MINERAL INDUSTRY REPORT 1969 and 1970

Volume 1

Yukon Territory and
Southwestern Sector
District of Mackenzie

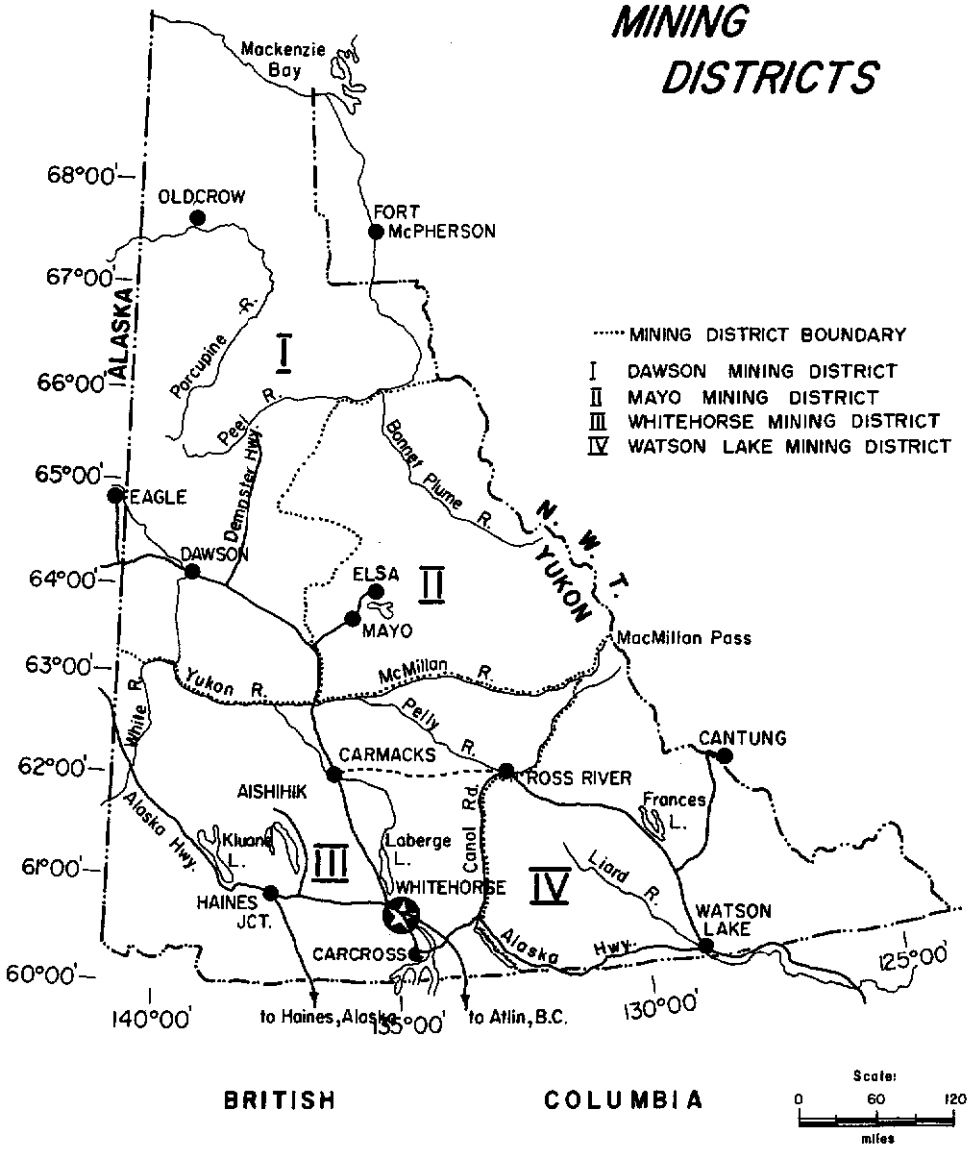
north of 60

mines and minerals

D B Craig
P Laporte

northern economic
development branch
department of indian affairs
and northern development
government of canada

YUKON TERRITORY MINING DISTRICTS



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ABSTRACT

This report is a summary of activity by the mineral industry in the Yukon Territory and the southwestern District of Mackenzie during 1969 and 1970.

The value of Yukon mineral production increased markedly during both years. The 1969 production of $35.4 million, compared with 1968 production of$21.3 million reflects increases in asbestos output by the Clinton Mine of Cassiar Asbestos Corporation from $8.7 million to $11.9 million, in copper concentrates from New Imperial Mines from $5.1 million to $7.6 million and four months production from Anvil Mine which shipped its first concentrates from the mill in September of 1969. Two small gold-silver producers, Arctic Gold and Silver Mines Limited and Mount Nansen Mines Limited ceased operations during the year.

The increase in value of production for 1970 to $79.6 million was due to the first full year of operation of Anvil Mine with concentrate sales of $40 million. Clinton Mine output increased by $3 million to $15.2 million and output from New Imperial Mines declined by $1.5 million largely as a result of the much lower average price for copper during 1970. Venus Mines, a gold-silver-lead-zinc-cadmium producer on Tagish Lake, milled at roughly 250 tons per day from September to December.

Pre-production work went forward at Wellgreen Mine where Hudson-Yukon Mines Limited will start production of nickel-copper concentrates at a 600 tons per day milling rate in the fall of 1971.

Exploration was active during both years with a noticeable increase during 1970 of geochemical stream silt surveys by major mining companies, largely in, but not restricted to, the Dawson Range.

Coal exploration, largely between Whitehorse and Carmacks, was done by several companies, in which numerous showings, known since the turn of the century, were re-examined, and some new occurrences discovered.

Placer gold production declined from about 11,700 ounces in 1968 to 9,800 in 1969 and 8,500 in 1970 with some 35 miners recording more than 30 ounces of gold produced.

In the Nahanni Mining District, Canada Tungsten mill operated throughout 1969 and 1970 producing 203 thousand STU* of WO_3 and 366 thousand pounds of copper in 1970.

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*Short ton unit

INTRODUCTION

This report is a review of the Yukon mineral industry for 1969 and 1970, by the Northern Economic Development Branch of the Department of Indian Affairs and Northern Development. Earlier geological records are presented in the Annual and Summary Reports of the Geological Survey of Canada from 1898 to 1933. Many of these earlier records have been annotated and republished in Geological Survey Memoir 284 (Bostock, 1957). This Memoir is presently being republished, but is currently available on microfilm. Mineral industry records for the period 1934 to 1940 are summarized by Bostock (1935, 1936b, 1937, 1938, 1939 and 1941). Records since 1960 are presented in an annual series of Geological Survey of Canada papers entitled The Mineral Industry of Yukon Territory and Southwestern District of Mackenzie by Skinner (1961, 1962); Green and Godwin (1963, 1964); Green (1965, 1966); and Findlay (1967, 1969a, 1969b).

The information was obtained from visits to properties, correspondence with company personnel, technical reports of companies, newspapers and trade journals and from the reports of the Mining Recorders of the Dawson, Mayo, Watson Lake and Whitehorse Mining Districts.

The authors acknowledge with thanks the co-operation of the companies and individuals of the mineral industry who provided information. The co-operation of members of government agencies has also been most helpful.

TRANSPORTATION FACILITIES

Whitehorse (population roughly 10,000 in 1970), the capital of Yukon Territory and main distribution centre, is serviced by ship and rail via Skagway (White Pass and Yukon Route), and by truck, bus and air from Vancouver and Edmonton. Canadian Pacific Airlines provide daily service to Edmonton and twice daily service to Vancouver. Wein Consolidated Airlines provide service on a three times per week basis between Whitehorse, Fairbanks, Anchorage and Juneau. Canadian Coachways Limited provide service to communities within the Territory and have three times per week service to Edmonton and Vancouver via Dawson Creek.

A highway system provides the basic surface transportation routes as follows: The Alaska Highway through southern Yukon (Watson Lake-Whitehorse-Alaska), the Whitehorse-Stewart Crossing-Mayo-Keno road with the road from Dawson City joining this road at Stewart Crossing, and the Campbell Highway from Watson Lake, through Ross River to Carmacks. Minor roads connect the network described with the small settlements and mining properties. Federal Government assistance is provided for mine access roads and Territorial Government assistance helps in the building of temporary and permanent, low-cost roads to exploration prospects, timber leases and ranches.

Boats are available for charter and some heavy equipment and fuels are moved on the Yukon River. One boat, the Brainstorm, services the community of Old Crow on the Porcupine River from a base at Dawson City, making the 1,000-mile round trip several times during the summer season.

Fixed wing aircraft, up to DC-3 size at Whitehorse, single Otter at Watson Lake, and Beaver at Ross River and Mayo, are available for charter.

Helicopters are permanently based at Whitehorse and Watson Lake and various designated points during the summer season.

MINERAL PRODUCTION OF YUKON

Table II shows current and cumulative Yukon mineral production. The increases between 1968 and 1969, from $21.3 million to $35.4 million are a reflection of increased sales of Clinton Creek asbestos ($3½ million), New Imperial Mines copper concentrates ($2½ million) and Anvil Mines lead and zinc concentrates from the first four months of production from September to December.

The very large increase to $79.6 million in 1970 is an expression of Anvil Mines first full year of production with sales of concentrates being $40 million. Clinton Creek production increased some $3 million; New Imperial sales declined about $1½ million.

Further production from Yukon mines is expected in 1971 with both Anvil and Clinton Creek production to be increased and production to start in the fall from the Wellgreen copper-nickel mine of Hudson-Yukon Limited at Quill Creek, west of Burwash Landing on Kluane Lake.

YUKON PLACER GOLD PRODUCTION

Yukon placer gold production, as summarized in Table III, shows a moderate decline from 9,800 ounces in 1969 to 8,400 ounces in 1970, with most areas showing a decrease. In 1970, some 30 operators recorded production of greater than 30 ounces. There were probably more casual operators, winning a few ounces, in 1970, than in the immediately preceding few years.

TABLE I

Representative Transportation costs for Yukon Territory, 1970

RAIL AND BOAT (container ship every week)

Ore and concentrates - Whitehorse to North Vancouver
Commodity rate on 30,000 lb. carloads

Lead, zinc or copper concentrates	$16.00 per ton
Asbestos fibre	17.00 per ton

Mining equipment and related supplies - North Vancouver to Whitehorse
Commodity rate (dollars per 100 lb.)

	10,000	24,000	36,000
Machinery	3.05	2.75	2.65
Petroleum products (packaged)	3.05		
(Gasolines and fuel oils are quoted F.O.B. Whitehorse)			
Drilling mud, building supplies	3.05	2.95	2.95

Backhaul rate on the above up to 12 months is 60 per cent

TRUCK

Basic rates - Whitehorse from Edmonton and Vancouver

Pounds	100	5,000	10,000
From Edmonton (dollars per 100 lb.)	7.25	5.62	4.97
From Vancouver (dollars per 100 lb.)	11.35	6.33	5.74

BUS (3 times per week)

Express rates - Whitehorse

	1-2 lb.	2-10	40-50	90-100
From Edmonton	2.30	2.85	7.05	12.50
From Vancouver	2.95	3.15	8.65	15.65

Table I (cont'd)

AIR (Edmonton - daily, Vancouver - twice daily)

Air express and air freight - to Whitehorse from Vancouver and Edmonton

Air express	Minimum	1-10 lb.	20-24 lb.	100 lb.
from Edmonton dollars		7.00	10.95	38.75
from Vancouver	Minimum	1-8 lb.		
dollars		7.00	11.95	43.50

Air freight	Minimum to 50 lb.	100 lb.	200 lb.	400 lb.
from Edmonton dollars	11.50	.22/lb.	.20/lb.	.19/lb.
from Vancouver	Minimum to 25 lb.			
dollars	6.00	.22/lb.	.19/lb.	.18/lb.

CHARTER AIRCRAFT

Type	Rate per hour	Rate per mile
Fixed Wing		
Cessna 172	$ 55.00	$ .45
180	70.00	.60
185 wheels	80.00	.60
185 floats	80.00	.65
Beaver	90.00	.90
Otter	145.00	1.35
Aztec	140.00	.70
DC-3	225.00	1.50

Helicopters	Rate per hour when carrier supplies fuel	Rate per hour when charterer supplies fuel
G-2	$ 120.00	$ 112.00
G-3-B-1	155.00	144.00
206 A (Jet Ranger)	248.00	237.00
Hiller 12 E	160.00	

TABLE II

Mineral Production of Yukon Territory[1]

Product		1968	1969	1970[2]	Cumulative Totals[2] 1886 to 1970
Gold	fine oz.	24,167	29,682	20,400	
	$	911,338	1,118,715	746,000	267,864,802
Silver	fine oz.	2,077,987	2,685,060	4,265,000	
	$	4,806,384	5,182,166	7,890,250	146,127,180
Lead	lb.	7,221,940	28,056,581	137,475,000	
	$	970,629	4,256,183	21,748,500	82,301,502
Zinc	lb.	5,306,429	33,062,280	155,975,600	
	$	748,206	5,035,385	24,846,900	64,367,909
Cadmium	lb.	51,830	68,172	63,000	
	$	147,716	239,965	236,900	6,076,476
Copper	lb.	10,597,000	14,866,077	15,500,000	
	$	5,097,157	7,645,623	9,000,800	28,255,142
Tungsten	lb.				
	$				27,499
Platinum	fine oz.				19
	$				1,553
Coal	tons		5,000[3]	16,700[3]	300,437
	$		50,000[4]	167,000[4]	2,784,312
Asbestos	tons	63,592	87,437	108,000	
	$	8,684,125	11,924,526	15,173,000	36,188,022
Totals	$	21,365,555	35,402,563	79,642,350	633,994,217

[1]Figures from Dominion Bureau of Statistics

[2]Preliminary figures (Dominion Bureau of Statistics)

[3]1969 and 1970 values of coal are preliminary

[4]At approximate price of $10/ton

TABLE III

Yukon Placer Gold Production, 1969 and 1970

District	Area	Number of operators[1] 1969	1970	Approximate production of gold (crude ounces) 1969	1970
Dawson	Klondike	18	17	5,689	5,324
	Sixtymile	2	4	552	412
Mayo	Haggart Creek and Dublin Gulch	2	2	1,826	1,707
	Highet Creek and Johnson Creek	1	1	494	392
	Thunder Gulch	1	1	170	168
Whitehorse	Bullion Creek	1	1	100	90
	Burwash	2	2	232	226
	Sheep Creek	0	1	-	32
Miscellaneous	Production	(10)	(5)	(120)	(113)
Totals		35	34	9,183	8,464

[1]With production greater than 30 ounces

TABLE IV

Mineral Claims Recorded, Yukon Territory

Mining District	1966	1967	1968	1969	1970
Dawson	738	220	403	846	847
Mayo	706	680	2,115	1,466	768
Watson Lake	4,828	2,183	2,091	996	1,294
Whitehorse	11,666	4,295	3,948	12,927	8,609
Totals	17,938	7,378	8,557	17,081	11,518

LODE EXPLORATION IN YUKON

Yukon Territory during 1969 and 1970 was the scene of strong exploration activity. By most guides - number of claims staked, number of companies, size of programs - these years were more active than the immediately preceding ones. Major mining companies were strongly represented either by exploration subsidiaries or by joint venture agreements. Mineral exploration divisions of petroleum companies were also active.

Table IV records the mineral claims staked and illustrates the marked increase in staking activity during 1969 over 1968 and the decrease from 1969 to 1970 from 17,081 to 11,518 claims.

The Whitehorse Mining District was the most active in 1969 with roughly 13,000 claims recorded, 10,000 of these being in the Dawson Range. During 1970, some 70 per cent of the claims recorded in the Territory were in the Whitehorse Mining District.

The major discovery of 1969 was the porphyry copper-molybdenum deposit on the Casino Silver Mines Limited property, 190 air miles northwest of Whitehorse, at the heads of Canadian and Casino creeks in the Dawson Range. Following recognition of essentially coincident copper and molybdenum anomalies on Patton Hill in 1968, diamond drilling started in June, 1969, by July had demonstrated a promising mineralized zone. This discovery stimulated a staking rush which continued through the mild fall and early winter of 1969.

On the west side of Windy Arm, Tagish Lake, Venus Mines Limited continued underground development of the gold-silver property which had been active in the early 1900's.

Boswell River Mines continued exploration of the Slate Mountain copper-molybdenum occurrence northeast of Whitehorse, completing geological surveys and 10,000 feet of diamond drilling.

On the White River, in southwest Yukon, Silver City Mines continued work on the copper deposit in Mush Lake volcanics with mapping and 10,000 feet of diamond drilling.

In the Mayo District, Hart River Mines explored their Marc Creek copper property, 80 miles northwest of Mayo, with 2,000 feet of surface and underground diamond drilling.

In the Dawson Mining District, Connaught Mines explored the Mosquito Creek property in the Sixtymile area, west of Dawson City, trenching and mapping and diamond drilling an area containing silver-bearing galena veins.

During 1970, numerous companies, supported by some 20 helicopters, explored the Dawson Range and surroundings in western Yukon, particularly the Nisling Range and Dawson City-Sixtymile areas. Work was largely stream silt geochemical prospecting. Soil sampling, geophysics, geological mapping and diamond drilling were done on some of the claim groups staked during 1969.

The Casino property was explored further by diamond and rotary drilling as well as by detailed geological mapping of bulldozer ripper trenches.

On the Venus Mines property, pre-production work, both surface and underground, was completed and in September the mill on the shore of Tagish Lake began producing silver-zinc-cadmium and lead-silver-gold concentrates.

Following a production decision announced early in the year, Hudson-Yukon Mining Company proceeded with pre-production work at the Wellgreen property west of Burwash Landing, with the object of starting production at 600 tons per day from the underground nickel-copper mine by the fall of 1971. Mill and townsite are being built at Mile 1110 on the Alaska Highway, 9 miles from the mine.

The Silver City copper property on White River was actively explored with 1,100 feet of adit being driven through the main mineralized zone.

At the Tom property near MacMillan Pass, on the Yukon-Mackenzie border, Hudson Bay Exploration and Development Company Limited explored the 5 million ton lead-zinc deposit with 6,000 feet of underground workings and 20,000 feet of diamond drilling.

MINERAL PRODUCTION AND EXPLORATION
NAHANNI MINING DISTRICT, DISTRICT OF MACKENZIE

Full production continued at the Cantung Mine of Canada Tungsten Mining Corporation on upper Flat River, near the Yukon-Mackenzie border. In 1969, production was 203,174 STU of WO_3 and 366,224 pounds of copper. The mine operates from May to September during which time a stockpile is prepared for winter millfeed. Exploration was done in the mine area and surrounding area.

During 1970, Redstone Mines Limited did diamond drilling on their copper property near Little Dal Lake.

Cerro Mining did geochemical soil sampling on their Coates Lake copper property.

WORK BY THE GEOLOGICAL SURVEY OF CANADA DURING 1969 and 1970
YUKON AND SOUTHWEST DISTRICT OF MACKENZIE

During 1969, one reconnaissance mapping program was conducted and several special studies were made by scientists of the Geological Survey.

S.L. Blusson and D.J. Templeman-Kluit, in a helicopter supported reconnaissance, (Operation Stewart) mapped parts of Lansing (105 N), Niddery Lake (105 O), Nadaleen River (106 C) and Bonnet Plume Lake (105 B) map-areas (pp. 29-31)[1] in the Hess Mountains and Bonnet Plume Range of the Yukon and western Mackenzie District. Main emphasis was the delineation of the major sedimentary features of the area. Much new information was gained on the Proterozoic and Cambrian sedimentary formations which underlie much of the area. Granitic intrusions are widespread in the Lansing and Niddery Lake map-areas, in argillaceous host rocks. The host rocks of the Amax Tungsten

[1]Refers to pages in G.S.C. Paper 70-1, Part A, Summary of Activities.

property on Mount Allan, north of MacMillan Pass appear to be correlative with the Lower Cambrian strata which are host to the ores of the Canada Tungsten mine, 120 miles to the south-southeast.

The main structural elements recognized are upright, mostly open folds and blocks of gently dipping strata. Thrusting is mainly northeastward.

W.H. Fritz, in his studies of Cambrian rocks, measured and collected fossils from 4,400 feet of Lower Cambrian strata, largely Sekwi formation, at the headwaters of the Mountain and Arctic Red Rivers in Bonnet Plume map-area.

R.G. Garrett began a compositional study of intrusions of the eastern Yukon (p. 62). Samples from five plutons, two of which were known to be associated with tungsten occurrences, were analysed for Co, Cu, Mo, Ni, Pb, W and Zinc. Some of the compositional variations found can be related to possible mineral potential.

A.R. Cameron (p. 18), as part of a study of radioactivity in lignites, measured activity in coal-like material on Granite Creek, Amphitheatre Mountain, Cement Creek, and Ptarmigan Creek west and southwest of Kluane Lake (115 G and F) and at Kimberley Creek, Sugden Creek, and Goat Creek west and southwest of Haines Junction in Dezadeash map-area (115 A). Highest value of 22 stations was 16 milli Roentgen per hour over a background of 10 milli Roentgen per hour.

P.A. Haquebard (p. 19), in a study of economic aspects of coal in the Yukon, collected samples from three coal seams in and near the Tantalus Butte Mine near Carmacks (115 I) for petrographic correlation analysis.

J.T. Gray (pp. 192-195) completed field work on talus and pro-talus debris in the Bear River Valley in the Wernecke Mountains (Nash Creek map-area 106 D) and Tombstone region in the Ogilvie Mountains (Dawson map-area, 106 B and C). The work is the basis of a doctorate thesis (McGill University). Erosion of rock walls was calculated by estimating talus volumes and the wall areas from which the talus was derived.

During 1970, two reconnaissance mapping programs and several special studies were in progress.

S.L. Blusson completed the mapping of the areas started in 1969 and the southwest corner of Mt. Eduni map-area (106 A) (p. 19)[1]. The northwest part of Nadaleen River is underlain by Proterozoic strata different from sub-Cambrian rocks to the east and may represent the oldest rocks in the Mackenzie or Selwyn Mountains. The basal unit, seen near Fairchild Lake (Nadaleen River map-area) comprises some 4,000 feet of thin-bedded argillaceous and calc-silicate hornfels. The Lower Proterozoic rocks, block faulted and locally tightly folded, separated from Upper Proterozoic purple argillite by a strong angular unconformity are possibly correlative with lower Rapitan Group. Volcanic rocks - thin basaltic flows and coarse breccias - established as Middle Ordovician, were found northeast of Bonnet Plume and Misty Lakes (Bonnet Plume map-area).

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[1]Refers to pages in G.S.C. Paper 71-1, Part A, Summary of Activities.

W.H. Fritz continued detailed studies of some of the Lower Cambrian strata at the head of the Arctic Red River.

D.J. Templeman-Kluit started 4-mile reconnaissance mapping in the Snag (115 J and K E½) and Aishihik (115 H) map-areas - the last two map-areas in the Yukon remaining to be mapped on reconnaissance scale (p. 34). A traverse was made across the Dawson Range and outcrops along the Yukon, White, Donjek, Ladue, Klotassin and Nisling Rivers were examined. Inflatable rubber boats with outboard jets were used on the rivers.

Much of the area is underlain by Yukon Group rocks, unconformably overlain by Mesozoic and younger volcanic and sedimentary strata. The Yukon Group metamorphic rocks are dissimilar to the late Precambrian Grit unit found elsewhere in the Territory, but are lithologically similar to upper Paleozoic strata found east of the project area.

W.W. Nassichuk (pp. 103-105), in a study of Permian rocks in northern British Columbia and Yukon, studied and collected fossils from a Lower Permian formation on the western flank of the Richardson Mountains in Bell River map-area (116 P).

R.G. Garrett, in a helicopter supported program, completed the geochemical sampling of the major bodies of acid plutonic rocks, 74 intrusions in all, northeast of the Tintina Trench (pp. 72-73), between latitudes 62° 40' N and 64° 40'N. Representative collections were made of the host rocks, including detailed sampling at the Mount Allan Tungsten property. Disseminated sulphides were found within intrusions in the MacMillan Pass area and tourmaline was commonly found only in this MacMillan Pass area. Several minor sulphide showings were found in the course of the sampling.

D.F. Sangster (p. 91), in his study of lead and zinc deposits in Canada, examined several properties in the Yukon, particularly the Tom property at MacMillan Pass - a stratiform lead-zinc deposit in baritic limestone.

R.V. Kirkham (pp. 85-88), in his study of copper deposits in Canada examined several occurrences in the Mush Lakes volcanic sequence southwest of the Shakwak Trench; namely, those in the White River (Silver City), Quill Creek, Sockeye Lake (Johobo property), Tetamagouche Creek (Alice Lake Mines Limited) and Pickhandle Lake areas. All of these are in the Dezadeash (115 A) and Kluane Lake (115 G and F) map-areas. These occurrences have enough similarities to deposits in the Hazelton and Takla Groups of British Columbia and the Coppermine River Group in the Northwest Territories to suggest that they have had similar origins.

R.I. Thorpe (p. 94) visited and sampled several Yukon properties as part of his study of silver deposits in Canada.

P.A. Hacquebard and A.R. Cameron (p. 17) extended the work of 1963 of the coal studies in the Carmacks area, collecting samples in 6-inch increments from a 17-foot-thick coal seam exposed on the south bank of the Yukon River at Carmacks, near the bridge.

LODE MINING AND EXPLORATION

MAYO MINING DISTRICT

GALENA AND KENO HILLS AREA

UNITED KENO HILL MINES LIMITED
7 King Street East
Toronto, Ontario.

Silver, Lead, Zinc
105 M 14
(about 63°55'N, 135°29'W)

References: Boyle (1956; 1957; 1965; 1968); Green and McTaggart (1960); McTaggart (1960); Skinner (1961, pp. 21-25; 1962, pp. 22-27); Green and Godwin (1963, pp. 5-8; 1964, pp. 7-12); Green (1965, pp. 7-12; 1966, pp. 10-17); Gleeson (1966; 1967); Findlay (1967, pp. 18-21; 1969a, pp. 20-24; 1969b, pp. 10-12).

Claims: 894 claims in the Keno-Galena Hills district, five surface leases and two Crown Grants.

Location and Access:

The properties are on Keno Hill and Galena Hill, roughly 32 miles north of the town of Mayo Landing. Concentrates are trucked to Mayo Landing and on to Whitehorse, a total of 277 miles, where they are loaded on White Pass and Yukon Route railway cars for delivery to the port of Skagway, 110 rail-miles from Whitehorse.

History:

The Keno Galena Hills district has the longest production history of any lode mining area in the Yukon. The first silver-lead discovery was made in 1906, with mining starting in 1913. The rich No. 9 vein on Keno Hill was discovered in 1919, stimulating much prospecting. During the 1920's, some 10 properties were developed, with production coming from several of these. Most of the work was by the Treadwell Yukon Corporation Limited. There has been continuous production from 1919 to the present, except for the years 1942-1946.

Treadwell Yukon was succeeded by Keno Hill Mining Company Limited in 1946 which was reorganized in 1948 as United Keno Hill Mines Limited. Ventures Limited acquired control in 1960. Falconbridge Nickel Mines Limited absorbed Ventures in 1962 and remains the controlling interest in United Keno Hill Mines Limited.

Description:

The silver-lead-zinc ores of the Galena Hill-Keno Hill district occur in erratic shoots and lenses in vein faults that cut finely bedded to massive quartzites, intercalated sills and lenses and schistose rocks of uncertain age (Findlay, 1969b, p. 21).

Current Activities:

During 1969, development work went forward at four main properties in the district. At Hector Calumet, of 1,867 feet of lateral work, 104 feet were driven in ore. At Elsa, of 1,175 feet of lateral work, 76 feet were in ore. At Sadie Ladue, 406 feet of lateral work failed to develop any ore. The major development work was on the Husky Mine. The shaft for this, started in March, 1968, was put down 423 feet. Water flows were severe and a major pumping station was established at the 375-foot level. Shaft stations were completed at the 375-, the 250- and the 125-foot levels. During the year, crosscuts were driven to the ore on the 125- and 375-foot levels, with the 250-foot crosscut being started. The vein does not rank as ore at the vein - 375-foot crosscut intersection, but at the vein - 125-foot crosscut intersection, assays average 50.7 ounces silver per ton across 9 feet. The Hector Calumet and Elsa Mines provided most of the millfeed with minor production from Sadie Ladue, following rehabilitation work during much of the year. Overburden drilling was continued on several properties, with diamond drilling as well on Galena Hill around the Calumet and Elsa properties.

During 1970, a total of 5,461 feet of lateral work was done by the company, of which 1,147 feet was in ore. In Hector Calumet, no ore was developed from 823 feet of work. In Elsa, 27 feet was developed from 1,088 feet. In the Husky Mine, 1,120 feet of ore was developed in two veins from 3,439 feet of work on the 125-foot and 250-foot levels. Sadie Ladue Mine was closed following completion of mining. Further preparation for production was continued in the No Cash Mine with the driving of 111 feet. Bulk of production was from the Hector Calumet and Elsa, with minor amounts from Sadie Ladue and some development ore from the Husky also providing millfeed.

The inclusion of Husky Mine reserve figures for the first time result in the marked increase over those quoted for 1969 (United Keno Hill Mines Limited, Annual Report, 1970).

The following summary of operating results for 1968, 1969 and 1970 is from information provided by the company:

	1968	1969	1970	Cumulative (1947 to December 31, 1970)
Dry tons milled	60,800	87,663	93,215	3,095,730
Daily average (tons)	166.6	239.6	255.4	
Mill heads:				
Silver (oz/ton)	33.93	27.98	29.22	
Lead (%)	6.53	4.56	3.65	
Zinc (%)	5.55	4.67	4.35	
Metal production				
Silver (oz)	1,981,777	2,405,615	2,601,960	111,433,163
Lead (lb.)	7,418,645	7,719,096	6,583,652	404,202,184
Zinc (lb.)	6,212,589	7,845,682	7,467,164	316,401,775
Cadmium (lb.)	74,042	100,740	98,687	4,000,917
Metal sales[1]	$6,053,715	$6,863,886	$6,854,728	
Ore reserves[2]	100,230	91,750	142,260	
Silver (oz/ton)	39.2	34.2	50.6	
Lead (%)	6.5	5.9	6.7	
Zinc (%)	5.5	4.3	4.6	

[1]Without deductions for smelter charges, freight and marketing.

[2]Additional reserves not presently economic for various reasons total 115,680 tons having average grade of 38.1 ounces silver per ton, 6.8 per cent lead and 5.4 per cent zinc (Findlay, 1969b, p. 11).

SILVER CHRISTAL NATURAL GAS AND MINING COMPANY
1177 West Hastings Street
Vancouver, British Columbia.

Lead, Zinc, Silver, Gold
105 M 14
(63°56'N, 135°27'W)

Reference: Boyle (1965).

Claims: 90 claims and fractions

Location and Access:

The claims are to the north and northwest of Elsa in the Galena Hill area. The Elsa-Keno road intersects the southern part of the property 3 miles from Elsa and a seasonal road leading to Hanson Lake extends northward across the north-eastern part of the property.

History:

The ten original claims of this property were purchased from Charlie Nord in 1968 and 80 additional, contiguous claims were staked during a period lasting until the spring of 1969.

Geochemical soil sampling on the Barb claim group in the northwest

section of the property was done in 1968. The sampling program was used to delineate areas where trenching and drilling might be employed to advantage.

Description:

The property is underlain by graphitic schist, thin-bedded quartzite, quartz-mica schist, phyllite, calcareous schist and quartzite of Precambrian and/or Paleozoic age (unit 1, Boyle, 1965). The majority of outcrops are, however, a chloritic diorite displaying a degree of schistosity near the sedimentary contacts. This diorite makes up less than 25 per cent of the total rock as revealed by trenching.

Vein-filled zones in the northwest-trending fault system in the area commonly contain quartz, siderite, galena, sphalerite and freibergite. These zones are silver-bearing with a silver to lead ratio of 3:1.

Current Activity:

Surface exploration and trenching was done and 1,000 feet of diamond drilling in seven holes was completed by August, 1969. No further work has been done.

SILVER SPRING MINES LIMITED
440 Simcoe Street
Victoria, British Columbia.

Silver, Lead
105 M 14
(63°52'N, 135°41'W)

Reference: Boyle (1965).

Claims: ALBERTA 1 to 12 and 2 fractions

Location and Access:

The property is situated on the northwest side of the Elsa-Keno road approximately 3 miles west of Elsa in the Galena Hill area of the Mayo mining district.

Description:

The property is underlain by a graphitic schist of Precambrian and/or Paleozoic age with thin-bedded quartzite, quartz-mica schist, phyllite, calcareous schist and quartzite (unit 1, Boyle, 1965).

Current Activity:

Diamond drilling was started on the property in September 1969. Underground workings consisting of 440 feet of drift and 180 feet of raise were completed by December, 1969.

Potato Hills

JAY GROUP
Altair Mining Corporation Limited
310 - 890 West Pender Street
Vancouver, British Columbia.

Silver, Lead, Zinc
105 M 13, 106 D 4
(64°00.5'N, 135°38.5'W)

References: Green and Roddick (1962); Boyle (1965); Gleeson et al (1965, Maps 30-1964 and 31-1964); Poole (1965); Gleeson (1966); Green (1966).

Claims: JAY 1 to 40

Location and Access:

The property extends southeast from Lynx Creek, 3½ miles from the main summit of the Potato Hills, 30 miles northeast of Mayo Landing and 12 miles northwest of Elsa. Bulldozer trails pass within 5 miles of the property and the road to F. Taylor's Dublin Gulch placer workings is 6 miles to the west. The 1969 exploration crew flew to the property by helicopter from Mayo.

History:

The Jay claims, staked in February and April, 1969, for the Altair Mining Corporation Limited, cover ground formerly held as the G 1 to 34 claims by United Keno Hill Mines Limited in 1965 and 1966. Soil sampling and prospecting of the G group in 1965 revealed silver-lead-antimony veins which were trenched by United Keno Hill Mines Limited. The G group was allowed to lapse subsequent to this work. The Jay 1 to 16 claims were the only claims explored in 1969 and renewed in 1970.

Description:

The area is underlain by thick- and thin-bedded quartzite, graphitic schist, minor limestone and skarn (unit 2, Green and Roddick, 1962 and unit 3, Boyle, 1965) in the vicinity of the granitic intrusion along the southwest border of the claim group.

The showing discovered in 1965 (Green, 1965) occurs in the northern part of the claim group at the junction of Lynx Creek and its major tributary (Skate Creek). It consists of sheet-like zones of pale buff siderite, heavily manganese- and iron-stained, with minor galena, sphalerite, pyrite, and a grey antimony-bearing mineral (jamesonite ?) and quartz striking 40° and dipping 25° northwest, parallel to the bedding of the enclosing schist. The upper trench, dug by United Keno Hill Mines Limited, exposes a mineralized zone 20 feet long and 4 feet thick, a composite sample of which assayed 0.4 ounces of gold and 7.56 ounces of silver per ton, 1.9 per cent lead and 3.7 per cent zinc. A second trench, 60 feet downslope from the first exposes a zone 35 feet by 4 feet from which a composite sample assaying 0.03 ounces of gold and 6.80 ounces of silver per ton, 3.7 per cent lead and 3.1 per cent zinc was taken.

Current Work and Results:

The 1969 soil sampling survey outlined a major silver-lead-zinc anomaly trending west-northwest for 2,600 feet in the northern part of the claim group which is probably associated with the 1965 showings. Smaller geochemical anomalies occur to the north and south of the major one.

ERIN GROUP
United Keno Hill Mines Limited
21st Floor, 7 King Street East
Toronto, Ontario
and
Elsa, Yukon Territory.

Silver, Lead, Zinc
106 D 3, 4
(64°02'N, 135°35'W)

References: Green and Roddick (1962); Boyle (1965); Gleeson et al (1965, Maps 30-1964 and 31-1964); Poole (1965); Gleeson (1966); Green (1966).

Claims: ERIN 1 to 28 and 31 to 189

Location and Access:

The Erin claim group lies north and west of the South McQuesten River and east of Lynx Creek, 12 miles northwest of Elsa. Following establishment of a base camp by helicopter in 1969, a J-5 Bombardier Muskeg Tractor was used for access between the camp and the road into the South McQuesten River. The tractor was also used for travel within the claim group except in the heavily wooded areas.

History:

The property covers ground staked as the Bob 1 to 108 claims for Silver Titan Mines Limited in 1962 and the N and G groups by United Keno Hill Mines Limited in 1965. Silver Titan Mines Limited carried out a geological mapping and prospecting program in 1963 on 6 of the Bob claims in the central part of the group. The N 1 to 8 claims, which corresponded to the northern part of the Erin group, and the G group, the southeastern part of which corresponded to the southwestern part of the Erin group, were prospected and soil sampled in 1965. The Erin group was staked for United Keno Hill Mines Limited in the summer of 1969 and, subsequent to the 1969 exploration program, all but 45 claims in a northeast trending belt in the northern part of the property were allowed to lapse.

Description:

The claims cover Yukon Group thick- and thin-bedded quartzites, graphite schist, quartz-sericite schist, greenstone and minor limestone (unit 2, Boyle, 1965) trending northwest and dipping 9° to 30° southwest except where intruded by six Cretaceous granodiorite stocks (unit 10, op. cit.). The granitic stocks are fine to medium grained with slight compositional variations near the borders of the intrusions. The largest stock trends northwest in the northwestern part of the claim group and has quartz veins associated with it, fragments of which contain grains of scheelite.

The main metasedimentary unit on the property, quartzite, underlies most of the eastern part of the claim group and also occurs as an arcuate band in the southwestern portion of the group. The thin-bedded quartzites are interbedded with graphite and sericite schists, the sericite schist to quartzite ratio increasing towards the southwest. The schists display well-defined foliation and locally exhibit wrinkled laminations, drag folds and crenulations. The greenstone occurs as large lenses of altered diorite throughout the group with the most extensive outcrops being in the east-central and south-central parts of the property.

Current Work and Results:

Three small showings were discovered during the 1969 geological mapping and prospecting programs in the northwestern part of the claim group:
a) manganese- and iron-stained, drag folded quartz carbonate containing pyrrhotite and arsenopyrite, samples of which assayed 0.40 ounces silver per ton and 0.13 per cent zinc.
b) calcite, arsenopyrite, quartz, tourmaline, stibnite, pyrite and pyrrhotite in a crushed gouge zone 2.5 feet wide which assayed 0.07 per cent lead.
c) calcite, pyrite and quartz in a heavy limonite-stained intersection of two faults which assayed 0.02 per cent lead.

Concurrent with the geological mapping and prospecting, a 13,829-sample soil survey was carried out over the claims which outlined a major northeast trending anomaly in the northern part of the claim group. The anomaly has erratically distributed areas which are above background in silver.

A five man field crew, placed on the 45 claim Erin group in July 1970, carried out prospecting and soil sampling over specific anomalous areas found in 1969.

Prospecting did not contribute significant additional geological information because of overburden cover.

A total of 485 soil samples were taken by auger at a 1.5 foot depth and analyzed for lead, zinc and silver. It was found that, for the most part, the 1969 anomalies corresponded to swampy areas on the property and that most of the values could be attributed to organic material obtained from shallow sampling.

Auger sampling in 1970 revealed low order and sporadic lead, zinc and silver anomalies with no indications of vein-type structures.

Dublin Gulch

PAN GROUP
C. Provencher (60%)
General Delivery, Whitehorse
and
J.H. Boyce (40%)

Tungsten
106 D 4
(64°02'N, 135°47.5'W)

References: Keele (1904); MacLean (1914, pp. 127-159); Cairnes (1916); Cockfield (1919); Hurst (1927, p. 29); Bostock (1943); Little (1959, pp. 34-36); Skinner (1961, p. 33); Green and Roddick (1962); Green and Godwin (1963, pp. 9-10); Boyle (1965); Poole (1965); Gleeson et al (1965); Gleeson (1967); Green (1968, p. 17).

Claims: PAN 1 to 68, ARPA 1 to 40 and 57 to 88

Location and Access:

The property straddles Haggart Creek in the west and extends east along Dublin Gulch to the eastern slope of Potato Hills. A 20-mile truck road joins Mr. F. Taylor's placer operation on Dublin Gulch to the Elsa-Mayo road 12 miles west of Elsa.

History:

Placer mining on Dublin Gulch was started in 1898 and has continued to the present. The lode mining potential of the area was also realized early and extensive exploration work was done on gold-bearing stibnite-arsenopyrite-quartz veins (Keele, 1904; MacLean, 1914). Keele also reported the presence of scheelite in placer deposits; these were investigated in 1916 by Cairnes. As the demand for tungsten increased, exploration for the source of the placer scheelite gained importance and, chiefly through the efforts of Mr. R. Fisher, 10 occurrences were discovered and trenched in 1918 (Cockfield, 1918). Interest waned and no further work was done on the veins until 1942, when Harvey Ray found large blocks of float containing scheelite to the east of Dublin Gulch.

In 1960, Prospectors Airways staked the area but explored only the gold-bearing veins, (Skinner, 1961). In 1962, Rio Plata Silver Mines Limited staked the western part of the property and conducted a Turam electromagnetic survey and bulldozer trenching program which outlined a narrow silver-rich vein and a gold-bearing arsenopyrite vein.

The present claim group was staked in 1968 and early 1969 for tungsten. A geological evaluation survey was carried out on the claims in June, 1969, subsequent to which the western 38 Arpa claims were allowed to lapse.

Description:

The area was first mapped by Bostock in 1943, then by Green and Roddick (1962) and Boyle (1965). The area is underlain by Yukon Group quartz-mica schist, graphitic schist, phyllitic quartzite, minor limestone and skarn (unit 3, Boyle, 1965) where the limestone is intruded by Mesozoic (Cretaceous?) granodiorite (unit 10, Boyle, 1965). The schists and quartz-

ites form an open southwesterly plunging anticline intruded, along the northerly side of the crest, by a northeast-trending 3-mile-long and ½- to 1-mile-wide stock. A second intrusion 1-mile-long by ¼-mile-wide occurs to the south of Potato Hills and a third, about 1,000 feet in diameter, on the west side of Haggart Creek. Dykes of decomposed and altered granite and altered diabase also intrude the schists and quartzites (MacLean, 1914).

The Dublin Gulch area contains quartz-arsenopyrite-pyrite-jamesonite veins, cassiterite veins, and scheelite- and wolframite-bearing veins, pegmatite bodies and skarn zones (Boyle, 1965). The gold-bearing veins occur in the metasediments along the northwest contact zone of the main intrusion. Most of the veins occur in clusters trending northeasterly and dipping southeasterly to northwesterly in faults, irregular shattered zones and fissures. Samples from the veins assayed from 0.10 to 0.50 ounces gold per ton and an assay of 1.35 ounces gold per ton and 0.53 ounces silver per ton over one foot is given in MacLean (1914).

The presence of nodules and lumps of siderite containing sphalerite, galena, jamesonite and other sulphosalts in the placer deposits suggests that siderite veins might occur in the area but these have not yet been discovered. The pyrite-jamesonite veins and cassiterite-tourmaline veins occur near the junction of Haggart Creek and Dublin Gulch. The cassiterite veins were explored by the Consolidated Mining and Smelting Company Limited in 1945 and the samples assayed averaged less than 0.3 per cent tin.

In the granitic rocks to the northeast the scheelite-bearing quartz veins form small stockworks with the veinlets ranging from 1 to 6 inches in width. The quartz and pegmatite veins in the metasediments are rare and occur mainly in the north and northeast contact zones. The scheelite also occurs as subhedral to anhedral crystals disseminated in metamorphosed limestone, calcareous schist and calcareous quartzite in the eastern contact zone of the granodiorite. Analyses of selected samples from the skarns indicate a tungsten oxide content ranging from 0 to 2.43 per cent.

Current Work and Results:

The 1969 geological program indicated that the most promising area, the north central part of the claim group, is underlain by decomposed granite and a scheelite-bearing quartz stockwork.

