

NEW JONT EXPLORATION OF CANADA LIMITED

VANCOUVER, B.C.

MEMORANDUM

for R. S. Mattson

+ JHP.

DATE: 20 January, 1981

TO: T. N. Macauley

FROM: C.H.B. Leitch

SUBJECT: Trout Lake trace element study - Sn and W

The results of tin and tungsten analyses for 139 composite samples of Trout Lake drill core have been received (Bucknam, 1980). The analyses were done on sections of core selected to be at either end of the deposit, through the center, and at different elevations in it. The fifty-foot composite sample length was chosen to attempt to smooth out some of the local fluctuations in trace element content.

All the values reported are low, especially for tin, which are at or below the detection limit of 4 ppm for the majority of samples. Most of the tungsten values are less than 20 ppm except at the southern end of the deposit where sections of skarn mineralization were cut in the drill holes. There, the only significant W values of over 20 ppm (up to 140 ppm, or even 2000 ppm, i.e. 0.25% WO_3), probably occur as scheelite.

A crude zoning is apparent from a comparison of tungsten values with MoS_2 assay data (see figures 1-4 attached). Weakly anomalous tungsten values (10-20 ppm) are present at either end of the deposit, to the north in DDH 76-7 (Sections 1-6), and to the south in DDH 78-1 (Section 10) and DDH 77-1 (Section 12). Tungsten values are very low (less than 1, to 4 ppm) in the heart of the deposit, for example the high-grade section in DDH 77-3 (Section 7). This is similar to the zoning of scheelite peripheral to molybdenite at the Red Mtn. deposit in the Yukon (Korenich, 1980).

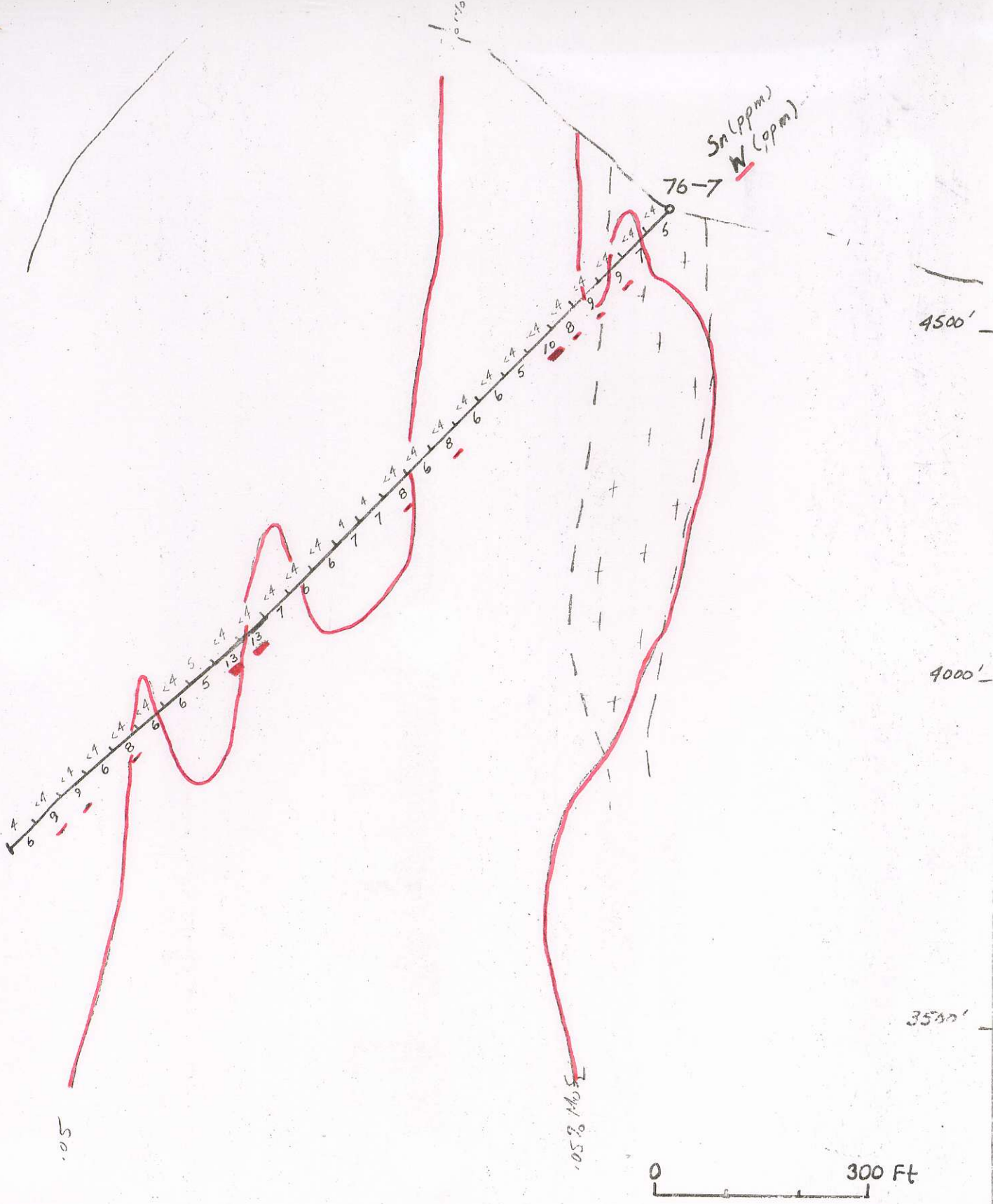
The highest, but only weakly anomalous, tin values (6-20 ppm) are also present in the heart of the deposit where molybdenum assays are highest. This indicates that tin has an antipathetic relation to tungsten and a similar distribution to that of molybdenum. Barely anomalous Sn values (5-15 ppm) are also present in DDH 78-1 at depth in the deposit (Section 10). Moving out to either north (DDH 76-7, Sections 1-6) or south (DDH 77-1, Section 12), the tin values are generally very low with few exceptions (at or below detection limit). Tin minerals have not been observed in the Trout Lake specimens.

