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Report on

TINTINA SILVER MINES LIMITED, EAGLE CLAIMS
IN THE YUKON TERRITORY

by

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Consulting Mining Engineer

March, 1968

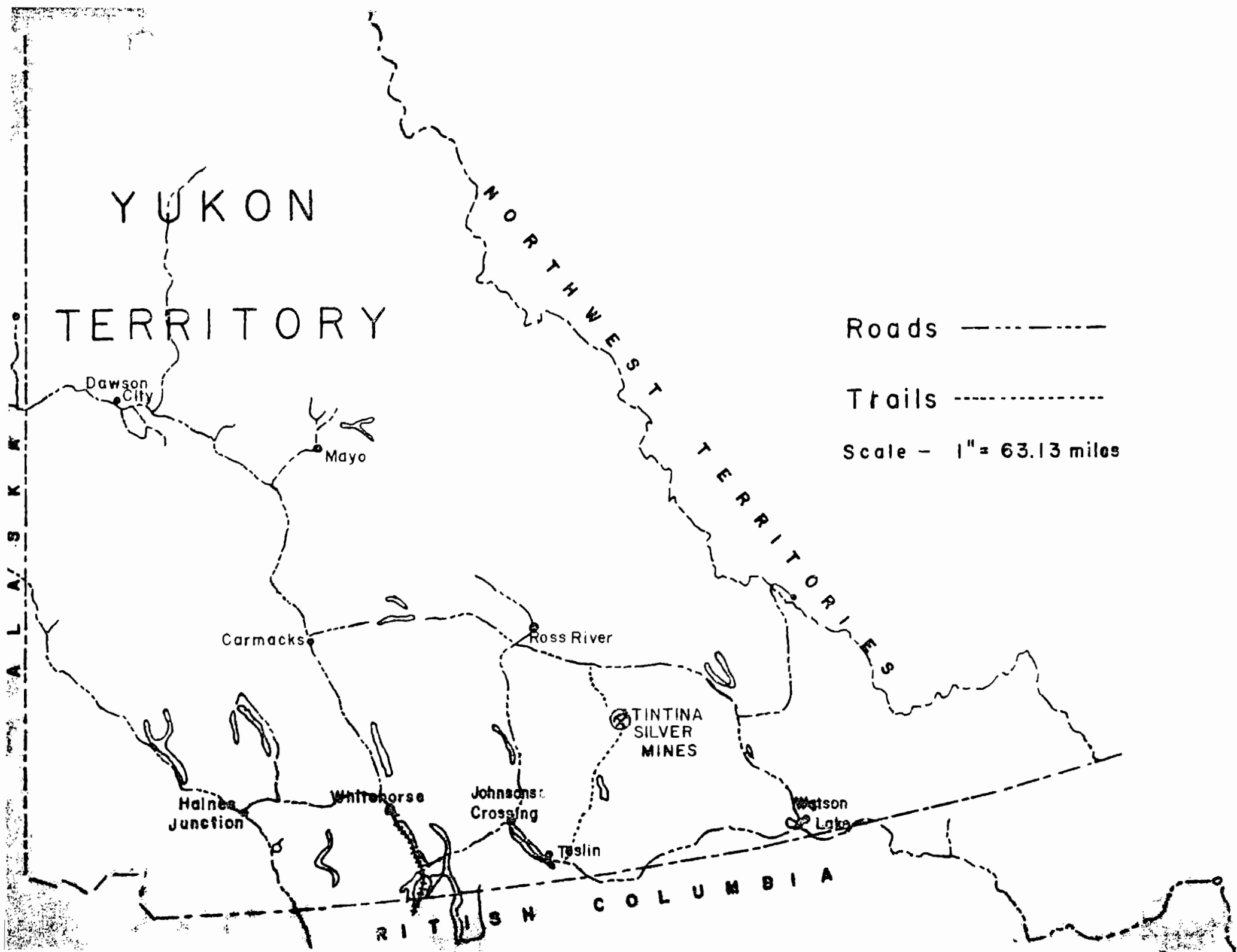
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APPENDICES

- Map No. 1. Location of Eagle Group and other claims and roads, Finlayson Lake Sheet.
- Map No. 2. Map showing location of group and sulphide zones.
- Map No. 3. Map of underground work done in 1962.