DAVIDSON RANGE AREA

Clark Lakes

CLARK CLAIMS
Bullion Mountain Mining Limited
303 - 1033 West Pender Street
Vancouver 1, British Columbia.

Lead, Silver, Zinc
106 D 2
(64°08'N, 134°57'W)

Reference: Green (1962).

Claims: CLARK 1 to 86

Location and Access:

The claims are 18 miles northeast of Keno, immediately south of Clark Lakes on the gentle north slope of the Davidson Range. An all weather road runs to McQuesten Lake, 15 miles west of the property and the Wind River Trail, a former winter road from McQuesten Lake, passes one mile north of the claims.

History:

The initial group of claims was staked in 1967 by prospector L. Elliott on the basis of soil and silt geochemical prospecting. Sulphide minerals were recognized and additional claims were staked in 1968, and bulldozer stripping done. The property was purchased by Bullion Mountain Mining Company Limited in 1970 and expanded to 86 claims.

Description:

The rocks underlying the property are black to grey mottled limestone, minor graphitic schist and schistose, gritty quartzite (unit 3, Green, 1962) of Precambrian or Cambrian age. The trend of the foliation is northeast with a southeast dip. Work by the company indicates a northwest trending, steeply plunging antiform of quartzite within which the less competent limestone and graphitic schist are strongly folded and sheared. Sulphides, largely galena, with lesser amounts of sphalerite and minor pyrite and chalcopyrite, occur in drag folds in the limestone and with quartz and calcite fissure fillings in the faults. Most of the galena and sphalerite occurs as replacements in pipe-like bodies within the grey mottled limestone bed.

Current Work and Results:

Following the stripping of an area 200 feet by 250 feet by the original owner, Bullion Mountain Mining Limited did a lead-zinc geochemical survey over a cut grid on the claim group demonstrating a broad area in which the soils contain from 100 to 200 ppm of lead and zinc and eight areas, regarded as anomalous, where the lead and zinc content is greater than 200 ppm. The company drilled 11 holes in the replacement body and related 22-foot-wide quartz-carbonate feeder vein using Winkie AX equipment for a total of 530 feet. Vertical hole No. 1 cut 91 feet of mineralized replacement material.

The sulphides have a typical silver to lead ratio of 1:1 and grade of lead is typically twice that of zinc in any one sample. A grade of 9 ounces of silver per ton, 8 per cent lead and 4 per cent zinc was obtained across 31 feet of channel sample.

Aerial photographs indicate that there are many northeasterly trending fissures (mineralized veins?) crossing the thick limestone beds.

PATTERSON RANGE AREA

Beaver River

WON GROUP
Cominco Limited
630 Dorchester Boulevard West
Montreal, Quebec.
and
Trail, British Columbia.

Zinc
106 D 2
(64°12'N, 134°34'W)

Reference: Green and Roddick (1962).

Claims: WON 1 to 24, 101 to 116, 121 to 130, 201 to 212 and 301 to 308, total of 70 claims.

Location and Access:

The Won group straddles the Beaver River 8 miles northwest of its junction with the Rackla River and 9 miles north-northeast of Mount Patterson. The 1969 survey crew flew to the property by helicopter.

History:

The Won claims were staked by Cominco Limited in the summer of 1968 under a joint agreement with L. Elliott of Calgary. On the basis of their work in the area, Cominco Limited optioned and maintained the north-western eight claims of the group in good standing.

Description:

The claim group is underlain by fine-grained black argillite of Precambrian and/or Cambrian age (unit 3, Green and Roddick, 1962). A few small grains of tetrahedrite were noted in quartz veins north of the northeast corner of the claim group.

Current Work and Results:

A geochemical soil survey over the northwestern eight claims outlined a significant zinc anomaly south of a line running west across the surveyed claims. The anomaly is related, according to the company geologist, to an argillite horizon containing a higher than normal amount of zinc.

Beaver River

JET GROUP
H. Versluce
Box 164
Whitehorse, Yukon Territory.

Silver, Copper
106 D 6
(64°24'N, 135°17'W)

References: Cockfield (1924, pp. 12-13); Alcock (1930, pp. 246-247); Green and Roddick (1962).

Claims: JET 1 to 16

Location and Access:

The property is in the southwest Wernecke Mountains on the northwest slope of Grey Copper Hill, southeast of Carpenter Creek, a tributary of the Beaver River, and 40 miles north of Elsa. Access in 1969 was by helicopter but old pack trails join the area to Keno City and a winter road constructed by Proctor Construction Limited in 1959, is 9 miles to the southeast.

History:

Shortly after the Keno Hill discoveries in 1922, low-grade silver-lead deposits were discovered on McKay Hill to the southwest of the property. Subsequent detailed prospecting of the area resulted in the discovery of a rich vein and high grade float on Grey Copper Hill by R. Fisher in 1923 (Cockfield, 1924). The area was staked and the mineral vein on the Grey Copper King claim was trenched. An adit was also driven on a quartz vein to the east.

The Jet claims were staked in July 1968 and allowed to lapse in 1969 following a property evaluation.

Description:

The property is underlain by Precambrian metasediments and dolomite (unit 2, Green and Roddick, 1962) in the northeastern part and by Cambrian to Silurian limestone and dolomite (unit 8, op. cit.) to the south with some serpentinized volcanics (unit 8a, op. cit.) in the southwest. The contacts trend west, sub-parallel to the Beaver River.

Cockfield (1924), described the 30-inch-wide vein of siderite, freibergite and pyrite with minor quartz, malachite and azurite occupying a fault fissure striking 350° and dipping 78° southwest. A sample from the vein assayed 52 ounces silver per ton over 16 inches and siderite float in the area reportedly assayed up to 1,100 ounces silver per ton (op. cit.).

Current Work and Results:

During the 1969 property evaluation survey, slightly mineralized quartz veins containing siderite, chalcocite, sphalerite and chalcopyrite were observed in the old workings.

WERNECKE MOUNTAINS AREA

HART RIVER PROPERTY
Hart River Mines Limited
848 West Hastings Street
Vancouver, British Columbia.

Copper, Zinc, Silver
116 A 10
(64°38'N, 136°52'W)

References: Green and Roddick (1962); Findlay (1969b, pp. 14-15).

Claims:

The property consists of three blocks of claims: the northwest block comprising the GT Fraction 1 to 5 and ZEBRA 1 to 88 claims, the central block comprising the LINDA B 1 to 9, 17 and 18, MARK 1 to 38 and MAY 1 to 6, 12 and 14 claims and the south group comprising the MARK 39 to 76 claims.

Location and Access:

The property is at the headwaters of a tributary (Marc Creek) of the Hart River in the Wernecke Mountains, 80 miles northwest of Mayo. The northwest group extends north and west from the northwest corner of the central group over the main western tributary of Marc Creek. The southern group, 1 mile south of the central group, which straddles Marc Creek, covers the southern reaches of the creek.

During the 1968-69 winter, a 64-mile winter road was constructed to the property from the Dempster Highway. During the summer, access to the property is by fixed-wing aircraft to an airstrip on the property.

History:

The main showings were discovered and staked as the Mark 1 to 24, 27 to 34 and Zebra 1 to 14 claims in June 1966. In 1967, Venture Mining Limited, in partnership with Anglo-Western Minerals Limited, optioned 38 of the claims, trenched the main showing, carried out a soil sampling and Ronka EM-16 surveying program over a 12 line-mile grid and drilled two short holes on the main showing using a packsack diamond drill. The Mark 25, 26 and 35 to 38 claims were added to the central group at that time.

In December, 1967, Hart River Mines Limited was incorporated to acquire and further develop the prospect. The 1968 program consisted of prospecting, geological mapping, soil sampling and magnetometer surveying of the claims and led to the staking of the Mark 39 to 76, May and Linda B claims in April, June and August. Thirty-one diamond drill holes totalling 7,266 feet were completed during the season.

The GT Fraction claims were added in 1969 to cover open ground within the northwest group.

Description:

Narrow bands of Precambrian argillite, shale, phyllite, dolomite, limestone, quartzite and slate (units 1 and 2, Green and Roddick, 1962) trend east and dip steeply south across the property. Locally, these sediments are

capped by Cambrian, Ordovician and Silurian thick-bedded dolomite and limestone (unit 8, op. cit.). Cretaceous intrusive/extrusive rocks of diorite composition (unit 20, op. cit.) occur as sill-like bodies, apparently conformable and locally intercalated with the sedimentary rocks (Findlay, 1969b). Company geologists have interpreted the local structure as a west-plunging anticline dislocated by a number of high angle faults trending easterly and northerly and at least one west-trending, south-dipping thrust fault (op. cit.).

Company geologists state that the main mineralized zone is in a west-trending steeply south-dipping shear-zone in the axial plane of an anticline. The zone is up to 30 feet wide and has been impregnated and partly replaced by disseminated to massive sulphides, chiefly pyrite, pyrrhotite, and chalcopyrite with minor sphalerite and galena. The sulphides occur chiefly as replacement bands along original bedding planes in the argillaceous rocks, as massive lenses near the argillite-diorite contact and, less commonly, as patchy replacement of the diorite (op. cit.). The main zone is a lens or pod of nearly massive sulphide some 50 feet thick and 250 feet long which dips 55° south and plunges 35° to the southwest.

The 1967 drilling indicated 1.58 ounces silver per ton, 1.58 per cent copper and 2.29 per cent zinc over 24 feet and 1.61 ounces silver per ton, 1.94 per cent copper and 1.8 per cent zinc over 28 feet (Northern Miner, May 23, 1968). The results of the 1968 drilling are given in Findlay (1969b).

The second showing on the central group is 3,000 feet to the southeast and consists of a series of galena-sphalerite veinlets striking northeasterly. A surface sample assayed 19.9 per cent lead, 6.95 per cent zinc and 3.10 ounces silver per ton over 5 feet.

Other areas of interest were outlined on the central group by the geochemical soil surveys. North of the main showing, coincident geochemical and magnetometer anomalies occur along the top of a ridge. Southeast of the second showing, a wide belt of copper-lead-zinc highs trends across a creek downslope from a diorite outcropping. Northeast of the main showing, a number of lead-zinc anomalies with minor copper occur over dolomite along a dolomite-diorite contact, which is sheared further to the north.

On the northeast group, two geochemical anomalies are associated with sulphide-siderite-quartz pods, parallel to the bedding in sericite phyllite, and veins in shear zones cutting serpentinized diorite and phyllites near a dolomite-argillite-diorite contact. Two other copper anomalies correspond to dolomite-limestone contacts near diorite-argillite contacts.

A lead-zinc anomaly occurs on the south group at the base of a hill of dolomite and limestone.

Current Work and Results:

Equipment was brought to the property by way of the Dempster Highway and the winter road. In March, 1969, an adit was collared at an elevation of 3,800 feet, 300 feet below the outcrop of the main sulphide zone on the central claim group. The adit was driven south, reaching the mineralized zone 670 feet from the portal, and extended a further 170 feet through

the zone and into the argillite beyond. Drifts were turned east and west from the 670 foot position, in the footwall argillite. From these drifts, short crosscuts were driven through the mineralized zone and diamond drill stations cut at the ends of these. Total workings were 2,000 feet. A series of diamond drill holes, fanned in vertical planes at -22 to -70 degrees, were directed northward to test the zone below the drifts and crosscuts. Thirty-two holes, having a total footage of 5,400 feet, were completed. Additionally, 3,373 feet of surface diamond drilling was done in nine holes. A second adit was collared at 3,680 feet elevation and driven 200 feet.

Based on the result of the work to August 31, 1969, the company reported proven tonnage of 577,445 tons, grading 1.45 ounces silver per ton, 0.041 ounces gold per ton, 1.45 per cent copper, 0.87 per cent lead and 3.6 per cent zinc with a probable tonnage of 600,000 tons of similar grade.

A feasibility study (Northern Miner, September 4) was conducted by Kaiser Engineers during the last four months of the year.

In 1970, two diamond drill holes, totalling 2,709 feet, were drilled southwards from underground to test a similar anticlinal structure, some 1,000 feet south of the main mineralized zone. The results were negative. In addition four areas within the central claim group, which had proved to be anomalous in the 1968 and 1969 geochemical and electromagnetic surveys, were re-examined by closer soil sampling and electromagnetic surveys. One of these areas, occupying a topographic saddle 1,500 feet south of the main zone, proved to be highly anomalous and indicated a conductive body. A diamond drill program on the zone is planned for 1971.

CINCH GROUP
New Cinch Uranium Limited
Room 416 - 25 Adelaide Street, West
Toronto, Ontario.

Copper, Lead
116 A 10
(64°36'N, 136°51'W)

Reference: Green and Roddick (1962).

Claims: CINCH 1 to 48

Location and Access:

The claims are in the Wernecke Mountains at the headwaters of a tributary (Marc Creek) of the Hart River, 80 miles northwest of Mayo. Access to the property in 1969 was by helicopter from Marc Lake 12 miles to the southeast.

History:

The Cinch claims, staked in June, 1968, were allowed to lapse in 1970.

Description:

Narrow bands of Precambrian slate, phyllite, dolomite, limestone, quartzite and argillite (units 1 and 2, Green and Roddick, 1962) trend east-

erly to southeasterly through the area and dip steeply south. These sediments are capped by thick-bedded limestone (unit 8, op. cit.) which form the predominant outcrops on the property.

Current Work and Results:

A soil sampling survey was carried out on the claim group in 1969 over 20 line-miles of grid. The survey outlined one copper anomaly at the base of a steep north-facing slope in the central section of the claim group. A lead anomaly occurs in a cirque in the southern part of the group.

HART GROUP
Montana Mines Limited
9th Floor, 850 West Hastings Street
Vancouver, British Columbia.

Copper
116 A 10
(64°39'N, 136°50'W)

Reference: Green and Roddick (1962).

Claims:

The property consists of a main group, the claims Hart 1 to 32 and a secondary group, Hart 51 to 63, one mile to the northeast.

Location and Access:

The two claim groups are in the Wernecke Mountains, south of the Hart River and east of the Hart River Mines Limited property, 80 miles northwest of Mayo. Access to the property in 1969 was by fixed wing aircraft to Marc Lake and by helicopter to the property.

History:

The claims Hart 1 to 18 were staked in June, 1968, for Montana Mines Limited. The Hart 19 to 27 and 51 to 63 claims, staked in June, 1969, were transferred to Montana Mines Limited in August while the Hart 27 to 32 claims, also staked in June, 1969, were transferred in January, 1970. The Hart 1 to 18 were in good standing in January 1971.

Description:

The northeastern group of claims covers outcrops of Precambrian sediments, chiefly argillite, shale, phyllite and dolomite with minor limestone and quartzite (units 1 and 2, Green and Roddick, 1962). The central and northern parts of the southwestern group are underlain by the Precambrian sediments also but the southern claims cover areas underlain by sill-like masses of Cretaceous (?) diorite (unit 20, op. cit.). The rock units trend roughly west and dip steeply south. Float containing disseminated sulphides was noted on the claims.

Current Work and Results:

A stream silt sampling program of 88 samples was carried out on the two groups in June, 1969, and indicated two areas of interest. A copper-

zinc-lead anomaly occurs at the junction of two minor streams in the southeast part of the main group and a second anomaly occurs in the northern part of the main group.

BONNET PLUME RIVER AREA

Dolores Creek

MAMMOTH GROUP
Bonnet Plume River Mines Limited
625 - 925 West Georgia Street
Vancouver, British Columbia.

Copper, Cobalt
106 C 13, 14
(64°56.1'N, 133°16.5'W)
and (64°54'N, 133°32.5'W)

References: Findlay (1969a, pp. 30-31; 1969b, pp. 8, 16-17).

Claims:

The main group comprises the claims MAMMOTH 1 to 108 and 201 to 216. The second group, 5 miles to the west-southwest, comprises the claims MAMMOTH 217 to 250.

Location and Access:

The main claim group is situated 15 miles east-southeast of Fairchild Lake and 98 air-miles north of Elsa on the southwestern slope of the Bonnet Plume Range in the Selwyn Mountains, northeast of the junction of the forks of a small stream flowing into a tributary of the Bonnet Plume River, locally known as Dolores Creek. The west group occurs on the east side of a narrow valley drained to the north, by a tributary of the Bonnet Plume River and to the south by a small tributary of Dolores Creek.

Access to the property was improved in 1968 by the construction of 50 miles of winter road to connect the property with the Wind River Trail, a winter trucking route from Elsa to the Peel Plateau, and of a 2,100-foot-long by 150-foot-wide airstrip on the main claim group. A bulldozer trail from the Wind River Trail to Fairchild Lake runs along the western edge of the west group in the stream valley.

History:

The initial discovery was made by L.J. Brown early in 1967. In the spring of that year, Mr. Brown went into joint partnership with L.I. Proctor, president of Nordex Exploration Limited and further prospecting of the area was undertaken. Other copper and cobalt showings were discovered and staked as the Mammoth 1 to 56 claims, recorded in June, 1967. Continued prospecting along with geological mapping, ground magnetometer surveying and geochemical soil sampling led to the staking of the Mammoth 57 to 108 claims in August, 1967, (Findlay, 1969a).

The Bonnet Plume River Mines Limited Company was formed to finance the 1968 program consisting of the construction of a winter road, airstrip and base camp on the property, and the preliminary prospecting and stream silt sampling of the surrounding area west to Fairchild Lake and south for

50 miles. Geological mapping and prospecting of the most promising areas led to the staking of the Mammoth 201 to 250 claims in April and August, 1968.

Description:

The Precambrian Katherine Group: interbedded slate, phyllite, quartzite, dolomite and limestone, is the main mineralized unit on the groups. In the northwestern part of the main claim block, this unit is folded into a broad anticline with a north-trending axis. Most of the west group is also underlain by this unit.

Overlying this unit unconformably is the Rapitan Formation composed of coarse breccia fragments of rock types similar to the Katherine Group and containing randomly distributed dioritic to gabbroic lenticular sills, dykes and small stocks. The unit's contact with the Katherine Group trends 45° across the centre of the main group, while on the west group the Rapitan Formation occurs only at the higher elevations.

The third unit is a thick carbonate sequence crossing the southeast part of the main group and dipping 20° to 40° southeast. The coarsely crystalline dolomite with numerous veinlets of calcite, quartz and siderite at the base of this unit grades into less pure dolomite with interbedded silty and cherty limestone.

Dykes, stocks and sills of syenite and quartz-diorite intrude the Katherine Group and Rapitan Formation. Ranging in width from less than 200 feet to 2,000 feet, the dykes show internal variations in texture and composition.

The main showings discovered in 1967 are described in Findlay (1969a, 1969b). The showing uncovered in 1968 consists of nearly one square mile of Katherine Group rocks cut by hairline fractures mineralized with siderite and chalcopyrite. The better grades (0.15% copper and 0.12 ounces silver per ton over 60 feet) are found in dolomites and quartzites near the contact with the Rapitan Group.

Current Work and Results:

During the 1969 field season, the company continued geological mapping, as well as bulldozer trenching and diamond drilling.

The property was inactive during 1970.

HESS MOUNTAINS AREA

Rogue River

HORN GROUP
Canadian Industrial Gas and Oil Limited
640 - 8th Avenue Southwest
Calgary 2, Alberta.

Copper
105 O 12
(63°40'N, 131°30'W)

Claims: HORN 1 to 9

Location and Access:

The claim group is situated in a north-facing cirque 4 miles east of the junction of Old Cabin Creek with the Rogue River. Access is by helicopter from a base at Sheldon Lake, a distance of about 80 miles.

History:

The nine Horn claims were staked on August 12, 1968, to cover a sulphide showing.

Description:

The claims are underlain by a series of carbonate-bearing shales and banded cherts of probable Silurian-Ordovician age, capped unconformably by Tertiary volcanic material. The buff coloured shale strikes N 10° - 20° W and dips steeply eastward. It outcrops in the northwestern part of the claim group. Along the western border, a long, sinuous, brecciated and calcite-cemented zone strikes in a northerly direction.

The alternating buff and dark grey banded chert outcrops in a narrow north-striking zone. A fine-grained, dark grey-green, intensely-jointed volcanic material lies unconformably on top of the chert and outcrops in the eastern and northern halves of the claim group. Quartz carbonate material, displaying cataclastic texture, outcrops in two narrow bands in the southern part of the claim group.

The sulphide veins of interest are associated with sheared and fractured zones in the volcanics in this southern part of the claim group. The vein is exposed for about 120 feet on a near vertical arrete wall near the head of the cirque. It strikes N 20° W, dips near vertically, and is 15 feet wide (true width).

On the other side of the arrete, (1,200 to 1,500 feet), the vein is obscured by limonite-stained talus. The vein has a sharp, horizontal contact with the volcanics on top. The vein is thought to continue no further than the chert contact, giving a possible depth of 350 feet.

A second sulphide zone is exposed 30 feet south of the first zone and appears to strike N 40° W and dip 30° SW. This vein is smaller than the first and may be an off-shoot.

Current Work and Results:

Channel samples taken from the best portion of the vein showed 40% magnetic pyrrhotite with lesser amounts of interstitial pyrite and patches of chalcopyrite in euhedral quartz gangue. Sample assays gave values of 0.49 per cent copper over 5 feet and 0.21 per cent copper over 30 feet.

DAWSON MINING DISTRICT

FORTYMILE AREA

Clinton Creek

CLINTON MINE
Cassiar Asbestos Corporation Limited
85 Richmond Street
Toronto, Ontario.

Asbestos
116 C 7
(64°27'N, 140°42'W)

References: Green and Roddick (1962); Green and Godwin (1964, pp. 19-21); Green (1965, pp. 25-27; 1966, pp. 25-26); Christian (1966); Findlay (1967, pp. 27-29; 1969a, pp. 31-32; 1969b, pp. 18-20).

Claims: 179 claims

Location and Access:

Clinton Creek joins the Fortymile River about 4 miles above the junction of the Fortymile and Yukon Rivers. The mine is 5 miles up Clinton Creek; the open-pit and primary crusher being on Porcupine Hill on the south side of the creek; the mill being on Trace Hill 1 mile away on the north side of Clinton Creek. The townsite is at the mouth of the Creek on a bench above the Fortymile River.

A 26-mile access road joins the mine to the Sixtymile Boundary road at Mile 33; road miles to Dawson City, 60; to Whitehorse, 390.

History:

The Clinton deposit was first staked in the spring of 1957 and initially explored in 1957 and 1958. Development work in 1963 and 1964 led to a production decision in 1965. Preproduction work went on during the next two years and milling began in October, 1967. Milling rate was about 2,500 tons per day during 1968. The federal government rebuilt the necessary 33 miles of the Sixtymile road from Dawson City and shared the cost of the 26-mile access road and the bridge over the Fortymile River.

Description:

The Clinton asbestos orebody is in a serpentinite lens about 4,500 feet long and 1,000 feet wide. Several ultrabasic bodies are present in the area within a mixed assemblage of metasedimentary and metavolcanic rocks which includes argillite, quartz-sericite-muscovite schist, carbonaceous limestone and chloritic schist. The serpentinite lens and the included ore zone

strike west and dip north. The section exposed in the present workings is as follows: argillite, hanging wall contact marginal quartz-carbonate alteration zone (converted from serpentine), a 20-foot gouge zone of quartz-carbonate material, barren serpentinite, chrysotile bearing serpentinite (ore zone), footwall contact and gritty, siliceous country rock termed quartzite. The hanging wall contact dips north at 45° to 55°; the footwall at 30°.

Current Operations:

Mining was in the third phase of a 10 year mining plan. From the initial bench at 1,710 feet in 1967, the floor of the pit was down to 1,440 feet in early 1971.

During 1969, production was all Canadian Group 4 and 5, (cement fibre). In 1970, production was increased as indicated in the operating summary and a circuit for the recovery of a spinning fibre fraction was added. Continuous production of the longer fibre, Cassiar grade CC, was achieved in early 1971.

The bulk of the output is brought to Whitehorse by truck convoy of the Transport Division of the company for transhipment to Skagway and Vancouver by the White Pass and Yukon Route railway and ship system. During 1970, some 26,000 tons were trucked to Fairbanks and Anchorage, Alaska for shipping to the port of Seattle, Washington for delivery to customers by ship.

Operating Summary:

	1969	1970
Mined (tons)	1,012,937	1,480,522
Milled (tons)	952,889	1,335,087
Daily average	3,048	4,049
Waste removal (tons)	3,410,710	4,536,738
Production (tons fibre)	87,820	104,386
Grade (% recovery)	9.22	7.82
Sales	$16.3 million	$20.8 million

Probable ore reserves to a depth of 200 feet below the adit, which is at 1,400 feet, are estimated at 20,500,000 tons.

SIXTYMILE AREA

Mosquito Creek

MOSQUITO CREEK GROUP
Connaught Mines Limited
11933 - 106 Avenue
Edmonton, Alberta.
and
P.O. Box 3854
Edmonton 41, Alberta.

Silver, Lead, Copper, Molybdenum
115 N 15
(63°55'N, 140°43'W)

References: Cockfield (1921); Green (1966, p. 28); Findlay (1967, p. 29; 1969a, pp. 32-33; 1969b, p. 20).

Claims: BEN 1 to 34 and 37 to 58, two groups of CCL 1 to 8, CEL 1 to 8, CON 1 to 200, JACK 1 to 8 and LOU 1 to 4 and 25 to 48, total of 316.

Location and Access:

The property extends east from the headwaters of Mosquito Creek, 3 miles south of its junction with the Sixtymile River and 40 miles west of Dawson. Sixty-five miles of all weather road and 7 miles of tote road join the property to the city.

History:

The presence of silver-rich galena in the Sixtymile River area has been known since the 1890's, but the Mosquito Creek veins were first staked in 1965 by J. Lerner and M. Chefkoi during a prospecting and reconnaissance geochemical sampling program (Green, 1965). The 16 CCL claims staked by the prospectors were optioned, along with the CEL and LOU claims, by A.H. Moisey of Edmonton who carried out the bulldozer trenching which uncovered the veins.

The 52-claim property was acquired by the Sixtymile Mining Company Limited of Edmonton in April, 1966, (Findlay, 1967) and the eight Jack claims were added to the property in July, 1966. The 1966 program involved limited bulldozer trenching and the shipping of 19.5 tons of material from the main showings to the Consolidated Mining and Smelting Company Limited at Trail, B.C. A limited reconnaissance electromagnetic survey was carried out near the showings in 1967 (Findlay, 1969a).

The 60-claim group was acquired by Connaught Mines Limited in 1968 and the 56 Ben claims added to it. Further bulldozer trenching was done on the claims in 1968 and in April, 1969, the 200 Con claims were staked.

Description:

The predominant rock type in the western portion of the property is Precambrian Pelly gneiss (?) (unit A, Cockfield, 1921), a quartz-plagioclase-biotite granite-gneiss characterized by numerous feldspar augen; the central part of the group is underlain by quartz-muscovite schist of the Nasina Series (unit A 1, op. cit.). The geology of the eastern part of the property is quite complex with remnants of minor rock units; quartzite, limestone and

skarns of the Nasina Series (op. cit.) occurring within and along the contact of biotite-rich gneisses with Cretaceous granitic intrusions (unit K, op. cit.).

The original property has two galena veins in the western part of the claim group. The main (No. 1 or upper) occurrence is a quartz vein containing massive galena and up to 18 inches wide, trending northeast and dipping steeply southeast. A grab sample of massive galena from this showing assayed 58.5 ounces silver per ton, 63.0 per cent lead and trace zinc (Findlay, 1969a). A second showing (lower or No. 3 occurrence) is 3 miles northwest of the main showing and consists of a lens of massive galena with minor chalcocite to 3 feet wide and 20 feet long along a northeast-trending fault. The bulk sample of ore from both these veins, sent to Trail, B.C., assayed 67.3 per cent lead, 67 ounces silver per ton, 0.06 ounces gold per ton and 0.6 per cent antimony. About midway between the two showings is a third vein some 3 to 5 feet wide, exposed for a length of 300 feet.

Current Work and Results:

The 1969 exploration program consisted of 46,040 cubic yards of bulldozer trenching, channel sampling, diamond drilling, geological mapping of limited areas, reconnaissance silt sampling and detailed soil sampling.

Trenching has intermittently exposed the main showing (No. 1 vein) for a length of 3,400 feet with grades averaging 22.8 ounces silver per ton, 0.031 ounces gold per ton and 19.9 per cent lead over a 4-foot width along 150 feet of the vein. A total of 1,083 feet of drilling in six holes tested the mineralized section and the best intersection graded 29.1 ounces silver per ton, 26.5 per cent lead and 0.08 ounces gold per ton over a true width of 2.2 feet.

The lower showing was mapped and channel sampled. The mineralized zone lacks continuity and the best grades were 60.7 ounces silver per ton and 67.8 per cent lead over 4.5 feet and 47.6 ounces silver per ton and 29.6 per cent lead over 2.6 feet. Two holes, having a total footage of 333 feet, were drilled on the vein with the best intersections grading 3.8 ounces silver per ton and 2.65 per cent lead over 3 feet.

The geochemical surveys consisted of a regional stream silt survey and soil surveys over three grids. The stream sediment sampling survey outlined a number of lead, copper and molybdenum anomalies which were then staked as the Con claims.

The soil survey over the western grid outlined two major lead anomalies and a number of less extensive ones, and two large, low intensity copper anomalies, apparently associated with the silver-lead veins. Trenching of the main lead anomalies uncovered a number of galena veins, one of which, in the northeastern part of the grid, grades 17.95 ounces silver per ton, 0.002 ounces gold per ton and 8.32 per cent lead over a 375-foot length and a 4-foot width.

Samples from the other veins assayed:

Width (feet)	Silver (oz/ton)	Lead (%)
0.5	59.1	60.3
2.7	22.98	28.9
1.8	48.8	33.7

Two 1,000-foot north trending and one 800-foot east trending lead anomalies were outlined on the central group by the soil survey. Associated with the lead anomalies are two closely-spaced copper anomalies covering an area 2,000 feet 1,200 feet, a Y-shaped copper anomaly and a molybdenum anomaly. Other smaller copper anomalies occur to the southwest and south of the main anomalies.

The geochemical work on the eastern grid outlined several lead anomalies trending east across the southern part of the grid. Trenches were cut across these anomalies and uncovered galena-tetrahedrite-barite veins, samples of which assayed:

Width (feet)	Silver (oz/ton)	Gold (oz/ton)	Lead (%)
2.0	64.7	0.005	62.0
4.0	166.2	0.12	52.5
0.9	29.1	0.08	38.7
3.3	32.6	0.04	24.2

The survey also outlined a large copper anomaly, about 4,000 feet by 6,000 feet, over the centre of the grid. Three molybdenum anomalies occur within and slightly to the west of the copper anomalies. Float mapping of the area indicated that the anomalies correspond to a quartz and magnetite rich phase of a highly jointed granitic stock 3 miles in diameter. No evidence of hydrothermal alteration was noticed in the float.

WHITEHORSE MINING DISTRICT

DAWSON RANGE AREA

Home Creek

VINA GROUP
Atlas Explorations Limited (40%)
Dynasty Explorations Limited (60%)
330 Marine Building
355 Burrard Street
Vancouver 1, British Columbia

Copper, Molybdenum,
Zinc, Lead
115 J 13
(62°46'N, 139°45'W)

Claims: VINA 1 to 241

Location and Access:

The claims are mainly at the headwaters of Home Creek to the south but also occupy part of the headwaters of Moose Creek to the west, Carlisle Creek to the north and Independence Creek to the northeast.

Access to the claims in 1969 and 1970 was by helicopter from the Yukon River, and the Uranus, Polaris and Casino airstrips.

History:

The Home Creek area was examined by Atlas Explorations Limited geologists in the course of a reconnaissance of the Dawson Range in 1969. Favourable geology and geochemical results led to the staking of 148 claims in October, 1969. A total of 93 claims were added in 1970.

Subsequent to the 1970 exploration program, the western 52 claims and the northeastern 24 claims were allowed to lapse.

Description:

The oldest unit in the area, an assemblage of Yukon Group high-grade metamorphic rocks, underlies the northeastern third of the claim group and is intruded by numerous Cretaceous and Tertiary units. Hornblende gneiss with foliation trending west-northwest and dipping steeply south occurs along the northwest-trending contact of the Yukon Group with a Tertiary granitic sill in the southernmost outcrops of the group. This unit grades into quartz-muscovite gneiss, intercalated with quartzite, with a foliation trending northwest and dipping steeply southwest. To the north, hornblende-rich gneiss is predominant with intercalated amphibolite and blue grey quartzite having a moderately southwest dipping north-northwest trending foliation.

The southern Vina claims are underlain by Cretaceous Klotassin hornblende granodiorite which grades locally to quartz diorite and quartz monzonite. These rocks are medium- to coarse grained, commonly foliated and commonly gneissic adjacent to the contacts. The foliation roughly follows the northwest trend of the intrusive contacts. Related to the Klotassin intrusions is a large, 500 foot wide, medium-grained diorite dyke intruding the Yukon Group gneiss in the central-northeastern claims.

The Tertiary intrusions comprise three sills and two small stocks of biotite-granite and dykes of alaskite and quartz monzonite. A large granite sill intrudes the northwest trending granodiorite-gneiss contact in the central part of the claim group. The sill is 1,200 to 3,000 feet thick. A second, narrower, parallel sill dipping 15° to 20° south intrudes the metasediments in the northern Vina Claims and the third sill occurs to the northeast of the claim group. One of the two small stocks, both roughly circular and about ½ mile in diameter, occurs in granodiorite southwest of the larger sill and the other at the granodiorite-gneiss contact north of the claim group.

Small Tertiary dykes ranging from acidic to ultrabasic in composition and porphyritic to aphanitic in texture intrude the older rock units. Fine- to medium-grained granite and rhyolite dykes are most abundant in the northern claims within gneiss underlain at shallow depth by a granite sill. The only concentration of the less abundant ultrabasic dykes is several small serpentinite dykes on a hill east of the claim group.

The Tertiary rhyolite and felsite flows, a possible terminal phase of the magmatic activity, exhibit a variety of textures and occur as discontinuous outcrops on the crest of hills in the south claims and as larger coherent cappings in the central and eastern parts of the property.

The general structural trend in the Dawson Range, as exhibited by the strike of the Yukon Group pendants, the granodiorite foliation and the trend of the Tertiary intrusives, is northwest. On the Vina claims, a second fracture direction, northeast, may represent the release of stresses generated by emplacement of the plutons. Most of the copper and molybdenum geochemical anomalies occur near the fracture intersections in the centre of the claims.

Small amounts of molybdenite, pyrite and chalcopyrite in hairline quartz veins and as fine-fracture fillings occur in four localities in the unaltered granite near the centre of the claim group. Molybdenite and chalcopyrite were also observed in vuggy granite float showing pervasive weak argillic alteration in the west-central claims. The Yukon Group quartz-feldspar-biotite gneiss along the southern sill's northern contact is rusty, veined with quartz and contains disseminated pyrrhotite, pyrite, magnetite and traces of chalcopyrite.

Current Work and Results:

Mapping at ½ inch to 1 mile scale, as well as geochemical sampling of stream sediments was carried out in August and October of 1969. Three grid areas were located on the basis of this reconnaissance work and line-cutting was started in April 1970. The grids then served as the reference for detailed soil sampling, magnetometer surveying and geological mapping at 1 inch to 1,000 feet in April to July of 1970.

The magnetometer survey outlined two small magnetic highs; one, on the northern grid over a granite dyke was caused by pyrite, pyrrhotite and magnetite at the contact, and the second one, on the central grid, is thought to be due to a similarly mineralized contact.

The geochemical survey reflects the small veins and contact mineral-

ization described with few exceptions. Erratic soil molybdenum anomalies occur over the granitic plug in the south. On the central grid, erratic molybdenum and copper anomalies reflect the presence of fine mineralized quartz veins and fractures. Lead and zinc anomalies show some correlation with the molybdenum anomalies and with rhyolite float but no galena or sphalerite was noticed. Copper, lead, zinc and molybdenum geochemical anomalies over the northern grid are believed to reflect contact mineralization in the gneiss.

FBH GROUP
Fawn Bay Development Company Limited (50%)
306 - 540 Burrard Street
Vancouver, British Columbia.
and
Hanna Gold Mines Limited (50%)
1111 - 409 Granville Street
Vancouver, British Columbia.

Copper
115 J 13
(62°51'N, 139°44'W)

Claims: FBH 1 to 48 and EX 1 to 8

Location and Access:

The property covers part of the divide between, and part of the headwaters of, Independence Creek to the north and the eastern fork of Home Creek to the south. The tote trail linking the Polaris airstrip to the Polaris main camp crosses the eastern claims of the FBH group.

History:

The FBH and EX claims were staked in December, 1969, following the discovery of a copper-molybdenum porphyry deposit on the Casino Silver Mines Limited holdings. The southern 20 claims of the FBH group were allowed to lapse in 1970 after a geochemical survey was completed.

Description:

Outcrops on and adjacent to the claim group are quartz monzonite and granodiorites of the Klotassin Batholith. The Yukon Group schist and gneisses are present 2 miles to the north of the property.

Current Work and Results:

A geochemical survey was done in 1970 with samples being taken every 200 feet along contour lines at vertical intervals of 250 feet. A copper soil anomaly measuring 700 by 4,000 feet trends north-northeast and then east along the north facing slope of the divide. An aureole of above local threshold values surrounds the anomaly and extends to the northwest.

BID GROUP
Atlas Explorations Limited (40%)
Dynasty Explorations Limited (60%)
330 Marine Building, 355 Burrard Street
Vancouver, British Columbia.

Copper, Molybdenum, Lead
115 J 12, 13
(62°45'N, 139°45'W)

Claims: BID 1 to 236

Location and Access:

The property straddles 5 miles of Home Creek, 10 miles from its confluence with the White River, and covers the northern part of the headwaters of Hungry and Tom creeks.

Access to the claims in 1969 and 1970 was by helicopter from the Yukon River and the Polaris, Casino and Uranus airstrips.

History:

The Bid 1 to 80 claims were recorded in October, 1969, on the basis of a reconnaissance mapping and geochemical program in August, 1969. Work on the claims in September and October led to the staking of the Bid 81 to 220 claims in November, 1969, while the last 16 claims were added in July, 1970. After the completion of the 1970 field program, 85 claims in the east and 53 claims in the north and northwest of the property were allowed to lapse.

Description:

The claims are underlain by granodiorites of the Klotassin Batholith, locally intruded by Tertiary granitic stocks and rhyolite dykes and capped by Tertiary flows. Intruding the coarse-grained hornblende granodiorite is an irregularly-shaped, north-trending fine- to medium-grained biotite granite body 2 miles by 3 miles, forming the stock-like eastern end of a narrow, west-trending intrusion. A second small tabular granitic stock, capped by rhyolite flows, outcrops to the northeast of the claim group. Tertiary rhyolite dykes trend west in the southern part of the group.

Small quartz-pyrite-molybdenite veins occur at the southern chloritized contact zone of a granodiorite inlier and the granite. Other quartz-molybdenite veins occur in an altered rhyolite dyke in the granite and in chloritic granodiorite float found in the northwestern part of the property. Small chalcopyrite-pyrite veins occur in fresh to weakly chloritized granodiorite in the east part of the claims.

Current Work and Results:

Two grids, totalling 28 line-miles, were cut in 1970 on the basis of the preliminary mapping and geochemical soil sampling done in 1969. The northern grid covers molybdenum soil anomalies and a corresponding aeromagnetic high on both sides of Home Creek and the southern grid covers a zone of pyrite-chalcopyrite-molybdenite veinlets and an altered granodiorite-granite contact.

The 1970 program consisted of linecutting, detailed soil sampling, magnetometer surveying and geological mapping at 1 inch to 1,000 feet. The geophysical survey did not reveal any significant magnetic anomalies and the weak geochemical anomalies on the north and south grids are associated with sub-economic quartz-chalcopyrite-pyrite-molybdenite veins. One copper-molybdenum anomaly of interest is present in the southwest part of the claim group.

Coffee Creek

CROWN GROUP
Rockland Mining Limited
635 - 789 West Pender Street
Vancouver, British Columbia.

115 J 14
(62°47'N, 139°23'W)

Claims: CROWN 90, 92, 94, 121 to 128, 193 to 202, 267 to 276, 341 to 350 and GAP 1 to 5. Total of 46 claims.

Location and Access:

The claim group straddles the west fork of Coffee Creek 7½ miles from its junction with the east fork. Exploration crews were transported by fixed-wing aircraft to the Casino airstrip and then by helicopter to the property.

History:

The Crown 1 to 398 claims were staked in November, 1969, for Rockland Mining Limited. Twelve claims were renewed after the 1970 geochemical survey. The Gap claims were staked during this survey to cover open ground within the Crown group.

Description:

The property covers northwesterly-striking Yukon Group metasediments, including quartz-mica schist and gneiss, gneissoid quartzite and hornblende paragneiss, intruded in the south by granodiorites of the Klotassin Batholith. The dominant rock, quartz-mica schist, locally ranges from quartz-sericite to quartz-biotite schist with minor quartz-mica-chlorite schist. The schist is strongly contorted on a small and local scale but regionally strikes northwest and dips near vertically. The intrusion is medium to coarse-grained granodiorite with large euhedral hornblende crystals and abundant biotite. The only sulphide observed is pyrite in a few isolated occurrences in the metasediments.

Current Work and Results:

Geological mapping at 1 inch to 400 feet and soil and silt sampling over a cut grid were carried out in July, 1970. No copper or molybdenum anomalies were detected.

TONI TIGER GROUP
Dawson Range Joint Venture
comprising:
(a) Strauss Explorations, Incorporated
120 Broadway
New York, New York.
(b) Trojan Consolidated Mines Limited
848 West Hastings Street
Vancouver, British Columbia.
(c) Great Plains Development Company of Canada Limited
736 - 8th Avenue Southwest
Calgary, Alberta.
(d) Molybdenum Corporation of America
280 Park Avenue
New York, New York.

Molybdenum
115 J 14
(62°49'N, 139°28'W)

Reference: Cairnes (1917).

Claims: TONI TIGER 1 to 32

Location and Access:

The property lies in the Dawson Range on the crest of a northeast trending ridge at the headwaters of the west fork of Coffee Creek. The exploration crews and their equipment and supplies were ferried to the property by helicopter in 1969 and 1970.

Description:

The claim group lies within the north edge of a 3-mile wide pendant of Yukon Group metasediments within the Klotassin Batholith. Coarse- to medium-grained biotite granodiorite or quartz monzonite borders the claims to the north and occurs as dykes in the metamorphic terrain. Intruding this granitic batholith is a sugary-textured aplite with quartz in a matrix of feldspar crystals. The metamorphic complex contains six distinct lithologies ranging from dirty quartzite and quartz-muscovite schist to meta-argillite, greenstone and amphibolite. Some green skarn occurs scattered throughout the area but mainly in a northeast-trending zone in the southern part of the claim group.

Current Work and Results:

In September, 1969, the claims were picketed, soil sampled and prospected. The 1970 summer program consisted of bulldozer trenching, geological mapping and check geochemical sampling. A D-8 bulldozer was engaged during the period May 21 to 29 to excavate four trenches in permafrost. A total of 3,482 cubic yards of soil were moved.

Two main mineralized zones occur within the metasedimentary pendant. In the skarn zone, scheelite, molybdenite and chalcopyrite occur in quartz veins, in small streaks and blebs, and as disseminations. Two of the samples taken from trenches in this zone assayed 0.18 per cent copper and 0.003 per cent molybdenum, near the southwestern limit of the skarn zone and 0.08 ounces silver per ton, 0.08 per cent copper, 0.192 per cent molybdenum and 0.10 per

cent WO_3 in the northeastern part of the zone. Southeast of the skarn zone, a patchy, discontinuous belt containing arsenopyrite, pyrite and chalcopyrite with minor molybdenite and scheelite strikes east across several rock types including meta-argillite, gneiss and gneissic skarn.

