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PRELIMINARY REPORT
ON THE RESULTS OF
1982 FIELD WORK
WITH RECOMMENDATIONS FOR 1983
ZX-SENTINEL JOINT VENTURE
NOVEMBER 2, 1983

Marg Target

This small project area encompasses a single lead-zinc-copper silt and lead-zinc soil anomaly that was previously explored over 15 years ago before sedex mineralization became recognized in Selwyn Basin. The target received a brief investigation at the end of the field season, between September 7 and 14, which was sufficient to confirm its importance and justify restaking it as the Tudl 1-32 claims.

The Marg target lies 35 km ENE of the Keno Hill silver-lead district (as shown on Figure 41 on the following page). The target was first staked in early 1965 by Canadian Superior as the Jack claims to cover a stream sediment anomaly of 300 ppm lead, 2400 ppm zinc and 240 ppm copper obtained by the GSC's Operation Keno in 1964 (see regional geochemistry on Figures 43 and 44, in pocket).

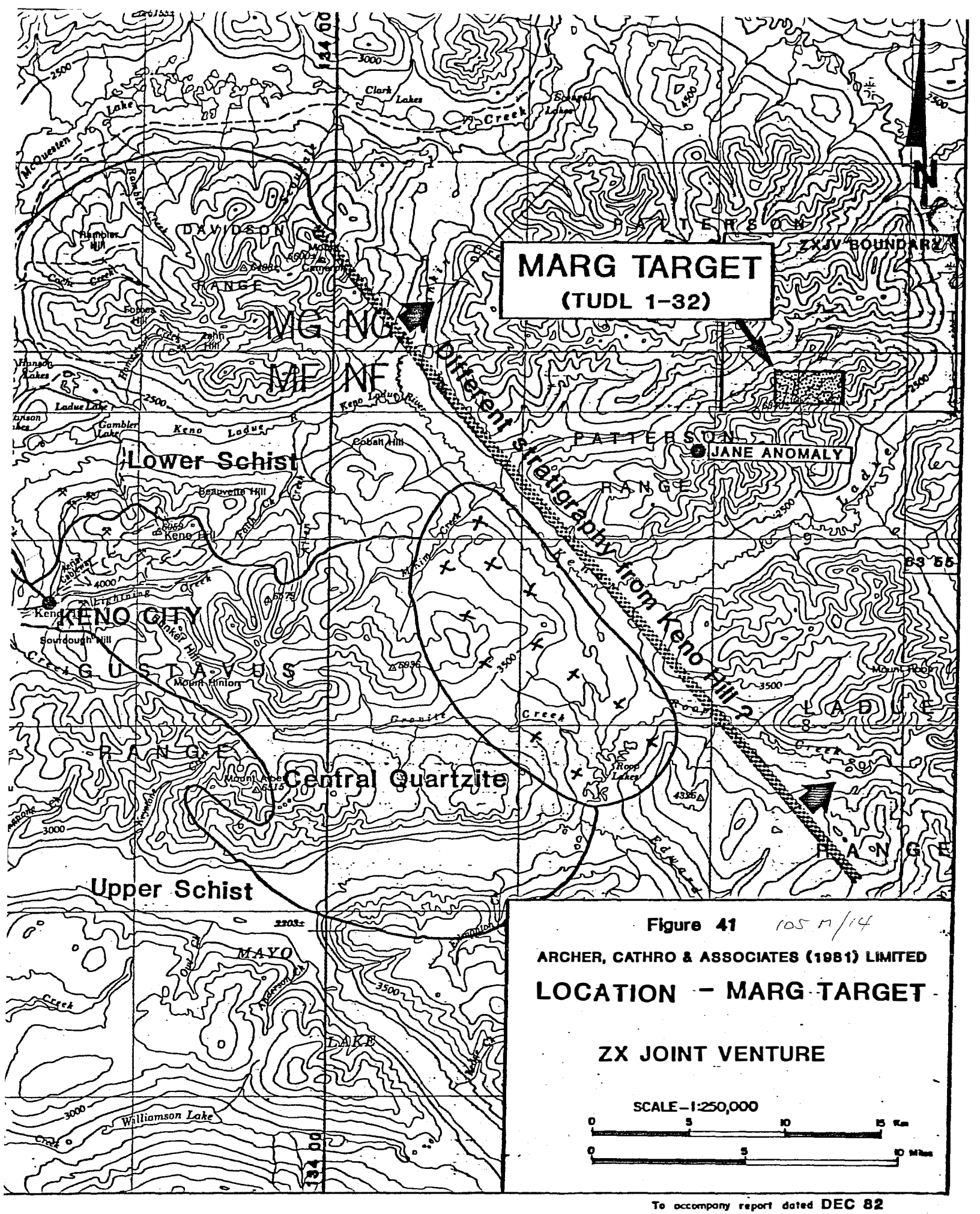

Figure 41 105 M/14

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LOCATION - MARG TARGET

ZX JOINT VENTURE

SCALE - 1:250,000

0 5 10 15 Km

0 5 10 Miles

To accompany report dated DEC 82

Canadian Superior explored by prospecting, soil sampling and hand trenching during 1965 and added the Marg and Heather claims that year. The property was joint ventured during 1966 by United Keno Hill Mines Ltd. (UKHM), which performed additional prospecting, grid geochemistry and hand trenching, and was examined by Archer, Cathro on behalf of Canadian Superior in 1967, at which time the previous grid sampling was rechecked and additional hand trenches were dug. The initial work was performed in the hope that it would locate Keno Hill-type galena veins with high silver content. The target was subsequently staked as the Flash claims in 1977 by Mountaineer Mines Ltd. and Welcome North Mines Ltd. but has received no additional exploration work since 1967.

