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**MICROFILMED**

THE CONSOLIDATED SYNDICATE

NORTH DUNDAS PROJECT, TASMANIA  
(S.P.L. No. 20)

REPORT ON ACTIVITIES IN WINTER 1970.

SUBMITTED BY:

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INTRODUCTION

Work on S.P.L. 20. has been carried out since 1967 by the Consolidated Syndicate, (NCGFA, Mt. Lyell M & R Co. Ltd. and Renison Ltd). The study has now reached the detailed stage where individual anomalies are being studied with a view to drilling. This report covers activities carried out during the Autumn and Winter of 1970 on a mineralised shear zone indicated by the regional study.

PREVIOUS WORK

The regional study incorporating geology, magnetics and geochemistry was carried out in the 1967/68 and 1968/69 field seasons by D.L. Forsythe and a team of field assistants working from base camps in the S.P.L. The results were presented in two Progress Reports dated 3rd July 1968 and 30th April 1969.

The most interesting anomalous area was in the north of the S.P.L. The largest tin anomaly observed coincided with copper and arsenic anomalies all from soil sampling, on the projection of a mineralised vein seen in trenches at two points, see fig. 2. This was also in an area of relatively high magnetics.

On the suggestion of Forsythe's second report it was decided to costean this anomaly along line 1. The results of chip sampling of this are contained in a 'Report on Follow Up Work Done In 1969-70 Field Season' dated . . . . . Anomalies for tin, copper and arsenic were observed over the projected position of the shear, though the shear itself could not be seen. On the basis of these results it was decided to cut a close (200ft interval) grid of lines along the line of the shear, running detailed geology, magnetics and geochemistry along them.

RECENT WORKGEOLOGY

Most of the lines on the grid were mapped and a stream section across the line of the supposed shear was also mapped. Outcrop however was poor.

MAGNETICS

Using a McPhar portable magnetometer the vertical force of the earths magnetic field was measured at 25' intervals along all traverses.

GEOCHEMISTRY

All lines were sampled at 50' intervals using handaugers. Samples were assayed for Sn, As, Cu, Pb, Zn.

OBSERVATIONS AND RESULTSGEOLOGY

Exposure along the cut lines in this area was poor to nonexistent and the rocks seen were mostly float boulders. Most of the streams were very small and likewise showed little outcrop. One stream section though provided a good traverse of the area, though which the projected position of the shear passed.

The mineralised shear was seen by Forsythe at its southern end in trenches at two places. The first intersection is on line 3 of the original S.P.L. 20 grid where it meets the baseline of the subgrid. The vein here is six inches wide containing arsenopyrite, pyrrhotite and quartz, principally. The vein is seen further north on line 1A where it is nine inches wide with mineralogy similar apart from the addition of chalcopyrite.

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Connecting these two veins would agree with the dominant NNW trend for the pyrrhotite - arsenopyrite - chalcopyrite - cassiterite vein bodies differentiated by Forsythe. That is parallel to the trend of the narrow orebody seen in the Frazer Mine to the SW. Evidence for the connection of these two outcrops was provided in the recent mapping by the presence of quartz vein float along the baseline as far as 1600 N. Most of this however appeared to consist of massive quartz with little or no sulphide mineralisation. Veining with massive quartz was also seen on the water race on traverse 1100 N, 300 ft west of the baseline. Mineralised quartz vein material was found in a small stream at 400 ft east on traverse 1600 N. A small sample of this assayed 1800 ppm tin and 11500 ppm copper. The source of this float has not been located.

North of line 1600 N no trace was seen of a mineralised shear zone and the only float of quartz vein material was seen in the well exposed creek bed west of the baseline at 2800 N. Here and throughout the area covered by the sub grid the rock types were predominantly shales, siltstones, sandy siltstones and grits of the Brewery Junction formation in the Dundas Group of the Lower Cambrian. In places these well bedded rocks show development of bedded sulphides, predominantly pyrrhotite and in places show small veinlets and joint fillings of pyrite and pyrrhotite. This is the only trace of mineralisation that can be seen north of traverse 1600 N and is also seen to the south of 1600 where quartz veining is also observed. On line 1 of the original grid where trenching exposed fresh bedrock the rock type observed was this typical well bedded shale and siltstone containing bedded sulphides and with occasional narrow stringers of mineralisation.