ROYALE GROUP
Atlas Explorations Limited (40%)
Dynasty Explorations Limited (60%)
330 Marine Building, 355 Burrard Street
Vancouver, British Columbia.

Copper, Zinc
115 J 14, 15
(62°47'N, 139°00'W)

Reference: Cairnes (1917).

Claims: ROYALE 1 to 66

Locations and Access:

The property is in the Dawson Range on a ridge between the eastern headwaters of Coffee Creek and the western headwaters of Excelsior Creek, 8 miles south of the abandoned settlement of Coffee Creek on the Yukon River 95 miles upstream from Dawson City.

Access to the claims was by helicopter during 1969 and 1970 with the men and supplies being flown by fixed-wing aircraft to the Casino, Polaris and Uranus airstrips and then to the property.

History:

The Royale claims were staked in September, 1969, on the basis of numerous pyrite-bearing sericitic intrusions coincident with an aeromagnetic high observed during a helicopter geological reconnaissance program in 1969.

Description:

Two subparallel northwest-trending pendants of coarsely to finely foliated Yukon Group gneiss in the Klotassin Batholith occur in the western part of the claim group. The southern Yukon Group body is composed of granitic and granodioritic gneiss which, at the contact with the granodiorite, is brecciated and shows intense argillic alteration but lacks sulphides. The second pendant, a wedge of fine grained laminated quartz-feldspar-biotite-hornblende gneiss, occurs in the northwest part of the claims and is cut by several intrusions. Pyrite, limonite and argillic alteration were observed in the gneiss at the contact with the batholith.

The Late Cretaceous Klotassin granodiorite ranges in texture from a fine-grained equigranular phase to a medium-grained phase with coarse-grained euhedral hornblende prisms. The granodiorite grades to quartz monzonite and granite of similar texture to the west of the claims.

The granodiorite is intruded, in the north central part of the claim group, by a Tertiary granite stock at the end of a northwest-trending dyke which intrudes the northeast edge of the northern Yukon Group pendant. The granite, sub-porphyrytic with euhedral crystals of orthoclase up to $1\frac{1}{2}$ inches

long, is cut by numerous aplite dykes and also occurs as dykes in the granodiorite along the stock boundaries. The granite-Yukon Group gneiss and granite-granodiorite contacts are intruded by large west- to northwest-trending Tertiary latite and dacite porphyry dykes.

Zones of alteration along the contacts of the granodiorite with the granite and gneiss are characterized by chalky feldspars, abundant quartz, abundant limonite, epidote and chlorite. Rocks are sheared and locally brecciated. Minor disseminated pyrite occurs in the gneiss and the dacite porphyry dykes.

Current Work and Results:

The preliminary geological mapping and soil sampling program started in 1969 at the time of staking, was expanded in 1970 over a picket line grid. The geochemical survey indicated that the geographic distribution of the samples anomalous in copper and zinc is quite irregular with only a few weak and scattered anomalies. No anomalies were outlined near the zones of alteration at the contacts of the different rock units.

PRINCESS AND DUCHESS GROUPS
Borealis Explorations Limited
940 - 8th Avenue Southwest
Calgary, Alberta.

115 J 11, 14
(62°45'N, 139°20'W)

Reference: Cairnes (1917).

Claims: PRINCESS 1 to 310 and DUCHESS 1 to 32

Location and Access:

The property extends in an 8-mile long by 3½-mile wide belt west-northwest along the crest of the Dawson Range. The claims cover the southern headwaters of the west branch and the western headwaters of the east branch of Coffee Creek and the headwaters of Doyle Creek flowing south into the Donjek River. The Polaris airstrip, constructed and maintained by the Polaris Syndicate, is on the Princess claim group and is long enough to handle a DC-3 aircraft. Alternate access is provided by a tractor road from the Casino Silver Mines Limited property, 18 miles to the east. Casino has an airstrip and is accessible by tractor road from the Yukon River and 140 mile winter road from the Alaska Highway.

History:

The Princess and Duchess claims were staked in December, 1969, by J.A. Legge and D. Gosling. Borealis Explorations carried out two months of evaluation in the summer of 1970 under an option to purchase. This option was not exercised, and in September, 1970, the properties reverted to Legge and Gosling.

Description:

The oldest rock units in the area, Yukon Group biotite and chlorite

schist, granitic gneiss and quartzite, occur in the central and southeastern portion of the property as a northwest-trending roof pendant in an extensive batholith. The metamorphic rocks are intruded by two subparallel northwest-trending dykes of fine- to coarse-grained metagabbro along the northeast edge of the pendant.

Most of the claims are underlain by the granitic batholith composed of coarse-grained granite, quartz-monzonite or granodiorite. Fine-grained granite and aplite dykes intrude the metasediments, gabbro and coarse-grained granitic phases. Porphyritic diorite and quartz diorite dykes occur in the granitic rocks and are considered by company geologists to be a secondary phase of the main intrusion.

The youngest rocks in the area are volcanics, mainly andesite and dacite, occurring in the southwest part of the claims as small bodies overlying the older rocks. Ten per cent of the talus on the property is quartz-feldspar porphyry.

Current Work and Results:

The 1970 field program consisted of geological mapping at 1 inch to 1,000 feet, prospecting, and geochemical soil and stream sampling. In the course of the geological mapping, samples from narrow quartz veins and lenses in the gneiss and schist were found to contain no more than 0.05 per cent copper, 0.002 per cent molybdenum and 0.1 ounces silver per ton. Samples of metagabbro containing pyrrhotite and chalcopyrite contained traces of nickel and copper.

The soil sampling program, conducted along cut lines spaced at 1,000-foot and 500-foot intervals were tested in the field for cold extractable copper and total heavy metals. No significant anomalous patterns were detected on the claim group.

PRINCE, DUKE, KING GROUP
Rockland Mining Limited
635 - 789 West Pender Street
Vancouver, British Columbia.

115 J 11, 14
(62°45'N, 139°08'W)

Reference: Cairnes (1917).

Claims: DUKE 1 to 16, KING 17 to 32, PRINCE 1 to 16, QUEEN 1 to 16, TIE 1 to 10

Location and Access:

The claims are along and to the east of the east fork of Coffee Creek, 3½ miles from its junction with the west fork.

In 1970, access to the claims was by helicopter but a bulldozer trail leads from the Casino property to within 3 miles of the claim group. A bulldozer could be walked from this trail to the property.

History:

The Duke, King, Prince and Queen claims were registered in April, 1970, for Rockland Mining Limited. The Tie claims were staked during the 1970 field season to cover open fractions in the claim group. Eight of the Prince claims and the 10 Tie claims remained in good standing by January, 1971.

Description:

The northern half of the property is underlain by westerly-striking Yukon Group metasediments (unit A, Cairnes, 1917) intruded by the Klotassin Batholith (unit 2, op. cit.) outcropping in the southern half of the group and two small stocks of Tertiary quartz-feldspar porphyry (unit 3, op. cit.) in the western part. The metasedimentary unit includes banded quartzite, gneissoid quartzite, quartz-mica schist, hornblende paragneiss and minor amphibolite.

The Klotassin granodiorite is characterized by large hornblende crystals and abundant biotite.

The main Tertiary intrusion, 4,000 feet by 800 feet, trends northwest across the metasediment-granodiorite contact. The porphyry contains rounded quartz eyes and euhedral orthoclase crystals up to one inch in length. A second smaller body, 300 feet by 500 feet, occurs to the northwest within the metasediments.

No sulphides were observed on the property but some remnant limonite and goethite boxworks occur in the porphyry fragments.

Current Work and Results:

The results of the 1970 geological mapping and soil and silt sampling program were discouraging; no geochemical anomalies being noted.

NABOB GROUP
Delta International Minerals Limited
1300 - 355 Burrard Street
Vancouver, British Columbia.

115 J 11
(62°42'N, 139°05'W)

Reference: Cairnes (1917).

Claims: NABOB 1 to 28

Location and Access:

The property is on the southwest flank of the Dawson Range at the eastern headwaters of the east branch of Coffee Creek, 12 miles south of the Yukon River. Access is by helicopter.

History:

The Nabob claims were staked in the fall of 1969 following the discovery of the Casino Silver Mines Limited porphyry copper deposit. In 1970,

the southern 10 claims were allowed to lapse.

Description:

Cairnes (1917) shows the area to be underlain by granitic rocks (Klotassin Batholith). Strongly lineated rocks, probably metasediments, (unit A, op. cit.) occur as float. Feldspar porphyry was also noted as float but no sulphides were recognized.

Current Work and Results:

In 1970, a preliminary geological report recommending a program of float and outcrop mapping and geochemical soil sampling was prepared by MacDonald Consultants Limited.

GEP GROUP
E.C. Fromme
Glenlyon Mines Limited
c/o Pemberton Securities Limited
744 West Hastings Street
Vancouver, British Columbia.

Copper, Molybdenum
115 J 10, 11
(62°41'N, 139°00'W)

Reference: Cairnes (1917).

Claims: GEP 1 to 32

Location and Access:

The property trends northeast along a ridge and covers the southern headwaters of the east fork of Coffee Creek, 5 miles northeast of the confluence of Dip and Casino creeks. The 1970 survey crew was flown to the property by helicopter.

History:

The Gep claims, staked late in 1969, are registered in the name of E.C. Fromme but the 1970 work was done for Glenlyon Mines Limited.

Description:

The claim group covers part of the Klotassin Batholith consisting of hornblende-biotite granodiorite (unit 2, Cairnes, 1917). A zone of alteration in the southwestern part of the claim group is marked by chloritization of the hornblende, sericitization of feldspars and leaching of the pyrite crystals. Visible, finely disseminated pyrite occurs in the east part of the property. Incorporated into the granodiorite are small xenoliths of Yukon Group metasediments (unit A, op. cit.). The granodiorite is intruded by a small stock of medium-grained orthoclase-rich and mafic-lean granite 900 feet wide trending east for 2,000 feet in a 2,000-foot-wide belt of aplite and pegmatite dykes, the density of which decreases away from the stock. A fresh, fine-grained gabbro unit, related to the Tertiary Carmacks Volcanics, (unit 3, op. cit.) occurs as scattered boulders and thin, irregular, discontinuous dykes.

Current Work and Results:

Geological mapping and a geochemical soil survey were carried out in 1970 over 7 miles of cut grid lines. The soil sampling survey outlined an 1,100 foot-long copper anomaly in the south-central part of the claim group and a minor molybdenum anomaly 1,500 feet to the west. The extent of the copper anomaly to the north and south was not determined.

MOTHERS AND ZAPPA GROUPS — Copper, Molybdenum
Dawson Range Joint Venture — 115 J 10
comprised of: — (62°44.5'N, 138°58'W)

(a) Strauss Explorations Incorporated
120 Broadway
New York, New York.
(b) Trojan Consolidated Mines Limited
848 West Hastings Street
Vancouver, British Columbia.
(c) Great Plains Development Company of Canada Limited
736 - 8th Avenue Southwest
Calgary, Alberta.
(d) Molybdenum Corporation of America
280 Park Avenue
New York, New York.

Reference: Cairnes (1917).

Claims: MOTHER 1 to 12 and ZAPPA 1 to 8

Location and Access:

The property lies in the Dawson Range at the headwaters of the east fork of Coffee Creek, 5 miles west of the Casino deposit. Although a rough bulldozer trail joins these two properties, the only practical access is by helicopter.

History:

The Mothers and Zappa claims were staked by Archer, Cathro and Associates Limited on behalf of the Dawson Range Joint Venture on August 17 and August 3, 1969, to cover a geochemical anomaly discovered by regional reconnaissance silt sampling carried out in June and July, 1969.

Description:

The claims lie within the Klotassin Batholith (Coast Intrusions) 2 miles south of a mile-wide pendant of Yukon Group metasediments. Three main rock units: foliated quartz monzonite, quartz monzonite (non-directive) and quartz porphyry, were distinguished on the property. Quartz monzonite is the major unit with a northeast-trending tongue of the two other units in the east central part of the claims and a roughly circular area, 800 feet by 1,600 feet, of foliated quartz monzonite in the southwest part of the property. The central part of the tongue is a quartz porphyry intrusion 3,200 feet by 800 feet and open to the east. The porphyry is separated from the quartz

monzonite by a 400-foot to 1,800-foot-wide belt of foliated quartz monzonite. The zone of foliated monzonite in the southwest contains remnant Yukon Group quartzite and schist xenoliths. Aplite dykes cut the quartz monzonite in a belt which trends northeasterly in the southern part of the property.

Current Work and Results:

The quartz porphyry is the only mineralized rock type and contains pyrite sparsely scattered along some of the fractures. The 1969 geochemical survey outlined a 24-acre molybdenum anomaly related to the quartz porphyry intrusion. A copper anomaly of 26 acres was also located one-half mile south-southeast of the molybdenum anomaly.

Canadian Creek

ACROLL OIL & GAS LIMITED
660 Calgary Place One
330 - 5th Avenue Southwest
Calgary 1, Alberta.

115 J 14, 15
(62°48'N, 138°46'W and
62°47'N, 138°57'W)

Reference: Cairnes (1917).

Claims:

The 123 claim property consists of two blocks: an east block of 16 CAN, 16 LIN and 32 NORA claims and a west group of 26 CAN, 10 TIP and 23 TIN claims.

Location and Access:

The east claim block straddles 2½ miles of Canadian Creek west of its junction with Britannia Creek. The second block, 2½ miles to the west, covers the headwaters of Excelsior Creek. Access to either part of the property is by helicopter.

History:

The claims were staked in December, 1969, and January, 1970, and transferred to Acroll Oil and Gas Limited in April, 1970.

Description:

The east claim block covers the Yukon Group granitic gneisses (unit A3, Cairnes, 1917) and mica, chlorite and amphibole schists (units A1 and A2, op. cit.). The western claims are within the Klotassin Batholith (unit 2, op. cit.).

Current Work and Results:

An aeromagnetic survey was flown over both parts of the property in an attempt to map petrological contacts and possible structures such as faults and shear zones. The survey revealed little more than that already shown by the published aeromagnetic maps.

NEW GROUP
Newmar Explorations Limited
211 - 717 West Pender Street
Vancouver, British Columbia.

Copper
115 J 15
(62°46'N, 138°53'W)

Reference: Cairnes (1917).

Claims: NEW 1 to 4, 23 to 38, 55 to 70, 89 to 102, a total of 50 claims

Location and Access:

The property, south of the Yukon River at the headwaters of Excelsior Creek to the west and Canadian Creek to the east, is accessible by helicopter only.

History:

The claims were staked in late 1969 north of the Casino Silver Mines Limited holdings. The area has been explored at various times since 1911 for placer gold and tungsten and silver-lead veins. Extensive programs were carried out to the south between 1964 and 1967 by Casino Silver Mines Limited and Nordex Exploration Limited, resulting in the discovery of the Casino porphyry copper deposit.

Description:

The claim group is underlain by locally foliated, grey, hornblende-muscovite granite of the Klotassin Batholith (unit 2, Cairnes, 1917); the trend of the foliation is north-northwest.

Two lineaments, one trending south for 2 miles across the centre of the claim group and a second less prominent one trending southeast to the east of the first, were interpreted by the geologist as vertical faults.

Current Work and Results:

The 1970 exploration program consisted of preliminary geological, photogeological and geochemical soil sampling surveys. The geochemical survey did not outline any extensive areas high in copper.

NEW GROUP
Trans Columbia Explorations Limited
211 - 717 West Pender Street
Vancouver, British Columbia.

115 J 15
(62°47'N, 138°50'W)

Reference: Cairnes (1917).

Claims: NEW 7 to 22, 39 to 54, 71 to 88

Location and Access:

The claims, extending along 2 miles of Canadian Creek, 4 miles from its junction with Britannia Creek, are reached by helicopter.

History:

The property is part of a group of 102 New claims staked in July, 1969, for Trans Columbia Explorations Limited and transferred to Estey Agencies Limited in November, 1970.

Description:

Most of the claims are underlain by Klotassin Batholith granodiorite (unit 2, Cairnes, 1917) with the eastern edge of the property covering Yukon Group argillite and gneiss (unit A, op. cit.). There is no evidence of alteration, pyritization or Tertiary intrusions in the granodiorite on the claims.

Current Work and Results:

The claims were geologically mapped and soil sampled by Archer, Cathro and Associates for Trans Columbia Explorations Limited in September, 1969. No areas within the claims are significantly anomalous in copper or molybdenum.

Isaac Creek

FOLLY AND RAIN GROUPS
Brewster Lake Mines Limited
300 - 890 West Pender Street
Vancouver, British Columbia.

Copper
115 J 15
(62°46'N, 138°34'W)

References: Cairnes (1917); Bostock (1944).

Claims: FOLLY 23 to 32, 45 to 54, 67 to 76, 89 to 98 and RAIN 1 to 9. Total of 49.

Location and Access:

The claim group, west of Isaac Creek and south of Sunshine Creek, is accessible by helicopter from the Casino airstrip.

History:

The Folly 23 to 98 claims were staked in November, 1969, for Brewster Lake Mines Limited and part of the group was allowed to lapse in 1970. The Rain 1 to 9 claims were added to the property in June, 1970, to cover open ground between the Brewster Lake Mines Limited property and staked ground to the north.

Description:

Bostock (1944) indicates that the major part of the property covers the northern edge of the Klotassin Batholith granodiorite (unit 3) with the northernmost claims covering Yukon Group metasediments (unit 1).

Current Work and Results:

A total of 593 soil samples were taken on the claim group in June, 1970. A copper anomaly 800 feet by 1,500 feet was recognized in the northwest part of the property. Isolated copper highs occur in an arcuate pattern south from this anomaly.

MONTE, CARLO, MAR, RAM GROUPS
Marguerite Lake Mines Limited
5517 - 789 West Pender Street
Vancouver, British Columbia.
Optioned to:
Nippon Mining of Canada Limited
607 - 475 Howe Street
Vancouver, British Columbia.

Copper
115 J 15
(62°47'N, 138°38'W)

References: Cairnes (1917); Bostock (1944).

Claims:

The MOSS 1 to 24 claims form a secondary group located 6½ miles west of the main group comprising the ARM 1 to 32, CARLO 1 to 44, FOLLY 1 to 22, FREDS 17 to 20, MAR 1 to 26 and 28 to 49, MONTE 1 to 48 and RAM 1 to 40 claims.

Location and Access:

The main claim group extends west along Sunshine Creek from its confluence with Isaac Creek, across Britannia Creek and on the east bank of the main southern tributary of Canadian Creek, a distance of 7½ miles. The Moss group, trending east for 3 miles, straddles ½ mile of Excelsior Creek 6 miles from its mouth.

The main group is traversed in the western part by an 11-mile all-weather road running northward from the Casino Silver Mines Limited property to the Yukon River. During the 1970 field season, the exploration crews flew to the claim groups by helicopter.

History:

The claim groups were staked in October and November, 1969, for Marguerite Lake Mines Limited and transferred in July, 1970, to the Guaranty Trust Company Limited.

Description:

The main group lies along the northeast margin of the Klotassin Batholith. The intrusion, composed of medium- to coarse-grained granodiorite (unit 2, Cairnes, 1917; unit 3, Bostock, 1944) with large euhedral hornblende crystals and abundant biotite, outcrops in the southern half of the claim group. The northern half of the group is underlain by various Yukon Group metasediments (unit A, Cairnes, 1917 ; unit 1, Bostock, 1944) including banded quartzite, gneissoid quartzite, quartz-mica schist, hornblende paragneiss, with marble at the granodiorite-metasediments contact. The west-trending contact is irregular with granitic sills and dykes intruding the metasediments and partly incorporated xenoliths of sediments occurring within the granodiorite.

An easterly-trending andesite dyke occurs near the western edge of the main group. Small, randomly-oriented zones of quartz-feldspar porphyry and felsite with minor disseminated pyrite occur throughout the claim group.

The Moss claim group is underlain by Klotassin granodiorite intruded in the centre of the group by a northerly-striking band of fine- to medium-grained quartz diorite with disseminated pyrite. The westernmost claims cover metasediments.

Current Work and Results:

Significant copper anomalies were found in four locations on or close to the granodiorite-metasediment contact on the main group. The most significant anomaly trends east for 1,800 feet in the western part of the claim group.

Between September 28 and October 6, 1970, 465 yards of bulldozer trenching was completed on the main anomaly, revealing a small section of rusty skarn, slightly mineralized with copper. A 690-yard trench was cut on a second anomaly 1,000 feet to the west.

TOAD GROUP
Prado Explorations Limited
Suite 1601 - 8 King Street East
Toronto, Ontario.

115 J 10
(62°43'N, 138°40'W)

References: Cairnes (1917); Bostock (1944).

Claims: TOAD 1 to 80

Location and Access:

The claims straddle a smoothly eroded mountain ridge trending west at the head of Sunshine Creek which flows into Isaac Creek 5 miles from its confluence with the Yukon River. The 1970 program was conducted from the Hayes Creek camp of International Mine Services with the crew and equipment flying to the property from the camp by helicopter.

History:

The 80 Toad claims were staked in July, 1969, by employees of International Mine Services Limited on behalf of Prado Explorations Limited. The property had been staked previously but no physical work had been done.

Description:

The Toad group is located in the northeast portion of the Klotassin Batholith which consists of medium-grained quartz monzonite and granodiorite (unit 3, Bostock, 1944).

Current Work and Results:

The 1970 geochemical soil survey and geological investigation of the claim group along cut and chained lines did not outline any areas anomalous in copper or molybdenum, nor were favourable geological features recognized on the claim group.

Britannia Creek

HOP GROUP
Empire Mercury Corporation Limited
202 - 569 Howe Street
Vancouver, British Columbia.

115 J 15
(62°46'N, 138°42'W)

References: Cairnes (1917); Bostock (1944).

Claims: HOP 5 to 12, 17 to 30, 33 to 52

Location and Access:

The 1970 exploration crews flew to the claim group at the headwaters of Britannia Creek by helicopter.

History:

The claims, staked on January 22, 1970, are presently owned by Empire Mercury Corporation Limited under terms of a purchase option made with the original stakers.

Description:

The claims cover part of the Klotassin Batholith (unit 2, Cairnes, 1917, and unit 3, Bostock, 1944).

Current Work and Results:

The results of a 483-sample soil survey carried out in August, 1970, were discouraging.

PEG GROUP
E.C. Fromme
Glenlyon Mines Limited
c/o Pemberton Securities Limited
744 West Hastings Street
Vancouver, British Columbia.

Copper
115 J 10, 15
(62°45'N, 138°45'W)

Reference: Cairnes (1917).

Claims: PEG 1 to 16 and 19 to 32

Location and Access:

The Peg claims are on the eastern border of the Casino Silver Mines Limited property along a northwest trending ridge at the headwaters of Britannia Creek. At present the most practical access to the property is by fixed-wing aircraft to the Casino airstrip and by helicopter from there to the property.

History:

The claims were staked in July, 1969, and transferred to E.C. Fromme. The 1969 soil sampling program was carried out for Glenlyon Mines Limited.

Description:

The main rock unit underlying the claim group is fresh hornblende-biotite granodiorite to diorite and a coarse-grained biotite-rich variety (unit 2, Cairnes, 1917). The northern outcrops of the granodiorite are coarse-grained and weakly foliated. Included in the Klotassin Batholith, is one 1,000-foot by 800-foot remnant of Yukon Group poorly- to well-banded hornblende-biotite-feldspar gneiss (unit 1, op. cit.) and numerous xenoliths. Aplitic and pegmatitic dykes intrude the granodiorite throughout the area.

Current Work and Results:

A soil sampling survey along 7 line miles of cut and picketed grid lines in 1969 indicated the presence of a small copper anomaly in the south part of the claim group.

Casino Creek

AZTEC, SQUAW and TLINGITS GROUP
Trans Columbia Explorations Limited
211 - 217 West Pender Street
Vancouver, British Columbia.

Copper, Molybdenum
115 J 10, 11, 14, 15
(62°45'N, 138°55'W)

Reference: Cairnes (1917).

Claims: AZTEC 1 to 151, SQUAW 1 to 12, TLINGITS 1 to 12, NEW 5, 6, and 103 to 150

Location and Access:

The New claim group is 1 mile northeast of the main block of claims. The claims cover the headwaters of, and the divide between, Casino Creek to the southeast and Coffee Creek to the northwest as well as the headwaters of Excelsior Creek to the north. The claims are accessible by helicopter from the Casino airstrip 6 miles to the east.

History:

The Aztec, Squaw and Tlingits claims were staked in August, 1969 for Trans Columbia Exploration Limited. The New claims are part of a larger group staked in October, 1969, for Trans Columbia Explorations Limited and part of which, the New 5, 6, 103 to 128 and 137 to 148 claims, was transferred to Estey Agencies Limited in November, 1970.

Description:

D.D. Cairnes (1917) mapped the area covered by the claim group as underlain by medium-grained granodiorite (unit 2) of the Klotassin Batholith.

Preliminary examination of the outcrops and rock fragments during the 1970 geochemical survey indicates that the granodiorite is slightly altered and pyritized and that light coloured porphyry occurs near the zones anomalous in copper and molybdenum.

Current Work and Results:

The 1970 assessment work done on the claims consisted of a soil sampling survey on a 400 foot by 400 foot grid. The survey outlined four anomalous areas, one significant molybdenum anomaly, one copper zone and two copper-molybdenum areas. Each of the four areas is at least 2,000 feet by 5,000 feet with copper and molybdenum concentrations exceeding five to ten times background. The anomalies occur along two general belts, one trending north-northwest in the northern part of the claims with an anomaly opening east onto the Casino Silver Mines Limited ground and another belt trending west near the south edge of the claim group.

CASINO SILVER MINES LIMITED
700 - 1177 West Hastings Street
Vancouver, British Columbia.

Copper, Molybdenum
115 J 10, 15
(62°43'N, 138°49'W)

References: Cockfield (1928b, pp. 11A-13A; in Bostock, 1957, pp. 576-578); Green and Godwin (1964, pp. 22-24); Green (1965, pp. 34-35; 1966, pp. 39-42); Findlay (1967, pp. 32-34; 1969, pp. 39-40); Archer and Main (1970); Phillips and Godwin (1970).

Claims: 326 claims.

Location and Access:

The Casino property is 190 air miles northwest of Whitehorse in the Dawson Range of the Yukon Plateau. It covers a watershed between Canadian Creek, a tributary of Britannia Creek which is a north-flowing tributary of the Yukon, and Casino Creek, a southwest-flowing tributary of the Donjek River. Access for heavy equipment during the summer is by barge on the Yukon River to Britannia Creek, from where a 10-mile tractor road has been built to the property. In the winter of 1964-1965, a 140-mile winter road was built from near Burwash Landing on Kluane Lake. This road was reconstructed and used during the winter of 1969-1970 to bring in house trailers and other heavy equipment necessary to establish a 100-man exploration camp. An airstrip, capable of handling DC-3 aircraft, is used for lighter, all season servicing.

History:

Recorded activity dates from 1911 when placer gold was produced from Canadian Creek. Scheelite was recognized in 1915 and placer tungsten mining was attempted in 1941 on the site of the present exploration camp. During 1963, Rio Tinto and Yukon Consolidated Gold Corporation trenched silver-bearing galena veins discovered in 1936. In 1965, Casino Silver Mines Limited was formed and investigated the veins during 1965 and 1967. The Bomber showing, consisting of veins of quartz, barite, siderite, galena and sphalerite with subordinate pyrite and chalcopyrite in a shear zone in Cretaceous granodiorite was investigated with bulldozer trenches and 1,200 feet of underground

workings. A shipment of 48.43 tons of hand-picked material, sent for smelter testing, assayed 161.1 ounces silver per ton and 68.0 per cent lead. The Helicopter showing, 3,400 feet west of the Bomber, was traced by EM surveys for 4,600 feet and found to contain minor amounts of sulphide minerals, mostly at the northern end of the structure. In 1966, a geochemical survey indicated a strong copper-zinc anomaly along a small tributary of upper Casino Creek. A gossan on this creek was diamond drilled in 1967. That the gossan was transported directed attention to the upland (Patton Hill) above the stream. The 1968 geochemical survey indicated strong copper-molybdenum anomalies in this area, essentially coincident and some 3,000 feet in diameter.

Description:

The property lies along the northeast margin of the Klotassin Batholith, here the eastern unit of the Coast Range Intrusions. Locally the rocks are medium-grained biotite quartz monzonite and granodiorite. The age, as indicated by the potassium-argon method, is in the 95 to 99 m.y. range or late Cretaceous (Findlay, 1967, p. 40). The Klotassin rocks intrude metasedimentary units of the Yukon Group, here schist, gneiss and quartzite with minor marble and conglomerate. The metasediments, particularly quartzite, are present as roof pendants in the granodiorite.

Intrusive into the Klotassin Batholith is the Casino Stock, dated at 70 m.y. or early Tertiary (Archer and Main, 1970) 5,000 feet long by 2,000 feet wide, trending west. Several phases are present, indicative of a complex igneous history. The eastern half of the stock is largely a coarse breccia having a quartz porphyry matrix; the eastern half is mostly feldspar porphyry. The Casino Stock has been intensely hydrothermally altered with some alteration affecting Klotassin rocks at least 2,000 feet from the Casino-Klotassin contact. The zoned alteration pattern observed is one typical of porphyry copper deposits. An irregular central area has potassic alteration, characterized by secondary K-feldspar and biotite, with iron oxides and tourmaline, followed successively outward by an advanced argillic zone containing muscovite-sericite, abundant tourmaline and small quartz veins having quartz-sericite envelopes. Peripheral to the advanced argillic zone is an area of phyllic alteration identified by marked development of sericite, moderate amounts of secondary quartz and minor clay. The argillic zone is characterized by strong development of clay with minor sericite, calcite and chlorite; the outer or propylitic zone contains abundant chlorite and calcite with minor epidote and gypsum.

Current Work and Results:

Since true outcrop is rare on the Casino property and confined to ridges, the understanding of rock types and distribution is from bedrock float and drill samples. During 1969 and 1970, bulldozer ripper furrows were cut in this largely permafrost area to depths of 2 feet on lines 400 feet apart, through the vegetation, organic debris and mineral soil to a zone containing abundant bedrock float. Observations were made and samples collected every 100 feet along 240,000 feet (45 miles) of these furrows. An attempt was made to distinguish between bedrock float and possible transported material. Under binocular microscope examination, several salient features were noted (Phillips and Godwin, 1970):

(a) rock type of probable underlying rock,
(b) silicification intensity, alteration facies and intensity,
(c) limonite data where the intensity and proportions were estimated by the colour of the limonite streak (jarosite-yellow; goethite-brown; and hematite-red),
(d) associated minerals, especially hematite, magnetite, tourmaline, pyrite, chalcopyrite, chalcocite and molybdenite,
(e) structural relationships such as closely spaced parallel fractures and cross-cutting quartz veins with quartz-sericite envelopes,
(f) transported float.

Chip specimens were taken for analysis of: Cu, Pb, Zn, Mo and W. Reduced data were plotted on a series of maps at a scale of 1 inch to 400 feet.

Diamond drilling from May to December, 1969, was 22,000 feet in 30 holes, roughly on 800-foot spacing, and provided sufficient information to indicate possibility of a large, low-grade, copper-molybdenum deposit. Greater than one billion tons of 0.38 copper equivalent was inferred (Northern Miner, December 21, 1969). A further 15,000 feet of diamond drilling was done in 1970. As core recoveries in a leached capping and supergene zone were poor, and caving serious, particularly in higher grade intervals, rotary drilling was tried on the property from January to August, 1970. The larger hole and use of air as a drilling fluid were expected to produce a better sample at less cost than diamond drilling. During operations, much effort went to confirming the quantity of the samples. From sample weight, specific gravity and hole size, a sample recovery of 95 to 100 per cent was determined. Dry cuttings were separated from the return air by cyclone. Initially, wet cuttings were separated from return water by running the return fluid into tanks. A screen over the tank caught the coarser fraction while a fine nylon mesh over an outlet nipple caught the fine fraction. A commercial sampler, used during the later part of the drilling, splits the sample while the cuttings are still in suspension, catches coarse cuttings on a 20-mesh screen and removes fines down to 340 mesh with a cyclone. Thirty-five of these 4 7/8-inch rotary holes were drilled for a total of 17,772 feet. The 1970 drilling, both rotary and diamond, largely filled in, at 400-foot spacing, the 800-foot grid of 1969.

From the study of lithology, alteration facies and distribution of tourmaline and hematite-magnetite, the following interpretation of the mineralization pattern for copper and molybdenum was made (op. cit., p. 45). Mineralized zones are:

(1) mainly within breccia,
(2) outside the hematite-magnetite area defined by the hematite-magnetite line,
(3) related to the outer margin of the potassic alteration zone,
(4) inside the tourmaline line.

The breccia seems to be the most important factor of the above.

Following completion of the work described, Brameda Resources announced for the Casino property, mineable reserves of 179 million tons of material having a grade of 0.37 per cent copper and 0.023 per cent molybdenum for a copper equivalent of 0.45 per cent, at a stripping ratio of 1.67 to 1.0.

BRAN GROUP
New Davies Petroleums Limited
and
Kopan Developments Limited
10th Floor, 366 Bay Street
Toronto 110, Ontario.

115 J 10
(62°40'N, 138°55'W)

Reference: Cairnes (1917).

Claims: BRAN 1 to 24

Location and Access:

The Bran group is on the south flank of the Dawson Range at the headwaters of a small stream emptying into Dip Creek 4 miles downstream from the mouth of its tributary, Casino Creek. Access to the property is by helicopter only.

History:

The Bran claims, staked in October 1969, were acquired by New Davies Petroleums Limited from W. Brander and W.J. Travers in November.

Description:

The property is underlain by Cretaceous granitic rocks (unit 2, Cairnes, 1917) of the Klotassin Batholith.

Current Work and Results:

A magnetometer and soil sampling survey carried out in 1970 did not outline any anomalies of interest.

HOLE GROUP
Coin Canyon Mines Limited
508 - 850 West Hastings Street
Vancouver, British Columbia.

Copper, Molybdenum
115 J, 10, 11, 14, 15
(62°43'N, 139°00'W)

Reference: Cairnes (1917).

Claims:

The property consists of two groups, the south block comprises the claims HOLE 1 to 8, 10, 13 to 22 and 25 to 34; the north block comprises the claims HOLE 36 to 152.

Location And Access:

The south block of 38 claims, west of the Casino Silver Mines Limited property, straddles a tributary of Casino Creek which flows southeast into the creek 3 miles from its confluence with Dip Creek. The north block, originally of 108 claims, extends west from the northeast corner of the Casino Silver Mines Limited claim group along the southwest slope of a northwest-

trending ridge to the east fork of Coffee Creek, 3 miles from its junction with the west fork. A road extends from the Yukon River to the Casino airstrip 3 miles east of the Hole claim blocks.

History:

The property was staked in October, 1969, adjacent to the Casino Silver Mines Limited holdings. The northern 80 claims of the north claim block were allowed to lapse in 1970 subsequent to a geochemical silt and soil sampling program.

Description:

The south claim group and the eastern part of the north block are underlain by granodiorite and monzonite of the Cretaceous Klotassin Batholith (unit 2, Cairnes, 1917). These rocks intruded the Yukon Group schist and gneiss (unit A1, op. cit.) which underlie the western part of the north claim group.

Current Work and Results:

In 1970, Coin Canyon Mines Limited prospected the Hole claim group and carried out a silt and soil sampling program which indicated two molybdenum anomalies with coincident minor copper anomalies. On the south group, the molybdenum soil anomaly extends across the claim group from east to west in the north-central part with anomalous silt values occurring in the stream downslope to the south. A less prominent anomaly occurs in the silt of the southern part of the north claim block.

CASH AND GUN GROUPS
La Ronge Mining Limited
248 - 2nd Avenue
Kamloops, British Columbia.

Copper
115 J 10
(62°40'N, 138°52'W)

Reference: Cairnes (1917).

Claims: CASH 1 to 24 and GUN 251 to 258 and 281 to 288

Location and Access:

The Cash and Gun groups of 40 claims extend southeast over the junction of the Casino and Dip creeks north of Stevenson Ridge. A winter road follows Casino Creek through the property but because of muskeg, summer access is by helicopter.

History:

The claims were staked in December, 1969, adjacent to the southern border of the Casino Silver Mines Limited property. Since the completion of the 1970 geochemical survey, the Gun claims have lapsed.

Description:

The few outcrops on the claim group are composed of coarse-grained quartz monzonite to granodiorite of the Klotassin Batholith (unit 2, Cairnes, 1917). The composition of the rock is 55 per cent orthoclase with some sodic plagioclase, 15 per cent quartz and 30 per cent mafic minerals, mainly large, impure stubby crystals of pyroxene with biotite inclusions. Minor inclusions of Yukon Group metasediments (unit A, op. cit.) and secondary intrusions of aplite and pegmatite dykes as well as basic dykes of the Carmacks Volcanics are present in the granodiorite.

Current Work and Results:

A reconnaissance geochemical survey was carried out along cut lines 3,000 feet apart in August, 1970. The soil sampling program detected two anomalies labelled Zone A, a copper anomaly and Zone B, a molybdenum anomaly. Zone A extends southeast in the east-central part of the claim group across and to the east of Casino Creek and is open to the east. Zone B, the molybdenum anomaly, occurs in the northeast part of the claim group and the source of the molybdenum may be further north on the Casino Silver Mines Limited property.

CUB CLAIMS
Cleveland Mining and Smelting Company Limited
615 - 850 West Hastings Street
Vancouver 1, British Columbia.

Copper, Molybdenum
115 J 10
(62°40'N, 138°52'W)

Reference: Cairnes (1917).

Claims: CUB 2 to 16 and 18 to 48

Location and Access:

The property lies on the southern flank of the Dawson Range north of Dip Creek and west of Casino Creek at their confluence. The winter tote road joining the Alaska Highway at Mile 1097 to the Casino Silver Mines Limited camp follows the Dip and Casino creeks, and passes one half mile southeast of the Cub property.

History:

The Cub 2 to 16 and 18 to 36 claims were staked in December, 1969, with the Cub 37 to 48 claims being added in July, 1970, to cover open ground to the southeast.

Description:

The claim ground is underlain by hornblende granodiorite (unit 2, Cairnes, 1917) of the Dawson Range Batholith. A preferred alignment of the hornblende and biotite locally gives the intrusive rock a slightly gneissic texture. Some coarse-grained gabbro occurs in the northwest part of the claim group. The batholith is intruded by two small dyke swarms of medium- to fine-grained granite in the western part of the group. A small body of Yukon

Group quartzites with minor phyllite (unit A1, op. cit.) and a small basalt porphyry stock occur between the dyke swarms. Two small limonite gossans with zones of secondary carbonate and manganese staining occur in the granite intrusions.

Current Work and Results:

The 1970 field program consisted of geological mapping at 1 inch to 400 feet and soil sampling of the claim group along 41 line miles of cut grid. One continuous 3,000 foot long east-trending zone, anomalous in copper and molybdenum, was outlined in the centre of the claim group.

Rude Creek

AXE AND HILL
Montana Mines Limited
Box 302
Whitehorse, Yukon Territory.

Copper, Molybdenum
115 J 10
(62°40'N, 138°32'W)

References: Cairnes (1917); Bostock (1944).

Claims: AXE 1 to 6 and HILL 1 to 24

Location and Access:

The claims are at the headwaters of the east branch of Rude Creek on the northwestern slope of Mount Cockfield. Access is by a winter tractor trail running from the Casino airstrip to just north of the property. Summer service is by helicopter.

History:

Of the 30 claims staked in December, 1969, for Montana Mines Limited, Hill claims 1 to 11 and 22 were retained in good standing subsequent to the 1970 geochemical survey. The claims cover part of a larger area staked and explored for silver-lead veins by Nordex Exploration Limited in 1966. The 1966 program consisted of a geochemical silt sampling and engineering study.

Description:

The main rock type present is a medium- to coarse-grained granite or granodiorite of the Cretaceous Klotassin Batholith (unit 3, Bostock, 1944 and unit 2, Cairnes, 1917). Locally, the rock is porphyritic with prominent feldspar phenocrysts. Pyrite and magnetite occur as disseminations and fracture fillings.

Current Work and Results:

The 1970 reconnaissance geochemical survey indicated an area of pyrite-bearing granite in the east central part of the Hill claims to be anomalous in copper and molybdenum.

Leslie Ridge

VIC GROUP
Great Horn Mining Syndicate Incorporated
Suite 1601 - 8 King Street East
Toronto 1, Ontario.

Copper
115 J 10
(62°38'N, 138°35'W)

References: Cairnes (1917); Bostock (1944).

Claims: VIC 1 to 96 and 109 to 112

Location and Access:

The property straddles the upper east end of the Victor Creek Valley on the west flank of Mount Cockfield and extends west for 7 miles along the south flank of Leslie Ridge. The 1970 follow-up program of prospecting and geochemical soil sampling was helicopter supported from the International Mine Services Limited camp on Hayes Creek.

History:

The 100 Vic claims were staked in September 1969, to cover a silt copper-molybdenum anomaly in Victor Creek discovered during a regional geochemical survey in the Dawson Range. The central part of the group corresponds to the southern part of the Ray group, staked and explored for silver-lead deposits by Nordex Explorations Limited in 1966.

Description:

The property is underlain by rocks of the Klotassin Batholith, in this area a medium- to coarse-grained quartz-rich biotite-hornblende monzonite (unit 3, Bostock, 1944 and unit 2, Cairnes, 1917).

Current Work and Results:

The geochemical survey of 1970 consisted of 1,284 soil samples taken along an east-trending base line with perpendicular grid lines. The survey indicated one anomalous copper zone trending east for 2,400 feet along the northern limit of the claim group on claims number 2 and 4 in the northeast corner.

STU AND MIST
Nickel Hill Mines Limited
848 West Hastings Street
Vancouver, British Columbia.
and
Pathfinder Resources Limited
602 - 789 West Pender Street
Vancouver, British Columbia.

Copper
115 J 10
(62°40'N, 138°37'W)

References: Cairnes (1917); Bostock (1944).

Claims: STU 1 to 22, 81 to 228, MIST 1 to 8, RODGER 1 to 28, a total of 206

Location and Access:

The 206 claims were staked in an east-trending belt covering the headwaters of Rude Creek north of Leslie Ridge and 6 miles southwest of the Casino Property. Access by the Casino Silver Mines Limited winter road from Burwash Flats on the Alaska Highway supplements helicopter servicing during the summer.

History:

Following staking of the Stu and Mist claims in 1969, the eastern 40 of the Stu group were allowed to lapse in 1970. The claim groups cover the southwestern part of the 536-claim group staked and explored in 1966 by Nordex Explorations Limited and Aishihik Explorations Limited for silver-lead deposits.

Description:

The property is underlain by granites and granodiorite of the Cretaceous Klotassin Batholith (unit 3, Bostock, 1944 and unit 2, Cairnes, 1917).

Current Work and Results:

The 1970 silt sampling program indicated a copper anomaly 1,200 feet long in the valley of Rude Creek in the southern part of the claim group. Subsequent grid soil sampling failed to indicate the source of this anomaly.

Mt. Cockfield

CO CLAIMS
United Keno Hill Mines Limited
7 King Street East
Toronto, Ontario.

Molybdenum, Copper
115 J 9
(62°39'N, 138°30'W)

Claims: CO 1 to 52

Location and Access:

Newmont staked the CO claims in July of 1969 on the basis of reconnaissance silt sampling. The property lies on the northwest flank of Mount Cockfield, covering the valley of the west fork of Battle Creek, a tributary of the Selwyn River. Casino Silver Mines property is 10 miles to the northwest.

