



# ***Acid Solutions***<sup>®</sup>

***Contaminated Water Treatment***

**TREATMENT OF SUSPENDED SOLIDS  
CONTAMINATED WATER**

**FOR A**

**SOUTH EAST QUEENSLAND  
COAL SEAM GAS COMPANY.**

**ACID SOLUTIONS PTY LTD**

**3 September 2012**



**16 HECTARE 650 MEGALITRE DAM TREATED WITH 44 TONNES OF REAGENT**



**SITE 1 WEEK AFTER TREATMENT.**

## 1 INTRODUCTION

*Acid Solutions* was requested by a south east Queensland Coal Seam Gas Company to provide treatment of a Suspended Solids Contaminated Dam water on a site near Dalby, Queensland. The water was of very good quality prior to pumping into the holding dam but due to the surrounding clay banks, became contaminated with fine colloidal clay particles. Treatment was required to improve quality so as to allow irrigation disposal of the water.

## 2 OVERVIEW

The water requiring treatment was contained in a clay lined dam with a length of approximately 380 metres, width of 450 metres and a depth of approximately 4 to 4.5 metres. The volume was estimated to be approximately 650 Megalitres.

The water required treatment using Gypsum to reduce suspended solids and raise the calcium level to provide a Sodium Absorption Ratio amended quality suitable for licensed irrigation disposal.

## 3 TREATMENT REAGENTS

44 tonnes of super fine Gypsum was accurately applied to the 16 hectare dam in less than 4 days to reduce suspended solids and modify the SAR ratio.

## 4 THE CRAB TREATMENT TECHNOLOGY

*Acid Solutions* patented water treatment technology is called the CRAB™.

The primary objectives of the *Acid Solutions* technology are to resolve or minimise the drawbacks of conventional systems and to be cost effective, simple and portable for mining applications. This technology uses our proprietary processes to achieve outstanding results.

*Acid Solutions* CRAB™ treatment system has many benefits above all other treatment system designs available. We have designed, refined and perfected these portable, multipurpose, adaptable treatment systems to suit the type and quality of treatment required quickly and efficiently. The CRAB™ is an accurate and computer controlled multi reagent blending machine with a diverse range of plug on application and processing systems. The technology is compact, adaptable and self powered. It offers significant economic advantages over other treatment designs in terms of infrastructure, operator requirements, safety and efficiency.

## 5 BENEFITS

**Benefits of our treatment services include, but are not limited to:**

- High quality water treatment results
- Extremely large volume fast treatment capability.
- Very Accurate and even reagent application
- Very cost effective in comparison to other treatment methods.
- No permanent infrastructure required.
- Flexible in regard to site locations.
- The portability of our treatment systems provide fast setup and dismantling leaving no permanent infrastructure to dispose of.

## 6 ACID SOLUTIONS CONTAMINATED BULK WATER TREATMENT SERVICES

Acid Solutions are specialists in urgent, high volume, metal contaminated water problems on difficult to access sites. We use “state of the art” technology, fully mobile computerised machines and systems that treat huge volumes of water, use less reagent, can target specific contaminants, and produce the high quality water results needed for licensed release, irrigation or reuse. We treat low pH and acidic water, dissolved metals, suspended solids, algae, toxins and many other contaminants, as well as acid forming rocks and soils. We treat sites previously thought to be untreatable.

### **We provide the following types of treatment:**

**In situ Treatment** - of large dams and lakes containing several Million litres to many Gigalitres of contaminated water. We specialise in treatment of large volumes of highly acidic, low pH metal contaminated water.

**In line Treatment** – of flowing water at rates up to many millions of litres per hour.

Treatment of either pumped water or flowing river systems, can be accomplished accurately and safely – (the CRAB machine has an accurate reagent output rate from 1 kg/Hr to over 4 Tonnes per hour.) We have many specialised application systems for this purpose.

Mine extraction pits that have filled with contaminated water from rainfall runoff are usually dewatered and treated in a single process saving time and money. Treatment while dewatering means you don't need to think about treatment after the water has been pumped.

**Neutralisation of Acid Forming Rocks and Soils.** *Acid Solutions* NeutraBind™ treatment process deals with the huge problems of acid formation and AMD leaching from pyritic rocks, soils and waste rock dumps. Disturbed pyritic rocks and soils produce acidity and mobilise many toxic metals when exposed or blasted. Acid formed from pyritic waste rock leaches low pH water and dissolved metals into catchment dams and the environment during and long after rainfall events. Even after rainfall, acidity continues to form and remains crystalline on the rock structure until washed away. The NeutraBind™ in-situ process instantly neutralizes and seals, providing long term and environmental protection.

**Sealing of Large leaking Dam.** *Acid Solutions* Dam Sealing Service quickly seals leaks in large catchment, holding and tailings dams without having to dewater.

Our dam sealing processes allow us to blend and mix our sealing reagent combinations onsite. We apply reagents with high accuracy directly to the leaking area or over a narrow or broad target area to a maximum depth of 24 metres.

No other company has our accuracy for reagent placement on very large sites. Only our methods allow placement of sealing reagents exactly where required using our specialised systems, methods and applicators.

**Our sealing services are a fraction of the cost of other sealing methods, saving you time and money.**

Acid Solutions Pty Ltd  
Contaminated Bulk Water Treatment Pty Ltd  
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*Acid Solutions Bulk Water Treatment Services –  
Specialists in treating difficult sites previously thought to be untreatable.*