#### MAGNETICS

The results of the magnetometer survey are shown fig. 3, which can be compared with fig. 2 in Forsythes 1969 report.

Broadly speaking the magnetics south of traverse 0 on the original grid are similar to those shown on Forsythes map apart from two slight lows seen on the western limb of traverse 1600 N. The general trend is of a fairly gentle slope of values rising from west to east to a broad anomaly of 2200 centered on Dumm's and Archer's Alluvial Workings. Moving down the magnetic gradient, however, to the north west there are three sharp anomalies which appear to trend NNE. The southern two of these are double anomalies with a ridge and trough lying parallel, side by side. These three anomalies occupy the position of the NNW trending single anomaly shown on Forsythes map which followed the original proposed line of the mineralised shear. Now that the anomaly has been split it now seems unlikely that it represents this shear. The trend of the anomalies is now sub-parallel to the strike of the bedding planes in this area.

It seems that the mineralised vein in the southern part of the sub grid is not magnetic enough to produce an anomaly on this scale.

#### GEOCHEMISTRY

##### TIN

The results of sampling has added more detail to the anomalies indicated by Forsythe. His principal anomaly (730 ppm) remains and is shown to be in part over 1000 ppm centered on line 1 of the original grid. The highest point of the anomaly is 4000 ppm on line 1. This anomaly is not directly associated with any significant magnetic anomaly. The position of this anomaly on line 1 coincides with the recent trenching and chip sampling. The results of this were less encouraging than the soil sampling and showed a sharp anomaly of maximum 1200 ppm tin. The anomaly occurs on the crest of a low ridge which drops gently away to the west and steeply to the east, down to the Great Northern Creek, so it is unlikely that the anomaly has been transported far from the source of the tin. There are other small tin anomalies in the area which seem to be associated with tin concentration in stream deposits.

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Fig. 5 shows the zinc values over the area sampled. A broad area of generally high values is shown to the south of traverse 1 with much of the area over 300 ppm. North of traverse 1, with one or two exceptions, values are below 300 ppm. The quartz veining with pyrrhotite, arsenopyrite, cassiterite mineralisation, found generally to the south of traverse 1, is unlikely to be the source of this zinc and this is borne out by assays of this material. There seems to be no direct co-relation between zinc and lead values the latter being generally below 100 ppm with one sharp anomaly of 6000 ppm on the western part of traverse 2100' north.

