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Preliminary Exploration Report on Livna Project, Lower Anvil Creek, Y.T.

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INTRODUCTION

This Dynasty-Atlas project was initiated subsequent to a July 22 decision by Cyprus and Dynasty to explore independently within the former Anvil joint venture area after expiry of an agreement thereon. The Lorna Group of 60 claims was staked on a magnetic anomaly 13 miles NW of the Anvil Mine during the first week of August. An exploration camp was moved into the area August 15 and detailed study of the area and staking of other anomalies was started.

EXPLORATION PHILOSOPHY

(see maps of District and Exploration Targets Map)

This is considered a top priority project for the following reasons:

1. It encompasses a 12-mile section (25%) of the 48-mile long Anvil phyllite belt, of which the other 75% contains three major replacement lead-zinc deposits, the Faro, Vangorda, and Swim, at 6- to 12-mile intervals. Considering the interval of strike distribution of sulphide bodies in the district, another may well occur in this project area.
2. The phyllite belt continues through the project area,

with the approximate stratigraphic section of the sulphide deposits lying mainly in the overburden-covered valley bottom of Anvil Creek.

3. Favourable stratigraphy, flat lying phyllites, and granitic intrusives, in fact all the controls, exist in the area, whichever theory of origin of the deposits is favoured.

4. Several magnetic anomalies similar to the ones caused by the known deposits occur along strike in this 12-mile section.

5. None of these anomalies have been explored, this part of the belt having been neglected probably because of (a) overburden cover, (b) appearance from published G.S.C. geologic maps that much of this area may be granite, this conclusion tending to be substantiated by lack of anomalies on government aeromagnetic maps and (c) the area may have been considered explored. Detailed examination of the area reveals outcrops of phyllite at low elevations, showing that the belt is essentially continuous between the granites, and Anvil mag-EM maps show characteristic anomalies. (Anvil's Faro orebody does not show on government aeromagnetic maps and is only a second order magnetic anomaly on the Anvil maps.)

6. Scattered mineralization, geochemical highs, and alteration occur at the northwest end of this section where creeks have exposed bedrock.

There is a good probability that one or more of the anomalies are caused by sulphides with associated lead and zinc. They could

therefore contain an orebody like Faro No. 1. Intensity of any given anomaly is probably not an indicator of its importance (compare Faro No. 1 to Vangorda and Faro No. 2).

For the above reasons this project has excellent possibilities for discovery of a large lead-zinc orebody. The area should be explored intensively by geochemistry, prospecting, geologic mapping, and geophysics. With concentration of efforts on the best anomaly situations it should be possible to develop targets for drilling in late September.

TARGETS (See Exploration Targets map and other file maps)

1. Anomaly Group 1 (Roto Claims)

The main anomaly is a broad mag area 3/4 mile long and up to $\frac{1}{2}$ mile wide in complete overburden cover on Anvil Creek above its junction with Rose Creek. It lies on strike of the Faro stratigraphy and has similar magnetic contrast. Its shape suggests moderate depth, and valley fill probably also masks geochem, since it is in the central part of the glacial valley.

A nearby sizeable airborne EM anomaly (unique in the project area) may be due to conductive overburden because of its low ratio, but slight magnetics occur nearby. Thus it could possibly be similar to Faro No. 2 zone which gave EM but no magnetics, with the main nearby mag anomaly (similar to Faro No. 1) being too deeply covered for EM response.

The above mag and EM anomalies should be tested by Mag, gravity and EM.

Two associated lesser mag anomalies $\frac{1}{4}$mile long on

sidehills to the north are likewise overburden-covered but possibly may be checked by sidehill soil sampling.

2. Anomaly Group 2

Two $\frac{1}{4}$ mile long mag anomalies, a strong one on the hillside and a weaker one at the canyon, occur $2\frac{1}{2}$ miles down from Rose Creek, adjacent to a granite contact.

The one at the canyon has slight associated EM and a mag low conforming with SW dip of schist outcrops. It is strongest near the granite contact and may be caused by pyrrhotite and magnetite found in exposed chloritic schists, although small traces of galena and chalcopyrite were found in these schists. The anomaly position should be checked exactly by ground traverses and if it corresponds to the exposed outcrops in the canyon, it can be eliminated. However, the EM anomaly is yet unexplained unless it is caused by conductive overburden.

The upper anomaly, although much stronger, is similar except with apparent reversed dip. Although apparently covered by glacial drift, it can probably be checked by mapping nearby outcrops and by contour soil sampling.

3. Lorna Anomalies

These anomalies lie in the overburden-covered valley on the SW side of Anvil Creek and show as a faint single contour on the government map.

