



## Water Quality

### The Many Facets of Water Pollution Control

Since EPA Administrator Hau Lung-bin's formal announcement at the end of last year that 2002 would be "River and Waterway Pollution Remediation Action Year," water pollution remediation has become a main focus of the EPA's administrative efforts. In addition, the revision of the *Water Pollution Control Act* in May of this year took a big step towards improved industrial wastewater management and the collection of water pollution fees.

The quality of water in rivers and waterways deteriorated as Taiwan's economy developed, sometimes even to the point of endangering human health. Hoping to improve the nation's water quality, the EPA has expressly declared this year "River and Waterway Pollution Remediation Action

Year," and has poured massive resources into remediation work. In addition, to put water pollution control and management on a sound legal foundation, the Legislative Yuan passed the revised version of the *Water Pollution Control Act* (水污染防治法) in May of this year. We have therefore interviewed the EPA Bureau of Water Quality Protection in this issue, and report on the current state of River and Waterway Pollution Remediation Action Year implementation and future management policies and systems.

### Waterway Remediation Efforts Underscore Government's Determination

Rivers and waterways are the lifeblood of ecological systems. Hoping to remedy increasingly severe water pollution, EPA Administrator Hau Lung-bin declared that 2002 would be "River and Waterway Pollution Remediation Action Year," and had the EPA formulate the *Taiwan River Basin and Ocean Management Program* (台灣地區河川流域及海洋經營管理方案); following its approval by the Executive Yuan, this program has become the basis of the country's future river, waterway, and marine water quality management work.

To make good on River and Waterway Pollution Remediation Action Year, the EPA has selected nine rivers – the Nankan River (南崁溪),

#### In this Issue

The Many Facets of Water Pollution Control.....	1
Subsidies for Filling Station Vapor Recovery Equipment Reintroduced .....	4
Revised Waste Disposal Act Enforcement Rules Drafted .....	5
Marine Pollution Response Exercise Held in Kaohsiung Harbor .....	6
EPA to Step up Crackdown on Illegal Diesel Fuel .....	7
Restrictions on Plastic Shopping Bags Introduced Successfully ..	8
Information Product Energy Star Program Successfully Underway .....	9
EPA Makes Headway on Illegal Industrial Waste Dump Clean Up .....	10
EPA and DOH Announce Dioxin Concentration Survey Results	11
News Briefs .....	12



President Chen Shui-bian hosts Love River opening ceremony in Kaohsiung City. See Activity on page 9.

Koya River (客雅溪), Chungkang River (中港溪), Peikang River (北港溪), Putzu River (朴子溪), Chiangchun River (將軍溪), Erhjen River (二仁溪), Tienpao River (典寶溪), and Kaoping River (高屏溪) – for priority remediation work, and plans to eventually improve the quality of rivers and waterways throughout all of Taiwan.

To show the government's determination to implement the *Taiwan River Basin and Ocean Management Program* and clean up water pollution, the EPA alone has budgeted NT\$555 million for river and waterway remediation in 2002. Of this sum, NT\$371 million (67%) has been allocated for the cleanup of the nine rivers mentioned above, while the remaining NT\$184 million (33%) is being used for general services and the cleanup of other rivers and waterways. The EPA plans to spend NT\$795 million on river and waterway cleanup in 2003, and hopes to budget NT\$600 million for this work in each of the subsequent years.

### Pollution Control through Construction, Auditing, and Public Participation

Water pollution remediation efforts in Taiwan include many pollution reduction construction projects. These projects include the construction of sewage treatment facilities in drinking water source protection zones, the construction of wastewater sewer systems in river basins, the closure and revegetation of riverbed waste dumps, the establishment of ecological parks, and various restoration and conservation tasks.

Apart from the improvement of hardware and infrastructure, the implementation of environmental management audits is another essential part of water quality improvement work. For example,

environmental protection and agriculture authorities have embarked on a campaign to ban hog raising in water source protection zones. Aerial and satellite imaging and computerized geographical data on hog farms are now being used to prevent hog raising from making a comeback in these sensitive areas.

Furthermore, environmental protection authorities have begun vigorously cracking down on polluters in nine river basins with severe industrial wastewater pollution problems. Taking the Tienpao River in Kaohsiung County and Nankan River in Taoyuan County as examples, pollution has been bad enough at some times to turn the water a strange color. Before commencing the recent anti-pollution campaign, Administrator Hau invited the enterprises along these rivers to meetings, announced that the government is determined to clean up pollution and requested the enterprises' cooperation. Numerous law-breaking firms have been fined and forced to shut down in the crackdown that followed, and the water quality in the Tienpao and Nankan rivers has improved significantly.

To better integrate remediation work and coordinate joint implementation by local authorities, the EPA has established cleanup task forces in 11 cities and counties along the nine rivers. According to the Bureau of Water Quality Protection, taking the Kaoping River as an example, the establishment of river basin management committees in Pingtung County, Kaohsiung City and Kaohsiung County has put remediation work on a systematic basis throughout the basin. And while water conservancy and environmental protection authorities did things in different ways during past campaigns to clean up and beautify rivers, nowadays remediation work is done using ecological-friendly methods with the dual goal of

flood control and environmental protection.