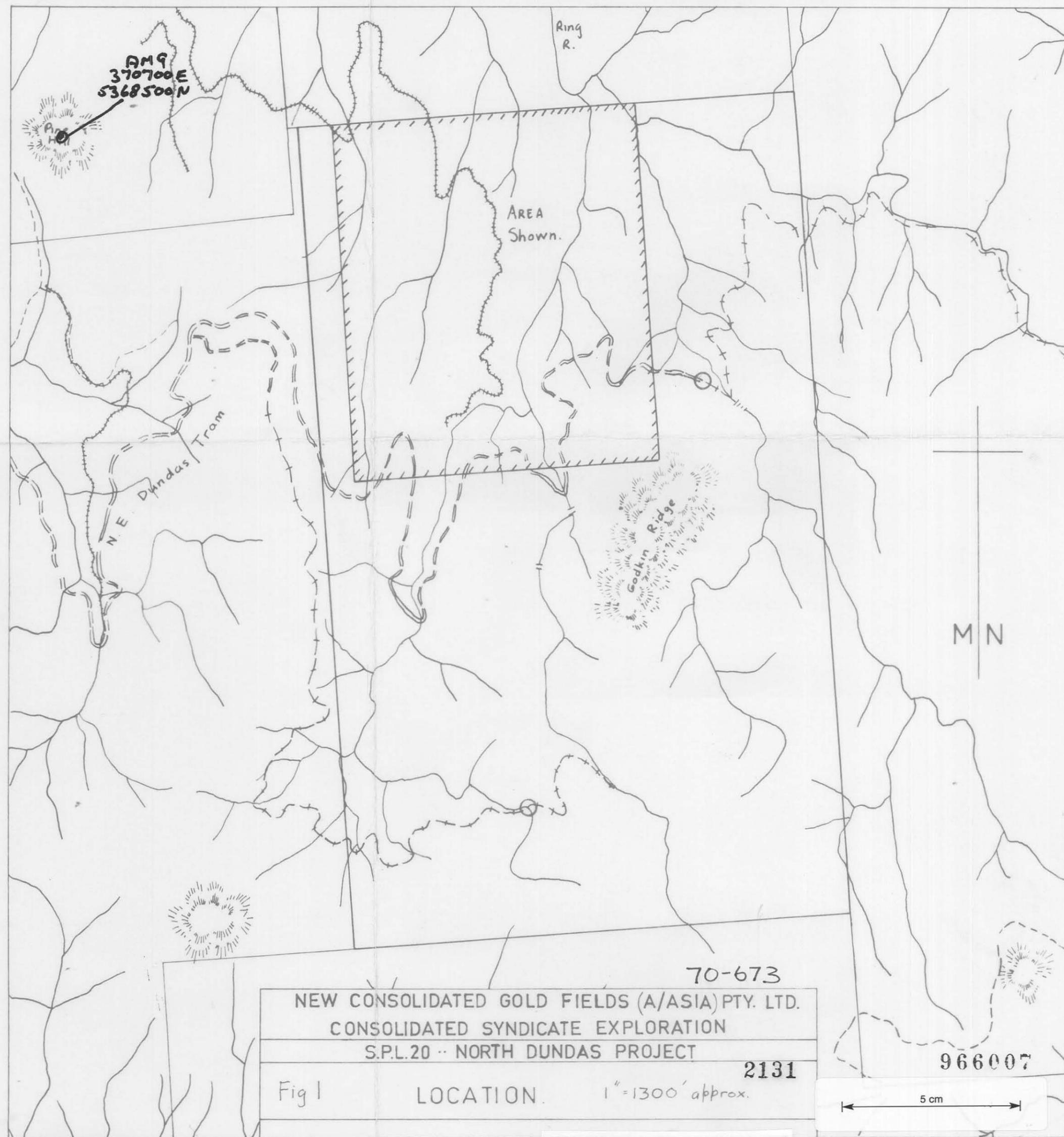
Copper values are also very low, again below 100 ppm.

Arsenic values, on the whole, mirror those of tin though are usually slightly lower, and confirm the link between the arsenic and tin anomalies and the arsenopyrite - pyrrhotite - cassiterite - quartz vein mineralisation.

#### CONCLUSION AND RECOMMENDATIONS

The results of this work have ruled out the possibility of a strongly mineralised shear zone running NNW through the area. The strong magnetic anomaly shown by Forsythes work in the northern part of the grid is now seen to be three separate anomalies with no strong geochemical results coinciding. No vein type mineralisation can be seen in the position of the strongest tin soil anomaly and no strong magnetic anomaly is observed, suggesting that the mineralisation present is of a disseminated type. To the south of this where the vein type mineralisation is observed, tin values in the soil are not anomalous and again magnetics are weak suggesting that tin mineralisation in the vein is weak or that dispersion of the element is slight, and that pyrrhotite is not developed in sufficient quantity to be picked up by the geophysical method used.

The aim of this work has been to select a possible drill target. The results, however, do not suggest that a massive ore body exists. If however it is desired to drill the disseminated mineralisation to test its value this could be achieved by drilling a hole 300 ft west of the sub baseline on line 1 of the original grid at an angle of 75° to horizontal, east along the direction of the traverse. Access to this point has already been achieved for the purpose of trenching the anomaly.



AMG REFERENCE POINT ADDED

FIG. 1.

