

A review of concrete sand supplies in the Hobart region, June 2006

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Introduction

Concern for the long-term supply of concrete sand for the southern metropolitan market has resulted in numerous reports being produced by Mineral Resources Tasmania. The most recent are a resource investigation which was conducted in 1999 (Duncan, 1999), and a review of long-term options provided by Mills (2000). Subsequent production continues to deplete the available resources and a replacement supply to provide long-term stability for the construction industry is still elusive.

It is concluded that the supply position has deteriorated to a point where urgent decisions are required. This review is provided as an addendum to the two studies listed above. It does not provide any new information but updates the information and attempts to summarise the salient findings to clarify the options to be considered

Sand resources

The foregoing work clearly identified six sites as being pivotal to the future supply of concrete sand. These were:

1. Calvert (Boral Construction Materials Group Pty Ltd);
2. Clarkes Sand (HBMI Pty Ltd);
3. Flexmore Park (All Sands Pty Ltd);
4. Llanherne Spit (Seven Mile Beach Protected Area);
5. Males Dry Sand (RNB Trading Pty Ltd); and
6. Males Washed Sand (Males Sand Supplies Pty Ltd).

The status of current resources, production capacity and restraints on expanding production are discussed below.

Calvert, South Arm (Boral Construction Materials Group Pty Ltd)

Resources were 1.16 million tonnes in 2000. These are now depleted to approximately one million tonnes.

The future is therefore secure. Production is approximately 20 000 tonnes per annum which is used by Boral almost exclusively for concrete. There is scope for moderate expansion. Contractual constraints with the landowner and a need to preserve longer term resources limit the potential for large scale extraction. There is also a community expectation that production will reduce at South Arm and that perceived transport impacts on South Arm Road will reduce as a consequence.

Clarkes Sand, Huonville (HBMI Pty Ltd)

Resources were 1.27 million tonnes in 2000 but production ceased in 2001. Excessive depth of clay overburden, a large gravel fraction and coarse sizing have resulted in downgrading the sand resource. The production rate peaked in 1999 at 26 000 tonnes per annum. Silt disposal was a problem when this site was in operation. There is very limited scope for the re-opening of this operation.

Flexmore Park, Penna (All Sands Pty Ltd)

Current resources are approximately 1.4 million tonnes. This operation does not produce concrete sand, with production largely being fat sand for brick laying. Incidental sharp sand is also produced in small quantities. The operation has been run successfully in conjunction with farming and forestry operations. The potential of washing to supply the concrete industry has not been considered to date. Water supply and silt disposal are likely to be major constraints impeding such an operation. There are existing community concerns over road transport from the existing small scale operation and this is considered to be a serious obstacle to securing a level 2 permit to meet any potential market expectations.

Llanherne Spit (Seven Mile Beach Protected Area)

In 2000 the resources of 550 hectares in the multiple use zone of the Protected Area were estimated to be between 4 and 8 million cubic metres, dependant on the depth (0.8 to 1.5 m) to which the pit would be

worked. A final pit depth is still to be proposed and detailed surface topography will affect the final estimate. This volume of sand is equivalent to 7 to 13 million tonnes. RNB Trading Pty Ltd, through Sanbar Pty Ltd, hold a retention licence over the multiple use zone. With good transport links production levels exceeding 150 000 tonnes per annum are considered practical.

Although the potential for a large-scale operation is good, there is community opposition to sand production. Re-zoning of the Clarence Planning Scheme is required with a subsequent permit application, both of which are subject to third party appeal. After sand extraction, revegetation with local species or forestry are rehabilitation options and there is potential for alternative land use to follow mining. The major constraint to sand production (and alternative development) is the existence of an aquifer in the sand spit. Shallow extraction to protect the potential water resource is therefore considered essential. Shallow extraction will provide for continued sand supply and not compromise future land use options.

Males Dry Sand, South Arm (RNB Trading Pty Ltd)

The bulk of the sand used in concrete manufacture in southern Tasmania comes from this pit. Resources were 651 000 tonnes in 2000. These are now depleted to approximately 100 000 tonnes, less than one year's production. Production rates of 124 000 tonnes per annum have been achieved. This is the measure of the looming shortfall in the market.

Males Washed Sand, South Arm (Males Sand Supplies Pty Ltd)

Resources were 1.69 million tonnes in 2000. These have not depleted significantly. The maximum production capacity has been estimated to be 45 000 tonnes per annum, with production to date being approximately 15 000 tonnes. This operation produces specialist sand including aggregate for cement block manufacture. The washing plant is constrained by its reliance on

groundwater for treatment but there is potential for moderate expansion. There is community expectation that production will reduce at South Arm and that perceived transport impacts on South Arm Road will reduce as a consequence.

Conclusion

Sand extraction from the Llanherne Spit (Seven Mile Beach Protected Area) has always been the leading option to meet long-term concrete sand requirements. If impediments are not overcome, alternative materials will be required to fill the shortfall.

- Washed sand production will increase. Costs will include increased water requirement, silt disposal and increased energy requirements.
- Aggregate requirements, mainly crusher dust, will change. Costs include increased energy requirements and competition with other quarry products.
- Alternative small-scale deposits will be depleted in competition with other sand uses.
- Large quantities, probably in excess of 100 000 tonnes per annum, will be transported from northern Tasmania. Costs include increased fuel consumption and road maintenance on State Highways.

Price rises are considered to be inevitable and will rapidly affect the cost of concrete for construction and building industries. The change will be sudden and it may be expected that there will be a disjunction in the market.

References

- DUNCAN, D. MCP. 1999. A study of the sand resources of southern Tasmania. *Record Geological Survey Tasmania* 1999/03.
- MILLS, J. 2000. A review of socio-economic and environmental issues relating to the potential extraction of sand in the Hobart region. *Record Geological Survey Tasmania* 2000/03.

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