But in spite of this progress, river and waterway remediation work cannot be completed by government alone. Besides appealing to the public via television to turn in illicit polluters and help the government clean up river and waterway pollution, the EPA is also assisting in the planning of school courses on rivers and waterways and the implementation of water quality and ecological monitoring projects. The EPA is sponsoring public river and waterway visits, photography sessions, and painting contests, and is encouraging private organizations to keep watch over the environment between inspections by government units.

The EPA is pleased to announce that, thanks to the joint involvement of the government and private parties, water quality in these nine rivers has improved dramatically, and the improvement of water quality in the Kaoping River has been especially noticeable. Not only have fish started reappearing in parts of the river, but the amount of chemicals needed to treat drinking water has decreased significantly.

#### **Panamanian Oil Tanker Adrift in the Seas off Taitung**

The Panamanian-registered oil tanker Orpheus Asia, carrying a full load of 250,000 tons of crude oil, lost power due to engine problems on July 25 and began drifting in the seas 110 nautical miles off Taitung. The EPA reached the captain of the ship by satellite phone immediately after being notified, and informed him that while Taiwan was willing to render any assistance needed, it was hoped that no ship-to-ship oil pumping would be performed in the absence of an emergency response plan. The shipowner afterwards dispatched a tug from Hong Kong, and the Orpheus Asia was towed from the scene on the morning of July 27. The disabled ship passed the centerline of the Taiwan Straits on July 30 and continued towards Hong Kong for repairs.

## Streamlining and Optimization of Industrial Wastewater Management

While the government actively cleans up rivers and waterways, the enactment of the revised *Water Pollution Control Act* during May of this year established another milestone in the nation's pollution prevention efforts.

One major change in the new *Water Pollution Control Act* is that water pollution discharge permit regulations will put industrial wastewater management on a more rational footing. The regulations specify that, in the future, environmental protection authorities may authorize the management of science-based industrial parks, export processing zones, and industrial park land controlled by the central competent authorities in charge of the industries in question to directly issue water pollution permits. The past application processes required enterprises to apply to several separate agencies for permits. The Bureau of Water Quality Protection says this change in administrative procedures will centralize science-based industrial park and industrial park management and significantly shorten the time needed to open new factories.

Outside of industrial parks, electroplating and metal surface processing firms that do not comply with land-use zoning regulations are finding their room to operate severely constricted after a continuous series of audits and crackdowns by environmental authorities. Unable to obtain discharge permits, many of these firms are either shutting their doors or giving binding promises to move to industrial parks within a certain period of time.

Because of the successive completion of wastewater treatment facility projects in many industrial parks, and because many plants have downsized operations

due to the economic slump, the EPA has found that many industrial park wastewater treatment plants currently have a great deal of excess capacity. While environmental authorities previously allowed only parties with their own pipe systems to send their wastewater to treatment facilities in industrial parks, the EPA now seeks to capitalize on these presently underutilized water treatment resources. It is therefore taking steps to facilitate the treatment of wastewater and sewage from nearby schools, communities, and individual factories at industrial park treatment facilities. To reduce treatment costs, the EPA is also busy revising regulations governing the outsourcing of wastewater (sewage) treatment in order to allow operators to transport liquid wastes using tank trucks and other means of transportation.

As for the phenomena of factories taking advantage of irrigation canals to discharge wastewater, in the wake of the enactment of the *Soil and Groundwater Pollution Remediation Act* and the outbreak of many farmland pollution incidents, the EPA and Council of Agriculture (COA) have reached a consensus that legislation must be enacted in the future to explicitly forbid the use of dedicated irrigation canals for the discharge of wastewater.

## Effluent Discharge Fees Provide Incentives for Pollution Reduction

Another main purpose of revising the *Water Pollution Control Act* is to provide for the collection of water pollution fees – a matter of considerable concern for industry. The revised act specifies that water pollution prevention fees shall be collected according to the quality and amount of discharged wastewater from households, wastewater sewer systems, and businesses that discharge waste-

## Announcement

### Subscribe to the EPM Online Bulletin Notification Service

In addition to the printed version of the EPM we mail out to our subscribers each month, the EPM is also posted monthly in a database on the EPA's website. Now, for the convenience of our online readers, we offer our EPM Online Bulletin notification service. Readers who subscribe to this free service will receive a monthly email informing them that the EPM has been posted online. This simple email includes a link to the full version of that month's online EPM and the titles and summaries of all the articles in that month's issue. Please subscribe to the EPM Online Bulletin at <http://www.epa.gov.tw/english/EPM/>.

water (sewage) into bodies of surface water. The money obtained in this manner will be put into a special fund for exclusive use for the remediation of surface water pollution, the improvement of water quality in drinking water protection zones, and the construction of public wastewater sewage systems. Apart from being held responsible for interest on back payments, users who fail to pay water pollution fees on time will be subject to fines and will be ordered by the courts to make payments.

In accordance with a Legislative Yuan resolution on the subject, water pollution fees will be collected first from specific types of firms – including the most severe polluters – during the initial period, and further consideration will be given to collecting fees from ordinary households at a further point in time. The EPA will complete deployment of relevant systems within a year's time.

