



# The Edith Creek gold prospect

by R. S. Bottrill

## Abstract

Reports of a gold occurrence in this area were followed up but no significant gold could be detected. The rocks in question are pyritic, and slightly anomalous in some metals.

## INTRODUCTION

The Department was contacted in November 1987 by a Mr T. Ling of Edith Creek regarding a supposed gold occurrence. This was supported by assays <15 g/t from a local laboratory and his panning of stream-sediments. Mr Ling stated that gold had historically been won from the Gentle Annie Creek, (?)Gorgey Creek (?Deep Creek), and Peppermint Hill areas. These areas are at the edge of a basalt plateau, and the gold was probably derived from sub-basaltic gravels.

The only area investigated was the site of the analyses, in a quarry about one kilometre due east of the Edith Creek township (fig. 1).

## GEOLOGY

The quarry is located in a Cambrian mudstone/siltstone of the Smithton Basin, probably a Crimson Creek Formation correlate. The rock is brown, deeply weathered, and finely fractured except for the area at the very base of the quarry. Here, near the water table of the nearby Edith Creek, the rock is unoxidised, pale blue-grey and rather pyritic. A fault in the deepest part of the quarry contains blocks of pyritic limestone, as well as the local mudstone, in a puggy matrix. The limestone probably represents the Smithton Dolomite.

Bedding dips consistently due east at about 15 degrees. A number of faults are present (see fig. 1); the throw is difficult to determine because of the lack of marker beds, but they are typically only a few tens of centimetres wide. Quartz-filled tension gashes are rare.

## GEOCHEMISTRY

A number of samples were collected and submitted for analysis for gold and various other base metals. Sample descriptions are given in Table 1 and located on Figure 1, and analyses are given in Tables 2 and 3. These analyses indicate no anomalous gold. The analyses of many of the other elements are anomalous however (including Ag, As, Bi, Cu and W), which may indicate the concentration of some elements by the pyrite in the fault zone.

Panning of stream sediment in Edith Creek, where gold was supposedly found, indicated abundant pyrite but again no gold.

## MINERALOGY/PETROLOGY

Two samples of pyritic rock were examined in thin and polished section (see Appendix 1). No gold was observed but

chalcopyrite occurs as inclusions in pyrite in sample C102634, and as disseminations in the matrix and veins in the limestone.

X-ray diffraction analysis of several samples of fault pug indicated a range of mineralogy, including palygorskite (Bottrill, 1989), 'swelling chlorite', montmorillonite, chlorite, goethite and illite (Appendix 1).

## DISCUSSION

Repeats of sample analyses by T. Ling using various laboratories confirmed the lack of gold in the samples, including the ones first analysed which supposedly contained up to 15 g/t Au. Contaminated litharge in the laboratory could be responsible. Analysis of a 20 kg sample by Analabs for T. Ling indicated 0.008 Au, <0.5 Ag, 32 As, 110 Cu, 8300 Fe, 890 Mn, 285 Ni, and 85 Pb (all g/t). Ni and As may be anomalous, as for some of the elements in Table 2, but the background levels in the mudstone and limestone are unknown.

The palygorskite occurrence is very small and of no economic interest.

## REFERENCE

BOTTRILL, R. S. 1989. Palygorskite from Edith Creek. *Unpubl. Rep. Dep. Mines Tasm.* 1989/16.

[12 May 1989]

Table 1. *Sample Descriptions (Edith Creek prospect)*

Sample No.	Description
C102631	weathered mudstone (≈102636)
C102632	brecciated limestone (≈102643)
C102633	puggy pyritic siltstone breccia (≈102645)
C102634	coarse fraction of above
C102635	Mn-Fe stained quartz tension gash
C102636	weathered mudstone
C102637	pyritic siltstone
C102638	pyritic siltstone, partly oxidised, immediately overlies 102637
C102639	fault pug
C102640	fault pug, oxidised
C102641	fault pug, Fe-Mn stained? (separate fault)
C102642	fault pug
C102643	pyritic limestone with calcite veins
C102644	pyrite concentrate of stream sediment
C102645	fault pug (gravelly pyritic clay)

**Table 2. Analyses of samples from the Edith Creek gold prospect (all results in g/t) Sb, Tl and Hg are all below the detection limits (5, 0.2 and 0.5 g/t respectively)**

Sample no.	Lab no.	Au	Ag	As	Bi	Cu	Mo	Pb	W	Zn
C102631	876047	<0.03	<5	14	<5	190	<2	22	15	260
C102632	876048	<0.03	11	18	6	15	2	17	20	36
C102633	876049	<0.03	7	14	5	120	3	15	<10	115
C102634	876050	<0.03	7	12	<5	115	2	15	21	130

**Table 3. Gold analyses of samples from the Edith Creek prospect (g/t)**

Sample no.	Lab. no.	Au
C102635	876208	<0.03
C102637	876209	<0.03
C102638	876210	<0.03
C102639	876211	<0.03
C102640	876212	<0.03
C102641	876213	<0.03
C102642	876214	<0.03
C102643	876215	<0.03
C102645	876222	<0.03

## APPENDIX 1

### Petrology/Mineralogy

#### C102632

The sample was examined by transmitted and reflected light microscopy and X-ray diffraction.

