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GEOLOGY AND DEVELOPMENT
OF THE TOM GROUP⁺

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DISCOVERY AND DEVELOPMENT:

Tom deposit discovered by classical prospecting in 1951. Sulfide boulder train in Tom Creek led to surface showing. By early 1950's, 9.5×10^6 tons of 0.26 oz./ton Ag, 5.6% Zn and 0.8% Pb proven. No further development work until 1966. Development renewed in 1966 in response to Anvil discovery and improved metal prices. 1966 program consisted of soil and stream silt geochem and 1.5×10^4 ft. of diamond drilling. By 1967-1968, reserves reported at 5.1×10^6 + ft. of drilling completed. In 1971, additional 300 ft. of adit development completed along with 2.8×10^7 ft. of drilling to test depth extension of West Zone. As of 1971, proven tonnage is 8.6×10^6 tons of 2.75⁶ oz./ton Ag, 8.4% Zn and 8.1% Pb. Additional reserves at this date are 10×10^6 tons of 0.7 oz./ton Ag, 4.6% Zn and 0.9% Pb. To date Hudson Bay has spent $\$2 \times 10^6$ on Tom property.

GEOCHEMISTRY:

1966 program involved sample collection on 800 ft. centers. Essentially rock geochem program as no significant soil profile developed on property. Good correspondence of geochem highs to known mineralization. Silt sampling in Tom Creek gave low zinc values.

GEOLOGY:

Tom deposit located in graphitic argillites, black cherts, limestones and chert pebble conglomerates (Black Clastic Unit of Templeman-Kluit; probably Earn Group of Campbell). These units ascribed to Ord.-Sil. by Roddick. Blusson gives them a Dev.-Miss. age. Sangster shows these units not Ord.-Sil. on basis of fossil evidence. Chert pebble conglomerate unit slightly mineralized with chalcopyrite yielding values up to 2% Cu.

STRUCTURE:

Two zones (east and west) on Tom property, East Zone on east limb of anticline, West Zone on west limb. Anticline plunges south 70° to 0° flattening at depth. Limestone of West Zone grades laterally to north and south into grey chert. Entire structure cut by northeast trending faults.

⁺ Notes on talk taken by D. S. Jennings

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Property Name: Common TOM Other

Location: Lat. 63°10' Long. 130°09' NTS 105 0/1

Metals: Major Zinc, lead, silver Minor

Type of Mineral Deposit: Stratiform

History and Previous Work:

Discovered in 1951 by Hudson Bay M & S and staked as the Tom claims, which are now held under 21-year lease. The deposit was explored between 1951 and 1953 with 17,834 feet of drilling in 36 holes, which outlined 10.5 million tons averaging about 5% zinc. The property was idle until 1967 when surface studies resumed. A further 5500 feet was drilled on surface in 1967 and 5100 feet in 1968. Between 1969 and 1971, a total of 6190 ft. of drifting and about 10,000 feet of underground drilling was completed. The Star cl (Y17754) were staked in 1967 adjoining on the east by Spartan EL.


Description:


Host rocks are finely banded cherty argillites and siliceous fragmentals, now thought to be Mississippian in age. The local structure is a plunging anticline. Mineralization is found in two zones—East and West. The East Zone is considered by company geologists to be a mineralized fault which cuts the bedding at a small angle. It lies on the east limb of the major anticline. The West Zone is a simpler concordant replacement in a barite-rich limestone. Widths range from 50 to 125 feet in the West Zone and 10-60 feet in the East Zone. Mineralization consists of galena, white sphalerite, and pyrite, which occur both as massive, fine-grained lenses and as thin laminations. The most recent reserves were given in 1972 as 9 million tons grading 8.4% Zn, 8.1% Pb and 2.75 oz/ton Ag. Potential for additional reserves, particularly at depth, is reported to be good.