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INTRODUCTION


The following report is based on a personal examination of the Tintina Silver Mines Limited property on September 15th, 16th and 17th, 1961 and on February 19th, 1962, while employed as Chief Mining Engineer for the then Department of Northern Affairs and National Resources. Reports prepared by Conwest Exploration Company Limited, who carried out the original work, were also reviewed and discussions held with engineers, geologists and officers of that Company.

The purpose of this report is to correlate all available information and propose a program of further exploration and development with the objective of delineating mineral tonnages of ore.

In the opinion of the writer, the property has as yet not been fully explored for production potential and will require additional work to establish ore reserves. Since 1962, there has been a steady rise in the price of silver to the point now where this property may be considered as one of the most outstanding silver prospects in the district.

DESCRIPTION AND LOCATION OF PROPERTY, ACCESSIBILITY

The mineral claims owned by Tintina Silver Mines Limited are staked subject to the provisions of the Yukon Quartz Mining Act and consist of the Eagle mineral claims, numbered 1 to 64, grant numbers 76323 and 76386 inclusive, claim numbers 64-92 with grant numbers 76413 to 76440 and claim numbers 115 and 130, grant numbers 76463 to 76478 inclusive, as shown in the records of the Mining Recorder for the Watson Lake, Y. T., Mining District.


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The claims were recorded on August 22nd and August 25th, 1961, with work performed and recorded in 1962 to maintain them in good standing until August 22nd and 25th, 1968. This group of 108 mineral claims are all located in the St. Cyr Mountain Range near the headwaters of the Liard River. The claims are approximately 110 air miles northwest of Watson Lake, 130 air miles northeast of Whitehorse and 45 air miles south of the Watson Lake-Ross River Development Road.


A winter road was built in 1961-62 to the property from a point on the Alaska Highway, 14 miles east of Teslin for a distance of 110 miles. A 3,500 foot airstrip about 6 miles from the showings was constructed in 1962. There is a tote trail from the Watson Lake-Ross River road to a point less than 20 miles northwest of the showings. This trail could easily be extended to the property in winter and converted into a 4-wheel drive access road in summer at very little cost. The Finlayson Lake sheet shows the possible tote trail route, other properties and roads in the area. (Map No. 1)

HISTORY

Silver-lead-zinc showings were discovered in July, 1961, by a prospector in the employ of Conwest Exploration Company Limited. Tintina Silver Mines Limited was then incorporated to acquire the claims.

Eight veins were found during the initial period of exploration and preliminary mapping, sampling, trenching, and packsack drilling were undertaken immediately to determine their character and extent.

In January, 1962, an adit was started on the 5390 level and approximately 1,830 feet of underground development was completed (see Map No. 3). Some 22


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underground diamond drill holes, totalling 3,201 feet, and 6 surface holes, totalling 625 feet, were drilled principally to explore the 5, 6 and 8 veins.

Detailed geological and structural mapping was carried out during the 1962 field season. Fourteen other silver-lead-zinc veins or occurrences were discovered northwest of the original discoveries, although they received little work.

In August, 1962, work was suspended on the property after the underground program failed to locate the No. 8 vein. No further work has been undertaken since.

GEOLOGY

Regional Geology

The geology of the region has been mapped by the Geological Survey of Canada and published on Map 8-1960. Finlayson Lake sheet, Yukon Territory.