The main anomaly is a strong mag high 1 mile long and $\frac{1}{2}$ mile wide with a mag low to the NE, suggesting a

SW dip conformable with phyllites in the project area. Exposures of what appear to be limy phyllites in the creek on the south flank the anomaly should be closely examined for alteration, mineralization, structure, rock geochem and magnetics. EM with a moderately high ratio (3.2 ave.) occurs at the mag low where suboutcrop might be closest to the surface. The main mag anomaly is larger and stronger than Faro No. 1, is like the Vangorda anomalies, but less complex. It appears to be entirely masked by valley fill and should be tested primarily by mag, gravity and EM.

A lesser anomaly NW on strike is gentler and $\frac{1}{2}$ mile across, suggestive of deeper cover, masked also by probably thicker valley fill near the centre of the glacial valley of Anvil Creek.

The main anomaly in particular appears to be an attractive target reflecting either sulfides with magnetite or a magnetite-rich greenstone sill.

4. Anomaly 3 (Gran Claims)

This is a moderate mag anomaly $1\frac{1}{2}$ miles long and $\frac{1}{4}$ mile wide near a granitic contact at the main bend of Anvil Creek. It lies along the projected strike of the Lorna anomalies but is transverse to their trend. Its contrast is almost the same as that of Faro No. 1. A geochem anomaly was obtained somewhere up the creek which cuts the east end of the anomaly. A slight EM response also occurs just off its east end. It may be caused by pyrrhotite impregnation at the granite contact but should be tested. It appears to be entirely overburden

covered, largely by valley fill at the toe of the slope. Sidehill and creek bank soil sampling may be effective as a positive tool, but mag and gravity are required to test it.

5. Anomaly Group 4

This consists of weak anomalies (one 3/4 mile long) at the base of the ridge SW of Anvil Creek. The main anomaly shows as a weak single contour on the government map. A weak government aeromag anomaly also occurs on the ridge with an associated low conforming with SW dip of phyllites exposed from halfway up the slope to the top. Pyrrhotite alteration with minor Cu and Zn occurs in a greenstone sill (rusty talus) to the SE, and zinc geochems occur in the canyon of Anvil Creek. The mag anomalies could be caused by pyrrhotite.

Sidehill soils should test the upper part of the section but copper and zinc results with no associated lead would probably reflect uneconomic trace mineralization similar to that around the slopes of Rose Mountain which is in the same stratigraphic position.

Because of thick valley fill of silt, the potentially more interesting lower slopes cannot be tested by geochem except perhaps by creek bank sampling.

The area should be staked and Mag profiles should be run in the area where Anvil mag-EM coverage is lacking.

Decision on further work should be contingent on the above as well as geologic mapping, study of rock magnetics, study of anomaly Group 5 which is on strike, etc.

Mag and gravity could be used to test the best target.

6. Anomaly Group 5

This consists of a string of narrow, moderate, en echelon mag anomalies, the largest southeast one being 3/4 mile long and 1/8 mile wide with nearby slight EM. Altered outcrops of a pyrrhotite-impregnated granitic body 300 feet wide, and pyrrhotite impregnated phyllites with minor chalcopyrite in skarney bands occur in the canyon of the creek which drains south from Tay Mountain. Zinc geochem occurs in the creek. The larger mag anomaly appears to be entirely masked by valley fill. Although the anomalies are probably caused by pyrrhotite associated with the impregnated granitic rock, this in itself along with alteration in the phyllites could be favourable. Except for the few outcrops in the canyons the area is masked by deep silt.

Further geochemical and geologic studies should determine the extent of other work, possibly mag and gravity profiles over the SE anomaly.

Lines cut over the NW part of this area suggest ground surveys by previous owners who should be contacted for their data.

NOTE: With some exceptions, much of the airborne EM in the area is probably caused by conductive overburden since valley fill increases down the creek and is too thick for penetration by the equipment used.

SUGGESTED PROGRAM

1. An immediate program should consist of:

(a) checking the remaining open anomalies along Anvil Creek valley by geochem (and reccy mag in area 4) as soon as possible, and staking any potential targets that cannot be conclusively written off. Anomaly Area 4 should be staked and checked first.

(b) Concurrent with (a), line cutting on both of the Lorna anomalies and on the main Roto and Gran anomalies, followed immediately by mag surveys at 800-foot line spacing to decide on gravity profile lines.
The object is to start gravity within 2 to 3 weeks in order to define drill targets as fast as possible; by mid- or late-September.
As soon as a drill target is defined a cat road should be extended down Rose Creek and drilling started before freeze-up.