References:


- Mineral Industry Report, 1969 and 1970, Vol. I, pp 129-130
- P69-55, pp 50-51
- P71-1, pp 91-92
- ER, Oct/70 by J.S. Vincent in Spartan EL Ann. Rep., 1970, p.4
- NM, 4 May/72

Rock Types

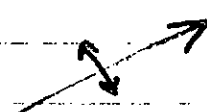
 - Argillite

 - Limestone (Well bedded grey ls. w/ dk. grey chert)

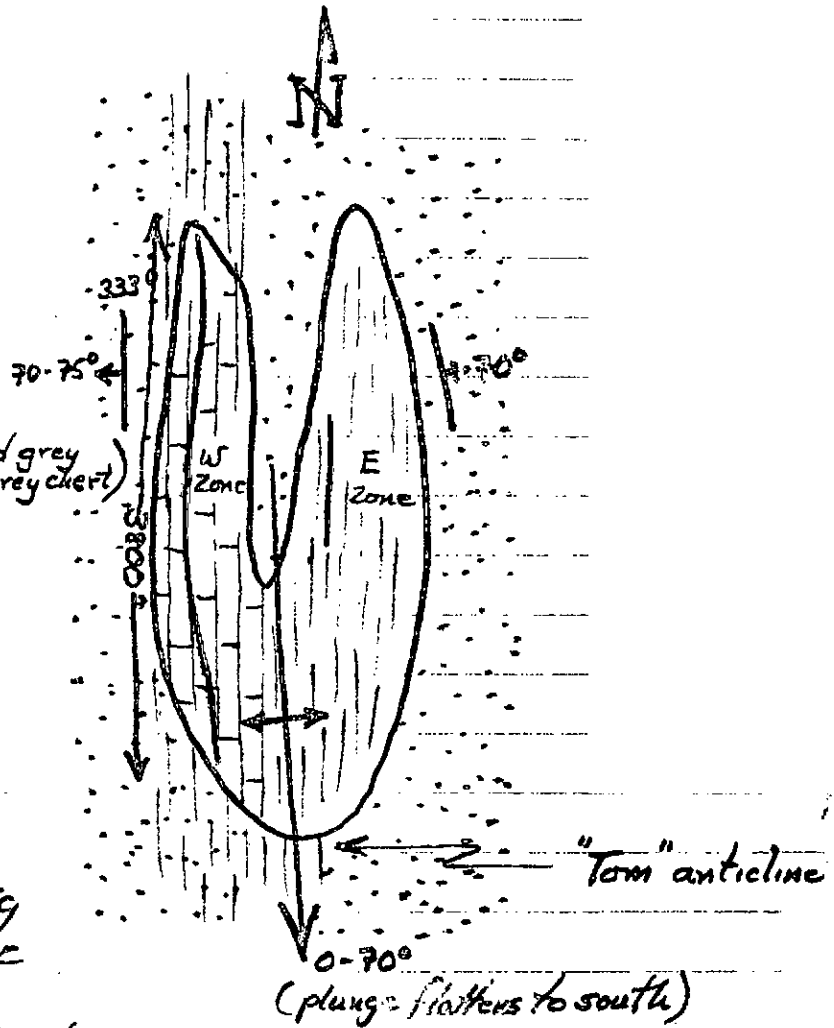
 - Conglomerate

 - Chert

Symbols

 - Anticline showing direction of plunge

 - Bedding, top direction known



ZONING AND SULFIDE MINERALIZATION:

On surface, west zone richer in PbS than ZnS. At depth vice versa. West zone is "typical" stratiform deposit of pyrite, sphalerite and galena. Sangster of GSC notes two forms of pyrite: a) a larger, more euhedral generation and b) a smaller anhedral generation. All sulfides in west zone are parallel to bedding with galena and sphalerite "replacing" limestone. West zone has strike length of 3800 ft. and varies in width from 2 to 176 ft.

The east zone is a massive PbS, ZnS body that may occur along a fault. Some evidence that east zone cross cuts bedding.

SUMMARY:

Remoteness causes current uneconomic status of the Tom deposit. Transportation and power are main problems.