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DATE January 26, 1971

TO Mr. L. P. Starck

CC: .

FROM W. E. Clarke

SUBJECT NICKEL PLATE SUMMARY REPORT

BY A. M. GERUN, JANUARY 20, 1971

Attached is the long-awaited report. Although I found it advisable to assist in the general layout and content of the report, the conclusions are Gerun's, not mine. The following comments are therefore necessary to put forward my conclusions and recommendations, which may not necessarily agree with Gerun's:

SOUTH RIM

The Toronto diorite stock occupies a major portion of the South Rim area from the Rollo claim through to the Metropolitan. To the south of the stock a zone of altered sediments and diorite dykes and sills, the potential environment for mineral deposits, occurs, varying from 100 to 250 ft. wide on the Kingston to 500 to 700 ft. wide in the Warhorse-Rollo area. The area is traversed by several E.N.E. and N.W. trending mineralized fracture zones, and, in the area of the Warhorse, folding of the sedimentary horizons is in evidence. All are favourable mineral deposition controls.

Exploration showed that sulphide mineralization was restricted to fractures and skarn zones of limited dimensions contacting diorite dykes and sills. Copper grades were rarely over the 0.5% range and widths generally narrow. Reasons for the difference in mineral distribution as compared to the main Nickel Plate productive area are believed to be that the diorite dykes and sills cut the bedding at relatively high angles, and the sediments in this area are not as thinly bedded. The net result is a major reduction in the amount of shattering of the sediments by the diorite intrusions.

There appears to be no area south of the Toronto stock where a major low grade copper deposit may occur in the horizons tested to date. It still has not been conclusively resolved as to whether these sedimentary horizons are the same as the productive horizons in the main Nickel Plate workings.

To the north of the Toronto stock, particularly in the Princeton area, geological conditions are interesting and may present a target area for future exploration. However, costs will be appreciable, as it is believed that exploration should be extended to greater depths than have been attempted to date. Two or three 600 ft. - 800 ft. diamond drill holes would constitute a reasonable initial phase of future work.

CENTRAL AREA

Exploration included surface and, as far as possible, underground examination of the area extending from the Bulldog northwesterly through the Mound, Climax and Copper Cleft claims, which, in part, is the easterly extension of the interesting Princeton area north of the Toronto stock, referred to above.

As in the South Rim area sulphide mineralization was found to be closely associated with major fracture zones and diorite sills and dykes. Diamond drilling of the Bulldog ore shoot returned copper values lower than anticipated, but skarn horizons above and below have not been effectively tested and coincident geochemical, magnetometer and E.M. anomaly to the south of the Bulldog, and east of the Horsefly may represent another mineralized area two to three times the dimensions of the Bulldog. This anomaly has not been further tested, nor has any exploration been completed south from here to the north contact of the Toronto stock in the Terrier claim, as the latter area lies outside the Nickel Plate claim group.

The Climax and Exchange faults strike northwesterly, roughly parallel to the elongation of the Toronto stock and are examples of the most prominent fault structures. E. M. surveying indicates additional sub parallel fracture zones, which in turn are intersected by east-west faults, the Bulldog fault being an example. Thus structural conditions are similar to the South Rim area and continued exploration should be directed towards testing the intersection of known structures and sedimentary horizons intruded by diorite at depth. Two or three targets are already known.

NICKEL PLATE AREA

The 1970 Program attempted to assess the potential of the Nickel Plate horizons to the north and down dip to the west, from the

former productive areas. Copper grades in these horizons as determined from diamond drilling on and below the 1500 level and wall channel sampling of old drifts and stopes on the 1500 level and above, indicate an average grade of 0.39% Cu/ton within the several skarn horizons, over a total thickness tested of approximately 200 ft. and strike length of 300 ft. On rather sketchy information from old surface diamond drill holes 700 ft. to the west, the 3750 level an additional 1300 ft. west and the Mascot 2700 Raise a further 700 ft. west, there is a dip slope potential of 2,700 ft. The total thickness of favourable horizons is in the order of 500 ft. - 600 ft. with a probable 20% dilution by unmineralized diorite sills.

The following table summarizes the assay information used in calculating the average grade. Gold and silver assays have not been completed.

<u>ZONE</u>	<u>SAMPLE SOURCE</u>	<u>FOOTAGE</u>	<u>LENGTH</u>	<u>COPPER %</u>
Upper Purple	Surface		60 ft.	<u>0.530</u>
Purple	DDH U15-1	3- 42	39	0.389
	U15-2	0-162	162	0.335
	U15-3	8- 38	30	0.367
	U15-4	104-151	47	0.217
	1501 DR.		160	<u>0.375</u>
Average				<u>0.344</u>
Red	DDH U15-1	42- 79	37	0.124
	U15-2	207-304	93	0.617
	U15-3	38- 78	40	0.070
	U15-4	151-203	52	0.298
	Red Stope		360	<u>0.189</u>
Average				<u>0.255</u>
Orange	DDH U15-1	79-214	135	0.363
	U15-3	105-223	118	0.188
	15-3U ST.		130	0.314
	1501 Crosscut		170	0.256
	1502 DR.		170	0.757
	8 Level-83 ST.		80	<u>0.500</u>
Average				<u>0.404</u>

<u>ZONE</u>	<u>SAMPLE SOURCE</u>	<u>FOOTAGE</u>	<u>LENGTH</u>	<u>COPPER %</u>
Blister	901-909 DR.'s		110	0.585
Central Fault	15 Level		200	0.460
			170	<u>0.626</u>
Average				<u>0.536</u>
AVERAGE ALL HORIZONS				0.388 =====

The area north of the former Nickel Plate workings and down dip below the 15 level lies almost entirely in the Windfall Canyon, one of the topographically more rugged sections of the property, but is believed to represent the most likely area for the development of an orebody. Present grades indicate that a large tonnage deposit must be found to be economical. Careful planning of an exploration program will be necessary to keep costs to reasonable levels.

In conclusion, while the exploration work to date has not turned up an economic deposit, and still leaves open to conjecture where the Nickel Plate horizons are in the South Rim area, and what is the ore potential of the lower sedimentary horizons below the Nickel Plate productive area, along the Central Fault, it has proven up the presence of widespread copper mineralization.

It is recommended that exploration be continued in the form of diamond drilling to depth in the Central Area, and more detailed work on the Nickel Plate horizons in the Windfall Canyon area. Before work in the latter area commences, there are several claims and groups of claims, such as the Nick of Time, Copper Chief, Bradshaw Group etc. which should be acquired for down-dip protection of the Nickel Plate horizons.

Yours truly



W. E. Clarke