

VIROSOIL TECHNOLOGY

Contaminated Site Remediation and Soil Treatment



Hydrocarbon and Heavy Metal Contaminated Soil •
Soil Conditioning • Dredge Spoil •
Acid Sulphate Soils • Revegetation

VIROSOIL TECHNOLOGY CAPABILITY STATEMENT

The effective and economical remediation of contaminated soil is necessary to protect our environment and communities from unwanted pollutants and to solve long-term industrial legacies.

Environmental problems associated with contaminated soil involve both the direct effect of surficial acidification and contamination and the leaching of heavy metals such as lead and mercury, metalloids such as arsenic and cyanide, and hydrocarbons through groundwater and surface run-off into drains, aquifers and rivers. Contaminated soil treatment and site remediation have

therefore become an integral component of modern, sustainable urban development.

ViroSoil Technology is an effective method of remediating land contaminated with acidity, heavy metals and all forms of hydrocarbons, including: single-bonded, alkanic hydrocarbons; chlorinated hydrocarbons, such as TCE and PCE; and polycyclic aromatic hydrocarbons, such as benzo(a)pyrene and naphthalene. High levels of heavy metal contamination and the degradation of hydrocarbons when present in levels greater than 100,000 parts per million are our specialty. ViroSoil

Technology can also be employed to neutralise both the total actual and potential acidity of industrial soils. Unlike the widespread use of lime, which provides a short-term fix but not a long-term solution, reagents used in ViroSoil Technology are insoluble, and continue buffering and neutralising acid long after application.

In revegetation, ViroSoil Technology supports germination and the establishment and persistence of flora by binding heavy metals into non-bioavailable forms; it neutralises acidity and enhances soil structure, increases moisture retention, and promotes nutrient

balance and availability. Simple to apply on any scale, ViroSoil Technology provides an economically attractive and sustainable solution with guaranteed results.

Whether to allow the re-use of contaminated industrial sites, to revegetate degraded sites or landfills, or to transform spoil, sediments and other industrial soils into valuable resources, ViroSoil Technology is the method of choice for the modern remediation professional. For all your contaminated site remediation and soil treatment needs contact our team of experienced professionals at Virotec.



Sustainable technology for contaminated site remediation and soil treatment.

virotec.com

VIROSOIL TECHNOLOGY

Contaminated site remediation and soil treatment

ViroSoil Technology is a unique technology for contaminated soil remediation that has been successfully applied around the world to treat acidity, heavy metals, volatile organic compounds, hydrocarbons and objectionable odours.

The Rapid Sequestro-Degradation (RSD) method of treatment is a synergy between reagent additives and engineering know-how that rapidly degrades volatile organic compounds and other intractable hydrocarbon derivatives, such as PCE, TCE and PAHs, including BaP in soil.

RSD can be utilised at disused industrial sites, for contaminated soil at oil refineries and processing facilities, landfills, ports and marinas, and other industrial facilities that generate and spill hydrocarbon-based contaminants.

ViroSoil Technology has been developed to meet the needs of the client and the site, and can be applied *in situ* or *ex situ*.

VIROGROW

To enhance plant growth

A reagent that has been specifically developed for soil remediation in degraded agricultural soil and dredge spoils.

ViroGrow reagent not only neutralises acidity, it incorporates essential plant nutrients, such as potassium, nitrogen, phosphate, calcium and magnesium trace elements.

ViroGrow reagent also binds toxic metals, including aluminium, copper and manganese, from affected soils. ViroGrow can successfully be used as an additive in biological fertilisers improving horticultural properties.

VIROBAC

To destroy organic compounds

A reagent designed to destroy organic compounds and other intractable hydrocarbon derivatives, such as oil, grease and coal tars, and hydrocarbons such as petrol, diesel, benzene, toluene, ethylbenzene, xylene and phenolics.

ViroBac's indigenous microbes consume, transform and degrade hydrocarbons into simple compounds, such as carbon dioxide, water and benign organic substances.



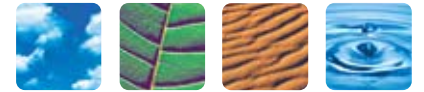
VIROBIND

To treat heavy metals, ASS and hydrocarbons

A reagent designed to treat heavy metal, hydrocarbon contaminated soil, Acid Sulfate Soil (ASS) and marine clays. ViroBind reagent enhances nutrient retention and promotes grass, plant and tree growth.

ViroBind reagent can be formulated in multiple combinations using inorganic and organic additives, enzymes and microbes based on site conditions and client needs.

TOWARDS A CLEANER ENVIRONMENT



CASE STUDIES

- > HYDROCARBONS: CEC Constructions, Fulton Hogan, and Civil, Mining and Constructions, Australia
- > CONTAMINATED SOIL: WestRock Developments, Department of Housing Services (Victoria), McMahon Services, and Thiess Services, Australia
- > ACID SULPHATE SOIL: Tomei Australia and Tweed Shire Council, Australia
- > DREDGING: Gladstone Port Authority, Australia
- > SOIL CONDITIONING: Action Sands and Tryton, Australia
- > ACID SCALDING: Club Pelican Waters Golf Course, Australia



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