Description:

The main rock unit is a late Cretaceous or Tertiary stock of coarse-grained quartz monzonite containing large orthoclase feldspar phenocrysts, intrusive into the Cretaceous Klotassin Batholith and the Yukon Group metasediments and Mt. Nansen Volcanic complex. Klotassin rocks flank the stock on east, north and west. The stock is crudely triangular in outcrop pattern, trending northwest with a length of 2 miles and a base of 1 mile. The southeast corner of the stock is on the adjacent DR claims of the Dawson Range Joint Venture. The Yukon Group metasediments and the felsites and basalts of the Mt. Nansen Volcanics outcrop along the southern edge of the stock. Pervasive alteration is lacking; that observed being essentially restricted to fracture planes. Molybdenite and chalcopyrite occur with quartz in a stockwork or system of anastomosing veinlets typically one-eighth inch thick spaced 1 to 3 feet apart. Pyrite, with minor chalcopyrite and molybdenite, is present along fractures in the Mt. Nansen Volcanics.

Current Work and Results:

Following initial discovery and staking, Newmont Mining Corporation completed a soil geochemical survey in 1969, getting an erratic pattern of high copper and molybdenum results. After optioning the property, United Keno Hill Explorations did a chip sampling, rock geochemical survey over the abundant talus slopes, obtaining results similar to those of the 1969 soil survey of 0.02 per cent copper, 0.015 per cent molybdenum. Seven miles of I.P. work was also done. A 6-hole diamond drilling program, a total of 4,584 feet, was completed during July. Grades were consistently similar to those in the surface rocks with ore grade sections not found.

The option was dropped by United Keno Hill Mines following the 1970 field work.

MO GROUP
Glenlyon Mines Limited
c/o Pemberton Securities Limited
744 West Hastings Street
Vancouver, British Columbia.

Copper
115 J 9
(62°38'N, 138°22'W)

Reference: Bostock (1944).

Claims: MO 1 to 14 and 17 to 32

Location and Access:

The claims are 2 miles east of Mount Cockfield and 2 miles west of the Selwyn River. In 1970, access was by fixed-wing aircraft to the Casino airstrip and by helicopter from the airstrip to the property.

History:

Staked in July, 1969, for H.C. Fromme, the claims were transferred to Glenlyon Mines Limited in November, 1970.

Description:

The claims are underlain by Cretaceous hornblende-biotite granodiorite-diorite which grades into quartz diorite and quartz-feldspar porphyry. Associated with this intrusion are small fine- to medium-grained aplitic dykes and some pegmatitic veins. Two other rock units, associated with the Tertiary Carmacks Group volcanics, are basic dykes and fresh, fine-grained andesite-dacite porphyry.

Current Work and Results:

The soil sampling survey along 7 miles of picket lines in 1970 outlined three copper anomalies in the southern portion of the property. Two of the anomalies, 800 feet and 400 feet long of unknown widths, occur on the northeast slope of a northwest-trending ridge of outcrop and the third 1,500-foot-long anomaly occurs on the southwest slope of the ridge. The anomalies are over a complex zone of intrusive rocks.

MT. COCKFIELD
Dawson Range Joint Venture

Copper, Molybdenum
115 J 9
(62°38'N, 138°25'W)

References: Bostock (1944); Cairnes (1917).

Claims: DR 1 to 64, PATSY 1 to 8

Location and Access:

The claims were staked in July of 1969 by Archer, Cathro and Associates on behalf of the Dawson Range Joint Venture on the basis of copper-molybdenum stream silt anomalies recognized during the reconnaissance geochemical exploration of the Dawson Range. The claims cover the northeast side of Mt. Cockfield at the head of Battle Creek, a tributary of the Selwyn River and the southeast side of the mountain, which is drained by an east-flowing tributary of the Selwyn. Access during 1969 was by helicpter.

Description:

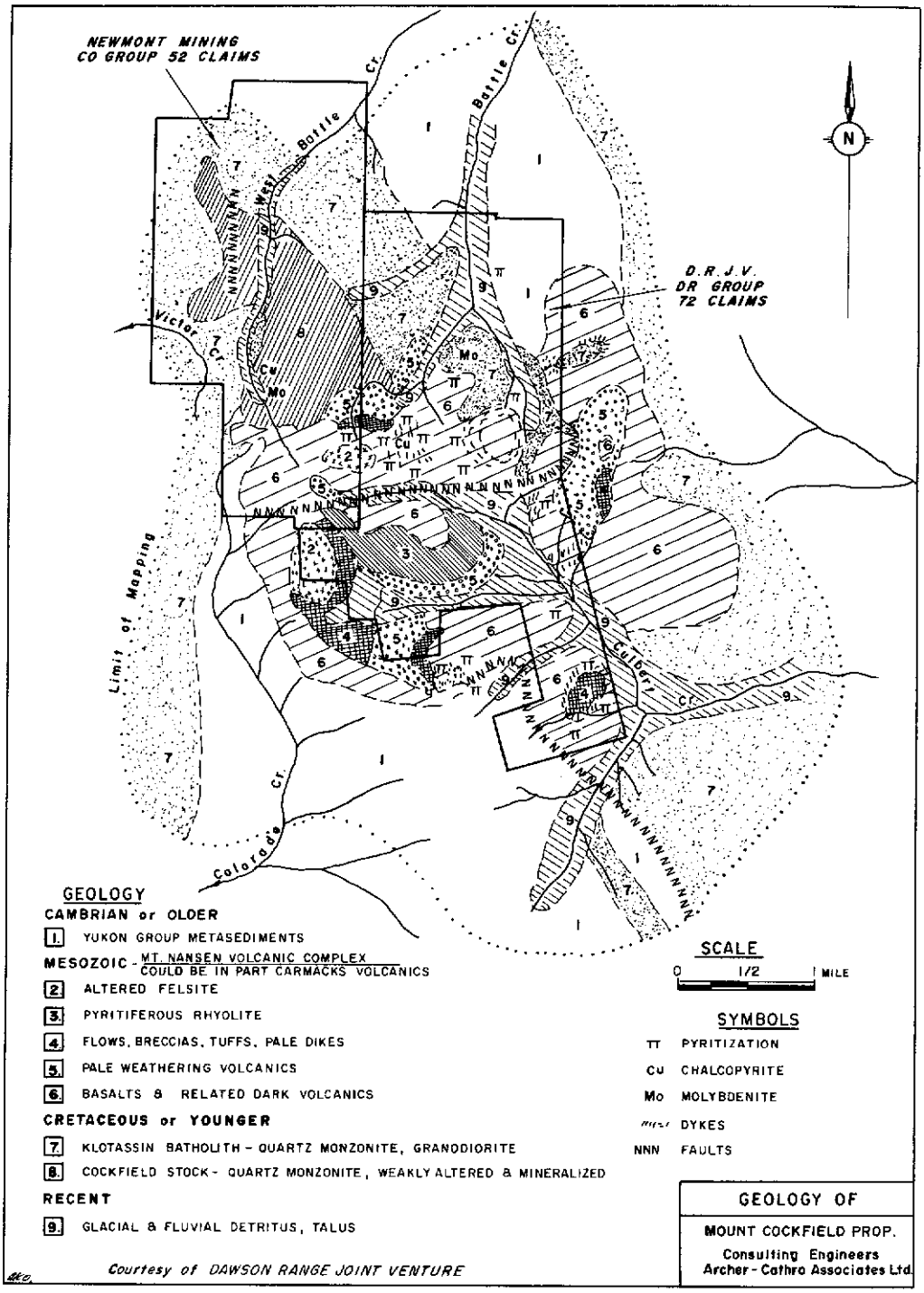
The claim group covers a Mount Nansen Group (unit 2, Bostock, 1944) volcanic erosion remnant on the central part of a north trending pendant of Yukon Group metavolcanics and metasediments (unit 1, op. cit.) in the Klotassin Batholith (unit 3, op. cit.). The Yukon Group outcrops in the northeast on both banks of Battle Creek and to the southwest of the property. On the east side of Battle Creek, rocks are schist, gneiss and feldspathic quartzite in a greenstone and amphibolite sequence. West of the creek is quartz-feldspar gneiss. In the southwest, the Yukon Group rocks are in a northwest trending probable fault contact with basalts of the Mount Nansen Volcanic Group.

Most of the Mount Nansen rocks present are basalts but included are acid flows, breccias, tuffs and dykes in the central and western part of the claim group. The acid volcanic rocks in the southwest breccias contain fragments of older rocks in a quartz porphyry matrix. The porphyry breccia grades into an altered, vuggy, cleaved felsite or rhyolite. This vuggy rhyolite caps the two summits of Mt. Cockfield. The main intrusion into these volcanics and metasediments is quartz monzonite of the Klotassin Batholith. This quartz monzonite has a boundary phase of quartz, feldspar and pyrite in a grey groundmass as a northwest-trending zone in the northern portion of the property.

Chalcopyrite and molybdenite occur near the contact of Klotassin quartz monzonite and Mount Nansen basalt in the central part of the claim group. The chalcopyrite is with quartz and pyrite in erratically and widely spaced fractures in the basalt; the molybdenite is in quartz veins in the quartz monzonite. The intrusive rocks do not show the strong hydrothermal alteration and complexity of rock types as does the more pervasively mineralized Casino Stock.

Current Work and Results:

In addition to the geological mapping, a soil geochemical survey, completed in 1969, outlined a molybdenum anomaly 2,000 feet by 1,000 feet over quartz monzonite in the east-central part of the property and a copper anomaly



GEOLOGY

CAMBRIAN or OLDER

1. YUKON GROUP METASEDIMENTS

MESOZOIC - MT. NANSEN VOLCANIC COMPLEX / COULD BE IN PART CARMACKS VOLCANICS

2. ALTERED FELSITE
3. PYRITIFEROUS RHYOLITE
4. FLOWS, BRECCIAS, TUFFS, PALE DIKES
5. PALE WEATHERING VOLCANICS
6. BASALTS & RELATED DARK VOLCANICS

CRETACEOUS or YOUNGER

7. KLOTASSIN BATHOLITH - QUARTZ MONZONITE, GRANODIORITE
8. COCKFIELD STOCK - QUARTZ MONZONITE, WEAKLY ALTERED & MINERALIZED

RECENT

9. GLACIAL & FLUVIAL DETRITUS, TALUS

SYMBOLS

TT	PYRITIZATION
Cu	CHALCOPYRITE
Mo	MOLYBDENITE
	DYKES
NNN	FAULTS

Courtesy of DAWSON RANGE JOINT VENTURE

GEOLOGY OF

MOUNT COCKFIELD PROP.

Consulting Engineers
Archer - Cathro Associates Ltd.

4,000 feet by 2,000 feet over pyritiferous rhyolite, altered felsite and basalt in the west-central part of the claim group. The property was inactive in 1970.

Selwyn River

CROCK GROUP
Dawson Range Joint Venture

Copper
115 J 9
(62°33'N, 138°16'W)

Reference: Bostock (1944).

Claims: CROCK 1 to 24

Location and Access:

The claims lie on the east bank of the Selwyn River 18 miles from its mouth and 9 miles southeast of Mount Cockfield. The property is readily accessible by helicopter.

History:

The Crock claims were staked by Archer, Cathro and Associates Limited on behalf of the Dawson Range Joint Venture to cover a geochemical anomaly discovered during the 1969 regional reconnaissance silt sampling survey.

Description:

A small stock of hornblende monzonite intruding the quartz monzonite (unit 3, Bostock, 1944) of the Klotassin Batholith underlies the claims. The stock has a chilled margin near which disseminated chalcopyrite has been found.

Current Work and Results:

The preliminary program of prospecting, geological mapping and soil sampling conducted during August, 1969, found minor disseminated chalcopyrite but copper, molybdenum and lead content of the soil was quite low.

Hayes Creek

HAY GROUP
Nicanex Mines Limited
821 - 602 West Hastings Street
Vancouver, British Columbia.

Copper
115 J 9
(62°42'N, 138°10'W)

Reference: Bostock (1944).

Claims: HAY 1 to 90

Location and Access:

The Hay group is at the headwaters of a tributary of Hayes Creek, 6 miles southeast of its junction with the Selwyn River. Access to the property is by helicopter either from the Mayo road near Minto or from the Casino airstrip.

History:

The Hay claims were staked in October and acquired by Nicanex Mines Limited from the stakers in December, 1969. Seventy of the claims were allowed to lapse in 1970; only the twenty northeast corner claims being maintained.

Description:

The claims, staked on the basis of aeromagnetic and geological information, are underlain by the Cretaceous granitic rocks of the Dawson Range Batholith (unit 3, Bostock, 1944). The rocks outcropping on the property are coarse- to medium-grained biotite granodiorite with some medium-grained hornblende diorite and granodiorite.

Current Work and Results:

A four-man crew carried out a soil sampling survey of the claim group in 1970. Two areas weakly anomalous in copper were detected. One anomaly occurs to the southeast in a poorly drained topographic depression. The second and major anomaly occurs at the northeast edge of the group and is covered by the 20 claims retained in good standing.

HAYES CREEK PROPERTY
Delta International Minerals Limited
1300 - 355 Burrard Street
Vancouver, British Columbia.

Lead, Silver, Copper, Molybdenum
115 I 12
(62°38'N, 137°55'W)

Reference: Bostock (1936a).

Claims: HAYES 1 to 32

Location and Access:

The property is on the east bank of Hayes Creek, 10 miles from its junction with the Selwyn River which then flows north 6 miles into the Yukon River. The nearest airstrip is on the International Mine Services property, 6 miles to the southeast. The mouth of the Selwyn, 5 miles north, can be reached by travelling 50 miles downstream on the Yukon River from Minto. A 35 mile tote road, suitable for tracked vehicles, connects the Yukon Revenue Creek end of the Discovery-Carmacks road with the property, but the 1969 and 1970 exploration crews travelled to and from the property by helicopter.

History:

The claims Hayes 1 to 20 were staked by J. Lerner and associates and Hayes 21 to 32 by B. Rouleau and R.L. McKamey in March and October of 1969 to cover a stream sediment anomaly in Hayes Creek and its tributaries, detected in 1965 during a regional prospecting program. Delta International Minerals Limited acquired the claims in February, 1970.

Description:

The main rocks underlying the claims are Yukon Group metasediments (unit 1, Bostock, 1936a), predominantly mica-quartz schist, chlorite schist and quartz-mica gneiss. In the northeast corner of the group a northwest-trending band of limestone (unit 2, op. cit.) has been traced for 2,800 feet. The metasedimentary sequence is intruded by two rock units. A quartz-feldspar monzonite porphyry body, Jurassic in age and with an average width of 1,000 feet, trends northwest for 6,000 feet across the central portion of the claim group. The second intrusion occurs in the western part of the property, trending west for 2,200 feet and widening from 400 feet in the east to 1,000 feet on the bank of Hayes Creek. The highly leached and altered appearance of this quartz-feldspar porphyry is typical of Dawson Range Tertiary intrusives (unit 13, op. cit.). This intrusive body also outcrops west of Hayes Creek and extends 800 feet up Klines Gulch.

From 1 to 3 per cent finely-disseminated pyrite occurs in the Yukon Group metasediments and in the quartz-feldspar monzonite. On the west side of Hayes Creek, the quartz-feldspar porphyry is mineralized with disseminated pyrite, chalcopyrite and molybdenite.

Current Work and Results:

The geochemical soil sampling programs conducted in 1969 and 1970 outlined several large, highly anomalous lead-silver areas associated with weaker copper and molybdenum anomalies. The main anomaly coincides with the

highly-altered intrusive rock but extends another 800 feet to the east. The second anomalous area trends east across the quartz-feldspar monzonite body for 2,200 feet and is from 200 to 500 feet wide. Two other lesser anomalous zones occur in the northeast and southeast corners of the claim group.

APEX CREEK GROUP
Phelps Dodge Corporation of Canada Limited
904 - 55 Yonge Street
Toronto, Ontario.
and
1112 West Pender Street
Vancouver, British Columbia.

Copper, Molybdenum
115 I 5, 12
115 J 8, 9
(62°30'N, 138°00'W)

References: Cairnes (1917); Bostock (1936a; 1944).

Claims: APEX 1 to 72, PAT 1 to 24, KOOK 101 to 172

Location and Access:

The claims cover two minor copper showings in an area west of Hayes Creek drained by its tributary, Apex Creek 3 miles northeast of Apex Mountain. No roads are near the property and in 1970 the field crews were flown by helicopter from Minto.

History:

On June 1, 1970, 128 Apex,Kook and Pat claims were optioned from Montana Mines Limited by Phelps Dodge Corporation of Canada Limited and 40 (Apex 1 to 40) additional claims were staked.

Description:

The claim group covers part of the Cretaceous Klotassin Batholith which intrudes the Yukon Group metasediments (unit 1, Bostock, 1936a) and late Jurassic Mount Nansen Group Volcanics (unit 7, op. cit.). The Yukon Group quartzite, biotite gneiss and schist occur on the east edge of the property and as xenoliths up to 5 inches in diameter in the intrusive body. Fragments of the Mount Nansen flows, breccias and tuffs also occur as xenoliths. The main phase of the batholith on the property is a coarse-grained hornblende-quartz monzonite (unit 10, op. cit.) with local limonitic stains. This unit has been intruded by a variety of fine- to medium-grained leucocratic rocks including monzonite, granite, rhyolite, dacite, latite and their porphyritic equivalents, as well as by younger dykes. Joint planes indicate northeasterly and northwesterly near-vertical structural trends in the batholith.

Current Work and Results:

The 1970 program consisted of geological mapping, soil sampling and a magnetometer survey of the claims over a cut grid totalling 120 line miles. Two showings were discovered, consisting of minor bornite and chalcopyrite disseminated in a quartz stringer at the Yukon Group-intrusive contact and chalcopyrite disseminated in a medium-grained granitic intrusion. Three small

geochemical copper-molybdenum anomalies were outlined by the 1970 soil survey, two high in molybdenum with some copper over minor fine-grained intrusions within the monzonite body, and the third high in copper with minor molybdenum associated with inclusions of Mount Nansen Volcanics.

Somme Creek

SOMME PROPERTY
Dawson Range Joint Venture

Copper, Molybdenum
115 J 8
(62°25'N, 138°28'W)

Reference: Cairnes (1917).

Claims: SOMME 1 to 24

Location and Access:

The claims lie at the headwaters of Tom Creek which flows south into Somme Creek 7 miles from its confluence with the Nisling River. The field crew in 1970 was flown by helicopter from the Casino airstrip.

History:

The Somme property was staked in May, 1970, to cover an area of interest discovered during the 1969 reconnaissance program.

Description:

Yukon Group gneiss and quartzite outcrop along the banks of Tom Creek and a smaller stream to the east. Intruding the metasediments are Cretaceous quartz monzonite in the southeast and alaskite in the central and northwest part of the claim group. The Tertiary Carmacks Group siltstone, basalt flows and hornblende-feldspar porphyry cap the older rock units, outcropping on the top of the ridges and stream divides.

Current Work and Results:

In 1970, the claims were grid soil sampled and geologically mapped. Three small areas high in copper and three non-corresponding areas high in molybdenum were detected. Several fragments of alaskite and quartz-feldspar porphyry containing minor molybdenite were also discovered.

Prospector Mountain

FROG GROUP
Prado Explorations Limited
Gui-Por Uranium Mines Limited
Lion Nickel Mines of Canada Limited
Indian Mountain Metal Mines Limited
all of:
Suite 1601 - 8 King Street East
Toronto, Ontario.

Copper, Lead, Zinc
115 I 5
(62°25'N, 137°55'W)

Reference: Bostock (1936a).

Claims: FROG 1 to 96

Location and Access:

The claim group straddles the upper end of the Hayes Creek Valley 3 miles west of Prospector Mountain. The 1970 field exploration crew boarded at the main base camp on Hayes Creek ten miles downstream and were ferried to the property by helicopter.

History:

The Frog claims were staked following the discovery, during the 1969 International Mine Services Limited stream silt sampling program, of a copper-lead-zinc anomaly in the silt of Hayes Creek and its tributaries.

Description:

The oldest rocks underlying the claim group are the Yukon Group quartz-mica schist, hornblende schist, quartzite and hornblende-feldspar gneiss (unit 1, Bostock, 1936a) in the northwest and southwest corners. In the southeast, these are overlain by late Jurassic to early Cretaceous Mount Nansen basalt, breccia and tuff (unit 7, op. cit.). Intruding these units is an early Cretaceous medium-grained syenite to quartz monzonite (unit 9, op. cit.). A dyke of Tertiary quartz and quartz-feldspar porphyry (unit 13, op. cit.) marks the contact of the intrusive with the Yukon Group metasediments to the northwest. The northeast part of the property is underlain by Miocene or older basalt and dacite flows of the Carmacks Volcanics (unit 12, op. cit.) which cap the other rock units.

Current Work and Results:

The 1970 soil sampling outlined limited areas anomalous in copper, lead and zinc over the Mount Nansen basalts in the southeast. The geological mapping and prospecting program revealed that these geochemical anomalies were associated with narrow quartz veins containing disseminated galena and chalcopyrite.

GB GROUP
Chataway Exploration Company Limited
401 - 550 Burrard Street
Vancouver, British Columbia.

115 I 12
(62°34'N, 137°48'W)

Reference: Bostock (1936a).

Claims: GB 1 to 96

Location and Access:

The 96 GB claims extend from the crest of a ridge separating Hayes Creek from Wolverine Creek, to the north, to the lower slopes of the Hayes Creek valley. The property is drained by six small streams which flow southwest into Hayes Creek 15 to 20 miles upstream from its confluence with the Selwyn River. The field crew in 1970 reached the property by driving to the Revenue Creek airstrip on Big Creek and flying from there to the claims by helicopter.

History:

The claims were staked in December, 1969, for Chataway Exploration Company Limited. Ten claims in the south-central part of the group were kept in good standing in 1970.

Description:

The major rock unit on the property is Tertiary Carmacks andesite (unit 12, Bostock, 1936a) which underlies the eastern half and southwestern and northwestern parts of the property. The volcanics rest unconformably on Yukon Group metasediments (unit 1, op. cit.) which outcrop to the west and are intruded by a north trending tongue of granitic rock (unit 10, op. cit.) contemporaneous with the Cretaceous Coast Range Intrusions.

Current Work and Results:

A geological reconnaissance and soil geochemical survey was conducted in August of 1970. No significant mineralized zones or soil anomalies were recognized.

JOHNNY, CASH GROUP
Atlas Explorations Limited
330 Marine Building
355 Burrard Street
Vancouver, British Columbia.

Copper, Lead, Zinc
115 I 5
(62°25'N, 137°37'W)

Reference: Bostock (1936a).

Claims: CASH 1 to 48, JOHNNY 49 to 88

Location and Access:

The property is on the eastern flank of the Dawson Range, 6 miles southeast of Prospector Mountain on the inside of an arcuate bend in Big Creek. A winter road joins the property to the Freegold tote road on Revenue Creek but access during the summer is by helicopter.

History:

The Cash group of 48 claims was staked in 1969 to cover the source of a heavy metal anomaly discovered in Big Creek and its tributaries by Coranex Limited in 1967. The claims were optioned by Atlas Explorations Limited in 1969 and the Johnny claims were staked to cover limonite-stained outcrop to the northwest.

All of the Cash claims and the southern 16 claims of the Johnny group were allowed to lapse after the 1970 program.

Description:

The oldest rock unit on the property, Yukon Group (unit 1, Bostock, 1936a) quartz-biotite schists and banded quartzite with minor limestone forms a belt trending east in the northwest part of the claim group. The southern part of the property is underlain by a coarse-grained porphyritic hornblende syenite (unit 9, op. cit.). A slight foliation of the hornblende and microcline phenocrysts trends northwest parallel to the long axis of the batholith. Locally, bodies of massive coarse-grained amphibolite and lighter coloured medium-grained quartz monzonite occur which may have resulted from magmatic segregation. Both the major rock units are cut by dykes of Tertiary rhyolite porphyry up to 5 feet wide.

Current Work and Results:

The 1970 geochemical survey of soil and stream sediments outlined two copper-lead-zinc anomalies corresponding to minor gossans along the Big Creek valley to the northwest.

Bow Creek

BO GROUP
Mead Resources Limited

Copper, Molybdenum
115 I 3, 6
(62°15'N, 137°18'W)

Reference: Bostock (1936a)

Claims: BO 1 to 96

Location and Access:

The property is in the valley of Bow Creek, 7 miles upstream from its confluence with Seymour Creek and 8 miles east of Klaza Mountain. Servicing in 1970 was by helicopter.

History:

The BO claims were staked in 1969 and purchased by Mead Resources Limited later that year. After the 1970 geochemical survey, all but the eastern 24 claims were allowed to lapse.

Description:

The bedrock in the area is Jurassic and later granodiorite (unit 10, Bostock, 1936a) which has been intruded by irregular bodies of Tertiary quartz porphyry, monzonite and rhyolite (unit 13, op. cit.).

Current Work and Results:

The geochemical soil sampling survey carried out in 1970 outlined a copper-molybdenum anomaly along the eastern edge of the claims.

Maloney Creek

MALONEY CREEK
Amax Exploration Incorporated
601-535 Thurlow Street
Vancouver, British Columbia.

Copper, Molybdenum
115 H 13
115 I 4
(62°01'N, 137°54'W)

Reference: Bostock (1936a).

Claims: POT 1 to 48

Location and Access:

The property is at the head of the south fork of Maloney Creek, 18 miles from the confluence of Maloney Creek and the Nisling River. During 1970 the property was serviced from the Casino airstrip 60 miles to the northwest.

History:

The claims were staked in September, 1969 over an area of scattered mineralized outcrops and corresponding copper-molybdenum geochemical anomalies.

Description:

The claim group is underlain by Yukon Group metasediments (units 1 and 2, Bostock, 1936a) and Mesozoic intrusions related to the Coast Range Intrusions (unit 10, op. cit.) which are overlain and intruded by a series of Tertiary flows (unit 12, op. cit.) porphyritic intrusions, dykes and a mineralized quartz diorite plug (unit 13, op. cit.). The Yukon Group consists of strongly folded, northwest-trending quartz-mica schist, impure quartzite and mica-quartz-feldspar gneiss with minor limestone to the northwest and epidote-garnet diopside skarn to the northeast. The Mesozoic intrusions consist of:

(a) a massive, coarse-grained amphibole-biotite-quartz-plagioclase diorite unit in the northwest part of the property,
(b) a massive, medium-grained hornblende-biotite porphyry present as small lenses and dykes in the schists and gneisses of the Yukon Group to the south.

The Tertiary igneous rocks are present in several distinct phases, as follows:

(a) ring-type intrusions and dykes of fine-grained andesite in the Yukon Group and Mesozoic units,
(b) a plug 2,000 by 5,000 feet, with long axis trending east-northeast, composed of porphyritic quartz diorite having biotite, feldspar and amphibole phenocrysts in a quartz-feldspar matrix occurring near the centre of the claim group,
(c) a small, easterly trending body of quartz porphyry along the southern contact of the diorite,
(d) a northeast-trending, irregularly shaped intrusion of brecciated quartz porphyry containing angular, silicified Yukon Group fragments occurring east of the diorite plug,
(e) a northerly trending belt of quartz-feldspar porphyry on the western part of the claims,
(f) irregularly shaped rhyolite bodies in the metasediments west of the quartz-feldspar porphyry belt,
(g) a number of acid to basic dykes intruding the several other units,
(h) a body of coarse-grained, strongly weathered, quartz-feldspar porphyry to the west of the property.

The dominant structural features on the property are a series of northwest trending linear elements paralleling the regional fault direction. Quartz veining is present as a stockwork pattern in the quartz diorite intrusion (b) and adjacent Yukon Group rocks.

Current Work and Results:

Following discovery of the showings in 1969 in the course of a regional geochemical reconnaissance, the company, in 1970, conducted a thorough examination consisting of geological mapping, detailed soil geochemical, magnetometer and I.P. surveys as well as pack sack drilling to a depth of 70

feet.

The soil geochemical survey outlined an area of 3,000 by 4,000 feet anomalous in copper and molybdenum over the northern and central part of the quartz diorite plug. The I.P. survey established one anomaly 600 feet by 4,400 feet along the southern contact of the intrusion. The mapping and magnetometer survey demonstrated in the diorite a northerly zone of magnetite in quartz veins, a central zone containing pyrite, chalcopyrite, molybdenite, jarosite, azurite, malachite, magnetite and hematite and flanking this to the south, a zone in which pyrite with minor chalcopyrite and molybdenite is widespread.

Freegold Mountain

FREE GROUP
Tanzilla Explorations Limited
1707 West 68th Avenue
Vancouver, British Columbia.
and
P.O. Box 2989
Whitehorse, Yukon Territory.

Gold, Silver, Antimony
115 I 6
(62°17'N, 137°02.5'W)

References: Bostock (1936a, 1936b); Johnston (1937).

Claims: FREE 1 to 12, 17 to 20, 22, 26, 33, 34, 49 to 52, 53 to 56, total of 32 claims

Location and Access:

The Free claims are on the southeast flank of Freegold Mountain between Stoddart Creek to the north and Seymour Creek to the south in an area that has been actively prospected for gold since 1930. During the 1970 field season, a new access road was constructed west of the original one-mile long Grizzly Gulch trail running from mile 38.5 on the Freegold road to Emmons Hill in the centre of the claim group.

History:

The first mention of staking of the ground now covered by the Free claims is in Bostock (1936b). Subsequent work is described in Johnston (1937). The Free claims were staked in November, 1969 by Tanzilla Explorations Limited over ground held by Peso Carmacks Gold Mines Limited as the Joe, Teare, Tie and Rex claims. These claims were part of a large group staked in October, 1964 on which trenching was done in 1965. These earlier claims lapsed in October, 1966.

Description:

The central part of the claim group is underlain by northwest-trending Yukon Group coarse sub-massive granitic gneiss to finer-grained quartz-feldspar-biotite-amphibole schist with local amphibolite bands and lenses (unit 1, Bostock, 1936a and Johnston, 1937). The southwest part is underlain by medium- to very coarse-grained, porphyritic and locally pegmatitic

hornblende syenite (unit 7, Bostock, 1936a and unit 2, Johnston, 1937). The northeast part of the claim group covers medium- to coarse-grained granodiorite (unit 10, Bostock, 1936a and unit 3, Johnston, 1937) containing quartz, K-feldspar, plagioclase and accessory hornblende and biotite. These units are cut by two groups of intrusive rocks in dykes and irregular masses; fine-grained andesite porphyry (unit 4, Johnston, 1937) with prominent plagioclase phenocrysts and fine-grained quartz-feldspar and rhyolite porphyries (unit 5, Johnston, 1937) which grade into non-porphyritic cryptocrystalline felsites.

The American Yukon and Whale showings were described by Johnston (1937). The American Yukon prospect, 1,000 feet north of Emmons Hill, consists of a coarse stibnite, barite, quartz and carbonate vein in banded gneisses striking north-northwesterly and dipping steeply east. The vein was exposed by numerous trenches and a 92-foot shaft with 27- and 50-foot crosscuts by American Yukon Gold Company Limited in the mid-1930's. Assays as high as $60 per ton in gold were reported but more consistently ranged from $26 to $31 per ton. The Whale showing, three-quarters of a mile southwest is in an east-striking quartz-feldspar porphyry dyke in syenite porphyry. The dyke has been brecciated and cemented by milky-white chalcedonic quartz.

Current Work and Results:

The 1970 field program consisted of geological mapping, construction of an access road, which simultaneously provided a bedrock section, and a soil and stream sediment sampling program which outlined three antimony-copper anomalies and one copper-molybdenum anomaly. The trenches on the American and Whale showings were sampled; grab samples from the American showing assayed 0.70 ounces gold and 0.16 ounces silver per ton and 0.10 ounces silver, 0.01 ounces gold per ton and 3.60 per cent antimony while the samples from the Whale showing assayed 0.005 ounces gold and 0.04 ounces silver per ton.

YUKON REVENUE
Yukon Revenue Mines Limited
Box 2029, Industrial Road
Whitehorse, Yukon Territory. and
Kaiser Resources Limited
1401 Board of Trade Tower
1177 West Hastings Street
Vancouver 1, British Columbia.

Copper
115 I 6
(62°21'N, 137°12'W)

References: Bostock (1936a); Green and Godwin (1964, p. 29); Green (1966, pp. 31-33); Findlay (1969, pp. 38-39).

Claims: 122 full and 58 fractional claims

Location and Access:

Property is on Revenue Creek on south side of the valley of Big Creek, 35 miles northwest of Carmacks. Access is by the Mt. Freegold road from Carmacks and an 8 mile tote road from Seymour Creek to the property. An airstrip 1,650 feet long, on Big Creek flats near the mouth of Revenue Creek

is used by aircraft up to Beaver size.

History:

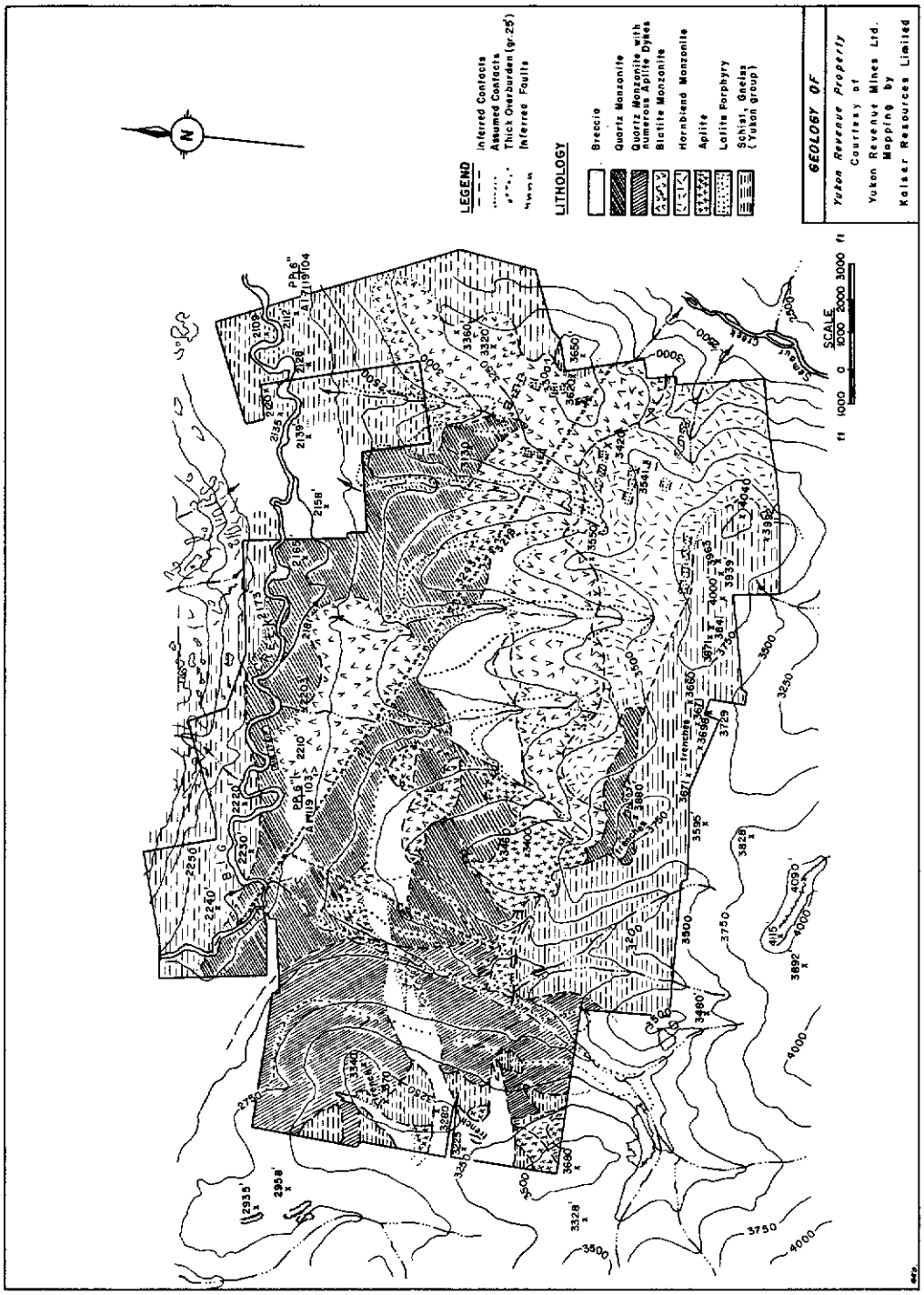
F. Guder of Carmacks discovered massive chalcopyrite on upper Revenue Creek in 1950. The property was optioned to Conwest in 1951 who drove a short adit and did E.M. and resistivity surveys. Subsequently the property was investigated by Teck Corporation (1954, 1955) with five diamond drill holes near the adit and by Asbestos Corporation who did silt and soil geochemistry on the claim group in 1959. In 1964 and 1965 Canex did a soil survey and put down three more diamond drill holes near the adit. In this drilling, disseminated copper was recognized. G. Heitman and E. Whitehead, in 1966 and 1967 put in some open cuts on the prospect. Later, in 1967, General Enterprises Limited, of Whitehorse, optioned the property and did further road building and bulldozer trenching. Yukon Revenue Mines Limited was formed in early 1968 to continue the exploration, which in 1968 and 1969 involved an I.P. survey and diamond drilling as well as further road building, bulldozer trenching and completion of the airstrip. A 140-foot intersection contained 0.12 per cent copper and 0.03 per cent MoS_2. Kaiser Resources took over exploration under a joint exploration agreement in April 1970.

Description:

A quartz-monzonite plug, consisting of several recognizable phases, is intrusive into schists and gneisses of the Yukon Group (unit 1, Bostock, 1936a). Hornblende monzonite forms an east-trending belt in the south central part of the property, flanked to the south by Yukon Group rocks and to the north by a biotite monzonite. A low mafic quartz monzonite occupies the central part of the property. An irregular, east-trending belt of altered breccia, probably granitic in composition, is present partly within the quartz monzonite and partly between quartz monzonite and biotite monzonite. The breccia consists of fragments up to a foot or more in size, but mostly 2 to 3 inches across, in an aphanitic breccia matrix. The rock is strongly kaolinized with pseudomorphs of feldspar phenocrysts recognizable as well as abundant quartz eyes. Alteration is widespread in the igneous rocks with propylitic alteration roughly surrounding a zone of argillic and strong argillic or phyllic alteration. The phyllic alteration is common in the breccia phase with the feldspars being almost completely converted to kaolin and some sericite developed. Potassic alteration is not significant.

Current Work and Results:

The Kaiser Resources program started with a geochemical orientation survey followed by a geochemical property survey and accompanying geological survey. As the area is overburden-covered, both geochemical and geological samples were obtained from pits to 6 feet deep put in by a ripper-equipped bulldozer. Underlying the modern soil, ash layer (widespread in this part of the Yukon) and a paleo soil are glaciolacustrine deposits, present up to 3,500 feet elevation and locally 60 to 80 feet thick. At the base of this overburden profile is a regolith consisting of decomposed bedrock. Wherever possible, geochemical samples were taken from this regolith. In the drilling program, on a roughly 1,800 foot grid, 25 percussion holes, a total of 7,365 feet and 13 diamond drill holes, a total of 6,074 feet, were completed, testing an area high in copper, as established by the geochemical survey.


GEOLOGY OF
Yukon Revenue Property
Courtesy of
Yukon Revenue Mines Ltd.
Mapping by
Kaiser Resources Limited
LEGEND
Inferred Contacts
Assumed Contacts
Thick Overburden (gr.25')
Inferred Faults
LITHOLOGY
Breccia
Quartz Monzonite
Quartz Monzonite with numerous Aplite Dykes
Biotite Monzonite
Hornblend Monzonite
Aplite
Latite Porphyry
Schist, Gneiss (Yukon group)
SCALE
ft 1000 0 1000 2000 3000 ft
N

Grades of mineralization were not significantly different from those found in the 1968-1969 program. The massive chalcopyrite and pyrite pod of the original discovery is found to be near the centre of the altered breccia. Most of the copper is in the monzonite and breccia phases as disseminated chalcopyrite, with the better grades near the westerly contact of the breccia unit with the monzonite. Malachite and azurite are present in the top 100 feet of bedrock. Rare molybdenite is essentially restricted to quartz veins in the monzonite.

BOW AND RAM GROUPS
Golden Gate Explorations Limited
222 - 744 West Hastings Street
Vancouver, British Columbia.

Copper, Molybdenum
115 I 6
(62°20'N, 137°15'W)

Reference: Bostock (1936a).

Claims: RAM 1 to 40 and BOW 1 to 40

Location and Access:

The property, located on Bow Creek 2 miles upstream from its junction with Seymour Creek 5 miles west of Freegold Mountain, is accessible by four-wheel drive vehicle over a tote road via Crossing and Seymour creeks from the Carmacks-Freegold road.

History:

The Ram claims were staked in November, 1969, for Golden Gate Explorations Limited. The Bow claims, also staked in November, 1969, were acquired by Golden Gate Explorations Limited from R.L. McKamey in July, 1970. The property covers the earlier Mary and Ray groups explored by the Newkirk Mining Corporation Limited in 1954. The electrical resistivity surveys run over the Mary and Ray groups that year did not delineate any anomalous regions. In November, 1970, four of the southern and six of the western claims of the Ram and Bow groups were allowed to lapse.

Description:

The major rock unit underlying the claims is a belt of porphyritic syenite (unit 9, Bostock, 1936a) of moderately alkaline composition trending northwest across the lower southwest part of the claim group. In places this unit grades into coarse alkaline granite, monzonite, hornblendite and quartz monzonite. Granodiorite and granite (unit 10, op. cit.) intrude to the south and east. Some samples of aplites were collected and are thought to represent dykes.

Current Work and Results:

The 1970 exploration program on the claim group consisted of an airborne magnetic-radiometric-electromagnetic survey by Geo-X Surveys Limited and a reconnaissance geochemical soil sampling program along the claim lines in which the samples were analyzed for zinc, copper and molybdenum. The geophysical survey and air photograph interpretation outlined three prominent

linear features. One lineament parallels Bow Creek in the eastern part of the claim group and extends to the west-southwest. The second linear feature is subparallel and north of the first lineament, extending northeast through claims Ram 35, 36 and 1 to 4. Both these features are interpreted as being faults. The third lineament is less precisely defined and is thought to represent a feature due to either faulting, shearing or a system of northerly trending dykes. The three linears seem to be part of a fan-shaped feature centered on claim Bow 7 and spreading to the north and east.

Three areas of interest were outlined on the basis of geophysical, geochemical and rock-type information; the Bow 1 to 4 claims cover a copper-molybdenum anomaly along the flanks of the geophysical west-southwest trending lineament; the Ram 1 to 4 area has a copper-zinc anomaly along the second lineament; and the Ram 13 to 20 area has a copper-zinc-molybdenum anomaly.

COM GROUP
Cominco Limited
Head Office:
630 Dorchester Boulevard West
Montreal, Quebec.
Western Region Office:
Trail, British Columbia.

Copper, Molybdenum
115 I 6
(62°20'N, 137°20'W)

Reference: Bostock (1936a).

Claims: The COM 1 to 7 claims form the eastern group and the COM 8 to 101 the main group

Location and Access:

The main group of 94 claims is situated on the northeastern slope of the Dawson Range, southwest of Big Creek and about 6 miles northeast of Klaza Mountain. The smaller group is 3 miles to the east.

History:

The claims were staked by Cominco Limited in September, 1969, to cover two aeromagnetic lows and ground underlain by granitic intrusions, subsequent to the discovery of the Casino porphyry copper deposit in the Dawson Range area. The eastern 20 claims of the main group were allowed to lapse in 1970.

Description:

The few outcrops seen on the main group of claims are biotite- or hornblende-granodiorite with schists of the Yukon Group being found in the southeastern corner. Previously the area was mapped as syenite, monzonite and allied rocks (unit 9, Bostock, 1936a). The second claim group, to the east, is covered by overburden.

Current Work and Results:

During the 1970 season, a geochemical survey was carried out on the claim groups where C horizon soil samples were analyzed for copper, molybdenum, lead and, in the case of the eastern claim group, tungsten. Numerous small copper, molybdenum and lead anomalies occur on the western claim group and a small tungsten anomaly occurs on the eastern group.

