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1986/29. Inspection of a gravel pit near Surges Bay

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Abstract

A dolerite gravel pit at Surges Bay has a two to five metre thick mudstone cap and further advance is limited by the hardness and increasing thickness of this cap. Future operations should be directed towards establishing a new face using better management to prevent overburden spillage and with screening and marketing the already won material.

An inspection of a gravel pit at Surges Bay was made on 24 May 1985 at the request of Mr L. Hyde of Franklin. The pit is located at the end of a southwesterly-bearing access road off the Huon Highway, three kilometres south of Surges Bay [DN979135]. The material in the pit is a coarse-grained dolerite or granophyre and its main use is as a surface course road-making material by the local Municipal Council.

The gravel pit faces north-west and is situated on the lower slopes of the Tongatabu ridge. The face is about 140 m high and is capped by two to five metres of indurated Permian mudstone. Undercutting of the face has led to collapse of the mudstone cap and consequent contamination of much of the mined material. This is poor mining practice. The over-burden should have been stripped from the face before advance to prevent the collapse.

The situation at present is that the mudstone/dolerite contact is dipping to the west. This will increase the overburden thickness as the face advances, which will be accentuated by a rise in ground level in the same direction. There will therefore be an increase in the overburden/ gravel ratio which will eventually become uneconomic. An added difficulty is that the mudstone is heat-hardened by the dolerite contact and may require blasting before removal. It is considered that unless a market can be found for the overburden, this face has reached its economic limit. In this case the future of this operation lies in extending the face along the slope in a northerly direction. The attitude of the overlying mudstone indicates that overburden may increase in thickness to the south. It is therefore recommended that test holes are dug along the slope to the north. These holes should be 2-3 m deep and about 15-20 m apart.

There is a reserve of already won material in the form of a stockpile which is estimated to contain about 10 000 m^3. The talus slope could also contain a similar amount but would need cleaning up to remove overburden fragments. These materials require screening to remove oversize, which would probably reduce the volume by about 25%.

It is understood that current council requirements are about 2000 tonnes per annum. If this is so, then the talus slope and the stockpile represent several year's supply.

The future of the pit lies in this 'clean up' operation and in exploration along the slope to find a suitable location for a new working face, rather than in attempting to remedy the effects of bad mining practice.

If a new face is established it should be worked from a series of benches or terraces to avoid the problems which are present in the currently mined face.

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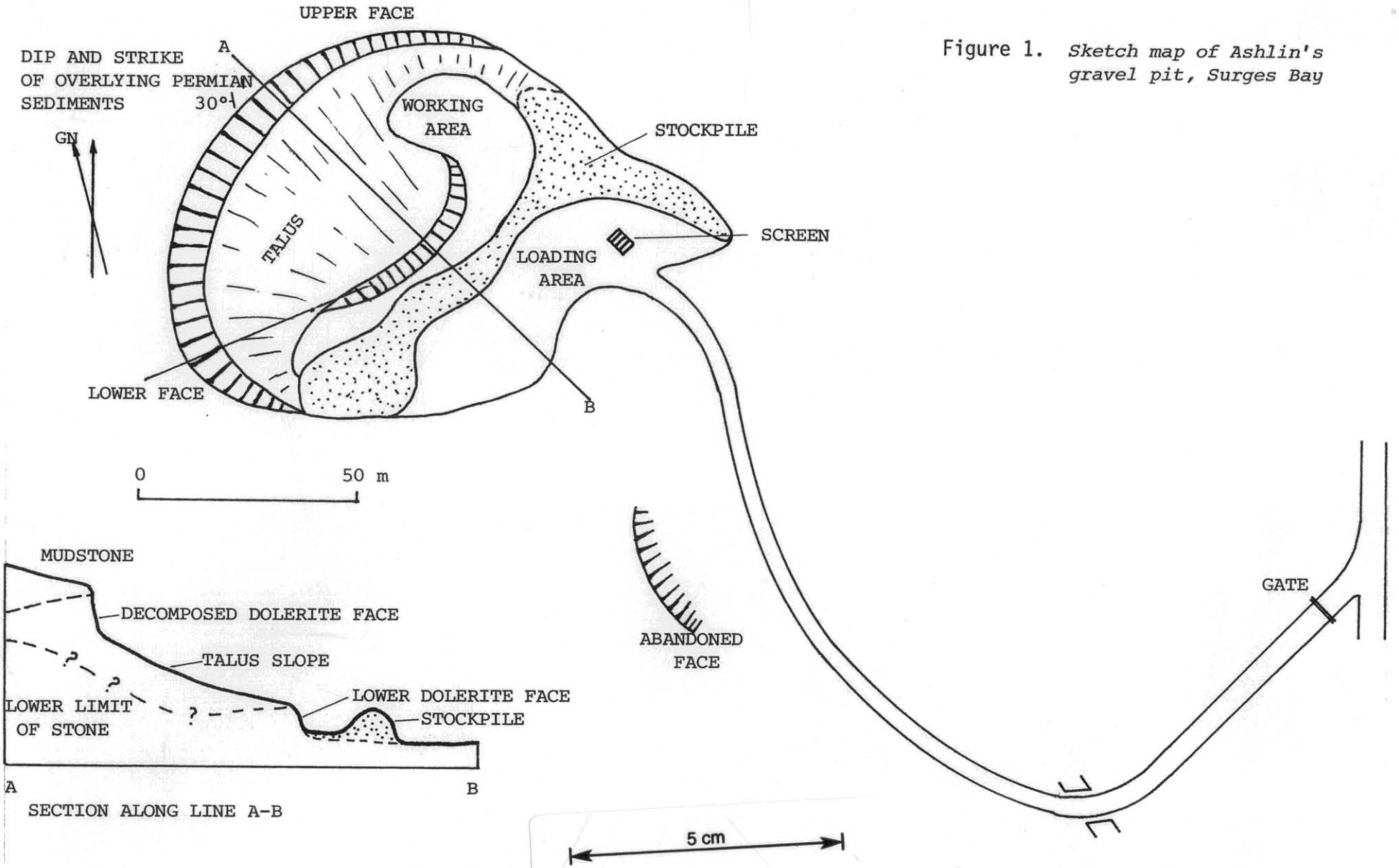

Figure 1. *Sketch map of Ashlin's gravel pit, Surges Bay*