The UKHM soil sample grid covered an area 1200 m (4000 ft) long by 450 m (1500 ft) wide centered on a transported gossan about one mile upstream from the anomalous GSC silt sample site. The data from this work is shown on Figures 45 to 47, in pocket. Soil samples were collected on 30 m (100 ft) centres, with fill-in sampling every 8 m (25 ft) within anomalous areas. Lead results are highly anomalous with an irregular distribution of values that range up to 15,000 ppm Pb and commonly exceed 500 ppm Pb. Zinc values range up to 2400 ppm and commonly exceed 400 ppm. Although the anomalous values form patterns that might suggest linear (vein) sources, they roughly occupy an area the length of the grid (1200 m) by some 300 m wide that trends east, or east-northeast, conformable with the general strike of the country rocks. The 1966 analysis was performed by UKHM at its own laboratory at Elsa. Random resampling in 1967 and 1981 by Archer, Cathro and in 1977 by Mountaineer and Welcome North at Chemex Labs reconfirmed the magnitude of the original anomaly.

Initial efforts to determine if the lead anomalies are derived from veins failed to uncover any lead mineralization although a single 1/4 inch fragment

of fine-grained sulphide panned from overburden by Archer, Cathro in 1967 was found to contain 40% sphalerite and 20% chalcopyrite in polished section. Pyrite panned from trenches in 1967 assayed up to 5500 ppm Pb with 60 ppm Ag, while soil samples from the trench sides returned values of up to 5850 ppm Pb with 30 ppm Ag. The conclusion drawn from the 1965-67 work was that no Keno Hill-type veins were present and no further work in search of veins was justified.

