



## Mine Site Environmental Sump Pump Installation

**Customer:** Vale Australia

**Location:** Carborough Downs Mine – Moranbah, QLD

**Case Study ID:** CS-73

**Date:** February 2013

### Overview

Dowdens Pumping and Water Treatment successfully designed, supplied, installed and commissioned some innovative pumping systems and wash down areas.

Dowdens utilised the existing infrastructure and installed a range of proven products to suit the mines' application. Eight catchment sumps have been constructed at Vale Australia's Carborough Downs Mine (located 15 km East of Moranbah).

### The Problem

Vale Australia required a pumping system to cater for a 1 in 100-year rain event (which floods Vale's underground mining operations and discharges off-site), potentially affecting Carborough Downs Mine's new surface sump and catchment pits.

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## Our Solution

The pumping systems supplied and installed were designed to cope with the region's historical rainfall events, onsite water quality, and the critical transfer of fluid from sump to sump during these extreme rainfall events.

The Dowdens solution was to use several pumps, including the EIM BD Series sump pumps & Grindex sump pumps with flow rates ranging from 49L/sec down to 9L/sec. The pumps selected were based on pump construction, an ideal selection for duty points, and reliability based on performance history in abrasive mining applications (pumping coal fines and dirty water).

The piping systems and valve assemblies to suit Flygt pumps were free and issued from the client with flow rates of 90L/second and 75L/second. A Wilden air operated diaphragm pump was selected for a portal sump pump (operated off an air operated level switch) to empty the sump pit during smaller rain events.

Dowdens also put mine spec housings for the pump discharge to valve assemblies, manual isolation valve and non-return valve assemblies for each sump, and victaulic pipework & HDPE poly pipe fitted from valve assembly to the discharge point.

Dowdens was the sole operator of the onsite supply, install and final commissioning for the pumping solution.

## Key Components

- EIM BD Series sump pumps
- Grindex sump pumps
- The Wilden air operated diaphragm pump
- Victaulic pipework
- HDPE poly pipe

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## Customer Review

*"...three months after Dowdens Pumping and Water Treatment completed the project, the site experienced a 1 in a 100-year rain event, and all pumping systems operated effectively – this minimised the downtime to our mining operations!"*

**Vale Australia Representative**

## Brands used in this project



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