The Bureau of Water Quality Protection reminds readers that the EPA announced the *Effluent Discharge Fee Collection Regulations* (廢(污)水排放收費辦法) as early 1998. To provide a solid basis for a water pollution fee system, the EPA will in the future



revise these regulations based on the framework of the original regulations, the recent revision of the *Water Pollution Control Act*, and various parties' views concerning the fees.

Apart from the revision of fee collection regulations, the determination of fee rates is yet another great challenge. Planned fee items currently include chemical oxygen demand (COD), suspended solids, heavy metals, cyanide compounds, total phosphorus, total nitrogen, organic halogen compounds, and phenolic derivatives. In addition, different pollution fee calculation regulations may be established in light of the particular characteristics of specific industries.

To smoothly establish effective water pollution fee collection mechanisms, this year the Bureau of Water Quality Protection commissioned National Taiwan University to perform a full-scale study of fee collection mechanisms, laws and rates, etc., and provide its recommendations. Furthermore, the views of all interested parties will be collected and used to guide the drafting and revision of relevant laws and regulations.

The Bureau of Water Quality Protection emphasizes that the purpose of the water pollution fee system is to provide economic incentives for the reduction of pollution output, while the money collected by the system will be used exclusively for water pollution prevention tasks. The system will consequently have an extremely great impact on water pollution prevention work in Taiwan. The EPA is taking a fully open and transparent approach to the formulation of water pollution fee collection regulations and fee rates, and hopes that thoroughgoing discussion with interested parties will allow the implementation of a fair and effective fee collection system compatible with the principle of sustainable development.

#### Air Quality

## Subsidies for Filling Station Vapor Recovery Equipment Reintroduced

**The EPA is once again offering subsidies for the installation of vapor recovery equipment on filling station fuel pumps. This will help remedy Taiwan's filling station vapor pollution problem by increasing the number of filling stations that utilize vapor recovery equipment. Moreover, the EPA will make it compulsory for all filling stations to install this equipment after the application period for these subsidies expires.**

The EPA, in its first effort to address the long existing problem of fuel vapor pollution from filling stations, began offering subsidies for the installation of vapor recovery equipment on fuel pumps in 1997. By the time the application period for these subsidies expired in 2000, a total of 1,361 filling stations had accepted the EPA subsidies, helping the EPA achieve an installation rate of 66% of all filling stations in Taiwan.

The EPA conducted on-site inspections of 100 filling stations in 2001 in order to determine the effectiveness of vapor recovery equipment. These inspections revealed that filling stations achieved significant reductions in their emissions of volatile organic pollutants by installing vapor recovery equipment. Measurements of the concentration of volatile organic pollutants taken near fuel nozzles when filling automobiles showed an average concentration of 250 ppm for pumps with vapor recovery equipment and an average concentration of 7,500 ppm for those without this equipment. When filling motorbikes, these readings revealed an average concentration of 700 ppm for pumps with vapor recovery equipment and an average concentration of 2,800 ppm for pumps without this equipment. These figures demonstrate just how much the installation of vapor recovery equipment can cut fuel vapor emissions.

Aiming to more aggressively promote the installation of vapor recovery equipment, the EPA on February 27 of this year introduced new control standards requiring all enterprises to install vapor recovery equipment when constructing new filling stations. However, around 844 of the 2,193 existing filling stations in Taiwan have still not installed this equipment. Therefore, following the success of the earlier subsidy program, the EPA has now decided to offer subsidies of NT\$10,000 per nozzle to stations that install vapor recovery equipment before December 31 of this year. And, this could be the last chance to enjoy such incentives as the EPA plans to make it compulsory for all filling stations to have installed vapor recovery equipment after this current subsidy program ends.

EPA statistics indicate that more than 30,000 metric tons of volatile organic compounds escape from filling station fuel pumps in Taiwan every year. These emissions, made up primarily of benzene, toluene, xylene, ethylbenzene, and other hydrocarbons, account for approximately 6% of all industrial emissions in Taiwan. What's more, ozone, one of Taiwan's main air pollutants, is created when the volatile organic compounds in fuel vapor undergo a photochemical reaction with nitrogen oxide in the atmosphere. With the data clearly indicating that vapor recovery equipment can significantly reduce the escape of the volatile organic compounds that lead to ozone pollution, the promotion of this filling station vapor recovery program will continue to be one of the EPA's main objectives.

For more information, please call 02-2311-7722 ext. 2672.

## Waste Management

# Revised Waste Disposal Act Enforcement Rules Drafted

**In conjunction with the revision of the *Waste Disposal Act*, the EPA has revised the *Waste Disposal Act Enforcement Rules* again as authorized by the new *Waste Disposal Act*. This draft of the Enforcement Rules, which contains 25 articles, will be formally enacted after approval by the Executive Yuan.**

Reflecting the requirements of the *Administrative Procedures Act* and the consensus reached by the Economic Development Advisory Conference, the Waste Disposal Act (廢棄物清理法) was revised last year, with revision work being completed on October 24. To ensure the effective implementation of the revised *Waste Disposal Act*, and complying with the requirements of Article 76 of the Act, the EPA immediately began the revision of the *Waste Disposal Act Enforcement Rules*. Now completed, this revision has enlarged the Enforcement Rules from the previous 20 articles to the current 25. The new Enforcement Rules primarily provides supplementary explanations of items where the *Waste Disposal Act* is insufficiently clear concerning details or technical and procedural definitions.