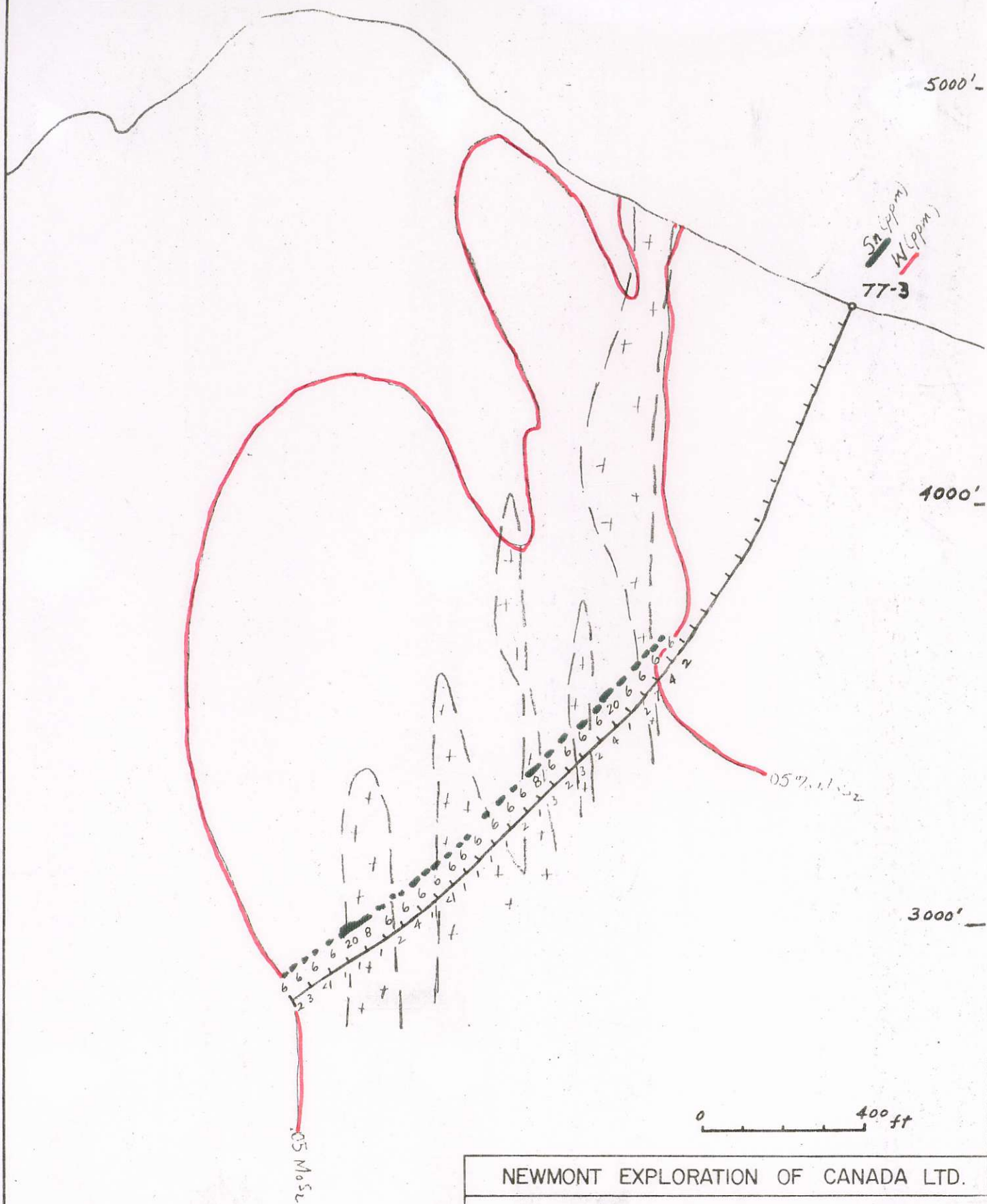
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In summary, a tentative zoning pattern deduced from the limited data available, much of which is close to detection levels, is that tungsten is zoned outside of molybdenum, with tin tending to occur centrally to the molybdenum (as noted at the Cave Peak molybdenum deposit, Texas (Sharp, 1979). At Trout Lake, the strongly anomalous tungsten associated with skarn mineralization, mainly at the south end of the deposit, gives rise to a different zoning pattern than the classical "shell" patterns described in Colorado at Climax (Wallace et al., 1968), Henderson (Wallace et al., 1978), and Redwell Basin (Sharp, 1978). Presumably the occurrence of tungsten at Trout Lake as scheelite in skarn bands, rather than as hübnerite or wolframite in quartz vein stockworks as in the Colorado deposits, and the strong structural attenuation at Trout Lake, account for the lack of classical "shell"-type zoning at Trout Lake. However, the rough ordering, from W to Mo and Sn as one goes towards the center of the deposit, is much the same.