NS GROUP
Mitsubishi Metal Mining Company Limited
No. 6, 1 - chome, Ohtemachi, Chiyodaku
Tokyo, Japan.
and
404 - 900 West Hastings Street
Vancouver 1, British Columbia.

115 I 6
(62°20'N, 137°04'W)

Reference: Bostock (1936a).

Claims: NS 1 to 16

Location and Access:

The claims lie on the divide between Stoddart Creek to the south and an unnamed tributary of Big Creek which flows to the west of the property. There is no access road to the property although there is a road to the Granite Mountain property. Servicing during 1970 was done by helicopter from the Casino airstrip.

History:

The NS claims were staked for Mitsubishi Metal Mining Company Limited on May 28, 1969, to cover an area geologically similar to the copper showings of Granite Mountain 4 miles to the southeast.

Description:

The claim group is underlain by biotite-hornblende granodiorite (unit 10, Bostock, 1936a) intruded by small pegmatite veins and a north striking 5-foot-wide aplite dyke in the northwest part of the claim group. The two main directions of jointing in the coarse- to medium-grained granodiorite are northeast and northwest.

Current Work and Results:

The helicopter supported geological and geochemical surveys carried out in May, 1970, failed to reveal any significant mineralization.

TINTA GROUP
Coin Canyon Mines Limited
508 - 850 West Hastings Street
Vancouver, British Columbia.

Lead, Zinc
115 I 7
(62°17'N, 136°58'W)

References: Bostock (1936a; 1941, p. 26); Skinner (1961, pp. 35-36); Findlay (1969a, p. 34).

Claims: TINTA 1 to 26

Location and Access:

The Tinta claims cover a quartz vein which outcrops 2 miles south-southwest of Granite Mountain at the headwaters of Stoddard and Merrice creeks, to the west and east. Access is by the Mount Freegold road following Crossing Creek to Mile 32 where a tote road, requiring a four-wheel drive vehicle, passes through the Tinta Group at about Mile 6.

History:

The ground was originally staked in 1930 and has been explored intermittently since then. A summary of the work done to 1960 is given in Skinner, 1961. In 1966, the ground was restaked by Canex Aerial Explorations Limited who conducted an E.M. 16 survey and a geochemical soil survey (Findlay, 1969a). In 1968, Silgold Mines Limited purchased the claims Tinta 9 to 18 from the stakers, optioned Tinta claims 1 to 8 from Canex Aerial Explorations Limited and staked Tinta 19 to 26. The trenches were cleaned out and the vein sampled. Coin Canyon Mines Limited acquired the property in 1969, purchasing the Tinta 9 to 26 claims and optioning the 1 to 8 claims from Canex Aerial Explorations Limited, and conducted a geochemical soil survey.

Description:

The area is underlain by granite (unit 10, Bostock, 1936a) with a small, one by one-half mile capping of Carmacks Volcanics (unit 12, op. cit.) occurring in the northeast corner of the claim group. The vein strikes 300° and dips 80° north and has well-defined walls of granite. It has been traced for 3,000 feet with possibilities of about 2,000 foot extensions at each end suggested by electromagnetic and geochemical work. The 1959 drilling by Conwest Exploration Company Limited (Skinner, 1961) along 1,200 feet of the vein and to a depth of 350 feet showed that a persistent galena-sphalerite vein up to 2½ feet wide lies along a shear zone about 100 feet wide. Chalcopyrite and pyrite are disseminated on either side of the vein and in places the mineralized zone is up to 10 feet wide.

Current Work and Results:

The work in 1969 consisted of a geochemical soil survey a follow-up to the previous work done by Canex Aerial Explorations Limited in 1966 (Findlay, 1969). The 1969 survey extended the geochemical anomaly to the southwest and the southeast. The area between the new southeast anomaly and the vein outcropping has not been sampled so the new anomaly may be a separate zone. Another small geochemical anomaly occurs to the northeast.

BRC GROUP
Mead Resources Limited

Copper
115 I 2, 7
(62°14'N, 136°53'W)

Reference: Bostock (1936a).

Claims: BRC 1 to 96

Location and Access:

The property straddles Crossing Creek 2 miles east of its source lake and 6 miles south of Granite Mountain. The all-weather road joining the Yukon Revenue Mines Limited property to Carmacks crosses the claim group.

History:

The 96 BRC claims were staked late in 1969 and acquired by Mead Resources Limited. The claims were allowed to lapse following the 1970 exploration season.

Description:

The claims lie near the northeast side of the granodiorite and allied rocks (unit 10, Bostock, 1936a) of the Dawson Range Batholith in an area without known porphyritic intrusions. Isolated patches of Carmacks Volcanics (tuffaceous basalts) (unit 12, op. cit.) cap the granodiorite to the southeast and northwest.

Current Work and Results:

The 1970 geochemical soil sampling survey outlined a low-intensity copper anomaly in the south-central part of the claims, however the geological survey failed to detect mineralization other than minor pyrite in quartz monzonite float.

Big Creek

KLAZAN GROUP
Atlas Explorations Limited
330 - 355 Burrard Street
Vancouver, British Columbia.

Copper, Lead, Zinc,
Molybdenum
115 I 5, 6
(62°23'N, 137°30'W)

Reference: Bostock (1936a).

Claims: KLAZAN 1 to 48, 55 to 136

Location and Access:

The property is on the southeast bank of Big Creek, 10 miles upstream from the mouth of its tributary Seymour Creek. The nearest settlement, Carmacks, is 35 miles by gravel road and 25 miles by tractor road from the Klazan Group. A camp on the property could be supplied during spring and early summer by a bulldozer and trailer using the tractor road but during July and August several long stretches of this road are impassable.

History:

The original 48 Klazan claims were staked in 1965 by Coranex Limited to cover a total heavy metal anomaly in stream sediments of Burgis Creek. In 1969, Atlas Explorations Limited optioned the remaining 21 original claims and staked another 109 Klazan claims.

A geochemical survey was carried out by Coranex Limited in 1965 and 1966 and was followed by trenching of the anomalous areas and geological mapping of the claim group.

Description:

The Klazan claim group covers a northwest trending tongue of Tertiary intrusive (unit 13, Bostock, 1936a) within the northeast edge of a large body of Jurassic to Cretaceous syenite (unit 9, op. cit.). This unit comprises:

(a) a coarse-grained hornblende syenite to the southwest, northwest and northeast of the group,
(b) a medium-grained subhedral quartz monzonite along the northern contact of the intrusive tongue, and
(c) a medium- to fine-grained quartz monzonite to granite porphyry along the southern contact of the intrusive.

The Tertiary intrusive tongue consists of:

(a) a massive aphanitic rhyolite porphyry which makes up the major part of the tongue,
(b) a glassy rhyolitic fragmental tuff along the northwestern edge of the rhyolite porphyry,
(c) a medium-grained quartz latite to feldspar porphyry as dykes in the central and northwestern zone of rhyolite porphyry, and
(d) massive aphanitic basalt-to-andesite post-mineralization dykes generally less than 5 feet wide and trending northwest.

A quartz stockwork containing molybdenite occurs in the rhyolite porphyry unit near the centre of the claim group.

The feldspar porphyry dykes and the massive rhyolite porphyry contain disseminated pyrite and traces of copper and molybdenite. Sphalerite and galena occur disseminated in the feldspar porphyry and molybdenite in the quartz stockwork veins.

Current Work and Results:

In 1970 Atlas Explorations Limited carried out a detailed exploration program consisting of geochemical soil sampling over 37 line miles of grid, geophysical surveying with a Sharpe MF-2 magnetometer, bulldozer trenching and diamond drilling. The two geochemical soil surveys outlined two composite copper, lead, zinc, and molybdenum anomalies, one over an alteration zone along Burgis Creek in the centre of the group and another on the west side of Etches Creek to the southeast. The metal isograms trend southeast with the highest metal concentrations corresponding to the rhyolite and feldspar porphyries contact.

Five holes totalling 2,171 feet were drilled. The highest grade intersections were .17 per cent copper with minor molybdenum over 45 feet in the quartz stockwork and 0.16 per cent copper and 0.068 per cent molybdenum over 10 feet in a feldspar porphyry dyke.

Mount Nansen

MOUNT NANSEN MINES LIMITED
420 - 475 Howe Street
Vancouver, British Columbia.

Silver, Gold
115 I 3
(62°03'N, 137°07'W to 137°10'W)

References: Bostock (1936a); Green and Godwin (1963, pp. 23-24; 1964, pp. 26-28); Green (1965, pp. 32-34; 1966, pp. 34-38); Campbell (1965; 1966); Findlay (1967, pp. 30-31; 1969a, pp. 35-38; 1969b, pp. 23-25).

Claims:

Mount Nansen Mines Limited and affiliated Brown-McDade Mines Limited hold 299 and 70 claims respectively in the Mount Nansen area.

Location and Access:

The claim groups are located in the Dawson Range about 30 miles west of Carmacks and approximately 150 miles northwest of Whitehorse. Access is by a 40-mile gravel road which leaves the Carmacks-Laforma road about 1 mile west of Nordenskiold River bridge at Carmacks.

History:

An outcrop of the Webber vein system was discovered in 1962 by G.F. Dickson on the ridge between Nansen and Victoria creeks. The area was being

explored at that time by the Mount Nansen Exploration Syndicate, a consortium of several mining and exploration companies (Findlay, 1969a, p. 36). In 1963, the members of the syndicate formed Mount Nansen Mines Limited which carried out a detailed surface exploration program leading to the discovery of additional showings.

In 1964, underground exploration of the Webber and Heustis showings was begun. In the same year, control of the Webber, Heustis, Cabin Creek and Brown-McDade was acquired by Peso Silver Mines Limited. From early 1965 to the spring of 1966, underground exploration was continued on the Webber, Heustis and Brown-McDade (which had been explored by underground workings in 1946) properties consisting of 6,192 feet of drifting, crosscutting, and raising and 7,300 feet of drilling. Estimated ore reserves at the end of this period were 173,315 tons averaging 0.484 ounces gold per ton and 19.49 ounces silver per ton for the Webber, Heustis and Cabin Creek properties and 110,000 tons averaging 0.61 ounces gold per ton and 5.4 ounces silver per ton for the Brown-McDade property. Operations were suspended between April, 1966 and June, 1967 while financial arrangements were made to bring a 200 tpd mill into production. Control of the Mount Nansen and Brown-McDade properties was acquired in 1967 by Canadawide Investments Limited (Findlay, 1969a).

Description:

Vein structures, consisting of sulphide-bearing quartz lenses, veins and stockworks, cut highly altered quartz-feldspar porphyry (unit 13, Bostock, 1936a) and Yukon Group quartz-biotite schists and gneisses. Ore-bearing structures occur in two forms. Sulphides are associated with discontinuous quartz lenses and stringers in fractured, altered zones up to several feet wide. Arsenopyrite, pyrite, galena and sphalerite are the principal metallic minerals. Various silver-bearing minerals such as freieslebenite, acanthite, native silver, andorite, and argentiferous tetrahedrite have been identified in the ores (Green, 1966, p. 36).

The three principal vein systems are the Heustis, Webber and Brown-McDade in the deposits. The Heustis and Webber vein systems have been extensively developed by underground workings.

Current Work and Results:

Production commenced from the Heustis property in September, 1968. The mill produced at the rate of 70 tons per day from September to December, 1968 and at 100 tons per day until the mine closed in April of 1969. Mill heads ran approximately 0.2 ounces gold per ton, 5 ounces silver per ton and 8 per cent lead. The mill was unable to obtain adequate recoveries without the introduction of a cyanide circuit. The mine has been inactive since April, 1969.

MAY GROUP
Esansee Explorations Limited
Suite 404 - 510 West Hastings Street
Vancouver, British Columbia.
and
P.O. Box 1784
Whitehorse, Yukon Territory.

Silver, Gold, Lead, Zinc
115 I 3
(62°07'N, 137°15'W)

References: Bostock (1936a); Findlay (1969b, p. 25).

Claims: MAY 1 to 22, GALENA FRACTION 1 to 3, SAFETY FACTOR 1 to 45 and SUE 1 to 8 (held under option from J.M. Wheeler of Carmacks).

Location and Access:

The 76 claims on the northeast shoulder of Mount Nansen northwest of the headwater of Nansen Creek and south of the Klaza River are joined to the Mount Nansen Mines Limited property by a 9-mile tote road constructed in March 1969. A 40-mile all-weather road leads from Mt. Nansen to Carmacks.

History:

In the late 1930's high grade silver-lead float was found on the present area of the claim group but the source of the mineralization was not found. In September, 1967, J. Smith of Whitehorse staked the May 1 to 8 claims and took random soil samples which assayed high in lead and silver. He subsequently cut a bulldozer trench with negative results. The claims Sue 1 to 8 were staked in August, 1967, for J.M. Wheeler of Carmacks who cut a trench on the Sue 3 and 4 claims in March, 1968. Esansee Explorations Limited acquired the May 1 to 8 group in February, 1968 and the May 11 to 22 in March. The Galena Fraction and Safety Factor claims, staked in June, 1968, were purchased in October and November, 1968. The Sue 3 claim was optioned from Mr. Wheeler in May, 1968 and the remaining Sue claims were optioned in May, 1969, subsequent to the 1969 field program. Esansee Explorations carried out preliminary geochemical, geophysical and trenching work on the claims in 1968. The result of this work is included in the section "Current Work and Results".

Description:

Bostock (1936a) shows the southwestern corner of the claim group to be underlain by Mount Nansen Group basalt, andesite and dacite flows, breccias and tuffs (unit 7), intruded by a northwest trending tongue of Coast Range Cretaceous granite and granodiorite (unit 10), which underlies most of the property. These two units were intruded by dykes and irregular bodies of Tertiary quartz and granite porphyries, rhyolite and allied rock types (unit 13).

Current Work and Results:

The 1968 field program consisted of a Ronka E.M. 16 survey and a geochemical soil sampling survey over 3.2 miles of picket lines and preliminary trenching. In March, 1969, a 9-mile tote road, suitable for four-wheel drive vehicles, was constructed to the property and the preliminary trenching

program continued with trench mapping and sampling.

The major zone, 2,400 feet long, and a secondary parallel zone of bleached and kaolinitized, sheared granite, within the hornblende-biotite granite intrusive, outlined in the 1968 surveys, was partially exposed by trenching during 1969 and found to contain bands of altered sulphides striking northwest and dipping 45° southwest to vertical. In trench number 1, at the centre of the main zone, three bands of bleached granite contain an easterly trending partly altered stringer of galena 3 inches wide assaying 0.05 ounces gold and 10.6 ounces silver per ton, 3.55 per cent lead and 0.17 per cent zinc over 1.8 feet and a westerly 1-foot-wide limonite, anglesite and cerussite vein with remnants of galena and arsenopyrite assaying 0.09 ounces gold and 2.9 ounces silver per ton, 3.88 per cent lead and 0.34 per cent zinc over 1 foot. Trench number 2 to the northwest uncovered a 17-foot-wide zone of bleached granite enclosing a 6-foot-wide irregular pod of quartz, pyrite and anglesite with cerussite and limonite which assayed 0.44 ounces gold and 14.1 ounces silver per ton; earlier grab samples of pyrite and anglesite having assayed 52.66 and 72.38 ounces silver per ton. Trench number 3, to the southwest, encountered a 40-foot-wide zone of bleached and fractured material with the highest assays running 0.05 ounces gold and 1.9 ounces silver per ton over 2 feet. Trench number 4, cut across a parallel zone to the northeast, uncovered a 17-foot-wide fractured, oxidized zone in a dyke of porphyritic andesite intruded into unaltered biotite granite. A 4-inch-wide vein in the zone of oxidation assayed 0.04 ounces gold and 1.6 ounces silver per ton, 2.28 per cent lead and 0.85 per cent zinc.

Merrice Lake

BF GROUP
Mitsubishi Metal Mining Company Limited
No. 6, 1-chome, Ohtemachi, Chiyodaku
Tokyo, Japan.
and
404 - 900 West Hastings Street
Vancouver 1, British Columbia.

115 I 7
(62°19'N, 136°39'W)

Reference: Bostock (1936a).

Claims: BF 1 to 8

Location and Access:

The claims are northeast of Merrice Lake, 11 miles east of Granite Mountain and 6 miles southwest of Yukon Crossing. There is no access road to the property but the Freegold road is 3½ miles south of the property.

History:

The claims were staked on May 29, 1969, by W.E. Fraser and transferred to Mitsubishi Metal Mining Company Limited on July 9, 1969.

Description:

The claim group is underlain by biotite-hornblende granodiorite (unit 10, Bostock, 1936a). The rock is fine- to medium-grained and intruded by feldspar-quartz pegmatite veins. Two weak joint systems strike northwest and northeast.

Current Work and Results:

The helicopter supported soil sampling program carried out on the claim group in May, 1970, failed to indicate any extensive anomalous regions. The samples were analyzed for copper.

Williams Creek

WILLIAMS CREEK PROPERTY
Dawson Range Joint Venture.

Copper
115 I 7
(62°22'N, 136°43'W)

Reference: Bostock (1936a).

Claims: BOY 1 to 78, 83 to 110, 115 to 127 and 137 to 150, DUN FRACTION 1 to 4, MAC FRACTION 1 to 6, MAN FRACTION 1 to 16, WAR 1 to 40 and WILL 1 to 119

Location and Access:

The property is situated 1 mile southwest of the Yukon River, 7 miles west of Yukon Crossing, on the northeast flank of the Dawson Range. The claims cover the drainage basins of Williams Creek and its major tributary to the north. The 1970 field work was dependent on helicopter support but the 1971 program includes the construction of an 8-mile tote road starting from the Freegold road at a point 20 miles from Carmacks.

History:

The 134 Boy claims which form the core of the Dawson Range Joint Venture Williams Creek property are held by option from G. Wing and A. Arsenault on September 21, 1970. The remaining 185 claims and fractions, were subsequently staked by the Dawson Range Joint Venture.

Description:

The claim group is underlain by a granitic batholith (unit 10, Bostock, 1936a) related in composition and age to the Late Cretaceous Klotassin Batholith. The northeastern edge of the group corresponds to the contact of the intrusive granitic rocks with the Mount Nansen Group Volcanics (unit 7, op. cit.) occupying the Yukon River Valley. These basic to intermediate flows, breccias and tuffs occur along the Teslin Lineament which lies between and roughly parallel to the Shakwak and Tintina Trenches.

Two weakly mineralized outcrops were found by Grant Abbott prospecting on the Boy claims in July, 1970. One zone is a near-vertical, tabular

zone 100 to 180 feet wide and at least 1,600 feet long striking N 35° W in quartz-feldspar-biotite gneiss. The zone, grading up to 1 per cent copper, is open to the north and cut off sharply to the south at a surface lineation. Geochemical sampling suggests a possible similar offset zone about 400 feet to the east. Mineralization is confined to the gneiss, which may be a downfolded or faulted roof pendant of Yukon Group metasediments. The pegmatitic and granitic dykes cutting this rock unit are apparently post mineralization.

The second zone has a length of 410 feet on surface, a maximum width of about 100 feet and an average grade of about 1 per cent copper. The country rock is porphyritic quartz monzonite cut by quartz veins, pegmatitic and granitic dykes. Malachite is the most common mineral.

Current Work and Results:

The 1970 program consisted of the prospecting and geochemical sampling of the Boy group, a grid soil survey of 14 square miles leading to the staking of the Will group, bulldozer trenching of the two showings and the drilling of two X-Ray size holes totalling 103 feet in the first zone.

ANVIL RANGE AREA

OWL GROUP
Atlas Explorations Limited
330 Marine Building
355 Burrard Street
Vancouver, British Columbia.

Copper, Lead, Zinc
105 K 11
(62°38'N, 133°20'W)

Reference: Roddick (1961).

Claims: OWL 1 to 87

Location and Access:

The claims lie 20 miles north of the Anvil Mine on the north flank of a mountain range approximately 4 miles southwest of the Tay River. Access to the property is by helicopter or by float plane to Owl Lake 6 miles east of the claims.

History:

The initial Owl claims were staked in October, 1969, to cover an area of anomalous Cu-Pb-Zn soil values found during the course of the Stokes Lake program in August and September of that year. An additional 44 claims were staked in June 1970.

Description:

The Owl Group is underlain by a group of Upper Devonian and Lower Mississippian sedimentary rocks, largely cherty, grey-green and black argillites with minor lime-bearing sections; quartzite is less abundant. Outcropping rocks, which cover about 25 per cent of the claim area, strike northwest and dip moderately to steeply southwest.

The 1970 program consisted of geological mapping, soil sampling, and magnetometer, EM and gravity surveys. Most of the mineralization, sphalerite, galena, chalcopyrite and arsenopyrite, occurs in veins with a maximum width of 1 foot. Sample assays have returned the following values: 0.01 ounces gold per ton, 7.68 ounces silver per ton, 0.25 per cent copper, 4.0 per cent lead and 20.2 per cent zinc.

Current Work and Results:

A soil geochemical survey indicated coincident copper, lead, and zinc anomalies 5,000 by 1,200 feet in the southern part of the area surveyed. This area was further studied with ground magnetometer, EM and gravity surveys. The gravity anomalies were considered to be the most promising.

In October and November, 1970, the gravity anomalies deemed most promising were diamond drilled. Results were negative.

Rose Creek

ANVIL MINE
Anvil Mining Corporation Limited
Faro, Yukon Territory
and
510 West Hastings Street
Vancouver, British Columbia.

Lead, Zinc
105 K 6
(62°21.5'N, 133°22'W)

References: Chisholm (1957, pp. 269-277); Roddick and Green (1961a); Green and Godwin (1964, pp. 31-32); Green (1965, pp. 36-37; 1966, pp. 47-50); Aho (1966, pp. 127-149); Roddick (1967); Findlay (1967, pp. 35-39; 1969a, pp. 43-45; 1969b, pp. 29-30); Templeman-Kluit (1968, pp. 48-52).

Location and Access:

The Anvil Mining Corporation Limited operations are in the Anvil Range 130 air miles northeast of Whitehorse. Access from Whitehorse is by way of the Whitehorse-Mayo road to Carmacks, the Campbell Highway and a 17-mile access road from Mile 101 on the Campbell Highway to the mine, a total of 230 miles. Concentrates are trucked to Whitehorse in containers capable of holding 30 tons each, transferred to railroad cars of the White Pass and Yukon Route and delivered to the bulk loading facilities at the port of Skagway, Alaska.

History:

The Faro deposit was discovered during the 1965 field season by a combined Dynasty Explorations Limited/Cyprus Mines Corporation exploration program. The 1964 exploration consisted of airborne magnetometer and EM surveys, ground magnetometer, EM and gravity work, geochemical sampling and geological mapping. Rotary drilling, from March to December, 1965, of targets outlined by the 1964 program, discovered massive sulphides on the Faro claim group in June of 1965.

Anvil Mining Corporation Limited was formed late in 1965 as a private company (60 per cent Cyprus Mines Corporation, 40 per cent Dynasty Explorations Limited) to develop the Faro prospect.

During 1966 exploration was concentrated in delineating the Faro No. 1 zone by diamond drilling. Fifty-six holes were completed with a total footage for the zone of 37,349 feet (Findlay, 1967). In late 1966 and early 1967, an adit, having a total length of 2,700 feet, collared at an elevation of 3,920 feet, was driven through the orebody to provide bulk samples for milling and metallurgical testing.

On March 20, 1967, it was announced that the property would be brought into production by late 1969 at an initial rate of 5,500 tons per day to provide 240,000 tons per year of zinc concentrates and 130,000 tons per year of lead concentrates.

During the remainder of 1967, 1968 and early 1969, preproduction work went forward on all phases. In 1967, overburden stripping was started in the pit area as well as further diamond drilling. Excavation and subsurface work on the mill complex was begun. The 17-mile access road to link the mine with the Carmacks-Ross River highway was started. In 1968, stripping for the open pit and mill construction were advanced on schedule. Work on the Faro townsite, near Vangorda Creek, 10 miles south of the mine, involved installation of sewer and water systems and continued work on the access road.

Description:

The ore of the Anvil Mine consists of massive pyrite-pyrrhotite-sphalerite-galena assemblages in three zones along a strike length of about 4,000 feet (Findlay, 1969b, p. 30). The main zone (Faro No. 1) is a northwest-striking, shallowly southwest-dipping lens some 2,400 feet long and 1,200 feet wide. The orebody is gently sinuous in longitudinal sections with plunges from 35° to the southeast to nearly horizontal. The ore suboutcrops locally and the main zones are overlain by 10 to 30 feet of glacial debris and other overburden and up to 250 feet of cap rock. The ore lenses occur in laminated phyllitic rocks believed to be Cambrian (unit 3, Templeman-Kluit, 1968). The rocks have been divided into a lower, quartz-rich phyllite assemblage which is host to the ore, and an upper, non-quartzose phyllite containing thick greenstone lenses.

Current Work and Results:

Work continued on schedule at mine, mill and townsite. On June 10, 1969, Faro townsite was burned by a forest fire, with 80 per cent destruction. A clean-up operation was started immediately and work continued. Mill tune-up started in August, 1969; the first loads of concentrates were trucked to Whitehorse during the first week of September and the first shipload left Skagway for Japan in the first week of December.

An expansion of the mill was announced (Northern Miner, May 15, 1969) to increase throughput from 5,500 tons per day to 6,600 tons per day, with the additional mill production to be 90,000 tons per year of a bulk lead-zinc concentrate to be shipped to Metallgesellschaft A.G. of Frankfurt, West Germany. The expanded facilities were completed and the first bulk concen-

trates produced in September, 1970.

Operating Summary:

During 1970, the first full year of production, Anvil Mine shipped concentrates containing 126,503,000 pounds of lead with 1,498,000 ounces of silver and 142,517,000 pounds of zinc having a sales value of $40,515,000. Mill heads graded 9 to 10 per cent combined lead and zinc during the first half of 1970 and close to 12 per cent from June to December. Reserves are quoted as 63,473,000 tons containing 3.41 per cent lead, 5.72 per cent zinc and 1.2 ounces silver per ton.

Mt. Mye

ZAN, MX, AC
Kangaroo Exploration Corporation Limited
1101 - 510 West Hastings Street
Vancouver, British Columbia.

Lead, Zinc
105 K 6
(62°25'N, 133°07'W)

Reference: Templeman-Kluit (1968).

Claims: A total of 234 in 6 groups, the ZAN, MX, AC, KD, TIM, JET

Location and Access:

The property is immediately north of Mt. Mye in the Anvil Range, 8 miles northeast of Anvil Mine. Access is normally by helicopter from Faro, however, a 12 mile winter road was built to the property.

History:

The property was first staked during the activity in the area in 1965, following the discovery of the Faro deposits. An airborne EM and magnetic survey was done on the property in 1966, followed by reconnaissance geochemical sampling and geological mapping in 1968. The property is presently held under option by Kangaroo Exploration Corporation Limited under a joint agreement with Giant Yellowknife Mines Limited and Mercury Exploration Limited.

Description:

The claims are underlain by chlorite-quartz phyllites and chloritic tuffs (unit 3, Templeman-Kluit, 1968) and granodiorite of the Anvil Batholith (unit 12, op. cit.). The area is largely covered with thick overburden.

Current Work and Results:

A gravity survey, conducted in February and March, 1969, indicated three gravity highs. An I.P. survey, over the same ground, did not indicate significantly anomalous chargeability effects over the gravity anomalies. The gravity anomalies may be due to rises in bedrock topography.

Geochemical samples, taken from the B soil horizon by hand augers, were analysed for copper, lead and zinc, with selected ones also analysed for

mercury.

Three diamond drill holes, totalling 1,948 feet, were put down. One hole was stopped, still in glacial overburden at 250 feet. The other two holes penetrated typical unit 3 (op. cit.) phyllites and schists, in which minor laminae of pyrite and pyrrhotite, parallel with the foliation of the host rocks, were found.

SOUTH MACMILLAN RIVER AREA

Mt. Selous

SOLO CLAIMS
Hudson Bay Exploration and Development Company
Box 2480
Whitehorse, Yukon Territory

105 K 16
(62°58'N, 132°10'W)

Reference: Green and Roddick (1961).

Claims: SOLO 1 to 45

Location and Access:

The claims are 8 miles east of Mount Selous in the Clearwater Creek area. Access has been by helicopter from Fairweather or Sheldon lakes.

History:

Solo claims 1 to 9 were staked in October, 1968, and 36 additional claims were staked in June, 1969, to cover a silver-lead geochemical anomaly found in 1968. All claims were transferred to Hudson Bay Exploration and Development Company. Soil sampling was carried out in 1968 on Solo claims 1 to 6 outlining a significant silver-lead anomaly. In 1969, geological mapping and further geochemical sampling was done.

Description:

The Solo claims are underlain by argillite, quartzite and interbedded argillite and conglomerate sediments of Ordovician or Silurian age (see G.S.C. Map 13-1961) and Cretaceous intrusions.

The argillite, with altered phases, is the predominant rock type. In the quartzites are thin beds of argillite up to 15 feet thick. The conglomerate underlies the western section of the area and contains angular to rounded cherty pebbles. The Cretaceous rocks consist of a granodiorite intrusion and rare narrow dykes of quartz porphyry.

The original silver-lead showing was found in a fault 8 inches wide. Narrow fractures in the area contain galena, boulangerite and sphalerite.

Current Work and Results:

Some grab samples of the original discovery contained 87.98 ounces silver per ton, 0.2 per cent zinc, 75 per cent lead, 0.11 per cent tin and 0.9 per cent antimony.

A total of 197 rock samples were collected, including chip channel samples of the original showing. Three hundred and thirty-eight geochemical samples were taken but gave no anomalous results.

Geological mapping indicated that the mineralization was confined to fault zones in the quartzite.

UPPER WHITE RIVER AREA

Canyon City

SILVER CITY MINES LIMITED
1322 - 510 West Hastings Street
Vancouver, British Columbia.

Copper
115 F 15
(61°47'N, 140°47.5'W)

References: Findlay (1967, pp. 51-52; 1969a, pp. 68-70; 1969b, pp. 40-41).

Claims: NUK, MARC, GOLDEN HORNE, SLAGGARD and HANNA claim groups, total of 224 claims

Location and Access:

The White River property of Silver City Mines Limited is on the east side of Upper White River about 18 miles south of Mile 1168 on the Alaska Highway. Heavy equipment is brought to the property by a 20-mile tote road that leaves the road to the Canalask Nickel property about 2 miles south of the Alaska Highway. An airstrip on a gravel bench near the east bank of the White River was maintained. Aircraft up to Beaver size can use a 1 mile lake, locally called Rifle Lake, roughly three-quarters of a mile south of the main showings.

History:

Chalcocite and native copper, with minor chalcopyrite, have been known in this vicinity since at least the turn of the century. (The White River property covers several of the original Crown Grant claims, first staked in 1905). The 2,600 pound slab of native copper on display at the MacBride Museum in Whitehorse came from early workings on this property. In 1967 a discovery was made during bulldozer trenching near one of the old workings. United Pemetex, a private company formed by Silver City Mines Limited and Central Del Rio Oils Limited, did 2,600 feet of diamond drilling in 1968, in addition to ground magnetometer and I.P. surveys. Since then, Silver City Mines Limited has continued exploration of the property, putting down one diamond drill hole late in 1968, 720 feet north of the 1967 showing.

Description:

The rocks underlying the claims belong to the Permian (and possibly earlier) Cache Creek Group (units 10 and 11, Muller, 1967) and the Triassic Mush Lake Group (unit 13, op. cit.). The area is structurally complex, with a postulated major, west dipping thrust fault, the Generc-Tchawsahman, crossing Upper White River Canyon and forming a prominent scarp on Slaggard Ridge southeast of the property. At least two other strong faults are probably present; one, passing through Upper White River Canyon about 2 miles west of the Generc Fault, separates Cache Creek strata on the west from Mush Lake volcanic rocks on the east. Numerous smaller faults are present. A prominent fracture zone trending about 20° east of north, offset by east trending small faults, appears to be the focus of mineralization.

The 1967 discovery is a zone 39 feet wide in fractured, dark green, locally amygdaloidal Mush Lake basalt. Steely chalcocite with subordinate native copper and minor bornite occurs as stringers and lenses (Findlay, 1969b). The drill hole put down in late 1968 passed through three mineralized zones in a 56-foot intersection having a calculated true width of 42 feet averaging 2.55 per cent copper (Northern Miner, December 29, 1968).

Current Work and Results:

In 1969, Silver City completed a 10,000 foot diamond drill program on the I.P. anomalies shown in the 1968 survey and on strike with the discovery showing. As in the case of the 1968 drilling, well mineralized zones were found, but the overall copper distribution is erratic. Reported intersections are: 5 per cent copper over 40 feet at discovery showing; 6.8 per cent over 5.5 feet, 300 feet to the north; 1.9 per cent over 41 feet, 400 feet to the north; 2.1 per cent over 44 feet, 700 feet to the north; and 4.6 per cent over 5 feet, 900 feet to the north.

An I.P. survey was conducted on the property during late May and June, 1969. High chargeability response was found to correlate in some cases with known mineralization in surface showings and diamond drill holes. Where diamond drilling of I.P. anomalies did not intersect rocks significantly mineralized with copper a suggestion is that abundant chlorite, present in amygdules and along shears, may be the cause of the I.P. response.

In 1970, the main mineralized zone was explored by 1,124 feet of underground workings. A 7-foot by 7-foot adit was collared at elevation 2,900 feet, 500 feet west-northwest of the discovery showing. The adit was driven 240 feet in a direction south 80 degrees east, passing through porphyritic andesite and sheared, chloritic volcanic material, probably basalt. The andesite contains some native copper and chalcocite from 70 to 140 feet from the portal. From the 240 foot point, a drift was driven at south 10 degrees east for 160 feet, turned to south 20 degrees west and continued a further 240 feet, bringing it almost underneath the discovery showing. Rock is essentially porphyritic grey to brown andesite with a faulted section of sheared chloritic material at the discovery showing. A zone from 100 to 180 feet and another from 340 to 380 feet is significantly mineralized.

From the adit, a drift was turned off at north 60 degrees east for 60 feet, then north 15 degrees east for 240 feet. Rocks are brown to grey

porphyritic andesite, purplish red andesite or basalt and sheared chloritic basalt. The zone of mineralization intersected in the adit continues for 30 feet in this north drift. A second zone extends from 60 feet to 180 feet.

KLUANE AREA

Quill Creek

WELLGREEN
Hudson-Yukon Mining Company Limited
c/o Hudson Bay Exploration and Development Company Limited
Box 2480
Whitehorse, Yukon Territory.

Nickel, Copper
115 G 5
(61°28'N, 139°32'W)

References: Campbell (1960); Muller (1958; 1967); Findlay (1967, pp. 52-53; 1969b, p. 43).

Location and Access:

The property is in the Kluane Range near the head of Nickel Creek, west of Burwash Flats. A 9-mile access road, from Mile 1111 of the Alaska Highway follows the Quill Creek Valley to the original exploration camp.

History:

Massive sulphides were discovered in a steep gully above Nickel Creek by prospectors W.B. Green and C.A. Aird of the Yukon Mining Company Limited. The property, known as Wellgreen, was optioned by Hudson Bay Exploration and Development Company Limited and the subsidiary firm, Hudson-Yukon Mining Company Limited, was established to direct exploration work. From 1953 to 1956 some 14,000 feet of underground workings and 65,000 feet of surface and underground diamond drilling was completed. Underground workings consisted of an adit driven westerly for 4,000 feet from a collar at an elevation of 4,250 feet and connected by winzes and raises to three other working levels: the 4,470- the 4,050- and the 3,650-foot levels. The work outlined 738,000 tons having a grade of 2.04 per cent nickel, 1.42 per cent copper and minor amounts of cobalt, platinum and palladium. Property was inactive, except for the maintenance of a watchman, from 1956 until 1968, when re-investigation began.

Description:

In this area, argillites and altered volcanic rocks of probable Lower Permian age (unit 10, Muller, 1967) are intruded by at least two dyke-like bodies of peridotite, possibly the sheared off limbs of a thin, planar intrusion. The peridotite strikes east and dips steeply south, with the deposit being on the north side of the southern body. The ultrabasic is 200-300 feet thick and consists mostly of serpentenized peridotite and feldspathic peridotite with a footwall marginal zone of fine- to medium-grained, altered, anorthositic gabbro or diorite (Findlay, 1967, p. 53). Massive to heavily disseminated lenses of pyrrhotite containing chalcopyrite, pentlandite and violarite occur within this gabbro zone and, to a lesser extent,

within a bordering hornfels zone. The ore shoots, typically thin and irregular, roughly parallel the ultramafic-gabbro contact (op. cit. p. 53).

Current Work and Results:

Hudson Bay Exploration and Development Company began re-evaluation of the property with a ground geophysical program in 1968 which outlined several anomalous areas (Findlay, 1969b, p. 43).

During the period June to November, 1969, the company completed 2,500 feet of diamond drilling in an attempt to discover zones of disseminated sulphides away from the massive sulphides explored earlier.

In March, 1970, the company announced plans to place the property in production on the basis of the 738,000 tons quoted earlier. Hudson Bay Mining and Smelting Company Limited, 93 per cent owners of Hudson-Yukon, completed a five year sales agreement with Sumitomo Metal Mining Company Limited of Japan for 30,000 to 60,000 tons of concentrate annually.

On the property, de-icing of the adit driven 15 years earlier was started in February. Slashing of the 6-foot by 7-foot exploratory adit to 6 feet by 8 feet for mining, sinking of an internal shaft between levels and driving of lateral openings in preparation for shrinkage stoping mining were carried on for the remainder of the year.

On surface a powerhouse and mine dry were built at the portal. Work on the mill and townsite beside the Alaska Highway at Mile 1111 was started; the mill foundations being finished by the end of the year.

Burwash Creek

CORK CLAIMS
Imperial Oil Enterprises Limited
111 St. Claire Avenue West
Toronto, Ontario.

Copper, Molybdenum
115 G 6
(61°23'N, 139°25'W)

Claims: CORK 1 to 60

Location and Access:

The claims are situated at the head of Johnson Creek, a southeast flowing tributary of Tetamagouche Creek. The settlement of Burwash Landing on Kluane Lake is 15 miles east. Access to the property is by a 6-mile road which leaves the Alaska Highway at Mile 1104 for the placer workings of Burwash Mining Limited. A tote road has been built a further 5 miles to the exploration camp.

History:

The Cork claims were staked on the basis of copper showings found during a reconnaissance geochemical survey in 1966 by Geophoto Services Limited. During 1967, geological mapping, magnetic, I.P. and soil geochemistry surveys were completed.

Description:

The area is 6 miles southwest of the Shakwak Trench and is underlain by west to northwest trending units of the Cache Creek and Mush Lake Groups, which are intruded by basic to acidic rocks Cretaceous to Tertiary in age. The Permian Cache Creek sandstones, limestones and shales (unit 11, Muller, 1967) outcrop on the southern part of the property. Triassic Mush Lake andesites, tuffs and agglomerates (unit 13, op. cit.) to the north overlie the sediments with probable unconformity. Diorite of the Kluane Range intrusions (unit 18) intrudes the sediments on the southern boundary of the property. A porphyritic latite or feldspar porphyry (mapped as unit 19, Muller, op. cit.) intrudes the Cache Creek and Mush Lake rocks at roughly the contact between these. An aureole in the older rocks surrounding the intrusion has been converted to skarn and hornfels. The feldspar porphyry has numerous quartz filled fractures and is weakly but recognizably altered with kaolinized feldspars, secondary biotite and sericite in the matrix. A bright yellow, in part reddish, gossan covers much of the area underlain by porphyry.

Pyrite, chalcopyrite and molybdenite with minor magnetite and specularite are present. Pyrite, disseminated and along fractures, locally makes up 2 per cent of the porphyry and in the contact aureole is still more abundant. Chalcopyrite and molybdenite are present in fractures in the porphyry with some chalcopyrite disseminated both in the porphyry and in the contact rocks. Malachite is common in the porphyry-Mush Lake contact zone.

Current Work and Results:

During 1969, a detailed geological map was prepared of the area underlain by the porphyry intrusion and surroundings. Rock samples, including 10 foot line samples, were taken from exposures. In 1970, 2,640 feet of diamond drilling was completed in eight holes.

Assays indicated sporadic highs of greater than 4 per cent copper in the skarn and greater than 0.5 per cent in the porphyry. On the best mineralized part of the property, samples representing 600 feet of line gave greater than 0.2 per cent copper. Molybdenite assays were mostly 0.010 to 0.005 per cent. Where the copper assays were 0.2, the molybdenite range was 0.010 to 0.13 per cent.

Although subeconomic, the surface assays, combined with the porphyry copper characteristics of the host rocks, namely alteration, leaching, fracturing and quartz veining, suggested the possibility of ore grade material at depth. This would be the first porphyry copper-molybdenum deposit recognized southwest of the Shakwak Trench in the Yukon Territory. The diamond drill holes, however, intersected rocks whose tenor was still low, being similar to the material at surface. There is no evidence of secondary enrichment, intense alteration or brecciation.

ALICE LAKE MINES LIMITED
327 - 736 Granville Street
Vancouver, British Columbia.

Copper
115 G 6
(61°21'N, 139°20'W)

Reference: Muller (1967)

Claims:

Alice Lake Mines Limited holds 92 claims in two groups known as the MARY and TEDDY.

Location and Access:

The claims lie along the crest of the Kluane Range at the head of Tetamagouche Creek. They are 6 miles southwest of Burwash Flats (Mile 1104 Alaska Highway). During the 1970 season, the property was serviced by helicopter from Burwash Landing, 15 miles east of the property.

History:

Claims were staked over an old showing (Muller, 1967).

Description:

Two showings, about one-half mile apart, occur near the ridge crest in dark green, amygdaloidal basalt of the Triassic Mush Lake Group (unit 13, Muller, 1967). One showing consists of a bornite vein 16 inches thick in a north striking, moderately west dipping shear zone. The second showing is in a trench where strongly fractured basalt contains bornite. Both zones are intensely stained with malachite.

Current Work and Results:

During 1969 and 1970, electromagnetic surveys outlined anomalies near the shear zone.

RUBY RANGE AREA

Tincup Lake

CAM CLAIMS
Arrow Inter-America Corporation
535 Thurlow Street
Vancouver, British Columbia.

Asbestos
115 G 11
(61°40'N, 139°20'W)

Claims: CAM 1 to 48

Location and Access:

The claim group consists of 48 contiguous claims lying 1 mile east of Kluane River and 8 miles north of Mile 1118 on the Alaska Highway. The property was serviced during the 1969 season by helicopters operating from Burwash Landing, 25 miles to the southeast. The Casino Silver Mines Limited winter road passes a few miles to the east of the property.

History:

The property was first staked in 1953, examined by Northwestern Explorations Limited in 1954, and the claims then allowed to lapse. Claims Cam 1-24 were staked by the present owners, T.L. Sadlier-Brown and E.O. Chisholm, in August, 1968, and optioned to Arrow Inter-America who staked 24 additional claims (Cam 25-48).

Description:

The claims lie in a small east-trending valley at 3,000 feet elevation, forming a local divide between Tincup Lake and Kluane River. The valley bottom is typically swampy; the lower hillsides are timbered with spruce and balsam to 4,000 feet.

The rocks consist of Yukon Group metasediments, here being slates, quartzites, schists and re-crystallized limestones (unit 3, Muller, 1967), containing ultrabasic intrusions. The rocks strike roughly west and dip 40° to 50° south. Present within the metasediments is a concordant ultrabasic body some 15,000 feet long and 4,000 to 5,000 feet thick. This sill is layered, having a base of peridotite followed by pyroxenite and then gabbroic rocks. In some parts there may be repetitions of this sequence.

Current Work and Results:

The 1969 program consisted of preparation of 40 line miles of grid, geological mapping, geochemical and geophysical surveys (magnetometer and E.M.) and test pitting.