The revised Enforcement Rules explicitly stipulate that the duties of city, county and special municipality governments include the planning, formulation, and announcement of general waste disposal fees, while the implementing organizations must bear responsibility for collecting general waste disposal fees in the areas under their jurisdiction. In accordance

with Article 26-3 of the *Waste Disposal Act*, “general waste disposal funds” shall be established using general waste disposal fees collected from households and other non-business users in specified disposal areas, income from the disposal of ordinary industrial waste, and other income. Money from the funds may be used for the purchase of general waste disposal tools, equipment and facilities, restoration costs, and the construction or restoration of garbage incinerators run under a BOO (build-operate-own) model.

With regard to the disposal of industrial waste by industrial firms, apart from disposal in company-owned facilities, industrial waste produced by different enterprises under the same corporate entity may be disposed of at joint facilities owned by that entity. When a business removes waste by leasing the services of a waste transport firm, while this can be seen as in-house removal, the business must send personnel bearing employee verification with shipments to provide oversight and management. In addition, leased vehicles must comply with the requirements of the *Standards for Industrial Waste Storage, Collection and Treatment Methods and Facilities* (事業廢棄物貯存清除處理方法及設施標準) .

Item 1 under Article 38 of the *Waste Disposal Act* states that industrial waste import/export controls do not apply when the EPA has announced, following consultation with the authorities in charge of the target industry, that a certain type of industrial waste is a needed industrial material. The Enforcement Rules specify in detail application procedures to be taken by the enterprises or industrial associations, along with necessary documents, and request the competent authorities in charge of the target industries to submit industrial and environmental impact reports to be referred to by the

EPA in drafting an announcement. Furthermore, the Enforcement Rules also stipulate that when the recycling of industrial waste involves its import or export, procedures must be controlled in accordance with Article 38 of the *Waste Disposal Act*.

When a business is punished for violations of the *Waste Disposal Act* by cessation of operations or plant closure, the business must submit a waste disposal plan or documents specified by the punishing agency, with attached verification of complete improvement, to the original punishing agency when applying for reopening or restart. The business may reopen or restart only after the application has been reviewed and approved.

During the revision of the *Waste Disposal Act Enforcement Rules*, in addition to engaging in discussions with city and county environmental protection bureaus and other relevant agencies, the EPA also held a series of public hearings to listen to the views of firms and industry association representatives, and incorporated ideas from many sources in its revisions. Apart from revising the original enforcement rules, the EPA also referred to past regulations, announcements, and explanatory content to supplement vague or incomplete requirements of the *Waste Disposal Act*, making the Act’s regulations more comprehensive and complete.

For more information, please call 02-2311-7722 ext. 2620.

### Reporting of Toxic Chemical Substances Allowed over Internet

The online reporting of toxic chemical substances, allowed by the EPA since July 1, will not only make it more convenient for firms to report their toxic chemical operating records and releases, but also enhance the government’s administrative efficiency. The EPA has established a comprehensive reporting website for firms (<http://ww2.epa.gov.tw/toxic/>).

## Water Quality

# Marine Pollution Response Exercise Held in Kaohsiung Harbor

**The EPA conducted the 2002 Severe Marine Pollution Response Exercise near the floating oil offloading dock outside of Kaohsiung Harbor on July 25. In this exercise, the EPA, with the support of the Coast Guard Administration, National Police Administration, Ministry of National Defense, Kaohsiung Harbor Bureau, and Kaohsiung City Government, jointly simulated an emergency response to the occurrence of a marine oil spill from an oil tanker.**

Kaohsiung Harbor is the fourth largest commercial harbor in the world. When you add to this the nearby naval harbor and fish harbor, with combined ship traffic averaging 40,000 ships per year, and the four floating oil offloading pontoons with their seven oil pipelines just outside of Kaohsiung Harbor, you can see that there is the high potential for a major disaster. The severity of the impact of such a disaster on Kaohsiung's marine and coastal environments is unimaginable. Aiming to prepare for this type of disaster, the EPA mobilized the agencies responsible for marine pollution control in the Kaohsiung area in order to jointly conduct a severe marine pollution response exercise on July 25.

This exercise simulated an oil spill from an oil tanker at sea. Under Taiwan's Severe Marine Oil Pollution Emergency Response Plan, an oil spill of this magnitude calls for



*The EPA's severe marine pollution response exercise underway outside of Kaohsiung Harbor on July 25.*

a Class III response. This plan requires the EPA to report immediately to the Executive Yuan and set up a Severe Marine Oil Pollution Emergency Response Center as soon as it receives notification of such a disaster. The Coast Guard Administration is also required to establish an on-site command center at the scene of the disaster. Each agency required to participate in the response action must dispatch personnel to this center so that all participating agencies can coordinate their efforts.