References:

- Bucknam, C.H. (1980): Results of Trout Lake trace element study: Letter to T. N. Macauley, November 13, 1980.
- Korenic, J. (1980): The Amoco-Tintina Red Mountain molybdenum deposit: Talk presented to the M.E.G. in Vancouver, December 10, 1980.
- Sharp, J.E. (1978): A molybdenum mineralized breccia pipe complex, Redwell Basin, Colorado: Econ. Geol. 73, p. 369-382.
- _____. (1979): Cave Peak, a molybdenum-mineralized breccia pipe complex in Culberson County, Texas: Econ. Geol. 74, 517-534.
- Wallace, S.R. Muncaster, N.K., Jonson, D.C., MacKenzie, W.B., Bookstrom, A.A., and Surface, V.E. (1968): Multiple intrusion and mineralization at Climax, Colorado: in Ridge, J.D. (ed.), Ore deposits of the United States, 1933-1967 (Graton-Sales Vol. 1), New York, Am. Inst. Mining. Metall. Engineers, p. 605-640.
- _____, MacKenzie, W.B., Blair, R.G., and Muncaster, N.K. (1978): Geology of the Urad and Henderson molybdenite deposits, Clear Creek County, Colorado, with a section on a comparison of these deposits with those at Climax, Colorado: Econ. Geol., 73, p. 325-368.





NEWMONT EXPLORATION OF CANADA LTD.

Sn & W in DDH 77-3 (Section 7)

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|-----------|------------------------|----------------------|
| SCALE | LOCATION TROUT LAKE | DATE Jan. 15 / 81 |
| SURVEY BY | DRAWN BY CHBL | NO. 2 |

NCI 241 - N.E.C.



NEWMONT EXPLORATION OF CANADA LTD.

Sn & W in DDH 78-1 (Section 10)

SCALE

LOCATION

DATE

TROUT LAKE

JAN. 18/81

SURVEY BY

DRAWN BY

NO.

CHBL

3