Rare showings of short fibre chrysotile asbestos were found along the northern contact in the basal peridotite zone, within 300 feet of the underlying metasediments. Fibre is typically 1/16 to 1/8 inch long and forms up to 3 per cent of the rock. In the best showing, a moderately to highly serpentinized zone 50 feet wide contains 7 to 8 per cent fibre, averaging 1/8 inch but to a maximum of 1/2 inch.

Raft Creek

TALBOT AND ALASKITE PROJECTS
Phelps Dodge Corporation of Canada Limited
904 - 55 Yonge Street
Toronto 215, Ontario.

Copper, Molybdenum
115 G 8
(61°28.5'N, 138°10'W)

Reference: Muller (1967).

Claims: A 1 to 101, ADD 1 to 28 and 30 fractions, B 1 to 42, ED 15 to 30, 45 to 60 and 75 to 85, and K 1 to 16, a total of 231 claims

Location and Access:

The property covers the headwaters of Rockslide Creek, Alaskite Creek and an unnamed creek flowing south into the northern Gladstone Lakes in the central-northeast part of the Ruby Range, 29 miles east-northeast of Burwash Landing. Access is possible during the summer by tracked vehicle from the Aishihik airstrip along a 35-mile route in the valleys of a north tributary of Albert Creek and of Talbot Creek.

History:

The property was staked for the Phelps Dodge Corporation of Canada Limited, during the summer and fall of 1970, to cover known and previously trenched copper, molybdenum and tungsten showings. The Bear 1 to 4 claims, two of which (presently owned by Topazios Mining and Exploration Company Limited, remain in good standing at the centre of the ED group), were staked in September, 1963, and explored through the years by means of 29 pits and trenches.

Description:

The area is underlain by biotite-hornblende granodiorite, quartz monzonite and quartz diorite of the Ruby Range Batholith (unit 5, Muller, 1967) and the Mesozoic and (?) Early Tertiary Nisling Range alaskite which includes granite and quartz monzonite (unit 7, op. cit.). The batholith outcrops on the property as an east-southeast trending tongue in the northwestern and central parts. The texture of both units ranges from fine- to coarse-grained and porphyritic.

Diabasic to dioritic dykes, trending north-northeast, intrude most of the rock types and are relatively unweathered. Acid dykes related to the granitic phases, trend northerly to northwesterly and dip steeply.

Three areas of intense jointing, faulting and shearing with disseminated molybdenite, chalcopyrite, pyrrhotite and pyrite in the rocks and along the fracture planes, occur on the property. The largest area, to the west of Alaskite Creek near its headwaters, is marked by a number of gossans and numerous zones of molybdenite rosettes. The second area, along the west flank of Talbot Creek, occurs within or near the edge of an alaskite porphyry body. The third mineralized area, south of Rockslide Creek, occurs in coarse crystalline alaskite.

Current Work and Results:

The 1970 geological mapping was carried out concurrently with a geochemical soil, silt and rock sampling program. The geochemical survey outlined three copper-molybdenum anomalies corresponding to the three gossan zones.

NISLING RANGE AREA

Onion Creek

MAX CLAIMS
Atlas Explorations Limited
330 Marine Building
355 Burrard Street
Vancouver, British Columbia.

Copper, Molybdenum
115 G 15, 16
(61°51'N, 138°34'W)

Claims: MAX - 217 claims

Location and Access:

The claims are between the headwaters of Onion Creek and Rhyolite Creek about 50 miles northeast of Burwash Landing. Access is by helicopter although Casino road, passable in winter, passes 5 miles west of the claim group.

History:

The 217 Max claims were staked in June and July, 1970, to cover a copper-molybdenum prospect discovered in the course of regional exploration in the Nisling Range. Succeeding work consisted of cutting grid lines spaced at 400 feet and 800 feet over selected areas, geologic mapping at 1 inch to 400 feet, soil sampling, prospecting, hand trenching, magnetometer and barometer topographical surveying.

Description:

The Max claims are underlain by Yukon Group rocks intruded by a series of Mesozoic and Tertiary granitic rocks. The main unit underlying the Max group is composed of micaceous quartzite, amphibolite gneiss and minor marble. The eastern portion of the claims is covered by dark green to purple andesitic porphyritic flows and pyroclastic breccias thought to be of early Mesozoic age.

Three separate phases of intrusion have been recognized: (1) the Nisling Range Granodiorite represented by two small, hornblende-biotite, quartz monzonite plugs, (2) a coarse-grained, rarely porphyritic alaskite with associated felsite dykes in the southern and central parts of the claim group, and (3) small basic dykes with compositions ranging from fine-grained diorite to lamprophyre.

A series of northwest trending faults, two of which occur on the claim group, dominate the structural features and are disrupted by smaller

cross faults.

Molybdenum occurs in quartz veins and as minor disseminations in the western quartz monzonite plug and as rosettes in quartz veins cutting quartzite; whereas, the copper is associated with pyrite and pyrrhotite in rusty breccia pockets in quartzite, in white-to-grey felsite dykes and their immediate host rocks and along with the molybdenite in the quartz monzonite stock.

Assays showed 0.009 per cent molybdenum and 0.033 per cent copper in the quartz monzonite plug and 0.31 per cent copper and 0.003 per cent molybdenum in grab samples of the rusty and brecciated Yukon Group rocks.

Current Work and Results:

Soil sampling was done over two grids. The soil survey over grid No. 1 in the central part of the claim group revealed the presence of four copper anomalies. The strongest anomaly is more than 6,000 feet long on the east side of the property and can be correlated with a quartz monzonite plug and adjoining felsite in the south, and a rusty silicified zone in the vicinity of a felsite contact to the north. A 3,000-foot-long molybdenum anomaly coincides with the northern part of the copper anomaly. The second largest anomaly trends northeasterly with copper highs to the east not coinciding with molybdenum highs. The centre of this anomaly covers a quartz monzonite plug. The smallest anomaly is over an area of rusty quartzite and adjacent to a northwesterly trending fault. A lead-zinc anomaly trends northeasterly in the southeastern part of the grid. This anomaly is adjacent to and partly overlapped by a molybdenum anomaly.

Most of the stream sediments on grid No. 2 are anomalous in copper. Copper and lead-zinc highs mostly coincide with anomalies covering large areas over the southeast half of the grid.

The magnetometer survey was run on the eastern part of grid No.1 and outlined the quartzite-quartz porphyry contact and anomalous readings, usually high and low patterns, coincide with the copper-molybdenum anomalies.

The geochemical anomalies over grid No. 1 appear to be caused by minor, disseminated sulphides and veinlets in intrusive and Yukon Group rocks and in quartz veins.

DEZADEASH AREA

Tatshenshini River

JACK POT COPPER MINES LIMITED
Whitehorse, Yukon Territory.

Copper
115 A 3
(60°03'N, 137°07'W)

References: Kindle (1953); Findlay (1969b, pp. 43-44).

Claims: LILL, TATS, RUM, STE, HILL groups, total of 206 claims

Location and Access:

The property is 6 miles southwest of Dalton Post (abandoned) and 3 miles north of the Yukon-British Columbia border. Access is from Mile 105 on the Haines cut-off, from which point a 4 mile road leads west to Dalton Post. During low water, four-wheel drive vehicles and heavy equipment can ford the Tatshenshini River and reach the property by a 6 mile tote road from Dalton Post.

History:

The property was first staked in 1965 and has been investigated since 1967 by Jack Pot Copper Mines Limited. Following electromagnetic, magnetic and geochemical surveys in 1967, bulldozer trenching in 1968 exposed copper minerals, mainly chalcopyrite. Continued trenching traced the zone for a strike distance of about 90 feet.

Description:

The showing is in a rusty shear containing quartz-breccia filling with disseminated and massive chalcopyrite having abundant malachite and azurite staining. The shear zone trends slightly west of north, dips steeply east and lies along the contact of fine- to medium-grained granitic intrusive rock (unit 7A, Kindle, 1953) to the east and fine-grained schistose andesite or basalt to the west (Mush Lake Group, unit 3, Kindle, 1953) (Findlay, 1969b).

Current Work and Results:

During 1969, the company put in bulldozer cuts at the showing and also trenched a geophysical anomaly some 2 miles to the north. In October and November, 1970, the company completed 1,700 feet of diamond drilling in five holes to test the width and continuity of the mineralized zone along strike. Results so far indicate strike length of at least 600 feet with widths ranging between 2 and 7 feet.

Haines Junction

GOLDEN GATE EXPLORATIONS LIMITED
222 - 744 West Hastings Street
Vancouver, British Columbia.

Asbestos
115 A 11, 14
(60°44'N, 137°17'W)

References: Kindle (1953, pp. 57-58); Skinner (1961, pp. 28-30; 1962, pp. 27-29); Green and Godwin (1963, pp. 24-25; 1964, pp. 29-30); Findlay (1967, pp. 55-56).

Claims: Golden Gate Explorations Limited holds 16 claims, the most promising part of the original 64 claim REX property.

Location and Access:

The property is on the west side of Kathleen River, 7 miles east of Haines Junction. A 7-mile tote road leads from the Haines cut-off road near Mile 152 to the property.

History:

Asbestos showings, first discovered in 1953, were explored by several companies between that date and 1963. Diamond drilling by Cominco in 1963 was hampered by overburden which was greater than 100 feet deep in places (Findlay, 1967). Golden Gate Explorations trenched and drilled the property in 1966. Six of eight holes started reached bedrock, covering an area of about 600 by 300 feet, and indicated 2 per cent asbestos fibre over horizontal widths of 210 feet (Northern Miner, November 17, 1966). An airborne magnetometer survey, made in late 1966, revealed a series of new anomalies.

Description:

The asbestos-bearing rock is a fine- to medium-grained partly serpentinized dunite (unit 5A, Kindle, 1953). Veinlets containing cross fibre asbestos up to ½ inch long occur with random orientation and in the best exposure constitute approximately 2 per cent of the rock (Findlay, 1967).

Current Work and Results:

When visited by this writer in 1969, the property was being explored by a truck-mounted overburden drill. Holes were put down through glacial till and lake sediments to bedrock. Coring equipment was then used to take a sample of the first 10 feet of bedrock; 1,200 feet in 22 holes being completed. Grades and fibre lengths were similar to those found in the earlier work.

WHITEHORSE AREA

Whitehorse Copper Belt

NEW IMPERIAL MINES LIMITED
1130 - 1055 West Hastings Street
Vancouver, British Columbia.

Copper, Silver, Gold
(60°33'N to 60°45'N
134°53'W to 135°10'W)

References: Green (1965, pp. 33-39; 1966, pp. 50-51); Findlay (1967, pp. 41-43; 1969, pp. 49-54); Hilker (1967).

Claims: 766, some 170 of which were added during 1970

Location and Access:

The properties of New Imperial Mines Limited are spread over a length of 16 miles, immediately west of the City of Whitehorse. Movement of material between the open-pits and the concentrator is by company mine haulage roads. One mile of road joins the concentrator complex with the Alaska Highway about 5 miles south of Whitehorse.

History:

The first reports of copper in the Whitehorse area were from miners on their way to the Klondike gold fields in 1897. During 1898 and 1899, most of the presently known showings were staked in a strip, some 4 miles wide and 17 miles long, trending slightly west of north, which came to be known as the Whitehorse Copper Belt. Small shipments of hand picked ore were made between 1900 and 1909. Development work and production went on from 1915 to 1920, until forced to stop by the low price of copper. Drilling was done during the period 1926 to 1929. Noranda did geophysical work, trenching and diamond drilling from 1946 to 1948 on the old workings known as Little Chief, Middle Chief, Big Chief, Valerie and Pueblo.

Imperial Mines and Metals Limited was formed in 1954 and acquired claims in the copper Belt in 1955. This company did magnetometer and diamond drilling on the Arctic Chief and Big Chief prospects. Renamed New Imperial Mines Limited in 1957, the company did diamond drilling in 1963 and by 1964 had outlined 2.1 million tons of material containing 1.2 per cent copper together with worthwhile amounts of gold and silver. In 1965, feasibility studies recommended a 2,000 tons per day milling operation, based on 5½ million tons of material amenable to open pit mining and containing 1.2 per cent copper. Following an agreement for senior financing and a ten year sales agreement with Sumitomo Metal Mining Company of Japan, construction started on the mill, near the Little Chief deposit, in the central part of the Copper Belt. Mining began on this deposit in the summer of 1966 and milling began in May 1967. In 1967, the company milled 368,000 tons of ore, producing concentrates with gross sales value of 3.9 million dollars. 1968 production was 732,000 tons of ore with the concentrates being worth 7.0 million dollars. Deep drilling demonstrated the presence of some 2.8 million tons of ore grading 2 per cent copper beneath the Little Chief pit.

Description:

The deposits of the Whitehorse Copper Belt consist of irregular lenses and patches occurring in skarn zones developed in Lewes River (Triassic) limestone adjacent to diorite to granodiorite Coast Range intrusions. In the Little Chief and Arctic Chief area, mined during 1967 and 1968, the skarn consists of diopside, epidote, tremolite-actinolite, garnet, serpentine, magnetite and/or hematite and, rarely, asbestos (Findlay, 1969b, p. 34). The ore minerals are chalcopyrite, bornite, chalcocite and vallerite, with minor native copper. The skarn of the War Eagle is a diopside-garnet assemblage with lesser amounts of epidote and tremolite-actinolite. Bornite and chalcopyrite are the main ore minerals.

Current Work and Results:

During the first six months of 1969, millfeed came from the Arctic Chief and Little Chief open pits, adjacent to the mill. Development work on the War Eagle property was completed in June, 1969. Following changes to the grinding circuit necessitated by the more abrasive ore of the War Eagle orebody, 8 miles north of the mill, this deposit was mined for 18 months, being completed in January, 1971.

In exploration during 1969, surface diamond drilling was done on the Gem deposit, south of the Little Chief, proving 822,000 tons grading 1 per cent copper. Geophysical surveys (EM 16) were completed in the same area. During 1970, the Black Cub deposit was drilled and proved to have 287,000 tons grading 1.45 per cent copper. At the northern end of the Copper Belt, around the old Pueblo workings (the largest producer in 1917), 18 line miles of I.P. survey were completed as well as a magnetometer survey.

An underground development program, designed to make the 2.8 million tons of Little Chief ore available for mining, was started in November, 1969. A 10-foot by 15-foot decline was collared just west of the mill and driven southerly at a 15 per cent slope. The planned length is stated to be 5,000 feet, the end to be 850 feet lower than the portal. Diamond drilling from stations in this decline have demonstrated further mineralized sections in the Middle Chief zone. Estimates of this ore (Northern Miner, April 8, 1971) are 340,000 tons grading 2.48 per cent copper.

The following operating summary is from data provided by the company:

	1969	1970
Dry tons milled	805,519	852,461
Daily average (tons)	2,207	2,335
Mill heads (copper)	1.09 %	1.04 %
Metal production		
Copper	15,169,466 lb.	16,084,731 lb.
Total sales (including gold and silver)	$11.7 million	$ 9.9 million

Ore reserves were quoted at the end of 1969 as 9.1 million tons having a grade of 1.65 per cent copper. Following changes in classification, removing some of the above from the ore category because of lower copper prices, gives an ore reserve at the end of 1970 as 3.5 million tons having a grade of 2.31 per cent

copper.

LEWES RIVER MINES LIMITED
Suite 410 - 355 Burrard Street
Vancouver, British Columbia.

Copper
105 D 10
(about 60°35'N to 60°47.5'N, 134°50'W to 135°07'W)

References: Kindle (1964); Wheeler (1961); Findlay (1969b, pp. 34-35).

Claims: 478 in one block, 44 in a second block.

Location and Access:

The main block of claims forms a 17-mile by 2-mile strip along the eastern side of the Whitehorse Copper Belt and the second block, immediately east of the south end of the first, covers Cantlie Lake and surroundings. The property extends from about 2 miles east of the Carcross Road - Alaska Highway junction on the southeast to a point on the Yukon River 4 miles north of the city of Whitehorse. There is ready access by way of roads on the east side of the Yukon River, as well as the Alaska Highway, which the claims cross.

History:

The claims were staked during the 1960's on the overburden covered terrain east of the Yukon River. The assumption was that the eastern contact of the Whitehorse Stock (unit 8, Wheeler, 1961) would extend through this area and prove a host to contact-metasomatic copper deposits similar to those of New Imperial Mines which are at the western contact of this stock with Lewes River limestone (unit 3c, op. cit.). The present company was incorporated in 1968 to explore the property. In September, 1969, Lewes River Mines entered into a joint venture agreement with Canex Aerial Exploration Limited whereby Canex may earn a 70 per cent interest by bringing the property into production by December 31, 1973 (Whitehorse Star, May 19, 1970).

During 1968, a low level aeromagnetic survey was made of the property, outlining targets for ground work. Initial I.P., ground magnetic and geochemical surveys were done on two of the target areas.

Description:

The area of the main claim group is overburden-covered, mostly with fluvio-glacial material; the 44 claim group to the east has limestone in contact with a small granitic stock. Although skarn is recognized at the contact, sulphide minerals have not been found.

Current Work and Results:

In 1969, Canex Aerial put down four diamond drill holes having a total footage of 1,600 feet, and continued ground geophysics (I.P. and magnetometer surveys) on the targets selected earlier. The 1970 program consisted of further diamond drilling, a total of 5,000 feet in 11 holes.

The geophysical interpretation indicates that the contact between the Whitehorse stock and Lewes River sediments is present in suboutcrop on the main claim group and under the city of Whitehorse. Two areas of embayment by Lewes River sediments are indicated. The diamond drilling results thus far have substantiated the geophysical interpretation. The most favourable intersection from the 1969 drilling assayed 1.05 per cent copper over 130 feet with a possible true width of 100 feet (Whitehorse Star, May 19, 1970). Diopside-garnet skarn containing chalcopyrite, bornite and chalcocite is in contact with hornblende quartz monzonite.

Haeckel Hill

MIKE CLAIMS
Trans Western Investments Limited
c/o Peter E. Walcott and Associates Limited
605 Rutland Crescent
Coquitlam, British Columbia.

Copper
105 D 14
(60°50'N, 135°10'W)

Claims: MIKE 1 to 14 and 17 to 29

Location and Access:

The property is 5 miles northwest of the city of Whitehorse, between Haeckel Hill and the Porter Creek subdivision on the Alaska Highway. Roads provide convenient access.

History:

Between July 3 and 11, 1970, Peter E. Walcott and Associates Limited carried out limited I.P. and magnetometer surveys over the Mike claims.

Description:

The property lies on the western edge of the Whitehorse Copper Belt. Biotite granite outcrops on the northern extremity of the group, while sedimentary rocks and tuffaceous equivalents outcrop in the centre of the property. No skarn zones were found on the property.

Current Work and Results:

Using a "pole-dipole array" method with an electrode separation of 400 feet a strong I.P. anomaly was noted trending northwest across the most southerly of the claims and is open at both ends.

The magnetic survey failed to outline any anomalous areas on the southern claim but did serve to outline an airborne anomaly shown on the government maps.

The southernmost claim is the only promising part of the group and soil sampling and more I.P. and magnetic surveying are recommended.

Marsh Lake

PINE AND OAK CLAIMS
International Mine Services
Box 1052
Whitehorse, Yukon Territory.

Copper
105 D 9
(60°30'N, 134°15'W)

Reference: Wheeler (1961).

Claims: OAK 1 to 120 and 33 PINE claims

Location and Access:

The claims are situated on the northeast side and southeast end of Marsh Lake in the Whitehorse mining district and are on the Alaska Highway.

History:

Between July, 1967, and March 12, 1968, an airborne EM and magnetometer survey as well as some ground magnetometer and EM surveying was done on these claims. The area was selected because of the favourable geology, similar to that around orebodies in the Whitehorse Copper Belt. An I.P. survey was subsequently carried out in the spring of 1969 over claims Oak 92, 94, 131, 133 on which an electromagnetic conductor had been recognized.

Description:

The area is underlain by volcanic rocks of uncertain age some of which are metamorphosed. These rocks are, in turn, underlain by Jurassic sediments consisting of graywacke, arkose, argillites and related rocks. These rocks, including the volcanics, are intruded by Cretaceous Coast Range intrusions.

Current Work and Results:

Aeromagnetic work in 1967 revealed a strong magnetic anomaly following the McClintock River as well as an EM anomaly to the northeast of the magnetic anomaly. A number of EM anomalies were also found close to the contact zone between the volcanics and Jurassic sediments. Another magnetic anomaly trending northwest approximately in the center of the survey area was observed which does not follow the general trend of geology (G.S.C. Map 193A, Wheeler, 1961). Also an extensive magnetic trend was observed following the Alaska Highway. EM anomalies were found to the southwest of Caribou Lake and graphite was observed in the area. The I.P. survey carried out subsequently in 1969 showed a very high background above which no anomalies were discernible in the area of the Caribou Lake electromagnetic anomaly.

Geochemical soil sampling on the Caribou Lake grid lines indicated low background values in copper, lead and zinc. A ground electromagnetic survey was conducted on this grid in 1967, and a magnetometer survey was completed during this period. The EM anomaly extends over a distance of 2,400 feet and is classified as a poor to moderate conductor having graphite and minor pyrite as a conductive source.

CARCROSS AREA

Montana Mountain

VENUS MINES LIMITED
440 - 890 West Pender Street
Vancouver, British Columbia.

Gold, Silver, Lead,
Zinc, Cadmium
105 D 2
(60°01'N, 134°38.2'W)

References: Cairnes (1908, pp. 16-17; 1909, p. 31; 1917, pp. 39-41; in Bostock, 1957, pp. 254-255; 282; 447-459); McLean (1914, pp. 194-200); Cockfield and Bell (1926, p. 40); Wheeler (1961, pp. 129-130); Findlay (1967, pp. 48-50; 1969a, pp. 62-64; 1969b, pp. 37-38).

Claims: 40 claims owned and optioned, of which eight are Crown Grants

Location and Access:

The property is on the west side of Windy Arm, Tagish Lake, 4 miles southwest of the abandoned settlement of Conrad and 10 miles southeast of the community of Carcross. A 17-mile access road along the lake joins the property to Carcross.

History:

From 1914 to 1918, this area was explored for gold and silver deposits, several of which were worked briefly (Findlay, 1969b, p. 37). A 100-ton mill was built on the lakeshore to treat ore from the properties. Small ore shipments were made with 6,000 tons reportedly coming from the Venus workings (Cairnes, 1917).

Description:

The rocks of the area belong to the Cretaceous Hutshi Group (unit 7, Wheeler, 1961), consisting of a variety of volcanic types. Andesite and andesite breccia appear to be the most common in the mine area. Northerly trending quartz veins (around north 20 degrees east) dip about 30 degrees west. The Venus vein, the most persistent found thus far, has been traced for more than a mile. It contains coarsely crystalline quartz - in part showing comb structure - and carbonate with bands and lenses of pyrite, arsenopyrite, galena, sphalerite and minor chalcopyrite. Ruby silver is present in significant amounts in some parts of the vein. Ore grades quoted range from 0.185 ounces gold per ton and 22.0 ounces silver per ton over 5.4 feet (this in a 15-foot ore shoot) to 0.329 ounces gold per ton, 10.36 ounces silver per ton, 2.12 per cent lead and 1.92 per cent zinc over 5.4 feet (105-foot ore shoot) (Northern Miner, October 19 and November 24, 1967).

Current Work and Results:

Modern exploration and development began with Venus Mines Limited in 1966. During both 1966 and 1967 some four months of underground work with a 10-man crew was done on the property. The company continued the work for 10 months during 1968. To the end of 1968, Venus completed 7,100 feet of drift-

ing and crosscutting, 650 feet of raising and 2,900 feet of diamond drilling. During 1966 and 1967, work was on the 2,700-foot level (elevation 2,734 feet). In 1968, the 2,600-foot level adit was driven from a collar at an elevation of 2,622 feet and 1,200 feet northeast of the 2,700-foot level portal. A raise was driven along the vein from the 2,600-foot to 2,700-foot level in the northern part of the workings and a 2,650-foot sublevel established from this raise. The 17-mile access road was built from Carcross.

In late 1968, the consulting engineering firm recommended that the property be put into production at 300 tons per day. Following successful financing during the spring of 1969, the company started construction of mill foundations on the lakeshore, 5 miles north of the mine, with production scheduled for August, 1970.

During 1969, further underground development prepared the mine for production with the building of ore passes and preparation of stoping areas. On the 2,600-foot level, 564 feet of drifting, crosscutting and raising were completed, with 504 feet being done on the 2,700-foot level. The 2,800-foot level, established above the 2,600-foot adit from a raise on the 2,700-foot level, was driven 123 feet. From the drifts, 2,452 feet of diamond drilling was done.

During 1970, the 2,800 2N drift was extended 1,200 feet and the 2,800 2S driven 235 feet, to a length of 333 feet. A 2,850-foot sublevel drift was driven south 40 feet during August. From the series of levels and sublevels, raises some 50 feet apart were driven on the vein to provide mining places. During the year 157 feet of diamond drilling was done.

Development ore from the workings was stockpiled below the 2,600-foot portal. When the mill started in September, about 30,000 tons were available to supplement mine-run ore in providing mill feed. By the end of the year, 23,491 tons were treated, with two concentrates being produced. The zinc concentrate contains one ounce of gold and 30 ounces of silver per ton and 2.5 per cent cadmium. The lead concentrate carried 7 ounces of gold, 270 ounces of silver per ton and 0.05 per cent cadmium. An initially planned circuit, designed to recover a pyrite-gold concentrate, has not been put in to use.

The following is an operating summary for the period September to December, 1970, from information provided by the company:

Dry tons milled	23,491
Daily average	246
Production	
Gold (ounces)	1,791
Silver (ounces)	76,970
Lead (pounds)	345,860
Zinc (pounds)	236,905
Mill head grade	
Gold	0.08
Silver	3.29
Lead	7.36
Zinc	5.04

Reserves quoted in the feasibility study were: 75,470 tons proven containing 0.39 oz/ton gold, 11.55 oz/ton silver, 2.58 per cent lead, 1.67 per cent zinc and 0.093 per cent cadmium.

ARCTIC GOLD AND SILVER MINES LIMITED(N.P.L.)
1130 - 355 Burrard Street
Vancouver, British Columbia.

Silver, Gold
105 D 2
(60°05'N, 134°42'W)

References: Cairnes (1906, pp. 24-25; 1908, p. 14; 1917, pp. 28-36; in Bostock, 1957, pp. 209-217; 245-275; 426-459); Cockfield and Bell (1926, p. 39; 1944, p. 12); Wheeler (1961, p. 127); Green (1966, pp. 56-60); Findlay (1967, pp. 46-47; 1969a, pp. 58-60; 1969b, pp. 35-37).

Claims:

The Arctic property consists of two Crown Grant claims ('Pride of the Yukon' and 'Caribou') and an additional 82 claims on Sugarloaf Hill about 1 mile north of Montana Mountain summit.

History:

The property was initially investigated in 1905 when underground workings were begun along a quartz vein structure. Three thousand tons of handpicked ore, reportedly grading 1.08 ounces gold and 27.7 ounces silver per ton, were shipped from the property before 1925.

Description:

A system of northeast striking quartz veins, which cut altered granodiorite, contain pyrite, arsenopyrite, sphalerite, galena and rare chalcopyrite as irregular lenses and shoots within the veins. The vein structures are commonly bordered by selvages of intensely altered granodiorite.

Two principal vein systems are fairly persistent but gentle flexures in dip and translation along two fault systems complicate underground development and exploration.

Recent investigation of the property was undertaken in 1964 by the present company. In June, 1967, the announcement was made that the property would be brought into production early in the summer of 1968. During 1967, mine and mill buildings were completed, an 8-mile all-weather access road was constructed, and underground (approximately 30,000 feet in 200 holes) and surface (3,700 feet in 19 holes) drilling programs were completd. Stope development commenced in December, 1967. Reserves at the end of 1967, as outlined by the drilling program, were 254,920 tons averaging 0.68 ounces gold per ton and 19.70 ounces silver per ton (from company annual report, 1967).

Initial production was to be at a rate of 200 tpd and eventually increased to 300 tpd. Gold and silver concentrates were to be shipped by rail to Skagway and then to Bolidens Mining Plant in Sweden.

Production from the property began in mid-May, 1968. Tune-up problems and ore-grades below feasibility production affected the operation during the first six months and production was inconsistent. The mill closed for a three month period, December, 1968 to March, 1969 while the company refinanced and modified the mill. Mill heads in 1968 averaged 0.28 ounces of gold and 10.5 ounces of silver per ton of ore at an average mill rate of 150 tons per day. Production resumed in March and continued to October, 1969, on a 100 ton per day basis. The mine ceased operation at the end of October. Prior to shutdown, approximate grades at the mill heads were 0.23 ounces of gold and 7.5 ounces of silver per ton. Production figures for 1969 to date of closure are 4,627 ounces of gold and 119,887 ounces of silver recovered from 25,132 tons of ore milled.

Mt. Conrad

LULU CLAIMS
Premier Mines Limited
c/o R.G. Hilker
P.O. Box 566
Whitehorse, Yukon Territory.

Silver, Lead, Zinc
105 D 2
(60°00'N, 134°33'W)

Reference: Wheeler (1961).

Claims: LULU 1 to 16

Location and Access:

The claims are on a north-facing slope of the Rams Horn in the vicinity of Windy Arm, Tagish Lake above timberline. Helicopter from Whitehorse is the common mode of access.

History:

The Lulu claims 1 to 4 were staked October 7, 1967, and Lulu claims 5-16 were staked September 26, 1968. The claims were all subsequently transferred to Premier Mines Limited. A property examination was carried out on September 12, 1968.

Description:

The rocks consist of metamorphosed volcanics of the Taku Group of Pennsylvanian and Permian age (?). Magnetite, pyrrhotite and chalcopyrite were found in the vein zones of andesitic rock of the volcanics with significant amounts of copper, silver, nickel and gold. Patches of skarn were found associated with the vein zones and sulphide bearing float was found in the talus.

Current Work and Results:

In the fall of 1969, a ground magnetometer survey was done by chain and compass control using an east-west baseline. No highly anomalous areas were found although numerous weak anomalies were observed.

A geochemical soil survey was also performed on the grid and a volcanic ash horizon was found; sampling procedure was modified to include material from the horizon when it could be found. A total of 54 soil samples were taken.

Some sample assays were 20.2 ounces silver per ton, 4.6 per cent lead and 0.63 per cent nickel. The average lead assay for the 54 samples was 15 ppm.

BIG SALMON RANGE AREA

Livingstone Creek

BEAVER-MINK GROUP
The Colorado Corporation
c/o Donaldson Securities
535 Thurlow Street
Vancouver, British Columbia.

Copper
105 E 1
(61°21'N, 124°11'W)

Reference: Bostock and Lees (1938).

Claims: BEAVER 1 to 8 and MINK 1 to 56

Location and Access:

The claim groups cover the southern section of the northeastern slope of Boswell Mountain and extend east across Fish Creek and south to the southern shore of the northernmost of the Loon Lakes. The lake is sufficiently long to permit the use of float-equipped aircraft.

History:

The area was first staked prior to 1900 (Bostock and Lees, 1938, p. 28) and has been often restaked since then. Two adits, one roughly 270 feet long and the other 50 feet, were driven in the early 1900's. Since then, little work had been done on the ground until it was staked as the Beaver 1 to 8 claims in June, 1969. The Mink claims were staked by employees of P.H. Sevensma Consultants Limited during a preliminary examination of the property

in December, 1969.

Description:

Precambrian or Later Yukon Group schist and quartzite (unit 1, Bostock and Lees, 1938) underlie the eastern three-quarters of the claim group with some Lewes River Group limestone (unit 5, op. cit.) in the south-central part of the property and Hutshi Group volcanics (unit 9, op. cit.) in the southwestern part. A number of diabasic to dioritic sills and dykes intrude the metamorphosed Yukon Group.

The rocks are cut by two major faults, one trending 20° in the south part of the property and a second one in the north part.

Chalcopyrite occurs as disseminations and as fine veinlets, in a 100- to 150-foot wide zone of cherty quartzite and disseminations in the adjoining schists. The chalcopyrite zone trends 350° and dips 75° west.

Scattered chalcopyrite and arsenopyrite-pyrite-quartz veins outcrop in various areas on the property. The arsenopyrite-rich areas are usually poor in chalcopyrite.

The old adits are reported to have cut an 80- to 90-foot wide zone containing disseminated chalcopyrite which graded 2 to 2.5 per cent copper. Grab samples taken before 1970 assayed:

Copper (%)	Gold (oz/ton)
6.7	0.04
1.41	0.06
2.9	N.A.
4.7	0.12

Current Work and Results:

The 1970 program consisted of geological mapping and soil and rock sampling along 16 miles of cut grid lines. The soil sampling indicated substantial copper anomalies in two zones trending northwest.

Resampling of the main zone indicated values of:

Width feet	Copper (%)	Gold (oz/ton)	Silver (oz/ton)
35	0.47	tr	0.2
2	1.14	tr	0.4
100	0.58	0.03	0.3

Sawtooth Range

FOX AND STAR CLAIMS
Boswell River Mines Limited
1177 West Hastings Street
Vancouver, British Columbia.

Silver, Lead, Molybdenum
105 C 13, 105 F 4
(61°00'N, 133°45'W)

References: Mulligan (1963); Findlay (1969, p. 8)

Claims: 408 claims in three groups, the FOX (376), STAR (24) and SNOWSHOE (8)

Location and Access:

The property is 50 miles east-northeast of Whitehorse, on Slate Mountain, at the headwaters of Slate and Red Mountain creeks, two tributaries of Boswell River. Heavy equipment was brought in during the winter of 1968-69 over a winter tote road from the south end of Quiet Lake, 25 miles east of the property. Fuel and other supplies were brought to Baker Lake, 6 miles east of the property, by Bristol aircraft, and ferried in from there by helicopter.

History:

Occurrences of silver-bearing galena have been known in this area for many years. During the season of 1966, an exposure of galena was discovered in a small creek bed and pyrite was recognized as being widespread in a porphyritic intrusion. The first group of Fox claims was staked in the winter of 1966-67 and surface exploration was continued in 1967. In November, 1967, an airborne survey (combined magnetic, radiometric and electromagnetic) was flown over the area. During the summer of 1968, a soil geochemical survey revealed essentially coincident silver, lead and copper and molybdenum anomalies in the central to southeast part of the property.

Description:

Slates, quartzites, chloritic schist and dolomite of the Big Salmon Complex (Mulligan, 1963) are intruded by feldspar-quartz porphyry of probable Tertiary age. The intrusion is at least 3,500 feet long and 2,500 feet thick, with the long sides roughly concordant with the northwest strike and moderate to steep northeast dip of the enclosing metasedimentary rocks. The intrusion interfingers irregularly with the hornfels equivalent of the enclosing rocks on the southeast. Much of the area of outcrop of the intrusion has a prominent yellow and red-brown gossan. Surface rocks contain numerous vugs, as well as significant pyrite, in some places forming up to 5 per cent of the rock. The pyrite occurs as blebs, crystals and veinlets in both the porphyry and the metasediments. Molybdenite is also present in the surface rocks, forming thin sheets. Rocks strongly silicified with quartz veins bordered by molybdenite are common.

Current Work and Results:

During the 1969 season, 7,500 feet of diamond drilling was completed in 14 holes. When property was visited by this writer, drilling was in progress with sections of moderate grade in molybdenum being recognized.

Additional geological mapping of the property was done, including the use of a scintillometer to help delineate the intrusive-metasedimentary contact in areas of shallow overburden.

The property was inactive during 1970.

MAC GROUP
McGregor Telephone and Power Construction Company Limited
9925 - 62nd Avenue
Edmonton 81, Alberta.

Copper, Molybdenum
105 C 13
(60°55'N, 133°45'W)

Reference: Mulligan (1963).

Claims: MAC 1 to 64

Location and Access:

The property is in the Sawtooth Range on the eastern side of the Teslin River Valley, 6 miles northeast of Swift Lake, and 45 miles east-northeast of Whitehorse. Access to the area is by the tote road joining the Fox claim group of Boswell River Mines to the Canol road.

History:

Of the 64 Mac claims staked in May, 1969, for A. McGregor, 41 were allowed to lapse in 1970.

Description:

The claim group is underlain mainly by quartz-hornblende and quartz-feldspar-hornblende gneiss and amphibolite and diorite (unit A, Mulligan, 1963). The gneiss is derived from the Mississippian or earlier Big Salmon Complex, schist, gneiss, quartzite, greenstone and limestone (unit 1, op. cit.), which outcrops in the northeastern corner of the property.

Current Work and Results:

A reconnaissance geochemical soil sampling survey carried out during the summer of 1969 outlined a number of extensive north-trending copper anomalies with coincident molybdenum highs in the southeastern part of the claim group.

NW GROUP
Northwest Explorers (1967) Limited
c/o Hudson's Bay Oil and Gas Company Limited
320 Seventh Avenue Southwest
Calgary 2, Alberta.

Molybdenum, Copper
105 C 13
(60°55'N, 133°35'W)

References: Lees (1936); Mulligan (1963).

Claims: NW 1 to 6, 11 to 16, 21 to 26, 53 to 58, 75 to 80, 103 to 120, 143 to 160, 183, 184, 239 to 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, RH 1 to 8 and XY 1 to 16, a total of 142 claims.

Location and Access:

The claims are within the Sawtooth Range, a part of the Big Salmon Range, north of Swift Lake, south of Slate Creek and southwest of Red Mountain Creek, 44 miles east-northeast of Whitehorse. A winter tractor road leaves the Canol road at Mile 28 and cuts through the NW claims to reach the Boswell River Mines camp. A branch of the road also goes to Swift Lake.

History:

The 118 NW claims were staked in May, 1969 and transferred to Northwest Explorers (1967) Limited in April, 1970. The RH and XY claims were staked for the company in September, 1969, and May, 1970.

Description:

Exposed in the Sawtooth Range are metasediments of the Mississippian and earlier Big Salmon Complex (unit 1, Mulligan, 1963). The sediments, chiefly micaceous quartzite and quartz-mica schist and gneiss with bands of limestone, marble, meta-volcanics and garnet-epidote skarn, have undergone medium to strong metamorphism resulting in a hornblende gneiss which locally approaches diorite in composition and texture (unit A, op. cit.). Overlying these rocks to the southwest of the claims are Triassic and Jurassic sediments; argillite, graywacke and conglomerate (unit 9, op. cit.). Coast and Cassiar granitic intrusions outcrop to the northeast of the property.

Current Work and Results:

During the summer of 1969, a reconnaissance silt sampling program was done on the property. Three grids were established for a more detailed soil sampling program. The silt geochemistry outlined a copper-lead anomaly trending east from the western corner to the central southeastern part of the property. Molybdenum highs occur with high lead and moderate copper values in the centre of this main anomaly. The soil survey outlined a number of southeast trending anomalies on the grids in the central and eastern parts of the property.

In 1970, soil sampling was completed over the whole of the claim group in order to assess the stream silt anomalies and extend the 1969 soil survey anomalies, which were open to the southeast. A number of copper and molybdenum anomalies were detected, the latter trending along the bedrock strike over black phyllites with heavily disseminated pyrite in the northern

and southeastern part of the claim group. The copper anomalies are less well defined but trend generally southeast; some copper highs coincide with the molybdenum anomalies.

LINDSAY GROUP
Trans Yukon Exploration Limited
P.O. Box 1979
Whitehorse, Yukon Territory.

105 C 14
(60°56'N, 133°03'W)

Claims: 204 claims in 22 groups staked from June 1966 to March 1968

Location and Access:

The property is south of Quiet Lake in a valley at 2,500 to 3,000 feet elevation. A 3 mile road leads from Mile 45 on the Canol Road westward to the property.

History:

The area was staked to cover an isolated magnetic high on Government Airborne Magnetic Survey Maps 7007 G and 1345 G (1961). Several patches of transported gossans are present where recent gravels have been cemented by iron and manganese solutions from local springs. Newmont Mining Corporation of Canada did a geochemical survey in 1966 (lead and zinc) but did not continue with their option. In 1967, Trans Yukon Exploration Limited contracted combined airborne EM, magnetometer and radiometric surveys of the area. The magnetometer survey indicated the suboutcrop outline of an ultrabasic intrusion. In May, 1968 two grids were established with northeast baselines and geochemical, magnetic and electromagnetic surveys were conducted over two large zones indicated by the airborne work to be anomalous. Geological mapping was also done over these grids.

Description:

The area of the claims is mostly covered with overburden ranging up to an estimated 70 feet in the middle of the valley. Bulldozer trenches to greater than 40 feet failed to reach bedrock.

The rocks of the area consist of northwest trending, northeast dipping schists, quartzites and gneisses assigned by Mulligan (1963) to the Big Salmon Complex (Mississippian and earlier). The southeast end of a granodiorite body, intrusive into Big Salmon rocks, outcrops on the northwest corner of the property. A body of serpentinized dunite and peridotite outcrops in Quiet Creek and is believed to underlie the central part of the claim group. Magnetite as fine disseminations and narrow bands, as well as minor pyrite, is present in the ultrabasic rocks.

Current Work and Results:

In March, 1969, Trans Yukon Exploration Limited did a magnetometer survey over three isolated airborne EM anomalies on the west side of the intrusion. The work helped to delineate the intrusion - schist contact and indicated the presence of faults. Soil samples from bulldozer trenches were

analysed for copper and nickel and an overall northwest trend for both elements was established.

During April and May, 1969, Eagle Geophysics completed a contract magnetometer and I.P. survey on part of the property along bulldozed lines running northeast. Magnetometer readings were taken every 100 feet, the purpose being to delineate the intrusion-schist contact. The I.P. survey indicated three anomalies, two of which lie within the Big Salmon Complex near the intrusive contact. These correlate well in trend (northwest) and position with the copper-nickel anomalies established by the geochemical survey.

The property was inactive during 1970.

Fox Creek

CAB CLAIMS
Atlas Explorations Limited
330 Marine Building
355 Burrard Street
Vancouver 1, British Columbia.

Tungsten
105 F 14
(61°52'N, 133°25'W)

Claims: CAB 1 to 106

Location and Access:

The claims are 36 miles southwest of Ross River. Access is by air only and float planes can be landed at a small lake 1½ miles north of the property.

History:

The 106 claims were staked over a period between June 15, 1968, and September 23, 1968. Geological mapping, channel sampling and geochemical soil sampling for tungsten were carried out during the 1968 summer season, with detailed plane tabling and some geochemical silt sampling being carried out in the 1969 season.

Description:

The area consists of metasediments, at least 1,000 feet thick, intruded and uplifted to the west by a Cretaceous quartz monzonite batholith which metamorphosed the sediments to a garnet diopside skarn. The showings consist of a roof-pendant (No. 1 showing) of massive skarn approximately 20 feet thick on the southeast edge of the batholith and two parallel skarn zones (No. 2 showing) separated by about 10-30 feet of interbedded quartz-biotite schist and local sills of quartz monzonite intrusive. One other skarn zone outcrops on strike in a deep gorge cut by Varden Creek about 3/4 mile to the northwest.

Current Work and Results:

In 1968, three lines of continuous sampling in addition to grab samples were taken on No. 1 showing while five lines were sampled on No. 2 showing. In September of that year, the ground was resampled and the zones were extended using a panel type sampling method in 3-foot by 3-foot areas across the strike of the mineralized zones.

Analysis of grab samples and channel samples taken in 1969 showed large discrepancies in the assay results so that no conclusion as to grade could be drawn. A soil survey revealed the presence of two anomalies which suggested that the second of the two showings previously mentioned extends northwest to the mineralized outcrop about 3/4 mile away. Stream silt sampling of Varden Creek reflects the soil anomalies. A total of 5,000 feet of drilling is proposed for the property.

WATSON LAKE MINING DISTRICT

FRANCES LAKE AREA

MATT BERRY MINES LIMITED
1102-347 Bay Street
Toronto, Ontario.