This response plan assigns specific tasks to the various agencies involved. During this exercise, the Coast Guard Administration called up its Airborne Patrol Corps, South Coast Guard Bureau, Fifth Sea Patrol Corps, and South Motorized Sea Patrol Corps. These Coast Guard units were responsible for providing support for the transport of personnel and equipment to all ships taking part in the response exercise, the placement of oil containment buoys and oil pumps, and the maintenance of safety at sea. The National Police Administration's Airborne Squadron dispatched one helicopter to conduct aerial reconnaissance of the area affected by the oil spill. The Naval Fleet Command also provided a boat and personnel to assist with response efforts. The Kaohsiung Harbor Bureau sup-

plied one fireboat to maintain fire safety and one boat equipped with oil containment buoys and oil pumps. The state-run Chinese Petroleum Corp. also provided one boat equipped with oil containment buoys and oil pumps to assist with control of the oil slick. On land, the Kaohsiung City Government Police Headquarters took responsibility for directing traffic and the Department of Health provided medical care to the personnel involved in the exercise. This emergency response exercise utilized a total of eighteen boats, two helicopters, and approximately 500 personnel from both Central Government and local government agencies, making it the largest operation of its kind since the promulgation of the Marine Pollution Control Act in 2000. With all of these resources on hand, the EPA was successful in demonstrating Taiwan's severe marine pollution incident response capabilities.

The Severe Marine Oil Pollution Emergency Response Plan divides marine pollution incidents into three classes based on their magnitude. Incidents with the potential to release 700 metric tons or more of oil are the most severe and are classified as Class III incidents. Class III incidents require the Executive Yuan to convene the Executive Yuan Severe Marine Pollution Emergency Response Task Force and to set up a



Severe Marine Oil Pollution Emergency Response Center, which is responsible for the overall management of the response effort. Class II incidents are those with the potential to leak 100 to 700 metric tons of oil. The central competent authority responsible for initiating emergency response measures to a Class II spill is determined by the location of the disaster. Minor incidents with the potential to release up to 100 met-

ric tons of oil are designated Class I incidents. Coastal management authorities or local governments are responsible for initiating response actions.

The EPA also conducted marine pollution emergency response exercises in Hualien County and Pingtung County on August 4 and 17 respectively. These exercises were intended to further enhance the response, inter-agency

communication, coordination, and support capabilities of the government agencies that will be called up when a marine pollution incident occurs. These preparations will ensure that these agencies respond effectively when a real disaster presents itself, thereby minimizing damage and protecting the marine environment.

For more information, please call 02-2311-7722 ext. 2840.

## Air Quality

# EPA to Step up Crackdown on Illegal Diesel Fuel

**The EPA, in coordination with revisions to the *Air Pollution Control Act* that allow for fines against users of illegal fuels, will step up its roadside inspections of diesel vehicles. The new act lays out fines of NT\$5,000 to NT\$100,000 for the owners or drivers of vehicles discovered to be using diesel with a sulfur content in excess of EPA standards.**

Motor vehicle emissions have always been difficult to ignore as one of the primary sources of air pollution, and the particulate matter and sulfur oxide pollution generated by the combustion of diesel fuels is one of the main culprits in causing poor urban air quality. Aiming to address these basic facts by reducing the air pollution created by motor vehicles from the source, the EPA implemented *Standards for the Composition and Properties of Automobile Gasoline and Diesel Fuels* (車用汽柴油成份及性能管制標準) in 2000.

The quality of fuels on the retail market has improved significantly due to the introduction of various government fuel controls over the last few years. As a result of

these source controls and more stringent motor vehicle emissions standards, the percentage of air pollution generated by motor vehicles has shown clear signs of dropping. The implementation of more stringent fuel control standards in 2002 reflects the EPA's efforts to follow the global trend of strengthening fuel controls. The EPA also announced on January 14 that, except for boats and military battle vehicles, diesel vehicles are prohibited from using diesel fuel with a sulfur content in excess of 0.035%.

EPA investigations show that the sulfur contents of the automobile diesel fuels produced by Taiwan's two petroleum refining companies Chinese Petroleum Corp. and Formosa Petrochemical Corp. are both within EPA control standards. However, these investigations also reveal that some diesel vehicles are using illegal diesel fuel. This illegal fuel can have a sulfur content of upwards of 0.49%, over ten times greater than that allowed by the EPA. This diesel is usually sold through illegal filling stations and tanker trucks that set up temporary sites. Most of this diesel comes from fishing boats that first purchase boat diesel, which is permitted to have a sulfur content of up to 1%, from harbor filling stations and then sell it illegally. The exhaust produced by the combustion of this illegal diesel creates severe air pollution and destroys the ozone layer.

