



Environmental initiatives

Chapter

4

Striving to Prevent Accidents and Minimize Risk: Soil Preservation

The Cosmo Oil Group works hard to provide environmentally friendly petroleum products. It is also striving to ensure the next generation will inherit a healthy global environment, by for example, offering renewable energies and protecting biodiversity. The Group conducts careful study, management and inspection to ascertain the environmental impact and risks associated with its business activities and makes continual improvements.



Environment & Technology Group, Safety & Environment Control Department¹
Cosmo Oil Co., Ltd.

Yuya Takagi

1. As of June 25, 2013, the Safety & Environment Control Department has been reorganized as the CSR & Environmental Affairs Department in the Risk Management Unit.

● Preventing Soil Contamination and Minimizing Risk

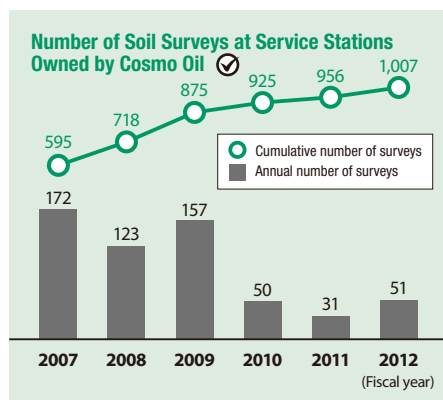
The public is concerned about soil contamination. Service stations are a part of the local community, so any contamination at one would create anxiety for nearby residents and harm public confidence. As a part of its advanced environmental initiatives, in August 2004 Cosmo Oil set up an organization dedicated to the centralized management of its soil preservation efforts, called the Environment & Technology Group.

This group is focused on preventing soil contamination, and also ensures a quick response in the event of an oil leak to minimize risk to soil. The group checks the equipment at sites and service stations within the Cosmo Oil Group, conducts soil surveys, and undertakes soil remediation.

● Responding Quickly and Properly with Central Information Management

The primary objective of soil surveys is to quantify soil contamination. There are various forms of soil contamination depending on the type and concentration of oil, the soil properties, and the groundwater. Central information management helps to minimize risk to soil and ensures a quick and proper response.

If the results of a soil survey indicate a problem, we carefully determine the impact in relation to the surrounding environment. Then we determine the scope, technique and schedule for soil remediation. With the reorganization of service stations owned by Cosmo Oil, soil surveys were conducted at 51 locations in fiscal 2012. As of last year, 1,007 service stations had been surveyed, and the necessary surveys were mostly completed.



▲ Survey using ground radar



▲ Soil sampling by boring



▲ Storing soil samples for testing



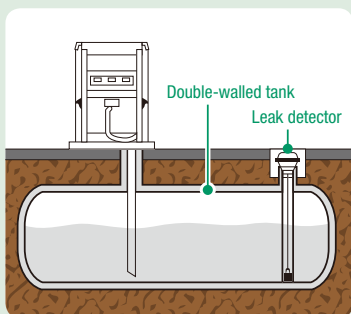
● Taking the Time to Address Concerns

Soil preservation is technical and complex, and tends to have a bad image. People are usually quite concerned about it. At one service station we surveyed, the neighbors were very worried about soil contamination at first, but we alleviated their concerns by patiently explaining the survey methods and action we would take. I have learned that it is very important to listen carefully to people and provide them with polite, accurate explanations.

Cosmo Oil's strength lies in how we carefully address each case while making the most of central information management and our accumulated expertise in soil preservation. In order to increase confidence in Cosmo Oil as an environmentally advanced company, we want to continue addressing soil issues with great sincerity.

Improvement of Equipment and Facilities

For new service stations, Cosmo Oil is installing equipment with very low leakage risk, such as corrosion-free resin pipes and double-walled tanks. For existing service stations, the Company is replacing and reinforcing piping as necessary, and is improving metal equipment through cathodic protection.



The Potential of 5-Amino Levulinic Acid (ALA)

Utilizing the Benefits of ALA for the Global Environment

ALA is a naturally occurring amino acid present in all living organisms. Although it has long been utilized for cancer drugs, it is difficult to produce and very expensive, impeding the development of new applications.

In 1999, the Cosmo Oil Group developed fermentation-based ALA mass production technology. In 2003, the Group launched the PENTAKEEP series, the world's first liquid fertilizer containing ALA. This fertilizer promotes the growth of plants and can help prevent declines in crop yield due to climate change. The Group is pursuing the full potential of ALA in areas such as livestock feed, pharmaceuticals, cosmetics and health food. Helping to solve social issues such as the need for more food production and better health is yet another way the Cosmo Oil Group is building a more sustainable society.



PENTAGARDEN series of liquid fertilizers

New Lineup

In March 2013, the Group released a solid fertilizer, PENTAGARDEN Pellet, to complement its liquid fertilizers. The product is 80% organic material for a slow-release effect, and 20% chemical fertilizer which works faster. It is popular for use indoors or on balconies that do not get much sun and also for improving garden soil.



History of the Cosmo Oil Group's ALA Business

- 1995 ○ Growth-promoting effects of ALA in plants discovered
- 1999 ○ Fermentation-based ALA mass production technology invented
- 2003 ○ PENTAKEEP liquid fertilizer released in Japan
- 2004 ○ Cosmo Seiwa Agriculture Co., Ltd. established (now Cosmo ALA Co., Ltd.)
 - Sales start outside Japan
- 2006 ○ PENTAGARDEN for home gardening released
- 2013 ○ PENTAGARDEN Pellet (with organic material) released