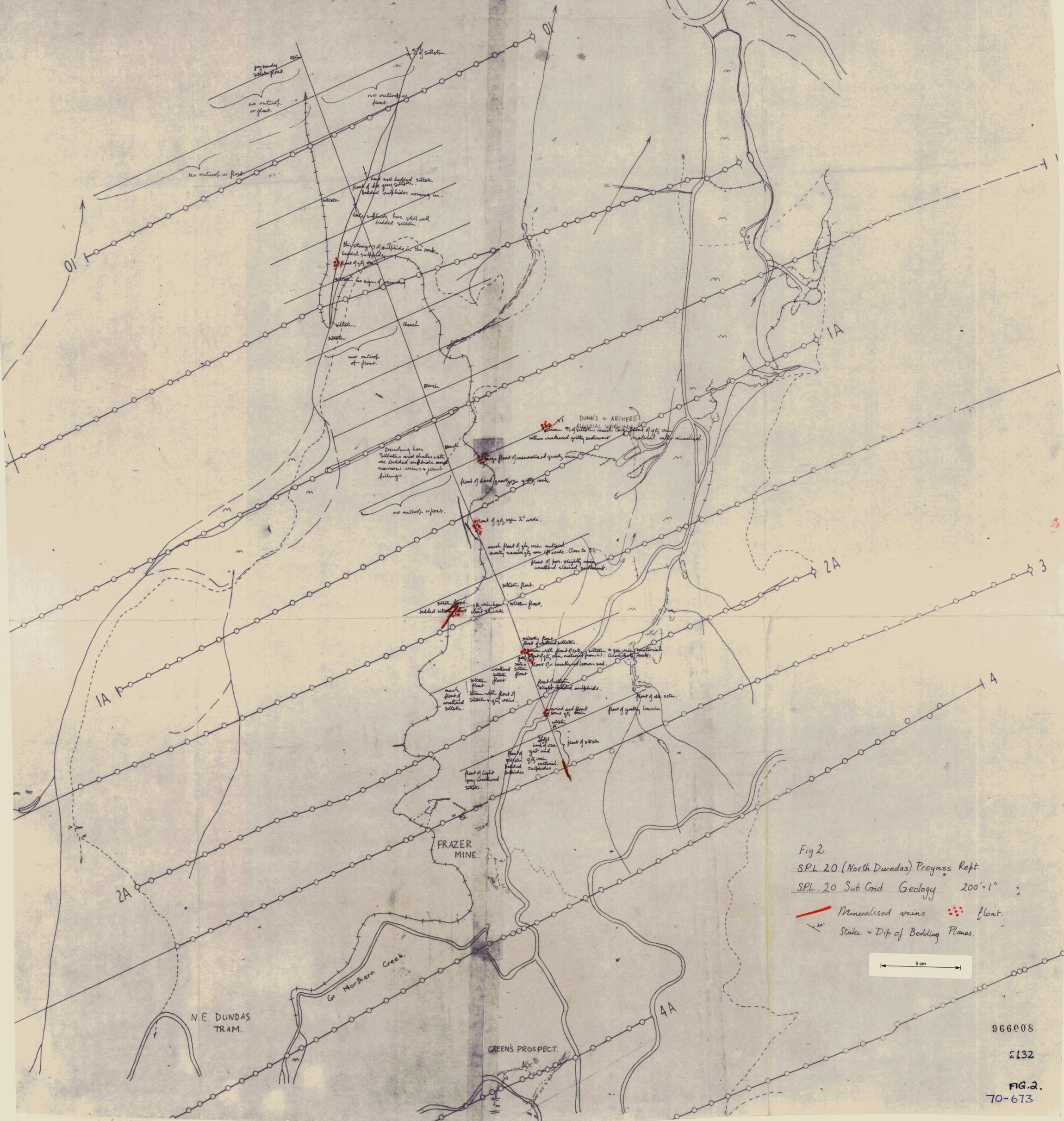


Fig 2.  
 S.P.L. 20 (North Dundas) Progress Rept.  
 S.P.L. 20 Sub Grid Geology 200' = 1"

— Mineralised veins    ••• float.  
 -20° Strike + Dip of Bedding Planes.