2. A concurrent follow-through program should consist of:

(a) more geochem, mag and possibly IP or EM in defined areas of interest.

(b) detailed prospecting of selected areas for mineralization, float, or alteration.

(c) Reconnaissance geochem around margins of the area, especially up the valley and creeks east of Tay Mountain.

(d) semi-detailed geologic mapping of the main phyllite belt with special attention to approximate stratigraphy (for orientation, the stratigraphic sections at Vangorda, Faro, Rose Creek should be studied, say 2 days each), structure, and checking for magnetic sections as an aid to anomaly interpretation. Geologic data from properties,

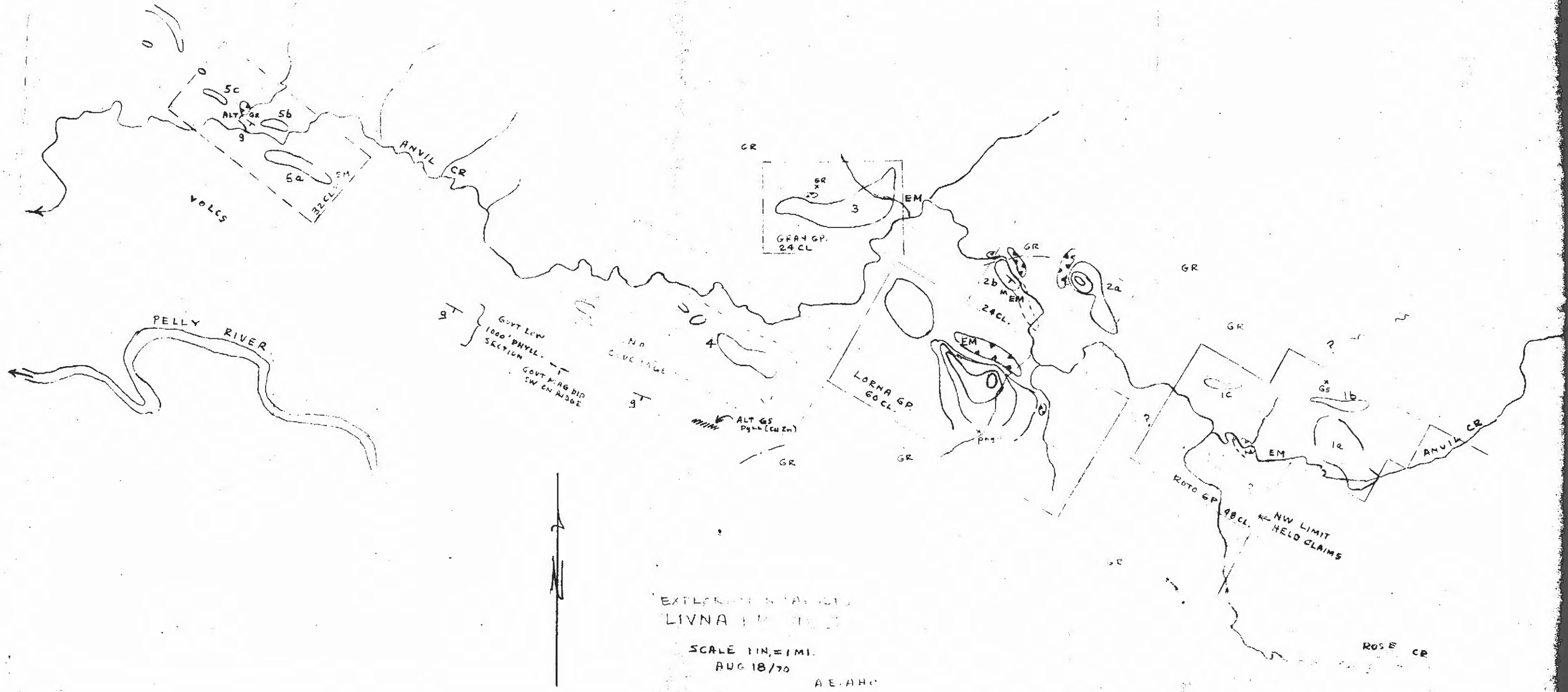
(eg. Anvil, Jacola) to the SE should be helpful. The geologic environment could be projected into the Tay Mountain area in the event of favourable geochem results there.

(e) Staking where results justify.

This follow-through work should also be completed by October in order to serve as a guide for better planned exploration, to the extent warranted by results.

3. The above work could be done with staff from other projects, which should not be extended unless results are promising. This project can base in the present camp with intermittent helicopter use to set out fly camps for other parts of the area. Programming, logistics, crew needs and budget should be decided by Brock.

AEA:eph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