

# Chemical Waste Management

154165-K

WATER



Earth's freshwater is only 0.3%.  
We create more

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## Introduction

With the upsurge in economic growth in the recent years, come new challenges to the environment. The demand for potable water is always on the rise from industries and municipalities, in addition to meeting the growing needs for the future.

For years, CWM has established itself as the leading specialist in the field of water treatment. Dedicated to delivering the best technologies and sound solutions, both the public and the private sectors have engaged CWM in numerous water treatment projects from surface to underground sources, and also to address specific environmental problems.

CWM had delivered its services and solutions to predominant industries illustrated below:

- Municipal Water Supply Schemes
- Power Plant & Petrochemical Industries
- Pulp and Paper Industries
- Food and Beverage Industries
- Hotel and Resort Industries
- Electronic and Metal Industries
- Flood Mitigation



**Surge Vessel at Sungai Selangor Water Treatment Plant**

**CWM**

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## Major Projects

### ***Water Treatment Plants***

The 30+ water treatment plants commissioned by CWM are among the largest projects throughout Peninsular Malaysia. In some cases CWM collaborates with international partners to tap into the global community of professionals for their insight and technology that are vital to meet our client's requirements and financial goals.

#### **1. Sg. Selangor Water Supply Scheme Phase 2 Stage 1 & 2**

Scope: Mechanical & Electrical Works  
Capacity: 950,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



#### **2. KIPC Water Treatment Plant**

Scope: Mechanical & Electrical Works  
Capacity: 230,000 m<sup>3</sup>/day  
Industry: Petrochemical Complex Water Supply  
Location: Terengganu, Malaysia



#### **3. New Gadek Water Treatment Plant**

Scope: Mechanical & Electrical Works  
Capacity: 55,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Melaka, Malaysia



#### **4. Genting Sanyen Water Treatment Plant**

Scope: Design & Build  
Capacity: 40,000 m<sup>3</sup>/day  
Industry: Power Plant  
Location: Selangor, Malaysia



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## 5. Bukit Pancor Water Treatment Plant

Scope: Design & Build  
Capacity: 5,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Pulau Pinang, Malaysia



## 6. Batu Hampar Water Treatment Plant

Scope: Mechanical & Electrical works  
Capacity: 60,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Negri Sembilan, Malaysia



## ***Bulk Water Transfer Systems***

The provision of services in bulk water transfer complement CWM's portfolio as most of the water treatment plants are usually located in remote areas. CWM constructed the downstream distribution and supply system to connect the treatment plants to the local service reservoirs and maintain high level of water quality over long distance.

### 1. Sg. Selangor Phase 3 (Rasa) Distribution Supply System

Scope: 10 Service Reservoirs  
(67,000 m<sup>3</sup>) + 72 km Pipeline  
Supply Capacity: 250,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



### 2. Sg. Selangor Phase 3 (Bkt. Badong) Distribution Supply System

Scope: 1850mm dia. x 17 km Pipeline  
+ 178,000 m<sup>3</sup>/day Pump Station  
Supply Capacity: 400,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



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## ***Pumping Station***

Transferring of raw and treated water requires thoughtful design in pumping stations that will be able to meet industry standards. And if it is to improve and refurbish an existing plant, it means handling technical challenges, for instance, integrating new plant into existing structures and modifications of operational procedures. With technical knowledge and expertise accumulated over the years, CWM can undertake construction of pumping stations of all scales and flow rates, including future upgrading flexibility and the ease of maintenance.

### **1. Nusajaya Booster Pumping Station**

Scope: Mechanical & Electrical Works  
Supply Capacity: 50,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Johor, Malaysia



### **2. DSS1 Pumping Station (3 stations)**

Scope: Mechanical & Electrical Works  
Supply Capacity: 550,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Kuala Lumpur, Malaysia



### **3. Sg. Semenyih Yield Augmentation**

Scope: Mechanical & Electrical Works  
Supply capacity: 68,000 m<sup>3</sup>/day  
(Lake Water Transfer)  
& 82,000 m<sup>3</sup>/day (Dam Water Transfer)  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



### **4. Sg. Selangor Phase 3 (Bkt. Badong) Booster Pumping Stations**

Supply Scope: Construction Works  
Capacity: 178,000 m<sup>3</sup>/day (Bukit Tadun)  
& 158,000 m<sup>3</sup>/day (New Jelutong)  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



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## ***Sg. Semenyih Water Supply Scheme Privatisation***

Through a consortium, CWM was involved in this 30-year privatisation project. The scope involves the operations, maintenance and management of the entire water supply scheme in exchange for selling treated water to the Selangor State Government at predetermined rates. The said investment has since been divested in 2006.

