

BiOWiSH® Remediate

Soil Remediation at Binary Industries in Australia

Background

On 25th August 2005 a fire at the Binary Industries chemical plant in Narangba Industrial Estate Queensland caused the release of a large quantity of herbicides and pesticides into the local environment including Saltwater Creek and a tributary.

The main chemicals involved were chlorpyrifos, 2,4-D, glyphosate and diuron.

To early 2008 it is estimated by QLD EPA that 5,283,441Gal (20 megalitres) of water and 4,000 tons of soil contaminated with has been treated in-situ or removed from the site.

Objectives

Despite the progress made significant quantities of soil remain contaminated with high levels of 2,4-D. Current remediation options are either cost prohibitive or take an extended period of time with common remediation periods to achieve the maximum acceptable limit of 0.0008oz/lb (50mg/kg) of 9 to 12 months with regular turning.

Implementation Program

30 tons of Binary soil was secured by Thiess Services from QLD EPA for the purposes of an accelerated remediation trial. This trial was overseen by Luke Zambelli of Three Media Environmental. Sampling throughout the soil showed average contamination levels of 0.128oz/lb (8,000mg/kg) of 2,4-D.

BiOWiSH® REMEDIATE was mixed into solution and applied at 0.100oz/cu ft (100gr/m3) or 100ppm with a microbial nutrient source rich in nitrogen and phosphorus (Fast Grow fertilizer) at 0.032oz/lb (2,000mg/kg) and moisture was maintained at 40-50% for the duration of the trial. All materials were thoroughly mixed as the BiOWiSH® REMEDIATE solution was sprayed through the soil.

No further action was required other than to ensure moisture content remained >40%.

Results

Sampling showed removal of 2,4-D as follows:

Weeks	% Removal	
Week 0	0.128 oz/lb	8,000 mg/kg
Week 4	0.0056 oz/lb	350 mg/kg
Week 6	0.00054 oz/lb	33.9 mg/kg

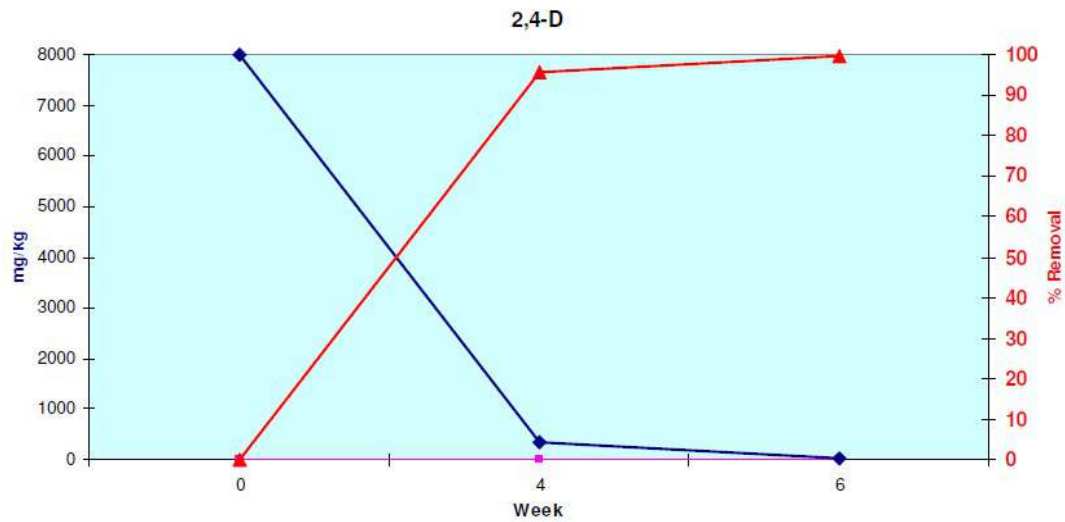
BiOWiSH® Remediate



- Improves environmental outcomes
- Reduces odor and volatile organic outcomes (VOC)
- Neutralizes harmful toxins
- Reduces requirement for turning, aeration, & other interventions
- Free of harmful chemicals

Available Sizes

- 1kg/2.2lbs
- 5kg/11lbs
- 10kg/22lbs



** It was observed that high levels of contamination remained in large clay bodies indicating that these need to be crushed prior to treatment.*



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