



# Western Australia's premier supplier of high grade calcium bentonite clay

Watheroo Minerals is situated 250kms north of Perth we supply many of WA's largest resource projects. As a large local producer with a consistent quality product we can respond quickly to our customers' specific requests. We hold large stocks year round in bulk storage.

## Hydrology and earthworks

Calcium bentonite clay has a very low permeability  $8.8 \times 10^{-10} \text{m/sec}$ . The product has widespread applications in:

- Construction and maintenance of ponds and dams
- Earthworks for water management
- Bunding and embankments for water diversion or containment
- Bunding for containment of emergency spills: waste water, fuels, industrial chemicals
- Support, bedding and sealing during installation and maintenance of pipelines

## Groundwater management

Watheroo Minerals bentonite can be used to create sub-surface impermeable barriers to manage shallow ground waters with problems relating to:

- Acidity
- Heavy metals
- Diesel and other fuels
- Industrial chemicals
- Nutrients, especially phosphates

## Other applications

- Earthing and low resistivity electrical applications
- Solidification and immobilisation of toxic waste products in slurries or waste waters
- Bore hole grouting
- Blast hole packing

Watheroo Minerals calcium bentonite has a long list of unique properties including:

1. Very low permeability
2. High neutralising capacity
3. High water absorption capacity
4. High cation exchange capacity
5. High adsorption capacity for metal ions
6. High phosphate retention index (PRI)
7. High absorption of diesel and other organics





## Clay A Applications

### Basic Composition of Clay A

#### Content % by weight

Silicon dioxide	26.4 SiO <sub>2</sub>
Aluminium oxide	2.7 Al <sub>2</sub> O <sub>3</sub>
Calcium oxide	20.8 CaO
Magnesium oxide	18.9 MgO
Potassium oxide	0.14 K <sub>2</sub> O
Sodium oxide	1.3 Na <sub>2</sub> O
Carbonates	28.6 CO <sub>3</sub>
Bulk density	1.3
Dry screen	< 2 mm
Wet screen	
Cation exchange capacity	80 CEC
Moisture content	~8%
pH	8.3
Viscosity 400 kg/m <sup>3</sup>	3000 cP
Swelling volume	1.2 ml/g

### Permeability: $8.8 \times 10^{-10}$ m/sec

Very low permeability, this facilitates:

- Ponds, dams, sealing pipework, drainage management
- Emergency flood management, bunding,
- Ground water management, impermeable clay barrier
- Manage acid and contaminated ground water

### B1 Earthing, Resistivity: 2 Ω.m

- Specific electrical earthing and lighting applications
- Meet strict AS2239
- 50% Calcium Bentonite; 50% Calcium Sulphate
- 100% less than 1 mm

### Absorption Capacity

- Metals including uranium, copper, nickel
- Organic pollutants e.g. Diesel, pesticides, industrial chemicals
- Neutralising capacity 70%
- 200 PO<sup>4</sup>PRI

### Bore Hole Grouting / Blast Hole Packing

- Grouting/plugging of bore holes.
- Seals bore from separate aquifers
- Non-expanding, solid, impermeable block, less likely to wash out than expanding clays.
- Can be flushed out if bore reactivated



**WATHEROO  
MINERALS GROUP**

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