Silver, Lead, Zinc
105 H 6
(61°28.5'N, 129°25'W)

References: Findlay (1967, p. 63; 1969b, pp. 47-48).

Claims: MATT, BERRY, JIM and KAY Groups. Total 264.

Location and Access:

The property is on the east side of the East Arm of Frances Lake, 95 miles north of Watson Lake. The Watson Lake-Ross River road passes along the west side of the west arm of the lake. Heavy freight and equipment can be taken by barge down the west arm and up East Arm to the property, a total of 30 miles. Light servicing is done by float- or ski-equipped aircraft.

History:

The area of the main showings was first staked in the late 1930's, and further prospected by Cominco in 1943. Dataloska Mines Limited did further surface exploration in 1960. Matt Berry Mines Limited acquired the property in 1965, did further trenching and stripping that year and 2,120 feet of diamond drilling in 14 holes during 1966.

Description:

The rocks underlying the property in the vicinity of the sulphide showing are Paleozoic argillites and phyllites. Although deformed by small folds, there is a consistent general attitude of northwest strike and moderate (roughly 40 degrees) dip. An axial plane schistosity cuts the bedding, producing a cleavage-bedding intersection which plunges gently to the north-northwest. A series of left lateral shear faults, about 300 feet apart, trend east-northeast to east, dip steeply north to vertical and have 50 to 100 feet

of displacement on each.

Massive to heavily disseminated galena and sphalerite with minor pyrite and chalcopyrite occur in quartz-siderite vein structures (Findlay, 1969b, p. 48), parallel to the bedding.

Current Work and Results:

Starting in late 1968 and continuing through the winter, a diamond drilling program extended the known strike length of the mineralized zone to 1,400 feet. Fifteen holes were put down, having total footage of 5,400 feet and bringing total on the prospect to 7,540 feet (Northern Miner, 12 February, 1970). In late 1970, a further 1,400 feet (4 holes) of drilling was completed.

The mineralized layers are typically 1 to 4 feet thick and occur at different positions within a stratigraphic interval of some 60 feet. From one to three intersections are typically found in each drill hole, the lowest consistently being in the first 10 feet above a lithologic change from grey phyllite to a black graphitic phyllite.

Results from one of the deeper holes in the 1969 program gave three intersections in 67 feet of core as follows: 3 feet grading 2.10 ounces silver, 7.45 per cent lead and 6.19 per cent zinc; 2 feet grading 2.50 ounces silver, 5.14 per cent lead and 1.08 per cent zinc; and 7 feet grading 3.70 ounces silver, 6.36 per cent lead and 11.48 per cent zinc (Northern Miner, 29 May, 1969).

In September, 1970, a working option agreement was announced whereby a joint venture of Canadian Nickel Company Limited and Metallgesellschaft Canada Limited may earn a 60 per cent interest in the property for exploration commitments (Northern Miner, 24 September, 1970).

During the 1970 season, the joint venture partners conducted a series of geophysical and geochemical orientation surveys over the known mineralized zone. These consisted of I.P., magnetometer and electromagnetic studies and silt and soil geochemical work.

PELLY PLATEAU AREA

Sheldon Lake

JOY GROUP
Spartan Explorations Limited (N.P.L.)
303 - 1035 West Pender Street
Vancouver, British Columbia.

Copper, Tungsten
105 J 9
(62°45'N; 130°15'W)

Reference: Roddick and Green (1961).

Claims: JOY 1 to 60

Location and Access:

The Joy Group is situated about 5 miles south of the western end of Itsi Lake and approximately 85 miles northeast of Ross River. The Canol Road passes within 15 miles of the property. Best access is by helicopter.

History:

The claims were staked in September, 1968, in an area where copper-tungsten mineralized float was discovered by a reconnaissance prospecting program. The claims were reinvestigated during the summer of 1968 with a geological mapping program and geochemical and geophysical surveys.

Description:

The major rock unit in the area is a series of Lower Cambrian and Devonian sediments which strike easterly and have a fairly constant regional dip of about 50° to the north. The Paleozoic assemblage of massive chert, dolomite, dolomitic limestone and shale is intruded by small quartz porphyry stocks and dykes of probable Cretaceous age. The sediments appear to form an east-west trending syncline with the quartz porphyry being intruded along the synclinal axis.

Interest in the area was sparked by the discovery of a boulder containing significant amounts of scheelite, chalcopyrite, sphalerite and pyrrhotite. Tungsten grade in the boulder was visually estimated at about 3 per cent WO_3.

Current Work and Results:

Soil samples were taken at 500 foot intervals on lines 1,000 feet apart. A total of 190 samples were obtained from approximately 190,000 feet of cut line. Several areas, anomalous in zinc and molybdenum, appear to be spatially associated with areas mapped as being underlain by quartz porphyry.

A ground magnetometer survey failed to delineate any anomalous areas.

MacMILLAN PASS AREA

TOM PROPERTY
Hudson Bay Exploration and Development Company Limited
Flin Flon, Manitoba.
and
Box 2480
Whitehorse, Yukon Territory.

Lead, Zinc
105 O 8
(63°10'N, 130°09'W)

References: Green (1965, pp. 47-48); Findlay (1969a, pp. 85-87; 1969b, pp. 50-51) Sangster (1969, in G.S.C. Paper 71-1A, pp. 91-92).

Claims: 144 claims

Location and Access:

The Tom property is 6 miles southwest of the Northwest Territory-Yukon boundary, at an elevation of about 5,000 feet in a cirque valley southeast of the South MacMillan River. The property is joined to the North Canol Road by a 2-mile company access road at a point 8 road-miles from MacMillan Pass and 130 miles from Ross River. Total road distance to Whitehorse is 390 miles by way of the Robert Campbell Highway and the Whitehorse-Mayo road. An airstrip beside the Canol Road, used in the past, was lengthened from 1,200 to 2,000 feet during 1969 to provide convenient access by wheeled aircraft.

History:

The original showing was discovered by Hudson Bay Mining and Smelting Company prospectors in 1951 on the northeast side of the cirque at 5,500 feet. Between then and 1953, a total of 17,834 feet were diamond drilled in 36 holes. Tonnage and grade figures were estimated as 10.5 million tons containing 5 per cent zinc with some lead (Green, 1965, p. 47). The property was idle from 1953 to 1966, when the company did a geochemical survey. Additional geochemical sampling and 5,500 feet of diamond drilling in 10 holes was carried out in 1967. Work in 1968 consisted of 5,100 feet of diamond drilling, concentrated on the eastern of the two recognized mineralized zones (Findlay, 1969a, p. 51).

Description:

The rocks of the area are finely banded cherty argillites and siliceous fragmental rocks, either chert pebble conglomerates or intra-formational breccia formed within cherty horizons of the argillite during deformation (Findlay, 1969a, p. 87). The local structure is a southeast plunging anticline with bedding on the limbs having variable dips of steeply southwest to vertical. Smaller scale deformational features - minor folds and fracture cleavage - are consistent with the larger structure. The rock units containing the sulphide bodies are presently considered to be Mississippian (D.F. Sangster, personal communications).

The west ore zone is simple, being concordant with the fairly regular bedding of the sediments. Fine-grained galena and sphalerite is present in a barite rich limestone which passes along strike into a black, graphitic

argillite within a few hundred feet of the mineralized zone.

The east zone is considered by company geologists to be a mineralized fault zone which cuts the bedding at a small angle and lies on the east limb of the major anticline. Bedding and ore dip steeply east. The zone underlies the fragmental chert rock and is strongly faulted and crumpled.

Current Work and Results:

Work during 1969 on the re-investigation of this property consisted of the lengthening of the airstrip and preparation of the portal site at an elevation of 4,750 feet on the northeast side of the valley 50 feet above the creek.

Between May and December, 1970, 7,753 feet of underground diamond drilling was completed. From the collar the 8-foot by 8-foot adit was driven south 591 feet. A drift was turned off, south 45° east, to follow the west ore zone. The main drift was continued on a heading of about north 70° east to the east ore zone. This zone was then drifted and underground diamond drilling was done from stations in both drifts.

The company presently states reserves to be 7.0 million tons grading 8 per cent lead, 8 per cent zinc and 2.7 ounces silver per ton.

ITSI RANGE AREA

Itsi Lake

NOM CLAIMS
Hudson Bay Exploration and Development Company Limited
Box 2480
Whitehorse, Yukon Territory.

Copper, Lead, Zinc
105 I 13
(62°50'N, 129°52'W)

References: Green, Roddick and Blusson (1967).

Claims: NOM 1 to 50

Location and Access:

The claims are 6 miles west of Mount Wilson on the boundary between the Yukon and Northwest Territories, between the headwaters of the Pelly and Ross rivers. Access is by the Canol road to Sheldon Lake and by helicopter to the property.

History:

The claims were staked in July, 1969, to cover a geochemical anomaly found in 1967.

Soil sampling and reconnaissance geological mapping was carried out and the 380 soil and silt samples were analysed for copper, lead and zinc.

Description:

The claims are underlain by Devonian and (?) Mississippian black shales, argillite and chert totalling several thousand feet as well as minor amounts of Upper Ordovician-Silurian graptolitic rocks not differentiated because of similar lithology, lack of definitive lithology and complex deformation (units 1, 18, Green and Roddick, 1967).

Current Work and Results:

Two grids were established and soil samples taken every 50 feet on lines 200 feet apart on grid No. 1 and samples every 100 feet on lines 400 feet apart on grid No. 2. All creeks in the area were sampled at frequent intervals and additional samples were taken in the broader valleys. Seventy-three rock samples were taken as well. All samples were analyzed for copper, lead and zinc and, in addition, the rock samples were analyzed for silver and gold.

Copper anomalies of over 250 ppm were found. Lead anomalies were more scattered.

ST. CYR RANGE AREA

McNeil Lake

BELL CLAIMS
Caltor Syndicate
Whitehorse, Yukon Territory.

Copper
105 G 5
(61°28'N, 131°46'W)

Location and Access:

Claim posts dating back to 1956 were found on the claim groups and a few hand trenches probably of the same age.

The 1970 program consisted of geological mapping at 1 inch to 400 feet, prospecting, soil sampling, rock trenching and sampling.

Description:

The Bell claims are underlain by a Mississippian (?) or earlier highly faulted, tightly folded, and sheared sequence of volcanic and sedimentary rocks - volcanic rocks typically being sheared, sedimentary rocks tightly folded. Calcite, quartz and barite veins, mylonite, and fault breccia also occur. The veins (1 inch to 2 feet thick) are mainly in the volcanic units as fracture fillings.

The various beds on the claim group generally strike 110° to 125° and dip 50° to 60° south-southwest. The larger faults and shear zones are generally steeply dipping and strike roughly parallel to the bedding. The main faults have been offset by less prominent northeast striking faults.

A total of nine small copper showings have been discovered on the property. Bornite, chalcopyrite, chalcocite and covellite are the main copper

minerals with malachite as an alteration product.

Current Work and Results:

Assays were as follows:

Showing No. 1 - 0.33 per cent copper and trace silver over 2 feet 4 inches across a small lense.
0.04 per cent and 0.18 per cent copper over 10 and 14 feet respectively.
Showing No. 3 - from 0.02 oz/ton of silver and 0.18 per cent copper over 15 feet to 0.76 per cent copper over 12 feet.
Showing No. 4 - 0.06 per cent copper over 6 feet
0.03 per cent copper over 6 feet
0.10 per cent copper over 20 feet
0.03 per cent copper over 20 feet

Soil samples taken at 400 foot intervals over most of the ridge indicated background values of 0.5 ppm for silver and 50 to 70 ppm for copper over volcanics. The background value for copper over sedimentary units was 25 to 35 ppm. Anomalous soil values have an erratic distribution and the copper and silver (usually coincident) present are in the form of small localized bodies. The largest anomalies are attributed to showing No. 3.

CPA CLAIMS
Charta Mines Limited
c/o R.G. Hilker Limited
Box 556
Whitehorse, Yukon Territory.

Lead, Silver, Gold
105 F 8
(61°27'N, 132°26'W)

References: Wheeler, Green and Roddick (1960).

Claims: CPA Y41569 to Y41580

Location and Access:

The claim group is located on the southwest edge of the St. Cyr Range, within the northwesterly trending Pelly Mountains. The claims are situated near a major divide, with the Nisutlin River draining to the south, the Big Salmon River to the west and the Pelly River to the north. Access is presently by helicopter.

History:

The 12 CPA claims were staked on September 26, 1969 to cover a zone of three strong gossans in an area with several known lead, silver and gold occurrences.

Work in 1970 consisted of a visit by R.G. Hilker to the property in order to define the size and position of the gossan zones relative to the claim lines and to collect a few rock and soil samples.

Description:

The claim group is situated over buff rusty and pale green felsic breccias and tuffs with minor chert and brown crinoidal limestone of Mississippian or earlier age. It is part of a northwest trending belt of Paleozoic sediments and volcanics which have been highly faulted and folded.

Three large gossan areas occur on the claim group. The largest one, 3,750 feet by about 1,200 feet trends northeast across the central part of the claims. A smaller gossan, 1,500 feet by 500 feet, lies to the west and trends NE also while the third area, 2,000 feet by 700 feet, lies east and trends NNW. These are made up of iron staining on tuff and manganese oxide coating on some felsitic rocks.

Current Work and Results:

Soil samples were taken during staking in September, 1969 and rock samples and further random soil samples were taken in July of 1970.

LOGAN MOUNTAINS AREA

Hyland River

HYLAND RIVER MINES LIMITED
301 - 543 Granville Street
or 1002 - 549 Howe Street
Vancouver, British Columbia.

Lead, Zinc, Silver
105 H 1, 2
(61°15'N, 128°30'W)

Claims: MIKO 1 to 16

Location and Access:

Property is 25 miles east of the south end of Frances Lake and about 8 miles west of Mile 47 on the Cantung Road, from which point a tote road has been built to the claim group.

History:

The claims were first staked in the spring of 1966. Hand trenching and blasting of outcrops for samples followed late that year. An airborne combined magnetic and electromagnetic survey was flown over an area which included these claims in 1968.

Description:

The rocks underlying the claims consist of biotite calc-silicate hornfels and quartzite (unit 14, Green *et al*, 1966) in contact with biotite quartz monzonite (unit 15, op. cit.). Foliation in the metasedimentary rocks strikes west northwest and dips south at 55 to 65 degrees. Two concordant lenses or zones containing galena and sphalerite extend for several hundred feet from the intrusive contact into the metasediments.

Current Work and Results:

During 1969, a series of trenches at roughly 100 foot intervals were blasted across the mineralized zones. Five diamond drill holes with total footage of 1,000 feet were completed. When the property was visited by this writer in July, 1970, bulldozer trenching and stripping was in progress to further expose the mineralized zones. The best chip sample over 10 feet, very close to true width, reportedly contains 1.9 ounces of silver, 27.14 per cent lead and 21.76 per cent zinc. This zone is persistent for roughly 700 feet along strike. A second zone assays roughly 1 ounce of silver, 3 per cent lead and 4 per cent zinc across 40 feet. Persistence of this zone is not known.

CASSIAR MOUNTAINS AREA

Rancheria River

LUCK GROUP
Silver Seven Exploration Limited
716 - 850 West Hastings Street
Vancouver, British Columbia.

Silver, Lead, Tungsten
105 B 1
(60°07'N, 130°26'W)

References: Little (1959, p. 37); Poole, Roddick and Green (1960); Green and Godwin (1963, pp. 31-32); Green (1966, pp.80-82).

Claims: HOT 1 to 8, LUCK 1 to 6 and 13 to 28, MORN 1 to 16, SEVEN 1 to 16, SUSAN 1 to 6, SWAN 1 to 16, and ZORO 1 to 16, a total of 108

Location and Access:

The claims straddle Boulder Creek 5 miles from its junction with the Rancheria River and extend north to the headwaters of two small streams flowing north into Spencer Creek. Access is by a 2½-mile truck road from Mile 701.6 on the Alaska Highway. The nearest supply centre is Watson Lake, 70 miles by road from the camp.

History:

The 108 claims cover ground previously staked as the Fiddler Group (Little, 1959 and Green, 1966) and the Luck 1 to 15 group (Green and Godwin, 1963). Only the Luck 1 to 4 claims remain of the original group. The present group was staked in the summer and fall of 1969, except for the Morn 1 to 8 claims staked in June, 1968. The Luck 1 to 4 and 13 to 20 were transferred to Silver Seven Exploration Limited in September, 1970. The other claims are owned by G.E. Stephen (Morn 1 to 16), Stanley Moore (Luck 5 and 6), Paul Bochon (Susan 1 to 6, Seven 9 to 14 and Swan 1 to 16), Frank Lang (Seven 1 to 8), Tom Dick (Seven 15 and 16, Zoro 1 to 16) and G.W. McLeod (Hot 1 to 8). Silver Seven Exploration Limited also owns the claims Luck 21 to 28 staked in August, 1969.

The Fiddler group, consisting of the Bach, Greig, Elgar, Handel and Franck claims, was staked in 1943 for the Consolidated Mining and Smelting Company of Canada Limited. Some surface work was done by that company before the claims were abandoned. In 1951, the Yukon Tungsten Corporation Limited

acquired the property, constructed a truck road, drove a 530-foot adit, and raised 235 feet to the surface. A second raise intersected and followed the vein to the surface. A small crusher was brought to the property but burned before being put to use. No further work was undertaken and the claims lapsed. In 1961, ten claims, the Pete 1 to 6, Susie 1 and 2 and Hope 1 and 2, encompassing the old workings, were staked to cover a high grade silver showing and acquired by Native Minerals Limited who carried out a geological engineering evaluation program, doing extensive stripping and trenching.

The original Luck 1 to 15 group was staked in September and October 1961, by E. Krysko and transferred to Scurry Rainbow Oils Limited in November. In 1962, the company carried out self-potential and electromagnetic geophysical surveys and a geochemical survey over the claims. The anomalies outlined during these surveys were trenched and diamond drilled. Nine large open cuts were made and 13 holes, totalling 2,591 feet, were drilled. The company also constructed 5,585 feet of access roads on the property. Five more trenches were blasted in 1967 and the claims were returned to E. Krysko in 1968.

Description:

The rocks of the area are Lower Cambrian phyllite with interbedded lime-bearing schist and unaltered limestone beds from ½ inch to several feet thick (unit 3b, Poole et al, 1960). The general trend of the beds is 325° to 355° with dips of 20° to 60° E. In a few places the lime-bearing phyllite is folded; the beds dipping vertically to westerly.

The various units are cut by a series of east to northeast trending faults, fractures and shear zones filled with mineralized calcite, dolomite and quartz veins. A number of showings occur on the claim group:

a) The Luck showing (Green and Godwin, 1963) consists of a four- to five-foot thick zone of disseminated sphalerite, pyrite and massive galena lenses, to 6 inches thick and a few inches long, in lime-bearing phyllite between two faults 30 feet apart. The showing is overlain by an iron- and manganese-stained zone up to 6 feet thick containing minor sphalerite and pyrite and dipping gently to the south parallel to the foliation of the enclosing rocks. The northern fault, at the limestone-lime-bearing phyllite contact, is filled with a calcite vein trending 80° and dipping 75° south. Small calcite veinlets along the southern side of the vein contain minor scheelite. Sections of the Scurry Rainbow Oils Limited 1962 drill core assayed as follows:

Hole	Silver oz/ton	Lead %	Zinc %
Hole No. 1 over 10 feet	4.10	6.08	9.67
Hole No. 3 over 39 feet	1.66	1.47	8.32
Hole No. 4 over 21 feet	2.05	3.45	8.47

Assays of various other grab and channel samples are given in Green and Godwin (1963, p. 32).

b) The Pete showing consists of massive galena, 1 to 8 inches wide, in a shear zone trending 310° to 325° and dipping 40° to 65° northeast in limy phyllites trending 325° and dipping 15° to 25° northeast. The showing is 5,500 feet north-northeast of the Luck showing.

c) The Fiddler-West or Wolframite showing (Green, 1965), investigated by the Yukon Tungsten Corporation Limited, consists of a quartz vein or zone of veins up to 30 inches thick containing wolframite. The vein, striking 60° and dipping 25° southeast across north-northwest striking and east dipping phyllites, has been traced 650 feet down the south face of a dome-like feature. The vein consists of white, coarsely crystalline quartz with open vugs, patches and lenses of muscovite and scattered crystals of wolframite. A smaller vein, 10 feet long and 1 foot thick, north of and parallel to the main vein contains wolframite, cassiterite, chalcopyrite, galena, some silver mineral or minerals, malachite, azurite, limonite, fluorite and minor beryl.

d) The recently discovered Fiddler-East showing consists of a zone of scheelite within a coarse quartz-phyllite breccia. The scheelite concentration varies inversely as the number of quartz enclosed phyllite fragments.

e) The North showing, 3,500 feet north of the Fiddler-West showing, consists of a 6-inch zone of massive galena in a shear zone.

Current Work and Results:

An extensive exploration program consisting mainly of trenching, mapping and sampling of the occurrences was carried out by P.H. Sevensma Consultants Limited for Silver Seven Exploration Limited in 1969. On the Luck showing, an 800-foot by 200-foot grid was cut and soil sampled. Hand trenching was done on the calcite vein, a 100-foot to 1-inch transit-stadia survey map of the drill holes and trenches was made and the drill core from the 1962 drilling was logged. Samples of the calcite vein assayed up to 0.99 per cent WO_3 over 3 feet and the soil survey indicated a number of areas anomalous in tungsten. Detailed sampling of the sulphide occurrence indicated an average of 8.40 ounces silver per ton, 8.51 per cent lead and 9.90 per cent zinc over 35 feet.

The Pete showing was geologically mapped at 50 feet to 1 inch and sampled and the surrounding area was soil sampled. Samples of the showing, which lies south of a geochemical anomaly, assayed as follows:

Width	Silver oz/ton	Lead %	Gold oz/ton	Zinc %
4"	11.4	8.36	0.03	8.30
4"	159.1	34.58	0.04	1.91
8"	17.0	22.78	0.06	3.67

A geological map at 1 inch to 200 feet was prepared covering the Fiddler-West showing, the quartz vein was trenched and bulldozer stripping carried out. Samples of the vein assayed as follows:

Width	Silver oz/ton	Copper %	Lead %	Tin %	Tungsten %
3 feet	0.76	tr	0.12	tr	tr
3 feet	16.6	0.2	3.24	tr	0.67
2 feet	3.46	0.29	1.74	0.01	0.34

The Fiddler-East showing was mapped at one inch equals fifty feet and some bulldozer stripping and hand trenching was carried out. This work outlined a zone, possibly 300 feet long, 7 to 14 feet wide and with 130 vertical feet exposed on surface, samples of which assayed:

Width	Tungsten %	Copper %	Lead %	Zinc %
1 foot	0.34	0.01	0.02	0.13
5 feet	0.28	0.01	0.02	tr
7 feet	0.14	-	-	-
5 feet	0.54	-	-	-
3 feet	0.06	-	-	-
1 foot	0.53	-	-	-

A geological map on scale of 1,000 feet to 1 inch of the North showing was prepared and a sample taken which assayed 22.9 ounces silver per ton, 39.31 per cent lead and 0.63 per cent zinc over 6 inches.

CASSIAR MOUNTAINS AREA

Daughney Lake

DAN AND MOD CLAIMS
Boswell River Mines Limited
1177 Hastings Street
Vancouver, British Columbia.

Lead, Zinc, Silver
105 B 3
(60°10'N, 131°06'W)

Reference: Poole, Roddick and Green (1960).

Claims: 272 DAN claims, MAX 1 to 60, SAM 1 to 21, WET 1 to 22

Location and Access:

The property lies along the Swift River in the central Cassiar Mountains. It is accessible by a road which leaves the Alaska Highway at Mile 722, passes beside the Pine Lake airstrip and continues northeast to the property, a total of 15 miles.

History:

The first discoveries of silver-bearing galena and sphalerite float were made by prospectors of Hudson Bay Mining and Smelting Company in 1946. Following a Bolinden EM survey by the company in 1952, the most promising anomalies were diamond drilled and found to be related to graphitic schist. The area of showings was examined by Cominco in 1962. In 1968, the present company restaked the area with an initial group of Dan claims (1-10) and conducted an EM survey in 1967. Additional claims were staked during the spring and summer of 1968 (Dan 11-272); I.P. and further EM surveys were done on selected areas of the 282 claim property during 1968.

Description:

The area is underlain by Devono-Mississippian metasedimentary rocks - slate, quartzite, limestone, chert and graphitic schist, intruded by diorite, granodiorite and quartz monzonite. Jurassic and/or Cretaceous quartz monzonite of the Cassiar Batholith (unit 15a, Poole et al, 1960) lies immediately north of the property across the Swift River Fault.

The Ram Stock lies to the northwest and a small plug of similar quartz monzonite and granodiorite lies immediately to the south.

The main showing is a planar zone of pyrrhotite in schist, dipping steeply to the southwest, which contains sufficient sphalerite to grade 8 per cent zinc over 5.7 feet. Float samples gave grades of 0.75 ounces silver, 0.25 per cent lead and 3.2 per cent zinc.

Current Work and Results:

Work in 1969 consisted of 4,075 feet of diamond drilling using standard equipment and 283 feet of Winkie drilling.

An airborne magnetic survey was flown over 9 square miles of the property in 1970, after which additional claims were staked, bringing the total to more than 800.

NISULTIN PLATEAU AREA

Black River

RUTH GROUP
J. Melnychuk
c/o 715 - 850 West Hastings Street
Vancouver 1, British Columbia.

Copper
105 B 9, 16
(60°44.5'N, 130°04'W)

Reference: Poole, Roddick and Green (1960).

Claims: RUTH 1 to 24

Location and Access:

The claim group straddles Black River ½ to 1 mile from its junction with the Liard River, 60 miles northwest of Watson Lake. Shallow draught boats can be used on the Liard River to the junction with the Black River or float-equipped aircraft or helicopters can be used to gain access to the property.

History:

The claims Ruth 1 to 24 were staked in October 1969. The claims 3 to 8 and 11 to 16 were acquired by Wye Lake Resources Limited from Mr. J. Melnychuk and Associates in December, 1970. The claims 17 to 24 lapsed in October, 1970, and the ground was restaked as the Ruth 17 to 42 claims in December, 1970, by E. Perkins, G. Zeuman, M. Lutz and J.M. Graham. The ground

covered by the claim group was previously staked as the Black claims on which a limited amount of trenching was carried out.

Description:

The property lies between the Tintina Fault to the northeast and the Twin Lake Valley Fault to the southwest in an area underlain by a series of Cambrian to Ordovician northwest trending and highly deformed limestones, dolomites, argillites and phyllites. The main outcrops on the property are thin-bedded phyllite occurring along the banks of the Black River and two small granite plugs to the southwest.

Five showings of disseminated chalcopyrite and minor quartz in siderite occur on the claims. The two major showings, on the east and west side of the Black River near the centre of the group had been trenched previously and consist of siderite veins and zones of quartz-calcite trending north for nearly 1,000 feet.

Current Work and Results:

The 1969 exploration program consisted of trenching, stripping, and trail construction.

A number of trenches were cut across the first showing along the east side of Black River. The northern trench exposed six feet of mineralized siderite, a sample of which assayed 0.52 per cent copper over 5 feet. Two hundred feet to the south occurs a 10 foot by 16 foot outcrop of siderite and chalcopyrite, samples of which assayed 1.4 per cent and 0.21 per cent copper. Southward is a zone of calcite and quartz stringers, samples of which assayed 1.2 and 2.3 per cent copper.

A 110-foot by 8-foot area was stripped along the river bank to the south where sporadic copper mineralization was exposed in phyllites and numerous quartz-siderite veins. The siderite contains a 5-foot wide shear zone striking N 45° W and dipping 50° southeast which is well leached and contains trace copper only.

Several trenches were cut on the other smaller occurrences and samples assayed 1.38, 2.4 and 5.85 per cent copper.

Further work was conducted late in 1970 on a showing on the west bank of the Black River where a rock trench exposed a 15-foot width of chloritized phyllite and quartz-carbonate breccia grading 0.02 ounces gold, 0.1 ounces silver, 0.75 per cent copper and 0.01 per cent cobalt. Minor amounts of cobalt were detected in samples taken elsewhere on the property with one sample grading 0.075 per cent cobalt.

A survey grid has been cut to facilitate further evaluation.

NAHANNI MINING DISTRICT

DISTRICT OF MACKENZIE, NORTHWEST TERRITORIES

CANADA TUNGSTEN MINING CORPORATION LIMITED
80 Niobe Street
North Vancouver, British Columbia.

Tungsten, Copper
105 H 16
(61°57'N, 128°15'W)

References: Green and Roddick (1961); Brown (1961); Skinner (1961, pp. 42-46; 1962, pp. 41-43); Green and Godwin (1963, pp. 34-37; 1964, p. 48); White (1963, pp. 390-393); Green (1965, pp. 50-51; 1966, p. 85); Findlay (1967, pp. 68-69; 1969a, pp. 89-90; 1969b, pp. 53-54).

Claims: 84 claims

Location and Access:

The Canada Tungsten Mine is in the Logan Mountains 130 miles north of Watson Lake, near the headwaters of the Flat River. The local setting is a small, east-facing cirque, with the orebody at 5,000 feet elevation. The mill and townsite, just above the Flat River, are at 3,700 feet elevation and joined to the mine by 3 miles of switchback haulage road. The 130-mile road from the property joins the Robert Campbell Highway 67 road-miles from Watson Lake.

History:

The deposit was discovered in 1954 and explored by Northwestern Exploration Limited in 1955 and 1956. After the claims lapsed in 1958, they were restaked by Mackenzie Syndicate that year and explored by diamond drilling from 1959 to 1961. In 1962, an all-weather road was constructed to the property. Prior to this time most service was by aircraft, with one winter truck haul being made. Production began in 1962 and has been continuous since that time except for an eight month period, September, 1963 to May, 1964, due to low tungsten prices and an eleven month period, January to November, 1967, while the mill was being rebuilt following a fire late in 1966.

Description:

The geological setting of the Cantung deposit is a northwest trending syncline in lower Cambrian limestone which is overturned to the northeast. Within the lower (upright) limb, a diopside-garnet-epidote skarn is host to the ore. The deposit proper is a shallowly southwest dipping lens about 300 feet wide and up to 65 feet thick. Ore occurs as fine scheelite disseminated in a massive- to heavily- disseminated pyrrhotite-chalcopyrite matrix and in veins and lenses of coarse-grained quartz, calcite and scheelite which cut the massive sulphides. Below the skarn lies pale grey-green banded chert containing scheelite-bearing pyrrhotite layers.

Current Activity:

During 1969 and 1970, exploration has been directed towards determining the extent and grade of the chert beneath the skarn. A series of short holes have been put down in the pit area and one deep hole (1,627 feet) started at 6,200 feet elevation have tested the chert horizon. Twelve hundred feet northeast of the pit area, a deep hole was drilled on coincident I.P. and Turam anomalies. A total of 14,000 feet of drilling was done in 1970.

Production Summary:

	1969	1970
Tons milled	167,389	176,816
Daily average (tons)		511.62
Grade		
WO_3		1.39%
Copper		0.18%
Production		
WO_3 (STU)	203,174	186,340
Copper (lb.)	466,113	366,224
Mining (ore tons)		189,569
Waste (tons)		303,280
Reserves (mine)	733,823	558,000
at	1.68% WO_3	1.56% WO_3
(stockpile)	84,058	89,000
at	1.56% WO_3	1.43% WO_3

Little Dal Lake

RAY CLAIM GROUP
Cerro Mining Company of Canada Limited
401 - 44 Victoria Street
Toronto, Ontario.

Copper
95 L 10
(62°40'N, 126°45'W)

Reference: Gabrielse et al (1965).

Claims: RAY 951 to 985, 35 claims

Location and Access:

The claim group lies on the west side of Coates Lake approximately 250 miles north of Watson Lake, Yukon Territory. Access is by plane from Watson Lake or Fort Simpson.

History:

Mineralized float was found in the area in 1962. The present work follows an initial soil geochemical survey performed by Barringer Research.

Description:

The property is underlain by quartzite, siltstone, sandstone and conglomerate of the Rapitan Formation (Lower Cambrian), by black limestone of the Cleo Formation (Precambrian) and by siltstones and mudstones of the Jan Marie Formation. Structurally, the claims lie on the west limb of a north plunging syncline.

Minor amounts of copper sulphides are present in all three formations as well as at the contact of the Cleo and Jan Marie Formations.

Current Work and Results:

A soil sampling program was carried out by Barringer Research in September, 1970. Samples were assayed for lead and copper. Several anomalous areas of copper were outlined.

PLACER MINING

DAWSON MINING DISTRICT

KLONDIKE AREA

BALLARAT MINES LIMITED
Dawson, Yukon Territory.

115 O 15
(63°49'N, 138°39'W)

References: Skinner (1961, p. 10; 1962, p. 10); Green and Godwin (1963, pp. 47-48; 1964, pp. 53-56); Schmidt (1964); Green (1965, pp. 56-57; 1966, pp. 89-91); Findlay (1967, pp. 72-73; 1969a, pp. 92-93; 1969b, p. 55).

This company, owned and managed by Mrs. H. Schmidt of Dawson, was active in 1969 and 1970, working deposits on Dominion (63°49'N, 138°39'W) and Quartz (63°47'N, 139°06'W) creeks as well as renewing a three claim property on Eldorado Creek. In addition to the family, the company employs a mechanic and one or two men as required.

The Dominion property consists of two company claims and 60 contiguous leased claims. During 1969, mining commenced on the right limit at approximately 3 Above Lower Discovery. This ground had been in preparation for five years and presented drainage problems. Mining was carried on below water level using two D-6 caterpillars, and a bulldozer mounted conveyor and elevated washing plant designed by the late Mr. Harold Schmidt. A coffer dam, diversion ditches, small pumps and a D-7 pump were used to maintain a dry cut. The same procedure was followed in 1970.

On Quartz Creek the company leases or owns 32 claims and operated a bulldozer sluicing plant during 1969 and 1970. A shortage of water and mechanical breakdowns kept this operation to a minimum.

During the two seasons 193,748 cu yds of gravel and overburden were handled, yielding in excess of 2,000 ounces of crude gold.

The Yukon Consolidated Gold Corporation Limited
Suite 1660 - 1245 Sherbrooke Street West
Montreal 109, Quebec.

The Yukon Consolidated Gold Corporation Limited continues to hold its 235 placer claims in the Klondike area, 101 of which are leased to individual placer operators.

Bonanza Creek

J. and R. Archibald — 115 O 14
Dawson, Yukon Territory. — (63°58'N, 139°21'W)

References: Findlay (1969a, p. 96; 1969b, p. 56).

For the fourth and fifth consecutive years, the Archibald brothers operated on claims 37 and 38 Below on Bonanza Creek under lay agreement with R.E. Troberg of Dawson City. The equipment used in working this bench deposit consisted of a TD-14 bulldozer and sluicing equipment. Gold recovery was 52.24 ounces in 1969 and 68.71 ounces in 1970. High bench ground was also stripped on claims 39 and 40 on the right hand limit in preparation for the 1971 season. As well, the Archibald brothers are preparing ground on French Gulch (claim No. 2).

S. Berg — 116 B 3
Dawson, Yukon Territory. — (64°00'N, 139°22'W)

S. Berg owns seven placer claims on Bonanza Creek, two of which, the Cinnaman and Keno claims, he worked in 1969 with the help of C. Nicholson. Operations were hampered by the presence of permafrost and the low water level, nevertheless 50,000 cubic yards of gravel and overburden were moved and sluiced. Recovery for 1969 totalled 56.78 ounces. No gold production was reported in 1970 but the seven claims were renewed.

J.C. Cooper
Dawson, Yukon Territory.

J.C. Cooper mined on his Bonanza Creek property in 1969 and recovered 23.39 ounces on which he paid royalty tax. In 1970, he explored his Eldorado claims with intention of starting mining of these in 1971.

A.T. Fry — 115 O 11
Dawson, Yukon Territory. — (63°37'N, 139°22'W)

References: Green (1966, pp. 94-95); Findlay (1967, p. 75; 1969a, p. 75; 1969b, p. 55).

Mining in the Grand Forks vicinity on Bonanza Creek, A.T. Fry in 1969 paid royalty tax on 127.85 ounces of gold and prepared ground for 1970 by bulldozing and ground sluicing. A monitor is used to remove the topsoil after which the gravel is fed into the sluice using a D-7 bulldozer. By August 1970, 8,000 bedrock square feet had been cleared and yielded 12 ounces of fine gold. The total 1970 production on which royalty tax was paid was 34.95 ounces.

F. Perret
Dawson, Yukon Territory.

References: Skinner (1962, p. 10); Green and Godwin (1963, p. 47; 1964, p. 58); Green (1965, p. 59; 1966, p. 96); Findlay (1967, p. 76; 1969a, p. 97; 1969b, p. 56).

In 1969 and 1970, F. Perret was active on his Bonanza Creek claims repairing equipment and stripping 30,000 bedrock square feet of ground with two TD-18 bulldozers for the 1971 season. No production values were reported for either of these years.

Gold Bottom Creek

O. Lunde
Dawson, Yukon Territory.

115 O 15
(63°55'N, 138°59'W)

References: Skinner (1961, p. 12; 1962, pp. 11-12); Green and Godwin (1963, pp. 49-50; 1964, p. 60); Green (1965, p. 60; 1966, pp. 98-99); Findlay (1967, p. 77; 1969a, pp. 99-100; 1969b, p. 58).

O. Lunde holds 13 claims on Gold Bottom Creek, two of which, numbers 12 and 13, he mined in 1969 and 1970. Using a D-6 bulldozer and water stored in a head pond with a manual gate, Mr. Lunde usually mines 12 to 15,000 bedrock square feet per cut, averaging about 30¢ per bedrock square foot. In 1969, he mined 45,000 bedrock square feet and recovered a total of 380 ounces of gold. In 1970, his production was 237.72 ounces from 42,000 bedrock square feet.

M. Crockett
Dawson, Yukon Territory.

115 O 15
(63°54'N, 138°59'W)

References: Skinner (1961, p. 10; 1962, pp. 11-12); Green and Godwin (1963, p. 50; 1964, pp. 60-61); Green (1965, p. 60; 1966, p. 99); Findlay (1967, p. 77; 1969a, p. 100; 1969b, p. 58).

In August, 1967, M. Crockett acquired claims 29 to 38 above the mouth of Gold Bottom Creek as well as the upper 500 feet of Discovery claim from B. Bratsberg. He has been operating a D-8 bulldozer-sluicing plant on the creek since then. In 1969, Mr. Crockett recovered 403 ounces of gold from 5 cuts totalling 54,000 bedrock square feet. The 1970 production was 357 ounces from 70,000 bedrock square feet.

Mr. Crockett also filed the assessment work required under Section 92 (10) Yukon Placer Mining Act and made application to record two placer claims within his prospecting lease on Sulphur Creek.

Dominion Creek

I. Norback
Dawson, Yukon Territory.

115 O 15
(63°47.8'N, 138°36.2'W)

References: Findlay (1969a, p. 101; 1969b, p. 59).

In 1969, I. Norback mined 25,000 bedrock square feet on his claim number 77 Below Lower Discovery on Dominion Creek and also worked on his prospecting lease covering the ground formerly owned as claims 143 to 150 Below Lower Discovery by the Yukon Consolidated Gold Corporation Limited. The total 1969 production was 183.27 ounces. In 1970, Mr. Norback staked five placer claims within his prospecting lease, renewed claims 77 and 146 Below Lower Discovery and registered two transfers of claims. His total 1970 recovery was 99.07 ounces.

S. Prohaszka

115 O 15
(63°46'N, 138°31.5'W)

In 1969, S. Prohaszka, working on a lay agreement from Walter Troberg, mined ground on Dominion Creek prepared in the fall of 1968, and prepared ground for 1970. Shortage of water was the main problem on this creek all season. Production in 1969 was 178.00 ounces and in 1970, 332.44 ounces.

A. and N. Burgleman
Dawson, Yukon Territory.

115 O 15
(63°49'N, 138°49'W)

References: Skinner (1961, p. 11; 1962, p. 12); Green and Godwin (1963, p. 52; 1964, pp. 61-62); Green (1965, p. 61; 1966, p. 100); Findlay (1967, p. 77; 1969a, p. 100; 1969b, p. 58).

Mr. and Mrs. Burgleman continued mining in 1969 and 1970 on their claims on Dominion Creek. In 1969, a total of 30,000 cu yds of gravel were moved and royalty tax was paid on 235.87 ounces of gold. In 1970, the tax was paid on approximately 340 ounces of gold.

Hunker Creek

A. Kosuta

116 B 3
(app. 64°00.5'N, 139°05'W)

A. Kosuta owns five claims on Eighty Pup, a tributary of Hunker Creek, which he works using a D-6 bulldozer and a sluice box. In 1969, he started work early in May and finished late in October, stripping, mining, and additionally clearing and damming a 4-mile ditch. His work on the No. 1 and No. 2 claims produced 142.87 ounces of gold. In 1970, the production was 143.57 ounces.

B. Bratsberg
Dawson, Yukon Territory.

(a) 115 O 14
(63°47'N, 139°05'W)
(b) 115 O 15
(app. 63°58'N, 138°58'W)

In 1969, B. Bratsberg mined on Little Blanche and Quartz creeks (a). A total of 177,777 cu yds of gravel were processed by ground sluicing and bulldozer stripping. Royalty tax was paid on a total of 233.02 ounces of gold

In 1970, Mr. Bratsberg moved to his ground on Hunker Creek (b) where mining was carried out using one D-8 bulldozer to feed the sluice and a dragline to clear the tailings.

Allgold Creek

K and S Placers
Whitehorse, Yukon Territory.

115 O 15
(63°56'N, 138°37.5'W)

References: Skinner (1962, p. 14); Green and Godwin (1963, p. 56; 1964, p. 66); Green (1965, pp. 63-64; 1966, pp. 103-104); Findlay (1967, p. 79; 1969a, p. 103; 1969b, p. 60).

K and S Placers, owned and operated by M. Kinakin, leases the Discovery and 1 to 10 Above on Allgold Creek from Consolidated Brewis Minerals Limited and owns the claims 11 to 30 Above. Work by M. Kinakin in 1969 consisted of mining on claims 9 and 10 Above and the preparation of ground for 1970. Production was 379.94 ounces. Mining in 1970 lead to the recovery of 106.98 ounces.

Gold Run Creek

Gold Run Placers Limited
Dawson, Yukon Territory.

115 O 10
(63°43.5'N, 138°41'W)

Gold Run Placers, owned and operated by J. Lamontagne and E. Schink, leases claims 36 to 51 on Gold Run Creek from the Yukon Consolidated Gold Corporation. In 1969, work was carried out on claim No. 39, two D-6 bulldozers being used in mining and stripping ground for 1970. Total production for the 1969 season was 1,004.22 ounces of gold. In 1970, mining was stopped in August after six clean ups which produced 844.80 ounces. The estimated grade of the deposit is 12¢ to 16¢ per bedrock square foot.

Mr. Lamontagne also owns a 28 claim property on Eldorado Creek and Chief Gulch which he obtained from J.P. Castonguay in June, 1970.

Consolidated Mines (Yukon) Limited
Dawson, Yukon Territory.

115 O 15
(63°42'N, 138°36'W)

References: Findlay (1969a, pp. 101-102; 1969b, p. 59).

Consolidated Mines (Yukon) Limited, owned by L.M. Ross and T. Matson, continued work on the leased claims 8 to 32 Above on lower Gold Run Creek. Using two D-8 bulldozers to feed the sluice boxes and a Bucyrus Erie 37-B dragline to remove tailings, the two men recovered 1,000 ounces of gold from 190,000 bedrock square feet in 1969. Work was hampered by a lack of water and a short season lasting from late April to early September. By September 21st, 1970 Mr. Ross had finished mining the Gold Run Creek property and was preparing to move to Eureka Creek. Total production in 1970 was 691.20 ounces.