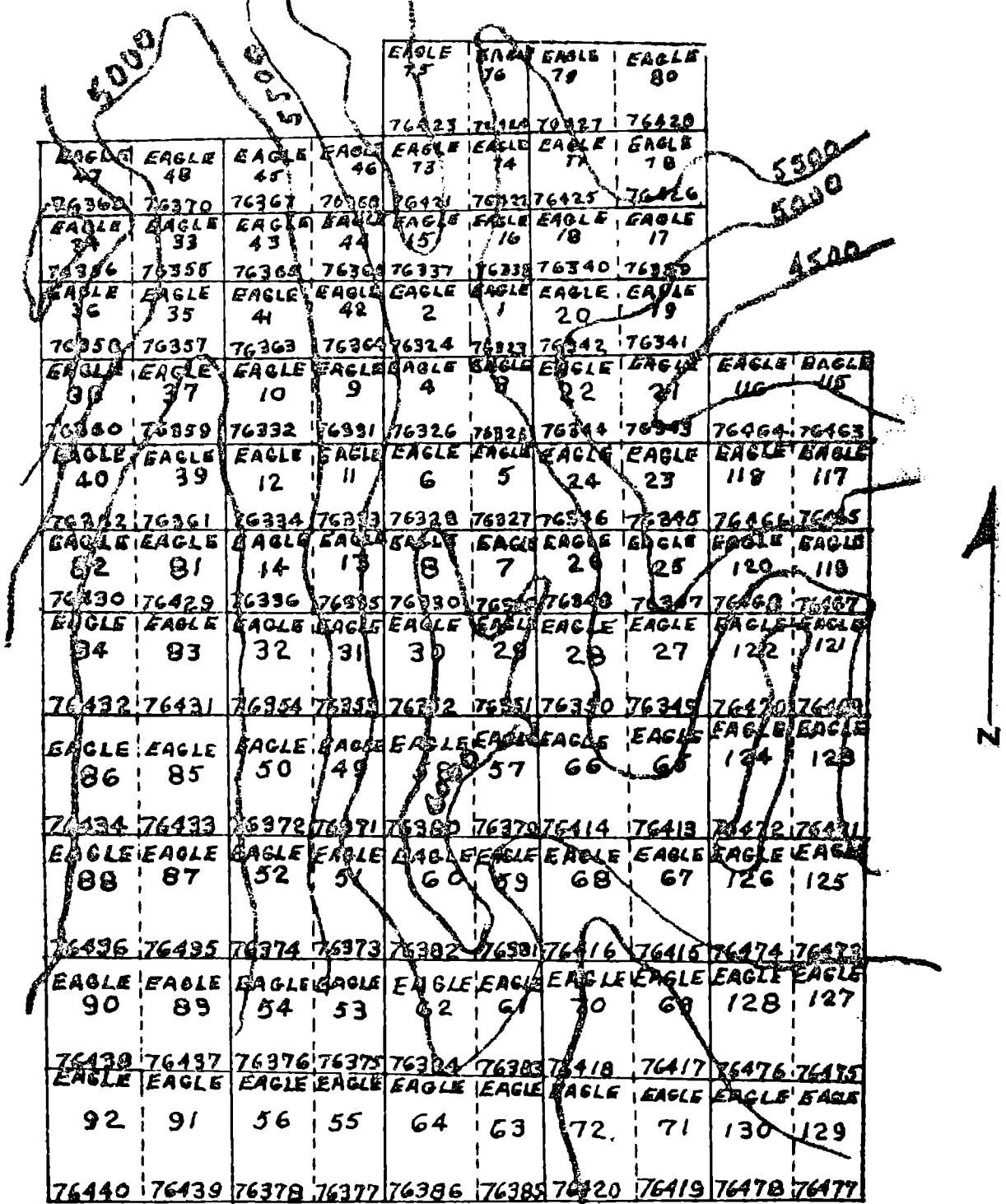
The area is located southwest of the Tintina fault, a major structure striking northwest, southeast. The rocks consist of folded and faulted sediments of lower Cambrian age which are dominated by a granodiorite intrusive, north of the sulphide zones.

Local Geology

The rocks underlying the claim group consist of highly contorted and folded limestone and argillite cut by a number of faults, modified by the thrust mass to the southwest.

Silver-lead-zinc mineralization in the form of freibergite, galena and sphalerite occurs as veins, lenses and disseminations in limestone and argillaceous limestone.

TINTINA SILVER MINES LTD.



EAGLE GROUP OF CLAIMS

PORTION OF MINERAL CLAIM SHEET 105-G-3.

Latitude 61° 00' to 61° 15'

Longitude 131° 00' to 131° 30'

Scale 1/2 mi. = 1 inch.

K.J.C.

MINERAL DEPOSITS

Twenty-two silver-lead-zinc showings occur on the property. They are designated as Veins I-15 inclusive, Zone F, Cornice Zone, Fall Zone, Ridge Zone, Sidehill Zone, West Mountain Zone and the Cirque Vein System.

Map 2. shows the location and distribution of the vein systems. The assay values referred to are based on sampling conducted by professional engineers employed by Conwest.