5 cm

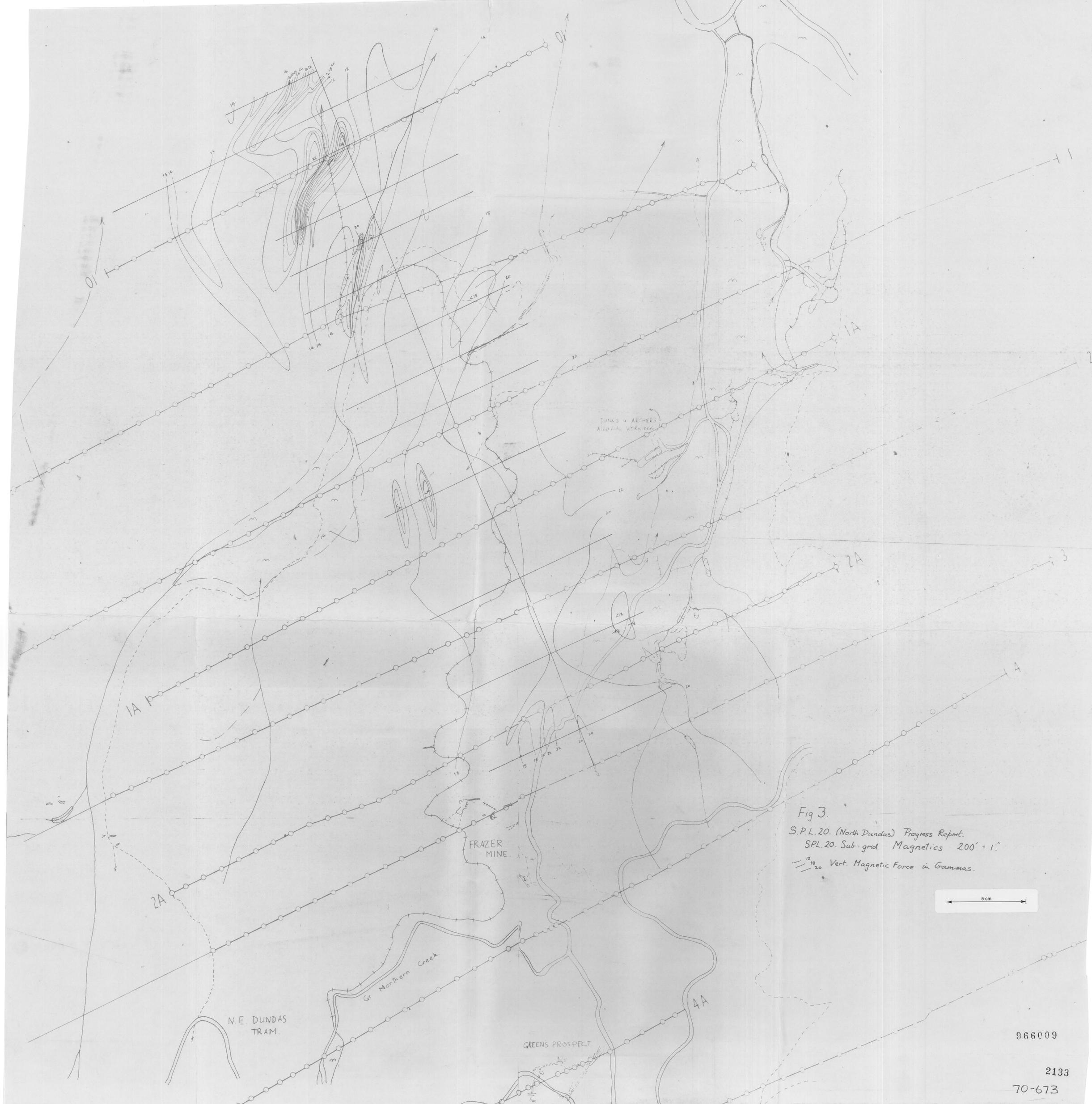


Fig 3.  
 S.P.L. 20. (North Dundas) Progress Report.  
 SPL 20. Sub-grid Magnetics 200' = 1".  
 12 18 20 Vert. Magnetic Force in Gammas.