To step up its crackdown on illegal diesel fuel, the EPA will request that the environmental protection bureaus of each city and county government conduct random fuel tests at diesel vehicle inspection stations. In addition, the EPA's Bureau of Environmental Inspection and Environmental Protection Police Force will jointly conduct random roadside inspections at sites, such as roadways near harbors and riverbanks, where illegal fuel vendors are likely to sell their sulfur-heavy diesel. In accordance with Articles 58 and 64 of the *Air Pollution Control Act*, the owner or driver of a vehicle discovered to be using diesel with a sulfur content in excess of EPA standards will be fined NT\$5,000 to NT\$100,000. The EPA reminds the owners of diesel vehicles to strictly avoid purchasing diesel with high sulfur levels or from unknown sources. Using this diesel not only creates serious pollution that degrades air quality, but it could also result in a heavy fine if discovered by environmental authorities. The EPA also encourages the public to report any activity related to the sale of illegal diesel fuel, such as fuel being sold from suspicious oil tank trucks or oil tanks, to local environmental authorities. These authorities will dispatch investigative personnel directly to the scene.

For more information, please call 04-2255-3349.

## Waste Management

# Restrictions on Plastic Shopping Bags Introduced Successfully

**The EPA implemented the first stage of its plastic shopping bag use restriction policy on July 1. In this stage, stores and restaurants government agencies of all levels are required to adopt these restrictions. In the second stage, scheduled to begin on January 1, 2003, the targets of these restrictions will be expanded to include department stores and shopping malls, mega retail stores, supermarkets, convenience store chains, restaurant chains, and eating and drinking establishments that operate out of storefronts.**

Having enlisted the support of all EPA personnel, the EPA successfully implemented the first stage of its plastic shopping bag use restriction policy on July 1. EPA statistics indicate that this first stage will require approximately 7,670 establishments to adhere to these restrictions. Aiming to ensure the smooth introduction of this policy, the EPA began dispatching the director general or deputy director general of each EPA bureau to each local government as early as May in order to promote this policy. EPA Administrator Hau Lung-bin even teamed up with celebrity Pai Ping-ping (白冰冰) to make a brief public service announcement. Beginning on June 5, World Environment Day, this announcement was aired repeatedly on television and radio, and other announcements were posted in newspapers and other media. This full-scale promotion strategy was designed to spread the word to all Taiwanese in order to guar-



*These promotional posters feature EPA Administrator Hau Lung-bin and celebrity Pai Ping-ping. The EPA has successfully implemented its restrictions on plastic shopping bags by mobilizing all of its personnel and conducting a massive promotional campaign.*

antee the successful implementation of this use-restriction policy.

Reflecting the depth of government's determination, all of Taiwan's 25 city and county governments conducted promotional activities for this policy on the same day the first stage was implemented. The mayor or county commissioner presided over these activities in sixteen of these cities and counties, while the heads of local environmental protection bureaus led these activities in the other cities and counties. This demonstrates the support local governments have for this policy and their determination to ensure it is properly implemented. On the morning of July 1, Administrator Hau also paid visits to several government agencies in order to witness this policy in action. Following, on July 8, the EPA's Bureau of Environmental Inspection and the inspection personnel of local government environmental protection bureaus began carrying out inspections of targeted establishments around the island. Though this policy has only been implemented for over one month, it has already proved to be quite successful. Establishments and consumers alike are changing their habits in order to coordinate with this policy, which prohibits stores from providing plastic shopping bags of 0.06mm or less in thickness.

Restrictions on plastic disposable dishes were originally scheduled to be implemented along with those on plastic bags on July 1.

However, due to the drought and subsequent water rationing in the first half of the year, the EPA announced the three-month postponement of this policy on June 12. With two typhoons having come back to back in early July, reservoirs in northern Taiwan are once again sufficiently filled, and water rationing has been suspended. The EPA now looks forward with confidence to implementing its restrictions on plastic disposable dishes on October 1.

Aiming to extend the success of the first stage from government agencies to society as a whole, the EPA, on July 23, formally announced the establishments that will be targeted under the second stage of restrictions, set for implementation on January 1, 2003. This second stage will apply to both plastic shopping bags and plastic (including polystyrene) disposable dishes. In this stage, the targets of these restrictions will be expanded to include six major groups: department stores and shopping malls, mega retail stores, supermarkets, convenience store chains, restaurant chains, and eating and drinking establishments that operate out of storefronts.



Declaring that environmental protection is not simply a concept, but is an attitude for living, Administrator Hau says that these restrictions, although they may cause minor inconveniences for the public, can curtail the wasteful use of resources and reduce the damage caused to Taiwan's environment by plastic waste if they can help consumers drop their habits of "use and dispose."

For more information, please call 02-2370-5888 ext. 3610.

### Ecolabeling

## Information Product Energy Star Program Underway

**The EPA has implemented the Energy Star program in Taiwan for two years. Now major domestic information product manufacturers are applying to certify their products and obtain the right to use the Energy Star mark. In addition to increasing product competitiveness, the Energy Star mark also underscores that the products conserve energy and reduce greenhouse gas emissions.**

The voluntary, cooperative Energy Star program introduced by the US EPA and Department of Energy in 1992 to promote energy efficiency among manufacturing, retailing, and other relevant industries. It is hoped that implementation of the Energy Star program will change the public's consumption habits and encourage manufacturers to produce energy-efficient products. The ultimate goals of the program are to conserve energy and reduce the emission of greenhouse gasses from generating plants, alleviating the threat of global warming.