Zones 1 and 2

Massive sphalerite and galena is exposed in a rock trench on this zone. Surface sampling was restricted to Packsack drilling in the Fall of 1961, assays were generally low except for a few short high grade sections. In 1962, four short vertical holes drilled through the mineralized section, intersecting one foot of high grade.

Zone 3

Here the mineralization occurs at the contact of limestone and overlying black argillite along a small syncline. Assays of 40 to 50 oz. Ag., were found over widths of seven feet in three trenches in 1961 but no further work was done in 1962.

Zone 4.

Three trenches were excavated along the north side of the same syncline of overlying black argillite in 1961. Three packsack drill holes showed that the values were generally lower, although two holes close together intersected values up to 92.7 oz. Ag. at a depth of 20'.

width?

Zone 5.

This is a crescent shaped, mineralized area, in the lower limestone unit, apparently just below the overlying argillite, which outcrops just to the east of the east side of the crescent. The best assays were obtained from a trench at the centre of the crescent.

Zone 5a

Silicified mineralization, relatively high in silver and low in lead was found underground in the 101 and 102 cross-cuts. On surface, trenching of float uncovered about two feet of sulphides and mineralized quartz striking in the same direction as the 5a underground.

Zone 5b

A shear zone along the side of the limestone outcrop was found by trenching to be at least 2 feet wide, mineralized with galena and sphalerite. The shear strikes about 110° and dips about 70° south.

Zone 6

This mineralization again is located at the contact of the limestone and overlying argillite, with underground drilling indicating a flat contact. Values up to 174.9 oz. Ag. were found in 1961.

Zone 6e

This zone was found while geological mapping was in progress in 1962 and was exposed by trenches over a length of 70 feet.

Zone 7

This appears to be two parallel seams of sulphides in the lower limestone unit, mostly only a few inches wide but in places 1 foot, with assays up to 149 oz. Ag.,

over 6 inches.

Zone 8

This zone has an undetermined dip to the southwest and contains irregular mineralization exposed for a length of over 400 feet with widths from 2 inches to 2 feet of massive lenses of galena and sphalerite. These cut across the schistosity and disseminated zones, parallel schistosity. In places widths range to 20 feet with "horses" of unmineralized sections within the zone. Because the true dip is not known, the true width is not certain, yet this was a target for underground operations.

Zone 9

This occurs on the footwall of the mineral fault in argillaceous limestone. Siliceous mineralization over a width of eight feet showed good values in one of the trenches. Probably an extension occurs 50 feet to the south which has been exposed for 29 feet.

Zone 10

This is a small exposure thought to be in a boulder in the upper limestone unit, but has not been trenched.

Zone II

This is an irregularly mineralized zone where the contact between limestone and argillite is transected by a diorite dyke.

Zone IIa

This appears to be a contact between the brown intermediate argillite and the limestone, folded into a small anticline, containing a quartz vein 20 feet long and about a foot thick. It is mineralized with galena, sphalerite and pyrrhatite.

Zone 12

This is a vein like series of lenses of massive sulphides about 2 1/2 feet wide exposed for 22 feet.

Zone 13.

This is located in recrystallized, sheared, siliceous limestone and consists of massive lenses and veins, as well as disseminations of mineralization. In one trench, 9 feet has been exposed with good values over narrow widths.

Zone 15

This appears to consist mainly of seams of sphalerite and galena along fractures in crystalline limestone but has not been properly trenched.

Zone F

This zone of quartz and sulphides is about 2 feet wide dipping 62° west in a small outcrop of the upper limestone unit.

Cornice Zone

This is on the Cornice ridge between 5,900 and 6,000' elevation. The trend or dimensions has never been established because of heavy talus and permafrost. A chip sample over 2.1' gave 68.8 oz. Ag., 40.8% Pb and 19.8% Zn while a grab sample ran 88.8 oz. Ag., 51.4% Pb and 17.7% Zn.

Fall Zone

In a very inaccessible location on the east slope, in the bed of a creek, on the Mineral Fault, sphalerite occurs in seams over a length of 120'. A grab sample ran 37.0 oz. Ag., 20% Pb., and 38.9% Zn.


