

Environmental Solutions Business

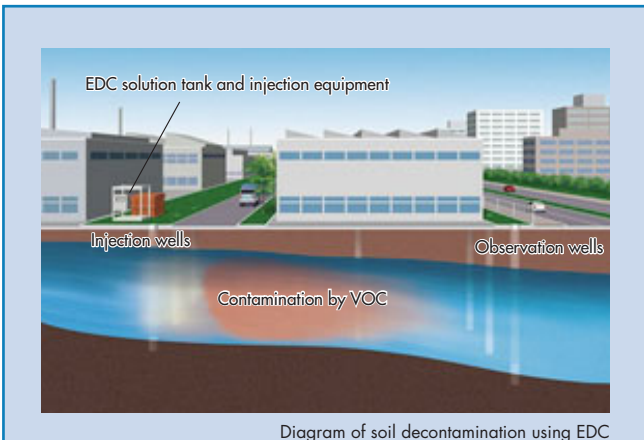


Diagram of soil decontamination using EDC

Microbe Soil Decontamination

MC is the exclusive sales agent for electron donor compounds (EDC), which is a commercial product used for decontaminating polluted soil. The company has marketed the product since 2004, selling it to engineering firms and to various other users. EDC is developed and manufactured by EcoCycle Corporation. Soil decontamination using EDC is conducted by introducing water-soluble EDC through injection wells, which produces fermentation of natural microbes in soil and in groundwater. The microbial nutrients promote chemical activity that leads to the decomposition of chlorinated organic compounds and by-products, resulting in complete detoxification of contaminated soil.

One of the major advantages of EDC is its safety. EDC is manufactured from food materials and is proven, through testing, to be biodegradable. Due to its strong microbial activation properties, EDC has been shown to remediate high concentrations of contaminants within mere months. A further advantage of EDC is that it can be used at operational plant sites. MC contributes to soil decontamination by marketing EDC to approximately 60 plant sites across Japan.

Providing Energy-Efficient Solutions

Japan Facility Solutions, Inc. (JFS) is a joint venture firm established by MC, Tokyo Electric Power Co., Inc. (TEPCO), Kandenko Co., Ltd. and Yamatake Corporation. The company supplies energy-efficiency solutions for various types of buildings, including measures that relate to building infrastructure such as temperature control and electrical facilities. Control systems and other non-hardware improvements are also addressed. The company's main business is its ESCO* service, which was responsible for reducing 7,600 tons of CO₂ emissions in fiscal 2005. One of the company's customers, Tokyo Metropolitan Hiroo Hospital, reduced its CO₂ emissions by 30.1% through the ESCO service, which is equivalent to planting 131 hectares of forest. The company will accelerate its efforts to provide comprehensive energy efficiency solutions in the future, extending its scope to plant and other industrial solutions. The company will also participate in technology transfer by loaning its energy efficiency expertise to projects in Southeast Asia and China.

*ESCO = Energy Service Company, offering comprehensive energy-saving business services to clients.



ESCO service client: Tokyo Metropolitan Hiroo Hospital



Al-Pac harvest cutblocks are patterned after forest fires.

■ Pulp Production Using Sustainable Forest Management

Alberta-Pacific Forest Industries Inc. (Al-Pac) operates a kraft pulp mill in the northeastern province of Alberta, Canada. The mill produces about 640,000 tons of elemental-chlorine-free bleached kraft pulp annually. Under its Forest Management Agreement with the Province of Alberta the company has access to 5.8 million hectares of natural forest.

Al-Pac produces a high quality pulp that is desirable by customers in North America, South Korea, Japan and China.

Forest management planning begins several years in advance of harvest operations and involves extensive consultation with members of the public, including local, Metis and First Nations communities, trappers, hunters, sawmill operators, environmental groups and government departments.

Forest management practices are implemented to ensure a sustainable wood supply. Harvesting is patterned to simulate natural forest fires. This approach minimizes the effects of forestry on nature and provides important habitat. Ecological benchmarks or protected areas of forest are set aside, free from industrial activity, that allow Al-Pac to compare its forest activities against natural processes.

Al-Pac is committed to its aboriginal stakeholders. It believes in creating mutually beneficial partnerships that build economic capacity in communities by identifying business, education and training opportunities.

Al-Pac received Forest Stewardship Council (FSC) certification of 5.5 million hectares of its Forest Management area in 2005. This area represents the largest FSC-certified forest in the world. FSC is highly regarded in the global marketplace and is endorsed by environmental organizations including the World Wildlife Fund (WWF), Greenpeace and the Sierra Club. FSC certification provides assurance that Al-Pac is operating in a socially and environmentally responsible manner. The demand for FSC-certified paper around the world has grown due to increased awareness of environmental issues. This is particularly true in developed countries, where FSC certified paper may eventually become the new standard.

■ Testing of LNG-Fueled Trucks at US Terminal Operations

MC established SES Terminal LLC as a joint venture with ConocoPhillips. The venture will build an LNG-receiving terminal to operate at the Port of Long Beach, California, contributing to the stable supply of energy in the United States. The terminal will receive up to six million tons of LNG per year when it goes online in 2012, which is equivalent to around 10% of the overall demand for natural gas in the State of California.

The Port of Los Angeles and adjoining Port of Long Beach are the busiest ports in the United States by container volume. Air pollution due to exhaust gases from yard trucks' diesel fuel is a serious environmental problem affecting Southern California. LNG, when it is alternatively used, provides an effective solution to this problem. The LNG-receiving terminal to be constructed by SES Terminal LLC will include facilities for producing and shipping of the automotive grade LNG fuel. The facilities will help to address the air pollution problem in the Southern California region, in particular around the ports, and have already gained support from regulatory agencies and local communities.

Prior to breaking ground on terminal construction, SES Terminal LLC is conducting the world's first field tests of LNG-powered yard trucks in partnership with NYK Line and also with the Port of Long Beach. Yard trucks are used for short distance container transport within container yards. Conversion to LNG-powered yard trucks will help to improve the air quality in the communities by eliminating the use of diesel-powered trucks currently operating within the two ports. The field tests are currently being conducted to observe operational performance in anticipation of future deployment.



LNG-fueled yard truck