Last Chance Creek

J. and I.C. Bremner
Dawson, Yukon Territory.

116 B 3
(64°00'N, 139°07'W)

In 1969, the Bremners worked with monitor and sluice box on their bench claim on Dago Hill, Last Chance Creek. A total of 240 ounces were recovered from a cut up to 35 feet deep and covering an area of 10,000 bedrock square feet.

In 1970, working with one hired man and the same equipment, Mr. Bremner produced 231.30 ounces of gold.

Adams Creek

H.C. and D.F. Boutillier
Dawson, Yukon Territory.

115 O 14
(63°55'N, 139°21'W)

References: Skinner (1961, p. 9; 1962, pp. 9-10); Green and Godwin (1963, p. 46; 1964, p. 57); Green (1965, p. 58; 1966, p. 95); Findlay (1967, p. 75; 1969a, pp. 95-96; 1969b, p. 56).

In 1969, the Boutillier brothers worked on Adams Creek, where they own 11 claims, and on claims 11, 13 and 27 on Eldorado Creek. A total of 17,000 cu yds of gravel were processed, yielding an unknown amount of gold. In August, 1970, mining was being carried out on Adams Creek with the use of a monitor to remove the gravel from the hillside and a TD-40 tractor to feed the sluice and stack the tailings. Water for both the sluice and the monitor is pumped from the creek through a "T" valve which controls the water at the pump. The royalty tax was paid on 77.57 ounces of gold in 1970.

Quartz Creek

A. Sailer
Dawson, Yukon Territory.

115 O 14
(63°47'N, 139°06'W)

References: Green (1965, p. 62; 1966, p. 102); Findlay (1967, p. 79; 1969a, p. 102; 1969b, p. 60).

Between late April and early October, 1969, A. Sailer worked 20,000 cubic yards of gravel and overburden using a D-6 bulldozer on his ground on Quartz Creek and recovered 85.94 ounces of gold. Production in 1970 was 219 ounces.

SIXTYMILE AREA

Miller Creek

O. and D. Medby
Dawson, Yukon Territory.

References: Green and Godwin (1964, pp. 69-71); Green (1965, pp. 66-67; 1966, p. 108); Findlay (1967, p. 80; 1969a, p. 104; 1969b, p. 61).

O. and D. Medby presently hold two claims on the Sixtymile River and five claims on Miller Creek, including the Discovery Bench claim. In 1969, F. Chudy and J. Simcox sank a 5 x 5-foot shaft 45 feet to bedrock on the Miller Creek property. Then, using a mucking machine, a jackleg drill and a compressor they drifted along a pay streak, recovering 45 ounces. No work was reported during the 1970 season but the claims were renewed.

E. Greenly

116 C 2
(app. 64°01'N, 140°50'W)

Mr. Greenly holds ground on the two adjacent Miller and Glacier creeks. Work in 1969 on the Glacier Creek property led to the recovery of 6.5 ounces of gold. In 1970, gravel was hauled 200 feet from the bench to the sluice on Miller Creek and fed in using a John Deere tractor. Production in 1970 was 35.00 ounces.

Glacier Creek Placers
Dawson, Yukon Territory.

116 C 2
(64°02.2'N, 140°49'W)

Glacier Creek Placers, owned by M.G. Grenier, E. Faucher and L. Grimard, hold 15 claims on Glacier Creek, starting at a point about ½ mile upstream from Glacier Creek P.O. (abandoned). Using two D-6 bulldozers, M.G. Grenier recovered 347 ounces of gold in 1969 from cuts totalling 30,000 bedrock square feet. The operations were hampered by a lack of water and the necessity to prepare frozen ground for the 1970 season. The water level was still low in August, 1970, by which time the operators had made three clean-ups. Royalty tax was paid on 196.39 ounces for the 1970 season; 37.57 ounces

of gold were also recovered from the Sixtymile River property of Glacier Creek Placers.

J. Lynch — 116 C 2
Dawson, Yukon Territory. — (64°02'N, 140°53'W)

References: Green (1965, p. 67); Findlay (1969a, p. 105, 1969b, p. 61).

J. Lynch owns 11 claims on Glacier and Big Gold creeks. In 1969, he mined and prepared ground for the 1970 season on the Faucher Discovery claim on Glacier Creek. Using a D-7 bulldozer to feed sluice box and stack tailings, Mr. Lynch recovered 206.90 ounces of gold in 1969 and 147 ounces in 1970.

MAYO MINING DISTRICT

HAGGART CREEK AND DUBLIN GULCH AREA

Haggart Creek

Spruce Creek Placers — 106 D 4
Mayo, Yukon Territory. — (64°01'N, 135°51'W)

References: Skinner (1961, p. 15; 1962, p. 18); Green and Godwin (1963, pp. 57-58; 1964, pp. 74-75); Green (1965, pp. 70-72; 1966, pp. 110-112); Findlay (1967, pp. 82-83; 1969a, p. 106; 1969b, p. 62).

Spruce Creek Placers, acquired in 1969 by K. Djukastein from J.M. Acheson, F.M. Wilson and W.L. Drury, holds a 22 claim lease from the E.H. Barker estate on Haggart Creek and the 2-mile prospecting lease No. 2806. The property has been mined since 1953 by Spruce Creek Placers and for the last two years by K. Djukastein. His production in 1969 totalled 1,670 ounces from 140,000 bedrock square feet and in 1970 he paid royalty tax on 1,283 ounces.

Dublin Gulch

F. Taylor
Mayo, Yukon Territory.

106 D 4
(64°02'N, 135°50'W)

References: Skinner (1961, p. 14; 1962, p. 17); Green and Godwin (1963, pp. 59-60; 1964, pp. 76-77); Green (1965, pp. 72-73; 1966, pp. 112-113); Findlay (1967, p. 83; 1969a, p. 107; 1969b, p.63).

F. Taylor owns property on Haggart Creek and its tributary, Dublin Gulch. The seven claim property extending upstream from the mouth of Dublin Gulch has been mined intermittently by Mr. Taylor since 1937.

In 1969, a total of 800 ounces of gold were recovered from 50,000 bedrock square feet on Dublin Gulch. Production in 1970 was restricted to Dublin Gulch and totalled 208.00 ounces.

HIGHET CREEK AREA

Highet Creek

E.C. Bleiler
Mayo, Yukon Territory.

115 P 16
(63°45.5'N, 136°09'W)

References: Skinner (1961, pp. 15-16; 1962, p. 19); Green and Godwin (1963, pp. 60-61; 1964, pp. 78-79); Green (1965, pp. 73-76; 1966, pp. 113-114); Findlay (1967, pp. 83-84; 1969a, p. 108; 1969b, pp. 63-64).

E.C. Bleiler held 34 placer claims on Highet Creek in 1968. On this property, stripping and mining are accomplished by a monitor system using water routed through a ditch that taps Highet Creek further upstream. In 1969 and 1970, Mr. Bleiler paid royalty tax on 493.5 and 391.75 ounces of gold respectively.

SOURDOUGH HILL AREA

Thunder Gulch

Bardusan Placers Limited
Mayo, Yukon Territory.

105 M 14
(63°54.5'N, 135°15'W)

References: Findlay (1969a, pp. 111-112; 1969b, pp. 64-65).

H. Barchen, owner and operator of Bardusan Placers Limited, owns eight claims on Thunder Gulch, a tributary of Lightning Creek on the northwest flank of Sourdough Hill. Barchen started mining in mid 1967, producing 300 ounces in 1968 of which over half was jewellery grade. In 1969, he recovered and payed placer royalty on 232 ounces while the 1970 production was 272 ounces. In 1969, Barchen obtained a prospecting lease on the ground above his claims to protect his future hold on the creek.

WHITEHORSE MINING DISTRICT

KLUANE LAKE AREA

Burwash Creek

S. Kinakin — 115 G 6 (app. 61°22'N, 139°17'W); 115 O 15 (app. 63°56'N, 138°59'W)

Sonya Kinakin was active in two areas over the 1969 and 1970 seasons. Production from Burwash Creek in 1969 was 30.5 ounces. In 1970, production from Burwash Creek was 42.68 ounces and from Gold Bottom Creek, 59.02 ounces.

Burwash Mining Company Limited — (61°22.5'N, 139°17'W)

H. Besner owner and operator of Burwash Mining Company Limited, mined claims in virgin ground on Burwash Creek in 1969 with the help of two employees. Approximately 800 crude ounces were recovered. A Bucyrus Erie 22-B 3/4 yard shovel is used to feed the sluice. Tailings are stacked with a D-7 and D-8 bulldozer.

The assets of the company were sold to J. Doran of Oregon who mined the property in 1970. Four men, working on 90-foot by 90-foot centre cuts, recovered about 183 ounces during the 1970 season.

Bullion Creek

H. Thorsen — 115 B 15 (60°58.5'N, 138°39'W)

References: Skinner (1961, p. 17; 1962, p. 21); Green and Godwin (1963, pp. 62-63); Findlay (1967, p. 87; 1969a, p. 113; 1969b, pp. 65-66).

H. Thorsen holds fourteen claims on lower Bullion Creek below the mouth of Wolf Creek. Using a D-7 bulldozer and feeding an average of three cubic yards of dirt into the sluice at one time, Mr. Thorsen moves about 15,000 cubic yards per season from 100 foot square cuts. His production in 1969 and in 1970 was approximately 100 ounces each year.

COAL MINING AND EXPLORATION

WHITEHORSE MINING DISTRICT

NIAMODLAOC MOUNTAIN COAL PROSPECT
Norman H. Ursel Associates Limited
Suite 7 - 2395 Cawthra Road
Mississauga, Ontario.

Coal
115 G 6 SE 1/4
(61°16'N, 139°07'W)
115 G 3 NE 1/4
(61°14'N, 139°06'W)

References: Cairnes (1915); Muller (1967); Nandi, Speelman and Montgomery (1971).

Licences: Territorial Coal Exploration Licences No. 14 and 18

Location and Access:

The licence areas lie south of the Alaska Highway at the headwaters of Halfbreed and Ptarmigan creeks. Area is accessible by roads from the Alaska Highway up Ptarmigan and Halfbreed creeks, the latter road leaving the highway at Mile 1088.

History:

Cairnes (1915) stated that 12 seams of lignite coal occur in the rocks on Amphitheatre Mountain; rocks now referred to as the Amphitheatre Formation.

Description:

The Amphitheatre Formation (unit 20, Muller, 1967) consists of Paleocene or Eocene clastic sedimentary rocks - conglomerates, sandstones, siltstones, shales and coal, as well as the poorly consolidated equivalents of these. There is a rough trend of decrease of coarse clastic material and increase of coal upwards.

St. Clair volcanic rocks, mostly basalt, overlie the Amphitheatre Formation. Sills and dykes intrude these older Tertiary rocks. The sequence is gently folded.

Current Work and Results:

During the 1970 field season coal seams were examined at several localities on the western side of Niamodlaoc Mountain. Channel samples were taken at the northernmost locality, where earlier workers had described a 6 foot and a 3 foot seam present in an interval of 22.5 feet. Additional coal occurrences were found to the south. In an adjacent creek, where downslope movements made measurements uncertain, company geologists believe there are at least 4 coal seams present, with an aggregate thickness of 12 feet, the thickest being 5 feet. Two and one half miles to the south of these occurrences, at a similar stratigraphic position, 3 seams are present with an aggregate coal thickness of 13 feet in a 50 foot interval.

Some 650 to 800 feet stratigraphically lower than those described, a coal seam was discovered divided by a sill of partly altered andesite with 11 feet of coal below the sill and 3 feet above. Channel samples of coal and altered coal were taken, and in conjunction with the Fuels Research Centre, Department of Energy, Mines and Resources, Ottawa, a study of the natural carbonization (Nandi, Speelman and Montgomery, 1971). Carbonaceous matter forms thin margins in dykes which are probable feeders of the sill. Prospecting dykes for the presence of this carbonaceous matter, thought to represent condensate of distilled coal tar, may be a useful coal exploration technique elsewhere in this area.

Lump resin is common in the coal seams examined. A preliminary test of solubility and melting point indicates that the resin may be satisfactory raw material for use in the manufacture of printing ink.

NORMAN H. URSEL ASSOCIATES LIMITED
Suite 7 - 2395 Cawthra Road
Mississauga, Ontario.

Coal
115 I 1, 8, 115 H 16
105 E 5

References: Bostock (1936); Cairnes (1910).

Location and Access:

Several prospects in the Carmacks and Laberge map-area were examined, using the Whitehorse-Dawson Road and the Yukon River for access.

History:

Coal has been described at various localities, occurring in the upper part of the Laberge Group and in the overlying Tantalus Formation (Cairnes, 1910; Bostock, 1936). Coal was produced from the Five-Finger Mine for sale in Dawson City in the very early 1900's. Some development work was done from 1906 to 1908. Coal was also produced from the Tantalus Mine at this time.

Description:

1. Probable upper Laberge sandstone outcrops at the mouth of Tatchum Creek, 12 miles north of Carmacks. Coaly plant fragments are present in the sandstone, but no coal float or seams were found.

2. At the old Five-Finger Mine, 8 miles north of Carmacks, two coal seams are present, in the upper part of the Laberge Group, interbedded with a prominent dolomitic limestone and a fine-grained sandstone. The lower of the two seams mined at the turn of the century is roughly 3½ feet thick.

3. At the old Tantalus Mine at Carmacks, an 18-foot coal seam occurs in the Tantalus Formation.

4. South of Carmacks, rocks mapped by Cairnes (Map 10A, 1910) contain thin coal beds locally thickened to 5 feet. The coal is intensely deformed, having acted as an incompetent layer between gently folded sandstone and conglomerate.

5. Southwest of Braeburn Lake in the area covered by Territorial Coal Exploration Licence No. 14 (105 E 5 - NW ½) the Laberge Group is folded about northwest trending axes and the stratigraphic interval which is coal bearing to the west (see p. 157, on Teslin Exploration Limited) probably occurs in Licence area 14 as there is a covered stratigraphic interval of up to 3,000 feet between Laberge conglomerate and the lowest Tantalus Formation rocks, which do overlie coal bearing rocks.

Current Work and Results:

In a 3 month period, during the 1970 field season, coal occurrences as well as stratigraphic sections containing these were measured and described. The marker horizons of sandstone and limestone recognized at the old Five-Finger Mine as being closely associated with the coal may prove useful in correlation.

TANTALUS BUTTE MINE — Coal
Anvil Mining Corporation Limited — 115 I 1
Faro, Yukon Territory. — (62°08'N, 136°16'W)

References: Bostock (1936a, pp. 59-62); Wheeler (1961, p. 74); Green (1966, pp. 121-122); Findlay (1967, p. 88; 1969a, p. 15; 1969b, pp. 66-67).

Location and Access:

The mine and storage facility are 4 miles north of the community of Carmacks on the right limit of the Yukon River, and less than one-half mile from the Whitehorse-Mayo Road.

History:

The mine operated from about 1923 until 1967, being owned from 1947 on by the Yukon Coal Company. Main use for the coal was as heating fuel for United Keno Hill Mines operations at Elsa. Maximum annual production was 14,113 tons (1954).

Description:

The coal occurs in the Tantalus Formation of Upper Jurassic (?) and Lower Jurassic age, consisting of conglomerate, with lesser amounts of sandstone, shale and a few coal seams (Bostock, 1936a, p. 74). The main seam ranges from 8 to 20 feet thick, strikes north and dips from 45 to 59 degrees W. It is cut by northeast trending, steeply southeasterly dipping faults. The coal is a high volatile (30 - 35 per cent) bituminous with a calorific value of from 11,000 to 12,700 btu. All samples are agglomerating and have a swelling index of 1 (ASTM). Coals of this type are not suitable for making metallurgical grade coke (Green, 1966, p. 124).

Current Activity:

In 1968, Anvil Mining Corporation Limited purchased the assets of the Yukon Coal Company and returned the property to production in July of 1969. Underground workings were rehabilitated and a 175 ton tipple was built. Following a breaking-in period, production was consistently about 80 tons per day during late 1969 and 1970. Production is to be increased to greater than 100 tons per day during 1971. The coal is back hauled by the concentrate trucks on their return from Whitehorse to the Anvil Mine. The coal is used by Anvil Mining Corporation to fire the concentrate driers and to heat the plant.

TANTALUS COAL PROJECT
Atlas Explorations Limited
330 - 355 Burrard Street
Vancouver, British Columbia.

Coal
105 L 2
105 E 15
(62°00'N, 134°47'W)

Reference: Bostock and Lees (1938).

Licences: Territorial Coal Exploration Licences No. 6, 7, 8 and 9

Location and Access:

The area covered by the licences lies just east of the junction of the Yukon and Big Salmon rivers. Helicopters were used for servicing the exploration program during 1970; however, access by boat along the Yukon River to Big Salmon (abandoned) is also feasible.

History:

The area was mapped by E.J. Lees in 1931 (Bostock and Lees, 1938).

Description:

The area covered by the licences is mostly subdued, with gentle hills rising 2,000 feet above the broad, alluvium- and glacial debris-filled valleys. The area examined, the Tantalus Basin, is underlain largely by clastic sedimentary rocks of Mesozoic age. Other than a small area of Yukon Group schist, the oldest known rocks are limestones and cherts of the Lewes River Group (Upper Triassic). Unconformably above these are the conglomerates, sandstones and coal of the Laberge Group (Jurassic) and the conglomerates, sandstones and coal of the Tantalus Formation (Upper Jurassic and Lower Cretaceous). Thin stringers of coal occur interlaminated with siltstone.

Current Work and Results:

Two men mapped at 1:50,000 scale for two months in the licence area. Coal as float and in thin seams was found on Jumpont Creek, 10 miles northeast of the site of Big Salmon.

TESLIN EXPLORATION LIMITED
Box 8592, Station F
Calgary, Alberta.

Coal
115 H 8, 105 E 5
(61°18'N, 136°02'W)

References: Bostock (1934, Map 372A); Cairnes (1910).

Licences: Territorial Coal Exploration Licences No. 10, 11, 12

Location and Access:

The area covered by the three licences is approximately 50 miles north of Whitehorse in the western Laberge (105 E 5) and eastern part of the Aishihik (115 H 8) map-areas; each licence covering 46,012 acres. The coal outcrop examined on Division Mountain is 18 miles southwest of Braeburn Lodge (Mile 55 on the Dawson Highway) and immediately east of the Nordenskiold River. Terrain is the hilly topography of the Yukon Plateau with local relief of about 1,500 to 2,000 feet.

History:

D.D. Cairnes of the Geological Survey of Canada visited the area in 1907, having as one of his objectives the discovery and description of possible coal occurrences. E.J. Lees (1938), also of the Geological Survey of Canada, mapped part of the Laberge area (in which is licence area No. 12 of Teslin Exploration Limited). Cairnes discovered coal outcrops on Division Mountain and on Red Ridge, four miles to the northwest.

Description:

The rocks of the area belong to the Laberge Group (Jurassic) and the Tantalus Formation (early Cretaceous). The Laberge here consists of sandstone to fine conglomerate with some intercalated shales and coal. Some highly ferruginous conglomerate is regarded as belonging to the Tantalus Formation. In 3,000 feet of section in the Laberge Group, the strike is consistently north 50° west and the dip 60° to 70° southwest. The company view is that the known coal seams are in the uppermost part of the Laberge Series, perhaps within 500 feet of the overlying Tantalus conglomerate.

Current Work and Results:

A series of seven trenches, a total of 550 feet, were dug over the Division Mountain coal occurrence, using a D-6 and a D-7 bulldozer. Four were dug along the coal seams in an attempt to obtain the freshest possible material for sampling. The deepest samples were taken from about 18 feet below the present surface. Three trenches were dug across the coal measures to obtain thickness measurements. The coal occurs over a stratigraphic interval of 1,000 feet with the 150-foot trenched interval having an aggregate coal thickness of 61 feet. Limited analyses available indicate the coal to be a low sulphur, good quality steam coal. Based on the work described, the inferred reserves amenable to strip mining, are 40,000,000 tons (Teslin Exploration, personal communication).

When visited by this writer in August, 1970, the trenches were complete. The coal seams strike north 40° west and dip from 65° west to vertical. The beds are offset by vertical faults which trend north 15° east, along which there has been horizontal movement of 20 to 30 feet.

WHITEHORSE COAL AREA
Luscar Limited
918 Royal Bank Building
Edmonton, Alberta.

Coal
105 D 6 NW ¼, NE ¼
105 D 11 SW ¼
(60°30'N, 135°15'W)

References: Cairnes (1908; 1912); Wheeler (1961).

Licences: Territorial Coal Exploration Licences No. 3, 4, and 5, total area 142,045 acres.

Location and Access:

The area underlain by coal-bearing rocks is 15 miles southwest of Whitehorse, physiographically in the transition zone between the Coast Mountains to the southwest and the Yukon Plateau to the northeast. Valleys are wide and fairly flat, the lower slopes of the mountains steep, and the uplands gently rolling. Glacial debris is abundant up to 6,000 feet.

Most convenient access is by helicopter from Whitehorse, however, vehicles can get to within 1 or 2 miles of the coal outcrops by way of an 11-mile bush road which leads west from Robinson, 22 miles south of Whitehorse on the Carcross Road.

History:

Coal has been known in the area southwest of Whitehorse since the turn of the century. Discoveries, reported by McConnell in 1900, were surveyed in 1901. By 1906, three seams, reported by Cairnes (1908) to be 2'6", 10'4" and 9'8", were known. A 60-foot adit was driven on one seam and numerous test pits and trenches were dug.

Description:

A northwest trending, 12-mile long wedge of non-marine Tantalus Formation (Upper Jurassic and Lower Cretaceous) rocks is downfaulted between Laberge Group (Lower Jurassic and later) sediments on the northeast and volcanic rocks, converted to greenstone, of the Upper Triassic Lewes River Group on the southwest. The Laberge and Tantalus rocks dip steeply northeast and form the southwest limb of the Fish Lake syncline. The Tantalus Formation here consist of quartz and chert pebble conglomerate having an arkosic matrix, arkose and minor black shale. The coal seams are associated with the black shale part of the sequence. The Tantalus section here is estimated to be from 500 feet thick at the point of the wedge in the northwest, to possibly 5,500 feet in the southeast. This last section may involve repetitions of strata due to faulting. Where the coal seams were examined, near the central part of the belt, stratigraphic thickness is about 1,800 feet.

Current Work and Results:

One month was spent in field work, on behalf of Lusear Limited, during the 1969 season, with the objects of verifying data from the old reports, determining whether there was sufficient coal to be of current interest, and establishing whether any of such coal could be strip mined.

The coal members were traced discontinuously for roughly 7½ miles. At two places, 1½ miles apart, three seams were found within the same stratigraphic interval. The best seam measured and sampled is slightly greater than 6 feet thick and is a low quality, high ash anthracite.

Appendix A

Reports accepted for assessment credit - 1969 and 1970

Coordinates and N.T.S.	Property, Company and Author	Date Filed	Work
60-21-127-25 95 D 6	MEL Winco Mining & Exploration Ltd. Geo-X Surveys Ltd.	25/11/69	Airborne mag
60-07-130-26 105 B 1	LUCK, MORN, SUSAN, ZORO, SWAN, HOT Silver Seven Explorations Ltd. P.H. Sevensma	28/10/70	Geol mapping, soil sampling, trenching, Core logging
60-10-131-15 105 B 3	DAN, MOD Boswell River Mines Eagle Geophysics Ltd.		I.P., Resistivity and E.M.
60-10-131-15 105 B 3	DAN, MOD Boswell River Mines Eagle Geophysics Ltd.	20/09/69	Geophysics, E.M.
60-44-130-04 105 B 9	RUTH Wye Lake Resources A.S. Ashton	19/10/70	Geological
60-55-133-35 105 C 13	NW, RH, XY Northwest Explorers (1967) Ltd. D.C. Mitchell	22/10/70	Geochem soil survey
60-55-133-35 105 C 13	NW Northwest Explorers (1967) Ltd. R.G. Hilker	13/04/70	Geochem
61-00-133-45 105 C 13	MAC McGregor Telephone & Power Construction Co. Ltd. K. Warren Geiger	1/05/70	Geochem Rec
60-55-133-00 105 C 14	LINDSAY Trans Yukon Exploration Ltd. Eagle Geophysics Ltd.	16/09/69	Geophysics
60-55-133-00 105 C 14	LINDSAY Trans Yukon Exploration Ltd. P.H. Sevensma	13/03/69	Geological (summary)
60-55-133-00 105 C 14	LINDSAY Trans Yukon Exploration Ltd. R.G. Hilker	16/09/69	Physical, Geophysics

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60-55-133-00 105 C 14	LINDSAY Trans Yukon Exploration Ltd. R.G. Hilker	16/09/69	Geochem Interpretation
60-00.5-134-33 105 D 2	LULU Premier Mining Corp. Ltd. R.G. Hilker	14/10/69	Mag and Geochem
60-05-135-00 105 D 2	ROY, ERIC Mogar Mines Ltd. Hugh Sutherland	11/07/69	Geophysical, E.M.
60-37-134-09 105 D 9	WIND R.G. Hilker	19/11/69	Property examination
60-35-134-45 105 D 10	GORD, HALL, JELLY, BRISTOL, STAR, OTTER, NECK,TIZA, WOLF, MEB Wolf Creek Mines R.W. Cannon	1/12/70	Geophysical
60-35-134-45 105 D 10	TOPAZIOS, DOBIE, SHACK, LAW, COPPER, SHAFT, OROT, DAVE, HELL, RUTH Topazios Mining & Exploration Co. Ltd. Canex Aerial Exploration Ltd.	30/10/70	Geophysical
60-35-134-45 105 D 10	AZ, AC, AD, BC, CC, AF, EZ, TOADSTOOL, RED DEER, HULK, PUTA, HILK, CUB Lewes River Mines Ltd. F.W. Cannon	13/01/71	Geophysical, I.P.
60-40-135-00 105 D 10, 11, & 14	COWLEY PARK, WAR EAGLE, BEST CHANCE New Imperial Mines Ltd. D. Tenney	18/01/71	Geochem survey
60-45-135-14 105 D 11, 14	MIKE Trans Western Investments Peter E. Walcott	17/07/70	Geological, geophysical, I.P. & Mag

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60-45-135-14 105 D 11, 14	MIKE Dawood Mines Ltd. Peter E. Walcott	17/07/70	I.P., Mag.
60-46-135-10 105 D 14	MAN Ambassador Mines Ltd. Harvey H. Cohen	26/05/69	Airborne Geophysics
60-15-137-15 115 A 6	KEL Kel-Glen Mines Ltd. Wm. Dollery-Pardy	16/09/69	Geology, Geophysics Geochem
60-30-137-35 115 A 12	MAG, JOY, JEAN, STOCK STAR, TRSS Kathex Mines Ltd. J.B Baird	10/03/70	Turam survey
61-08-128-40 105 H 2	KF, DF, FLIP Montana Mines Ltd. (N.P.L.) Montana Mines Ltd. (N.P.L.)	5/09/69	Geochem, Geophysics
61-15-128-40 105 H 2, 7	RENO Nebco Oils Ltd. R.G. Hilker	26/06/70 3/07/70	Geochem
61-25-128-25 105 H 8	BRYAN Norquest Joint Ventures Crest Laboratories (B.C.) Ltd.		Geochem
61-28-131-46 105 G 5	BELL Caltor Syndicate A.C. Ogilvy, P.N. Tredger	3/11/70	Mapping, Sampling
61-40-130-55 105 G 10	BOT Atlas Explorations Ltd. K.M. Dawson	3/08/70	Mag, Geophysical
61-40-130-55 105 G 10	BOT Atlas Explorations Ltd. K.M. Dawson	3/08/70	Geol mapping
61-29-132-26 105 F 8	CPA, MIN Charta Mines Ltd. R.G. Hilker	23/11/70	Geological
61-52-132-25 105 F 14	CAB Atlas Explorations Ltd. J.M. Bremner	8/12/69	Geochem
61-52-132-25 105 F 14	CAB Atlas Explorations Ltd. J.M. Bremner	11/12/69	Geological

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61-52-132-53 105 F 15	JN Silver Chief Minerals Ltd. Roving Exploration Services Ltd. John T. Coor	7/04/70	Gravimetric survey
61-12-134-11 105 E 1	BEAVER, MINK The Colorado Corp. P.H. Sevensma	17/07/70	Geol mapping, Geochem soil sampling, line cutting, Mag
61-29-136-45 115 H 7	KL Mitsubishi Metal Mining Co. Toru Kikuchi	23/06/70	Geol, Geochem
61-25-139-30 115 G 5, 6	AMP Nicanex Mines Ltd. T.L. Sadlier-Brown E.D. Chisholm	4/02/71	Geochem
61-20-139-45 115 G 5	GOAT Newmar Explorations Ltd. W.R. Newman	25/09/70	Geol, Photo Geol
61-23-139-25 115 G 6	CORK Imperial Oil Enterprises Canadian Industrial Gas and Oil Ltd. Bow Valley Land Co. Imperial Oil Enterprises	9/10/69	Geological
61-29-138-12 115 G 8	ED, ADD Phelps Dodge Corp of Canada F.M. Smith	15/03/71	Geol, Geochem
61-28-138-08 115 G 8	'A', 'B', 'K' Phelps Dodge Corp. of Canada Phelps Dodge Corp. of Canada	15/03/71	Geol, Geochem
61-41-139-21 115 G 11	CAM Arrow Inter-America Corp. J. Mackie	27/08/69	Geophysics
61-41-139-21 115 G 11	CAM Arrow Inter-America Corp. E.D. Chisholm	27/10/70	Geol, Geochem, Geophysics
61-51-138-34 115 G 15, 16	MAX Atlas Explorations Ltd. G.H.K. Pearse, D. Francis, D. Brabac	7/12/70	Geol, Geochem, Geophysical

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61-35-140-57 115 F 10	K-Cu White River Mines Ltd. (N.P.L.) Huntec	29/12/69	Geophysical on I.P. survey
61-50-140-33 115 F 15	LEP Imperial Oil Enterprises Richard W. Oddy	11/08/70	Geochem soil sampling
61-47-140-51 115 F 15	ORE Ronex Mines Ltd. R.E. Renshaw	13/04/70	Geological
62-40-126-45 95 L 10	RAY Cerro Mining of Canada Ltd. B.W. Smee, D. Mustard	16/10/70 6/11/70	Geochem soil survey
62-50-129-52 105 I 13	NOM Hudson Bay Exploration & Development Co. P. Slewchuk, R.T. McIntosh	2/04/70	Geochem
62-45-130-15 105 J 9	JOY Spartan Exploration Ltd. Spartan Exploration Ltd.	11/09/69	Geophysical
62-45-130-15 105 J 9	JOY Spartan Exploration Ltd. Spartan Exploration Ltd.	11/09/69	Geological
62-45-130-15 105 J 9	JOY Spartan Exploration Ltd. Spartan Exploration Ltd.	11/09/69	Geochem
62-20 to 62-30 133-00 to 133-30 - 105 K 6	ZAN, MX, AC, KO, TIM, JET Kangaroo Exploration Corp. Ltd. Peter F. Walcott	18/02/71	Geophysical, I.P.
62-05-132-31 105 K 2	SOUTH, EM Branta Explorations Ltd. P.H. Sevenema		Geol, Geochem
62-05-132-40 105 K 2	SANK, TOP Citex Mines Ltd. S.V. Ramani, S. Venkataramani	19/03/71	Mag
62-05-133-05 105 K 2	AL, FARGO, KIRK Sunset Mining Corp. Ltd. (N.P.L.) P.H. Sevenema	27/11/69	Geol, Geochem
62-20-133-30 105 K 5, 6	HILL, RUST Hecla Mining Co. Overland Exploration Services Ltd.	24/07/69	Gravity survey

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62-23-133-30 105 K 6	JO, RAE Kim Exploration Ltd. Canadian Aero Mineral Surveys Ltd.	8/12/69	Gravity survey
62-24-133-15 105 K 6	ZAN, JET, TIM, AC, MX Mercury Explorations Ltd. Robt. E. Chaplin	2/07/69	Gravity survey, Geochem
62-19-133-03 105 K 6	MUR Spartan Exploration Ltd. J.S. Vincent	28/07/70	E.M., Mag, Geophysical
62-21-132-48 105 K 7	OK Giant Explorations Ltd. (N.P.L.) Giant Explorations Ltd. (N.P.L.)	19/12/69	Geophysical, Geochem
62-38-133-20 105 K 11	OWL Atlas Explorations Ltd. M.E. Coates, J.S. Brock	5/11/70	Geochem, Geophysical
62-58-132-10 105 K 16	SOLO Hudson Bay Expl & Devel. Co. R.T. McIntosh	28/11/69	Geological mapping, and sampling
62-06-133-15 105 K 3	LYN Kerr Addison Mines Ltd. Overland Exploration Services Ltd.	15/09/70	Gravity survey
62-01-137-54 115 I 4	POT Amax Exploration Inc. Tom Gledhill	15/09/70	I.P.
62-01-137-54 115 I 4	POT Amax Exploration Inc. G.M. DePaoli, W.M. Dolan	15/09/70	Mag survey
62-01-137-54 115 I 4	POT Amax Exploration Inc. W. Lodder, T.J.R. Godfrey	15/09/70	Geol, Geochem
62-27-137-25 115 I 5	JOHNNY, CASH Atlas Explorations Ltd. W.J. Roberts, D. Brabec	27/11/70	Geol, Geochem
62-27-137-05 115 I 5	FROG International Mine Services International Mine Services	17/09/70	Geochem assesement

Coordinates and N.T.S.	Property, Company and Author	Date Filed	Work
62-30-138-00 115 I 5, 12 115 J 8, 9	APEX,PAT, KOOK Phelps Dodge Corp. of Canada R.G. Hilker	5/11/70	Geol, Geochem, Geophysical
62-23-137-30 115 I 6	KLAZAN Atlas Explorations Ltd. W.J. Roberts, D. Brabec	23/11/70	Geol, Geochem, Geophysical
62-15-136-54 62-15-137-15 115 I 2,3,6,7	BO, BRC Mead Resources Ltd. R.W. Phendler	11/12/70	Geol, Geochem
62-20-137-04 115 I 6	NS Mitsubishi Metal Mining Co. Ltd. Toru Kikuchi	23/06/70	Geol, Geochem
62-20-137-15 115 I 6	RAM, BOW Golden Gate Explorations Ltd. J.H. Montgomery, P.P. Nielsen	16/11/70	Geophysical, Geochem
62-22-136-42 115 I 7	BOY, MAN, MAC, DUN, WAR, WILL Archer, Cathro and Assoc. Ltd. A.R. Archer	15/03/71	Geol, Geochem
62-19-136-39 115 I 7	BF Mitsubishi Metal Mining Co. Ltd. Toru Kikuchi	23/06/70	Geol, Geochem
62-17-136-58 115 I 7	TINTA Coin Canyon Mines Ltd. G.C. Gutrath	25/08/70	Geochem soil sampling
62-20-136-25 115 I 8	ED E.O. Chisholm & W. Watmough E.O. Chisholm	23/12/70	Geochem, Geol
62-35-137-50 115 I 12	GB Alrae Engineering Ltd. Alrae Engineering Ltd.	8/10/70	Geochem sampling, Geol rec
62-38-137-55 115 I 12	HAYES Delta International Minerals Ltd. G.C. Gutrath	18/01/71	Geol, Geochem
62-38-137-55 115 I 12	HAYES Delta International Minerals Ltd. MacDonald Consultants Ltd.	4/05/70	Geochem analysis
62-38-138-02 115 J 9	DP Dawson Range Joint Venture Archer, Cathro & Assoc. Ltd.	24/04/70	Geochem sampling, Prelim Geol

Coordinates and N.T.S.	Property, Company and Author	Date Filed	Work
62-35-138-25 115 J 9	DR, PATSY Dawson Range Joint Venture R.J. Cathro	29/07/70	Geol mapping, Geochem sampling
62-33-138-16 115 J 9	CROCK Dawson Range Joint Venture R.J. Cathro	12/06/70	Geol sampling
62-42-138-10 115 J 9	HAY Nicanex Mines Ltd. (N.P.L.) T.L. Sadlier-Brown, E.O. Chisholm	16/10/70	Geochem
62-40-138-25 115 J 9, 10	CO Newmont Mining Corp of Canada Ltd. W.M. Odlan, C.P. Costin	25/05/70	Geophysical, Geochem
62-45-138-57 115 J 10	ZAPPA Dawson Range Joint Venture R.J. Cathro	25/08/70	Geochem sampling, Prelim Geol
62-44-138-59 115 J 10	MOTHERS Dawson Range Joint Venture A.C. Ogilvy	17/09/70	Bulldozer trenching, Geol & Mag surveys
62-40-138-52 115 J 10	CUB Cleveland Mining & Smelting G.S. Zimmer, G.G. Carlson	26/11/70	Geol, Geochem
62-41-139-00 115 J 10	GEP Glenlyon Mines Ltd. (N.P.L.) G.G. Carlson	28/08/70	Geol, Geochem
62-45-138-45 115 J 10, 15	PEG Glenlyon Mines Ltd. (N.P.L.) G.G. Carlson	28/08/70	Geol, Geochem
62-38-138-35 115 J 10	VIC Great Horn Mining Syndicate Inc. D.H. Waugh	8/10/70	Geochem assessment
62-40-138-52 115 J 10	CASH, GUN La Ronge Mining Ltd. (N.P.L.) G.G. Carlson	26/11/70	Geol, Geochem
62-39-138-54 115 J 10	BRAN New Davies Petroleums Ltd. Kopan Developments Ltd. G.L. Kirwan	24/09/70	Mag, Geochem

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62-40-138-37 115 J 10	STU, MIST Nickel Hill Mines Ltd. Pathfinder Resources Ltd. G. Trowsdale	10/08/70	Geochem water-courses sediment survey
62-40-138-32 115 J 10	AXE, HILL Montana Mines Ltd. (N.P.L.) B.C. Fulcher	18/01/71	Geol & Geochem evaluation
62-43-138-40 115 J 10	TOAD Prado Explorations Ltd. D.H. Waugh	2/09/70	Geochem assessment
62-45-138-55 115 J 10, 11, 14, 15	AZTEC, SQUAW, TLINGITS, NEW Trans Columbia Explorations Ltd. S.L. Sander	15/09/70	Geochem
62-45-139-00 115 J 10, 11, 14, 15	NEW Newmar Explorations Ltd. W.R. Newman	18/09/70	Geochem
62-42-139-05 115 J 11	NABOB Delta International Minerals Ltd. MacDonald Consultants Ltd.	19/10/70	Geological
62-43-139-00 115 J 11, 14, 15	HOLE Coin Canyon Mines Ltd. G.C. Gutrath	18/11/70	Geochem
62-43-139-00 115 J 11, 14, 15	HOLE Coin Canyon Mines Ltd. MacDonald Consultants Ltd.	18/11/70	Geochem
62-45-139-20 115 J 11, 14	PRINCESS, DUCHESS Borealis Exploration Ltd. F.C. Charlton	11/12/70	Geol, Geochem
62-45-139-45 115 J 12, 13	BID Atlas Explorations Ltd. K.M. Dawson	30/10/70	Geol mapping
62-45-139-45 115 J 12, 13	BID Atlas Explorations Ltd. K.M. Dawson	30/10/70	Geophysical
62-51-139-44 115 J 13	FBH Fawn Bay Development Co. Ltd. Hanna Gold Mines Ltd. P.H. Sevensma	9/12/70	Geochem
62-45-139-45 115 J 12, 13	BID Atlas Explorations Ltd. D. Brabec	30/10/70	Geochem

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62-46-139-45 115 J 13	VINA Atlas Explorations Ltd. K.M. Dawson	5/10/70	Geol mapping
62-46-139-45 115 J 13	VINA Atlas Explorations Ltd. K.M. Dawson	5/10/70	Magnetic Geophysical survey
62-46-139-45 115 J 13	VINA Atlas Explorations Ltd D. Brabec	5/10/70	Geochem
62-47-139-00 115 J 14	ROYALE Atlas Explorations Ltd. K.M. Dawson	28/09/70	Geol mapping
62-47-139-00 115 J 14	ROYALE Atlas Explorations Ltd. D. Brabec	28/09/70	Geochem
62-49-139-28 115 J 14	TONI TIGER Dawson Range Joint Venture A.C. Ogilvy	17/09/70	Mapping, Sampling, Trenching
62-47-139-23 115 J 14	CROWN, KING, PRINCE, DUKE Rockland Mining Ltd. M.F. Cowan	23/11/70	Geol, Geochem
62-45-138-45 115 J 15	HOP Empire Mercury Corp. Ltd. D.M. Scott	26/10/70	Geochem
62-47-138-38 115 J 15	MOSS, MAR, RAM, ARM, MONTE, CARLO, FOLLY, FREDS Marguerite Lakes Mines Ltd. R.W. Phendler, M.F. Cowan	16/10/70	Geol, Geochem
62-47-138-40 115 J 15	NEW Newmar Explorations Ltd. Richard E. Kucera	17/11/70	Photo geol
62-47.5-138-50 115 J 15	NEW Trans Columbia Explorations Ltd. Archer, Cathro & Assoc. Ltd.	25/08/70	Soil sampling
63-40-131-30 105 O 12	HORN Canadian Industrial Gas & Oil Ltd. H. Mogensen, P.G. Marshall	12/02/71	Geol
63-11-139-53 115 O 4	NICK Rainbow Lake Exploration Ltd. Eng. Ev. - J.P. Elwell Prop. Ex. - D.C. Findlay	8/01/71	Engineers evaluation, Property examination

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63-00-140-15 115 N 1	LIBRA Marguerite Lake Mines Ltd. Metals, Petroleum & Hydraulic Resources Consulting Ltd. R.K. Watson	12/03/71	Airborne Geophysical, Airborne Mag
63-53-140-32 63-58-140-54 115 N 15	BEN, CEL, CCL, CON, JACK, LOU Connaught Mines Ltd. M.S. Cholach		Geochem soil survey, Geol
64-12-134-34 106 D 2	WON Cominco Ltd. Cominco Ltd.	8/09/69	Geochem
64-00½-135-38½ 106 D 4	JAY Altair Mining Corp. Ltd. (N.P.L.) MacDonald Cons. Ltd., E.D. Dodson	25/02/70	Geochem
64-02-135-35 106 D 4	ERIN Falconbridge Nickel Mines Robt. E. Van Tassell	6/05/70	Geol, Geochem
64-03-135-45 106 D 4	PAN Conrad Provencher R.G. Hilker	17/12/69	Geol evaluation
64-02-135-35 106 D 4	ERIN United Keno Hill Mines Ltd. Robt. E. Van Tassell	6/05/70	Geol, Geochem
64-10-135-17 106 D 6	JET H. Versluce R.G. Hilker	22/12/69	Geol evaluation
64-15-138-10 116 B 8	WALKER, JIM, PIKA Casca Enterprises Egil Livgard	6/11/70	Geol
64-34-140-23 116 C 9	SHELL CREEK Selwyn Explorations Ltd. Selwyn Explorations Ltd.	29/09/69	Engineering eval
65-05-134-15 106 E 1	KEY Bonnet Plume Mines Ltd. Alrae Engineering Ltd.	12/12/69	Geol

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1936b: Mining industry of Yukon, 1935; Geol. Surv. Can., Mem. 193.

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1938: Mining industry of Yukon, 1937; Geol. Surv. Can., Mem. 218.

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1944: Preliminary map, Selwyn River, Yukon; Geol. Surv. Can., Paper 44-34.

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1966c: Arsenic content of stream and spring sediments, Keno Hill area, Yukon Territory; Geol. Surv. Can., Map 48-1965.

1967a: Antimony content of stream and spring sediments, Keno Hill area, Yukon Territory; Geol. Surv. Can., Map 49-1965.

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