Rocks in the Marg area (shown on Figures 42 and 45, in pocket) are not readily correlative with the stratigraphic section around Keno Hill. The Marg anomaly is underlain by pyritic graphitic schist, which is in turn underlain by a partly calcareous, pyritic, feldspathic quartzite. The pyrite occurs as fine disseminations to coarse euhedral cubes in quartzites and graphitic schist. Both the schist and the quartzite weather rusty and contain abundant boxwork and open vugs after pyrite. Ferricrete gossans occur at several locations, particularly in the main stream draining the anomaly. Thin sequences of occasionally calcareous chlorite schist and quartz sericite schist interdigitate within the graphitic schist and quartzite, suggesting a volcanic affiliation. Lenses of more resistant gabbro occur as conformable masses (sills?) below the quartzite. The graphitic schist is overlain by a massive chloritic unit and then, in turn, by a thick sequence of graphitic quartzite, siltstone and graphitic schist. The relationships of massive quartzites that occur to the north is unclear.

All rocks have been regionally metamorphosed to some degree and most original rock features and textures have been altered. Although no stratiform sulphide textures were seen, the Marg graphitic schist seems to contain a consistently high pyrite content that is not found in other graphitic schists higher in the section.

In 1977, Stu Blusson of the GSC assigned an upper Devonian age to a sequence to the northeast that resembles units in the Marg area. There is some difficulty with Blusson's interpretation, since he did not map the Marg area itself and his interpretation conflicts with previous opinions about the age of rocks in the Keno Hill area. For example, Tempelman-Kluit considers it to be Jura-Cretaceous in age (GSC Mem. 180, pp.14-31 and map). The best interpretation possible at this time is that the Marg anomaly occurs in the informally named "Lower Schist" unit, which underlies the productive "Central Quartzite" at Keno Hill and is regional in extent. The current investigations suggest that the graphitic schists associated with the Marg anomaly are probably the metamorphosed and deformed equivalent of a pyritic, carbonaceous shale within a volcanic assemblage.

Work in 1982 consisted of cleaning out the original trench where zinc/copper mineralization had been found and panning other trench bottoms at 1 m intervals. Approximately 70 specimens of pyritic rock types from across the anomalies were selected for petrological study and lithogeochemical analysis and a line of soil samples were taken to check the previous anomalies and to test for copper, silver and gold. The rocks associated with the anomaly are far more leached and pyritic than was previously suspected and there is much more chlorite and quartz sericite schist than had been mapped. Three specimens of fine-grained granular pyrite were found adjacent to trench B (see Figure 45, in pocket) and these samples (designated as AA, EE and FF) returned assays averaging 12.8% Cu, 8.00% Pb, 2.24% Zn, 160.1 ppm (4.67 oz/t) Ag and 2.263 ppm (0.066 oz/t) Au. This location is some 60 m downsection from where the fragment of sulphide was discovered in 1967 (trench L). Four specimens of rusty shale were found at the bottom of trench M (designated GG, KK, OO and SS) which returned assays averaging 1.80% Zn.

This location is some 200 m along strike from the 1967 discovery site. The copper, silver and gold response from country rocks (up to 5200 ppm, 15.4 ppm and 207 ppb), silt (up to 4400 ppm, 0.6 ppm and 8 ppb) and soil (up to 1500 ppm, 33 ppm and 35 ppb), is much higher than would be expected from normal shale-hosted mineralization. Thinly-bedded barite (assaying 1.22% Ba) was noted in one specimen of creek float located downstream from the main transported gossan and this suggests an exhalative environment.

Preliminary work by ZXJV suggests that the setting contains a previously unsuspected volcanic component and the mineralization may be volcanogenic rather than simply sedimentary exhalative. This raises exciting regional exploration possiblities because it is the first indication of volcanogenic mineralization in the region. Interestingly enough, GSC geochemical coverage to the northwest shows a good correlation between anomalous copper and zinc content and the mapped distribution of the Lower Schist unit. This unit has been traditionally assigned a low exploration potential because no mineralization other than minor, erratic copper occurrences associated with greenstone (diorite) sills and dykes has ever been discovered in it. For that reason, the GSC anomalies have probably been overlooked or, at best, explored superficially like the Marg target itself. To the south and east of the Marg target, no GSC sampling was performed and the quality of regional mapping is inadequate to limit the area with high exploration potential.