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Ridge Zone

A prominent occurrence of float revealed sphalerite veinlets in argillaceous limestone in an outcrop mantled with talus. A chip sample over 1.6' gave 12.8 oz. Ag., 121% Pb., and 13.3% Zn.

Sidehill Zone

An outcrop 60 feet long and 3 feet in width of heavy sulphides, ran 10 oz. Ag., 6.2% Pb., and 26.0% Zn., when trenched in 1961.

West Mountain Zone

Late in August in 1962 this zone was discovered. The mineralization is erratically distributed over an area 400' long and up to 100' wide and resembles the No. 8 zone. It appears to be in a warp in a thrust zone and the mineralization contains pyrrothite, sphalerite and galena. Silver assays were found to be generally low, the best being 14.7 oz. Ag., over 2.8 feet.

Quartz Veins at head of Cirque

There are 10 or 11 veins in this category mineralized with galena, sphalerite, pyrite and locally, chalcopryite. They range in thickness from an inch or two to 2' averaging about 6". They strike eastwest and dip to the south, all being located in argillite above the lower limestone unit. The best assay was from 5 1/2" vein of massive galena, where only a few feet are exposed, running 79.0 oz. Ag., and 52.4% Pb.

Boundary Veins

Near the east boundary two showings of mineralization were found, but no work was done in the area. Two lenses of quartz, one 3' wide and 9-1/2' long dipping 70°

south, and another 5' thick and 19' long dipping 54° south, with a streak of heavy sulphides extends northerly from the west end of the lens. This streak ran 17 oz. Ag., and .06 Oz. Au., from a grab sample. Another sample was low, but there was no work done to uncover the zones.

Surface Diamond Drill holes completed in 1961 with assays.

Zone No. 1

Hole No.	Total Depth	Sample Depth	Ag (oz)	Pb (%)	Zn (%)	Cu (%)
1	30.8'	0'-9'	4.40	-	-	-
		9.5-18	3.4	0.6	7.2	-
		18-25'	41.4	-	20.5	-
		25.2-27.2	0.9	-	5.3	-
2	10'	1'-10'	1.7	1.4	5.7	-
3	10'	0-5'	33.4	7.3	14.3	-
		5-10'	3.3	0.4	2.1	-
4	14'	1-4'	2.26	1.0	13.9	-
5	6'	Overburden	-	-	-	-
6	38'	13-17.5'	19.5	4.4	19.3	0.15
		17.5 - 19.5	6.4	1.1	1.0	0.07
		19.5-21.5	113.7	1.1	19.4	1.12
		22.5-28	5.36	4.1	28.4	0.15
7	8.6'	0-8.6	5.9	Nil	6.0	Nil
8	5'	0-1.5	10.8	0.5	26.3	.07
		1.5-5'	0.2	Nil	1.7	Nil
9	2'	Boulder	-	-	-	-

Zone 2

10	5'	Boulders	-	-	-	-
11	5'	Boulders	-	-	-	-
12	13.6'	0-4'	17.4	17.8	22	0.15
13	25'	0-5'	15.6	15.4	7.7	0.6
		5-7'	0.6	1.0	2.4	Nil
		7'-13'	14.1	7.5	12.3	0.07
		13'-18.5'	3.0	1.6	1.8	Tr.
		10-22'	28.0	12.2	18.4	.03
14	10'	Limestone	-	-	-	-

Zone No. 4

Hole No.	Total Depth	Sample Depth	Ag (oz)	Pb (%)	Zn (%)	Cu (%)
15	42'	23'-24'	59.1	37.7	3.7	.03
		24.5-26'	92.7	53.5	5.7	.07
		26.3-29'	33.6	6.4	15.1	.15
		29.42'	No sulphides		-	-
16	10'	Limestone	-	-	-	-
17		26.3-27.5	46.1	35.4	17.5	-
		27.5-29.3	15.4	8.6	16.9	-
		29.3-31	0.36	Nil	2.4	-

Zone No. 7

18	14'	0-1.5'	1.10	Nil	14.3	-
		2.5-4.3	34.9	41.4	18.2	-
		4.3-8'	11.16	11.0	11.5	-
		8-11'	.22	Nil	0.5	-

Summary of Assays taken in 1961

Vein	Width	Length	Ag (oz)	Pb (%)	Zn (%)
3	6.6	95'	36.8	13.4	9.2
4	2.2	25'	35.6	17.9	10.3
5	4.8	75'	36.9	15.1	16.0
6	4.3	70'	88.9	24.8	4.5
8A	6.4	52'	35.1	19.9	4.9
8B	3.7	112'	33.0	15.7	10.6

Note

A tonnage of 250 tons per vertical foot across a width of 4.8' and grading 42.4 oz. Ag., 16.9% Pb., and 9.3% Zn. was indicated from the sampling done in 1961.