The Energy Star mark has become an international emblem of energy efficiency. In addition to the US, the EU, Canada, Australia, New Zealand, and Japan are also cooperating with the US EPA in its promotion of the Energy Star mark. The ROC signed the "Energy Star Letter" with the US EPA in July 1999, which prompted the US EPA to authorize the EPA to use the Energy Star mark and manage related matters in the Taiwan area. Taiwan formally began employing the Energy Star mark system in 2000, and first applied the mark to such products as computers, monitors, fax machines, printers, copiers, scanners, and multifunction devices.

After two years of implementation, a total of 373 products made by 26 firms have been authorized to use the Energy Star mark. Among these products are 75 computers (made by four firms), 284 monitors (made by 18 firms), 11 scanners (made by two firms), and three multifunction devices (made by two firms). A large majority of these products are exported to markets around the world. To illustrate the benefits of this program, just the LCDs made in Taiwan alone last year can help global consumers conserve as much as 1.5 billion kWh of power.

Because the Energy Star mark has been adopted by numerous large international corporations as part of their product purchasing specifications, making the mark an international criteria of energy-saving effectiveness, any changes in the mark, especially the drafting of new or revision of old specifications, would have a major impact on Taiwan's mainly export-oriented information industry. For instance, the US EPA is currently devising much stricter monitor specifications that are expected to be implemented in 2003. Only LCD monitors will be able to pass these standards, but not CRT

monitors. Because the new specifications are likely to have an enormous impact on Taiwan's CRT industry, the EPA is reminding manufacturers to respond quickly to the upcoming changes.

To further promote energy conservation, the EPA plans to extend Energy Star certification to household appliances and green lighting. The EPA hopes that by getting the public in the habit of buying Energy Star products, it can teach people to change their lifestyles, conserve natural resources, and cherish environmental quality and the ecology.

For more information, please call 02-2311-7722 ext. 2668.

## Activities

### *President Hosts Love River Opening Ceremony*

President Chen Shui-bian visited Kaohsiung on July 24 to host a ceremony marking the free flow of water along the full length of the Love River. During the ceremony, President Chen opened a sluice gate at the Chihping Bridge Sewer Interception Station that had been closed for 16 years to let water flow freely throughout the entire 6.8-kilometer length of the Love River. The President reminded people that effective wastewater sewers are one of the most important signs of a modern city, and instructed the Ministry of the Interior to lend the Kaohsiung City Government its full assistance in raising the sewer system coverage to 50%.

### *Conference on the Establishment of Environmental Accounting Systems*

The EPA invited more than 20 domestic accounting system specialists and representatives of private businesses to a conference on July 12 to discuss how to establish environmental accounting systems for Taiwan's industries. The conference explored environmental accounting items and categories in great depth, and executives who have tried incorporating environmental accounting systems in their corporate accounting systems shared their experiences with experts and scholars.

## Waste Management

# EPA Makes Headway on Illegal Industrial Waste Dump Clean Up

**The EPA is making steady headway on the clean up of fifteen illegal industrial waste dumps it has listed as Class A dumps. It has already completed the removal of waste from seven of these sites, while, after further investigation, it has reclassified another site as a Class C site. As for the seven remaining sites, waste at two of these sites has already been stored properly and clearance and disposal work is well underway at the five other sites.**

The EPA, using information supplied by city and county governments, identified a total of 170 illegal waste dumps and began conducting preliminary risk assessment surveys of these sites in 1998. It completed surveys of 51 sites that year, resulting in the listing of six sites as Class A industrial waste dumps, meaning they pose an immediate threat to public health. From 1999 to 2000, the EPA surveyed of another 59 sites, listing eight sites as Class A dumps. Wrapping up the preliminary survey work on these waste dumps, the EPA made surveys of the remaining 60 sites and listed one site as a Class A dump in 2001.

The EPA has already completed clearance and disposal work on seven of these fifteen Class A dumps sites. These sites include the Chishan River (旗山溪) site in Kaohsiung County, the County Road 184 site in Kaohsiung County's Tienliao Township (田寮鄉), the site under the old train

bridge on the Kaoping River (高屏溪), Hsinfeng Township (新豐鄉) in Hsinchu County, the Peikang River (北港溪) river bed site in Chiayi County, the site near the Tzuchiang Bridge in Yunlin County's Erhulun Township (二崙鄉), and the Chinyu Metals (進玉金屬) factory site in Taichung County. Another site, the Fangfan Township (芳苑鄉) site in Changhua County, has been reclassified as a Class C site following further investigation. The waste solvent from the dump site in Taoyuan County's Luchu Township (蘆竹鄉) has been stored safely within the factory there. The waste from the Tsaihung lot site in Kaohsiung City's Tzoying District has been transported to the Chinese Petroleum Corp.'s (CPC) Kaohsiung factory for storage. CPC will commence treatment of this waste as soon as it obtains the proper permit.

The current status of the five remaining Class A waste dump sites is presented below.