Scope: Operations & Maintenance,  
Capital Works & Asset Replacement  
Capacity: 545,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Selangor, Malaysia



## ***Hohhot Water Supply Scheme***

Together with Veolia Water, CWM was involved in securing the Hohhot Water Supply Scheme in Inner Mongolia with 30-year concession through asset acquisition. This RMB536 million scheme involves 9 groundwater plants and 1 surface water plant with total supply capacity of 520,000 m<sup>3</sup>/day and supply treated water to the urban area of Hohhot, the capital city of Inner Mongolia with a population of more than 1 million.

Scope: Operations & Maintenance,  
Capital Works & Asset Replacement  
Capacity: 520,000 m<sup>3</sup>/day  
Industry: Municipal Water Supply  
Location: Inner Mongolia, China



## ***Flood Mitigation***

Due to the increasing weather disruptions caused by global warming, tropical countries like Malaysia is committed to implement flood mitigation schemes to prevent flooding caused by storm water. Our years of experience in water transfer come in handy to secure us new projects in this potentially prospective sector.

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## 1. Kepala Batas Flood Mitigation Scheme

This integrated scheme is designed to mitigate up to 100-year flood return and comprise upgrading of drainage systems for 6 rivers, slope revetment, elevation of bridges and the construction of a pump house integrated with flood detention pond.

Scope: Construction of Various Flood Mitigation Facilities

Capacity: Up to 100-year Flood Return Period

Industry: Drainage

Location: Pulau Pinang, Malaysia



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## WATER : Our Track Record

Plant / System	Engineering	Supply	Construction	Commission	Description of Works
<b>Mechanical</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Pumping plant with nominal capacity of 950,000m<sup>3</sup>/day.</li> <li>- Maximum pump capacity of 2.3m<sup>3</sup>/s with 2.9KW motor.</li> <li>- Surge protection for the pumping system.</li> <li>- Pumping plant pipe manifold of ø2.6m.</li> <li>- Penstock 2.5m<sup>2</sup></li> <li>- Sluice &amp; butterfly valves up to 1.5m FID.</li> <li>- Bandscreen with maximum capacity of 5m /s</li> <li>- Electricity overhead cranes up to 25 tons.</li> </ul>
<b>Electrical</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Complete electrical power distribution system including switchboards, cabling and transformer of 33kV, 11kV, 6.6kV and 415V</li> <li>- Maximum transformer rating installed = 16MVA</li> </ul>
<b>Generator</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Diesel engine driven standby generator sets output rating of 5MVA to 2.5MVA.</li> </ul>
<b>Process</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- 1,000m /day water treatment plant.</li> <li>- Sludge plant to treat waste water from the process plant.</li> </ul>
<b>Chemical</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- For 640,000m<sup>3</sup>/day water treatment plant.</li> <li>- Chemicals include alum, polyelectrolyte, chlorine, lime, fluoride. Lime silo capacity is 120 tons.</li> </ul>
<b>SCADA</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Complete system for treatment works with 6,000 I/O points.</li> <li>- Monitor and control plant automatic operation.</li> </ul>
<b>Instrumentation</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Complete system for treatment works.</li> <li>- Instruments include magnetic flowmeters, supervisory panels, water quality monitoring system and sampling equipment such as turbidity, pH, ammonia and chlorine residual meters</li> </ul>
<b>Distribution &amp; Supply</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>- Water retaining structure up to 24ML.</li> <li>- Laying of 1,850m FID pipeline.</li> <li>- Pipe jacking across road and railway track up to 60m length.</li> <li>- Pipe crossing over rivers using steel truss up to 49m.</li> <li>- Pipe laying underneath HT power distribution and transmission cables.</li> </ul>