SUMMARY AND CONCLUSIONS

It is the opinion of the writer, that the underground work was premature and the entire area has, as yet, not been thoroughly tested. This opinion is shared by other engineers and geologists who have examined the area in much greater detail. The No. 8 zone may or may not have been intersected underground, some 154 feet below the surface outcrop, because the cross-cut driven to intersect the zone had just entered the phyllites which appear to be the host rock for the mineralization in Zone No. 8 on surface, although it is difficult to determine the position of No. 8 with respect to the contact which is unknown due to a talus slope below the zone outcrop.

It was suggested that the ore lenses were flat lying, but it was found that in addition to flat lenses, there are zones of disseminations of sulphides and veins along contacts between argillites and limestones.

It appears that mineralization is controlled by the Mineral Fault, since most of the zones, except those to the north-west are associated with this fault, which has not been tested except by very shallow Packsack drilling and minor surface trenching. If the lenses are flat lying, there is no reason that other lenses may not be found at other horizons.

It has been reported that none of the underground workings achieved the objectives of the cross-cuts and underground drilling results were far from conclusive. The No. 8 zone may not be as flat a lense as believed and would have to be tested by deeper trenching to establish the dip, followed by diamond drilling to outline continuity. Since not only No. 8 zone but zones F, 4, 3, 1, 2, and Fall zone are all adjacent to the Mineral Fault, this entire section would be a prime drilling target to determine ore making possibilities of this part of the property. The Sidehill and Ridge zones appear to be


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associated with faulting, while the zones 10 to 15, extending northwesterly have not been explored to any extent. However, the contacts between argillites and limestones have been found to host the sulphides and further work appears justified. Due to the erratic nature of the sulphide deposition, it is probable that the only way to obtain a true picture of grade and extent of ore is to expose by trenching followed by bulk sampling and diamond drilling all zones.

It has been suggested that only a small portion of the 108 claims has been fully prospected. The excellent job of geological mapping that has been done, has been confined to relatively few claims of the group. The granitic plug to the north-west of Hornfels Ridge should be examined for possibilities of tin as well as the hornfels for scheelite. The extension of the Mineral Fault is believed to lie in a valley to the north-east of the Fall Zone, which area has barely been examined. The thrust zones geologically mapped should be followed up by stripping to see if the conditions of the West Mountain Zone and No. 8 Zone are repeated.

No work has been done on the property since 1962.

RECOMMENDATIONS

1. Further trench by drilling and blasting zones 10 to 15 to determine attitude and trends of zones. Follow up this work by diamond drilling to establish extent and reserves.
2. Trench the No. 8 zone longitudinally across the full width to a sufficient depth to determine the trend and dip of the structure. Bulk sample. Follow by diamond drilling to test structure at depth.
3. Diamond drill from the northerly end of Zone No. 8 to the F Zone and along the Mineral Fault to the Fall Zone. Step back southerly from along the Fault and drill on

100-foot centres, vertical holes, after first drilling short directional holes to determine dip. Drill with the objective of intersecting the fault and lower limestone unit.

4. Prospect the remainder of the claim group concentrating on the valley to the northeast of the Fall Zone, the Hornfels Ridge and other areas of float occurrences.

DISCUSSIONS AS TO RECOMMENDATIONS

It is suggested that the program consist of three phases:-

1. Move supplies for the season in to the property over a tote trail, built in April.

Application may be made to the Yukon Territorial Government for Tote Trail assistance, whereby, 50% of the cost of construction of the Tote Trail may be borne by the Territorial Government. This might later be improved to provide a year round access road.

2. It will likely be mid-June before there is sufficient water at the higher elevations to conduct drilling there, however, most of the snow below the 4,000 foot level should be melted by mid-May. Thus, work could commence on drilling zones at lower elevations after May 15th. This is when the camp should be opened to commence work. The drill crew could start drilling the lower zones and move progressively higher as the snow melts.