5 cm

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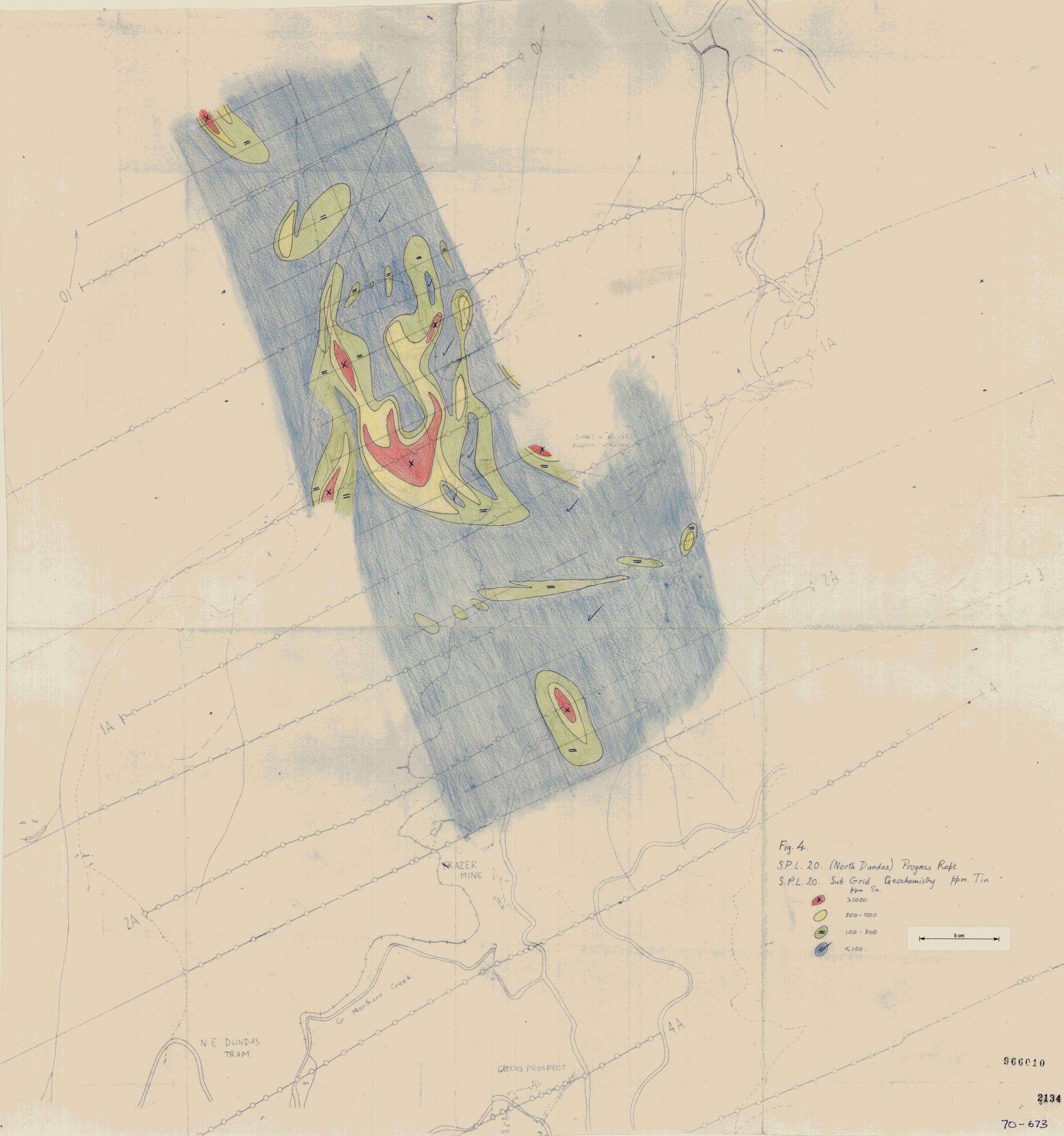


Fig. 4.  
 S.P.L. 20. (North Dundas) Progress Rept.  
 S.P.L. 20. Sub Grid Geochemistry - ppm. Tin

- x >1000
- o 300-1000
- o 100-300
- o <100.