The rock is dominantly fine-grained calcite with a few per cent of quartz sand and framboidal to euhedral pyrite. Calcite veins are common, and contain a little chalcopryrite (as does the matrix). A little chlorite and albite are also present in the matrix.

#### C102634

This sample was examined as above.

The sample is about 50% pyrite, has brecciated anhedral to euhedral grains up to 4 mm in diameter, with inclusions of gangue and chalcopryrite. The pyrite grains commonly show pressure shadows of quartz, chlorite and muscovite.

The matrix is a mudstone comprising chlorite, quartz, mica, albite and leucoxenised opaques.

#### C102639

XRD indicates that this sample of fault pug comprises palygorskite (a relatively uncommon clay mineral, a hydrated

magnesium silicate), 'swelling chlorite' (probably interlayered chlorite and montmorillonite), and minor illite.

#### C102640

XRD indicates that this fault pug comprises goethite and chlorite with minor illite and montmorillonite.

#### C102641

XRD indicates that this rock comprises major chlorite and trace illite.

#### C102642

XRD indicates that this rock comprises major montmorillonite and trace illite.

#### C102645

XRD indicates that this rock comprises chlorite, montmorillonite and illite

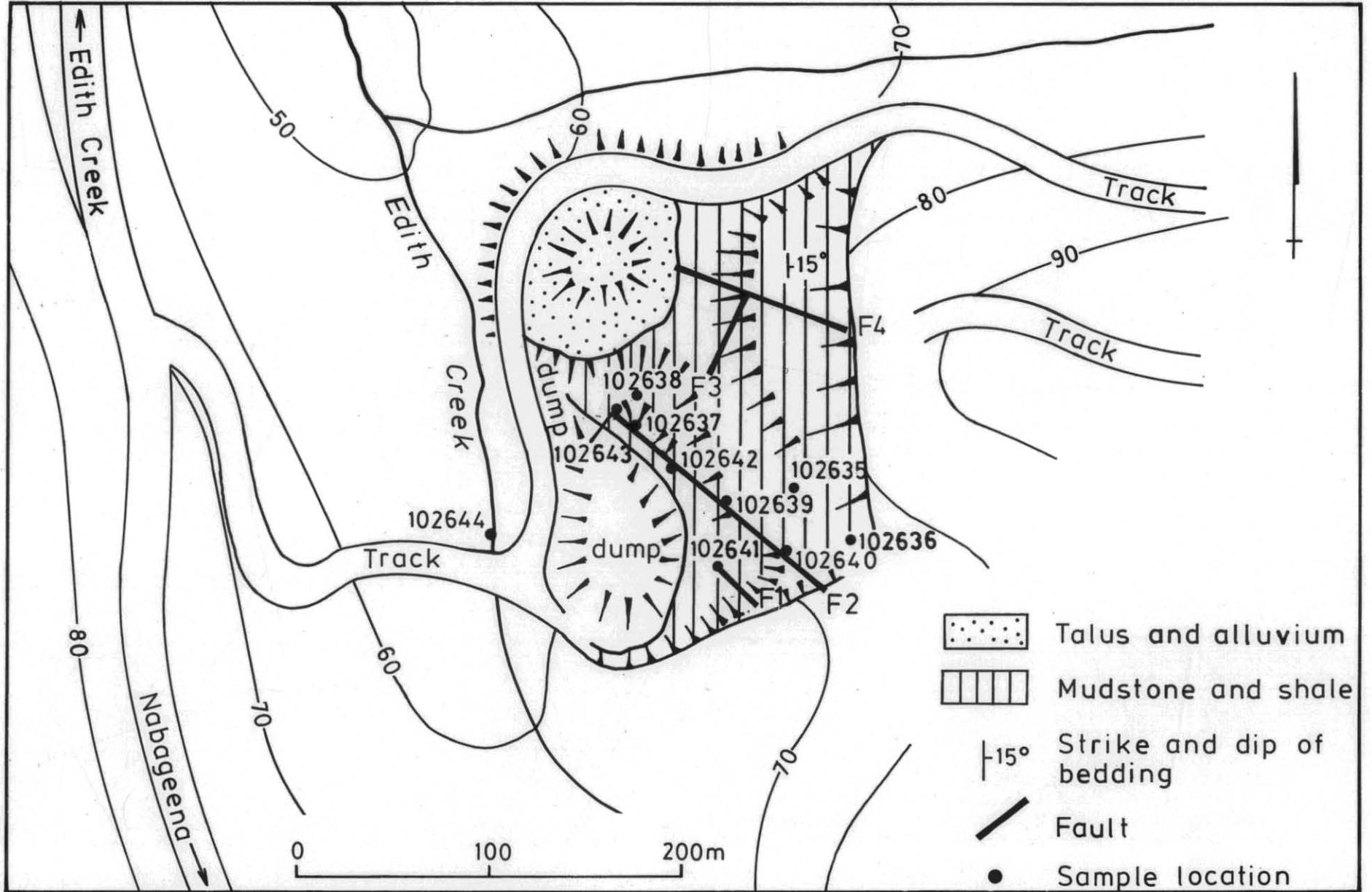


Figure 1. Sketch map of quarry, Edith Creek, showing sample locations.