3. Two crews of prospectors could start about July 1st, to examine the areas outlined. Casual helicopter flights would expedite movement of prospectors, helicopters are available on a casual basis from Whitehorse. Servicing of the camp might better be affected from Whitehorse by fixed wing aircraft. Thus, the landing strip should be maintained, by a cat. Communication should be by radio-telephone to an expeditor in Whitehorse.

4. A Bombardier Muskeg Carrier with flat deck could be used to move the drill (wireline equipment), move supplies from airstrip to camp because of muskeg between the

airstrip and camp and assist in freighting over the tote trail. The carrier has a payload of 6,000 pounds.

ESTIMATED COSTS SEASON OF 1968

<u>Item</u>	<u>Estimated Cost</u>
Camp equipment and camp construction 3-14'x16' tents, 2-10'x12' tents, plywood frames, stoves, cats and mattresses, propane cook stove and deep freeze, kitchen utensils, water storage tank and pump	\$ 4,000.00 ✓
Food and supplies	9,000.00 ✓
Wages and salaries	24,000.00 ✓
Rental of D-7 cat for 3 months	16,500.00 ✓
6,000 gallons fuel oil, 1,500 gallons gas, 15 cases oil	7,000.00 ✓
Radio rental and expediting service	2,500.00 ✓
Two Cobra gas drills and explosives	3,500.00 ✓
Transportation of camp equipment and supplies by truck from Whitehorse to Tote Trail	5,000.00 ✓
Cat and Muskeg Carrier on Tote Trail	2,500.00 ✓
Tote Trail (50% recoverable)	8,000.00 ✓
Bombardier Muskeg Carrier (F. O. B. Edmonton)	8,900.00 ✓
Aircraft - service trips	3,500.00 ✓
Helicopter - casual basis	9,500.00 ✓
Diamond drilling	63,000.00 ✓
Engineering and supervision	8,500.00
Miscellaneous	3,600.00
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Total Estimated Cost	<u>\$ 179,000.00</u>

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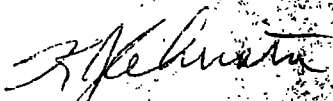
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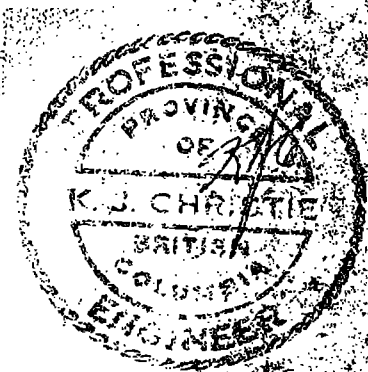
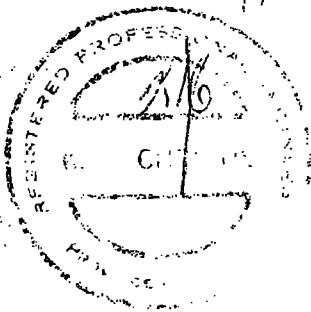
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6. Writers' personal notes of property after examination in 1961 and 1962.

ACKNOWLEDGEMENTS

The writer is grateful to Mr. E. R. Heald and C. Franklin for their co-operation in providing reports, maps, notes and extracts, which were made available to form the basis of this report. Also, discussions with former Conwest engineers were most helpful, in making this report possible.

Respectfully submitted,


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ATTESTATION

I, Kenneth John Christie of 1030 Bayview Drive, Ladner, British Columbia,

do certify that:-

1. I graduated from the University of Montana, Montana School of Mines, in 1942, with a Bachelor of Science degree in Mining Engineering.
2. I have been engaged in mining for more than 28 years with the exception of almost four years on active service in Canada and Overseas.
3. I am a registered Professional Engineer in the Province of Ontario and British Columbia and the Yukon Territory.
4. That I have examined the abstracts of title to the EAGLE claims and find them in good standing.
5. I have no interest in the property or in the securities of Tintina Silver Mines Ltd. (N. P. L.), direct or indirect, nor do I expect to have any interest.
6. This report is based on a personal examination of the property in 1961 and 1962 as well as reports mentioned in the Bibliography.



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