5 cm

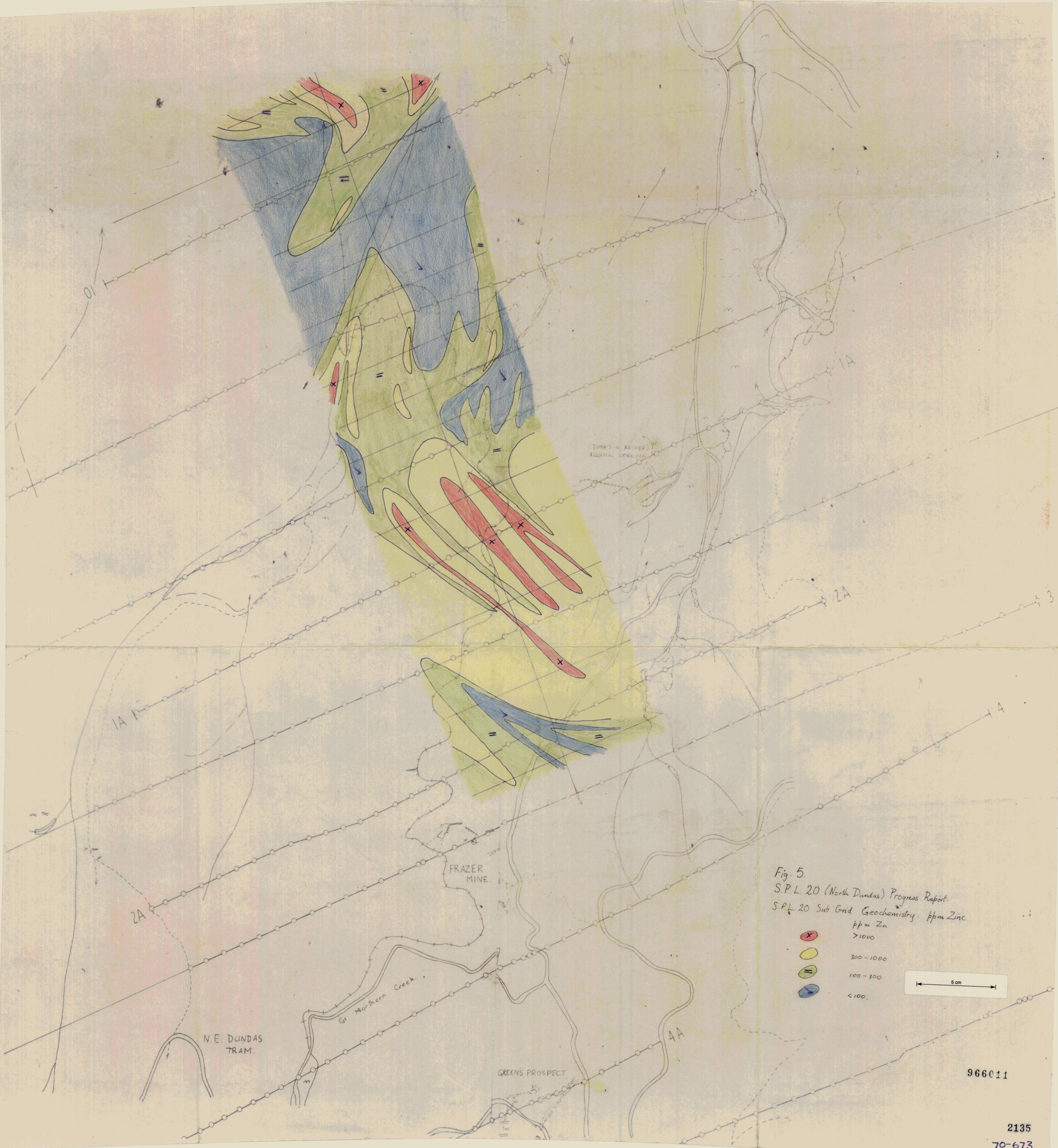


Fig. 5.  
 S.P.L. 20 (North Dundas) Progress Report.  
 S.P.L. 20 Sub Grid Geochemistry. ppm Zinc

- X >1000
- O 300-1000
- = 100-300
- O <100.

5 cm

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