



Water Resource Associates

A network of consultants in hydraulics, hydrology, groundwater & environmental issues

Project title: Bintan Industrial Estate Water Supply, Indonesia

Summary: Review of water resource development options for supply of large industrial estate on the western side of Pulau Bintan in the Riau Archipelago of Indonesia.

Client: Bintan Inti Industrial Estate	Financed by: Sembcorp Parks Management Pte Ltd
Period of assignment: Oct 2001 – Jul 2002	Location: Riau Archipelago, Indonesia
Project Value: S\$ 85 000	WRA services: S\$ 55 000
In association with: Restech & Pt BITA Enarcon	Background <p>Since the review of water resources of the Lobam-Busing Peninsula was carried out in 1993 to set up the industrial site, a wide range of options have been investigated. Abstraction from shallow groundwater and the Lake Java sandpits provided the first supply of 2 Mld.</p> <p>To meet increased demand on the industrial estate, water supply was increased to 6.5 Mld, from 1995 to 1997, by doubling the groundwater production, and increasing the storage characteristics of Lake Java. Due to multiple-source blending difficulties, groundwater from the well-field in 1999 was pumped directly into Lake Java, so that pre-mixed ground and surface water could be delivered, by the Lake Java pumping station, to the treatment plant on the industrial estate.</p>
<p>Key: Existing wellfields Towns / resorts Existing reservoirs Proposed reservoirs Bintan Industrial Estate</p>	Scope of WRA assignment <p>The WRA project looked at options to increase water supply to 7 Mld in the short-term, and then to 12 and 18 Mld in the medium-term. The project reviewed and costed all the identified schemes, including the combination of water supply with excavation for landfill materials. A strategy was developed for managing drawdown in lake water level during drought conditions. Water chemistry was reviewed and process tests performed on site, to optimize water treatment parameters, and investigate requirements for treatment of highly discoloured peat swamp water.</p>
Process Tests and Increase in Water Demand 	Results <p>The favoured option focused on the construction of a small dam on Sg Sasah, and work activities included hydrographic and hydrometric surveys, with logistic support of the client, and development of catchment models using HYSIM. The simulated flow data were used to establish yield of the scheme variants, using reservoir behaviour simulation.</p>
Hysim catchment model of Sg Jelam 	

Project Number 000077

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