1. The Chihshanyan site in Hsinyuan Township (新園鄉), Pingtung County: Having started on March 12 this year, the Pingtung County Government has already completed 80% of the solidification and landfill burial work for the heavy metal-polluted sludge from this site. It has completed the final disposal of 30,000 metric tons of this sludge and expects to complete the remaining part of this work by the end of August. As for this site's mercury-laced sludge, the EPA has already loaded over 8,000 metric tons of this sludge into containers. Under orders from the Pingtung County Administrative Court, the Pingtung County Government and Formosa Plastics Corp. are currently working to achieve a resolution as to which side is responsible for

the disposal of this waste. The EPA will continue to provide assistance and oversee the removal of waste from this site in order to ensure speedy clean up.

2. The Hsiangtan site in Hsinpi Township (新埤鄉), Pingtung County: The landowner, Taiwan Sugar Corp.'s Nanchou sugar factory, is using its own funds in order to commission the Industrial Technology Research Institute (ITRI) to carry out the remediation of this site. The ITRI has already placed in new barrels the 1,315 barrels of flammable industrial waste that remain at the site and has temporarily stored this waste in a factory building on this site. A small number of these barrels has not been placed in new barrels because district prosecutors are holding them as evidence. Taiwan Sugar will entrust the handling of these remaining barrels to CPC's Kaohsiung factory. CPC completed an environmental impact variance analysis for the modification of its incinerator permit on June 14 and will proceed immediately with incineration as soon as this permit modification application is approved.
3. The Hungsha Shan site in Taliao Township (大寮鄉), Kaohsiung County: The EPA has already provided a subsidy to the Kaohsiung County Government for emergency response clean up and further surveying of this site. On June 3, it also agreed to grant a subsidy of NT\$170 million for formal clean up work. The Kaohsiung County Government is presently taking bids for the remediation contract for this site and plans to chose a company and begin clean up work in October.

4. The site next to the Tating Feed Co. (大鼎飼料) factory in Wantan Township (萬丹鄉), Pingtung County: Pingtung County has completed negotiations with the ITRI over the price of waste clearance and disposal work for this site and ITRI plans to begin clean up work in early August. The EPA will continue to oversee waste removal work at this site.
5. The Wuchunying lot site in Liouying Township (柳營鄉), Tainan County: A total of 126 barrels of waste were uncovered at this site. The Tainan County Environmental Protection Bureau completed the clearance and disposal of this waste on June 28 and is currently conducting a detailed soil and groundwater pollution survey of the site. The bureau is also taking bids for the remediation of this site.

To protect public health and the environment, the EPA will continue to oversee local environmental protection bureaus in completing clearance and disposal work on these Class A illegal industrial waste dumps.

For more information, please call 02-2311-7722 ext. 2640.

### Air Quality

## EPA and DOH Announce Dioxin Concentration Survey Results

**Statistics released jointly by the EPA and DOH in July show that dioxin concentrations in areas surrounding Taiwan's major municipal waste incinerators are all lower than those in developed countries and that dioxin levels in food and public blood samples are also all within acceptable levels.**

Taiwan has already constructed eighteen large-scale municipal waste incinerators in its effort to resolve its waste management problems. However, as the number of incinerators increases, so does public concern about dioxin concentrations in the environment. Aiming to quell these fears, the EPA began a survey of dioxin concentrations in the air, soil, and plants in areas surrounding Taiwan's major incinerators in 2000, and has already completed surveys of the areas near twelve operating incinerators. These sur-

veys reveal that Taiwan's dioxin concentrations are all lower than those reported in developed countries such as Germany and Japan. Notably, dioxin concentrations in Taiwan's soil are significantly lower than those reported in similar surveys in England and Japan.

The targets of these completed surveys, which measured dioxin concentrations in air, soil, and plants, were the areas surrounding the incinerators in Mucha, Peitou, and Neihu in Taipei City, Hsintien, Shulin, and Pali in Taipei County, the Southern District of Taoyuan County, Hsichou in Changhua County, Lutsao in Chiayi County, Chenghsi in Tainan City, Kangshan in Kaohsiung County, and Kanting in Pingtung County. These surveys show that dioxin concentrations in the air at all of these incinerators fell between 0.0044pg WHO-TEQ/m<sup>3</sup> and 1.7pg WHO-TEQ/m<sup>3</sup>, dioxin levels in the soil surrounding these incinerators fell between 0.02pg WHO-TEQ/g and 24.6pg WHO-TEQ/g, and dioxin levels in the leaves of banyan trees (榕樹) near these incinerators were between 0.22pg WHO-TEQ/g and 21.0pg WHO-TEQ/g. These figures reveal that Taiwan's dioxin concentrations and levels near incinerators are actually no higher than those reported in similar surveys conducted overseas.

In addition to this EPA survey, the Department of Health (DOH) commenced a survey of dioxin levels in food, including fish and seafood, meat products, and dairy products, and in human blood samples in 2001. The latest results of this survey indicate that dioxin levels in 143 food samples all fell between 0.30pg WHO-TEQ/g fat and 5.62pg WHO-TEQ/g fat. These levels are all lower than the maximum control limits set by the European Union. Based on these levels, the DOH estimates that the

## News Briefs

### World-Class Auto Testing Center Formally Begins Operations

Built in the Changpin Industrial Park near Changhua by the Automobile Research and Testing Center (ARTC), a vehicle test track facility meeting international standards formally opened its doors for operation on July 16. With 21 laboratories and nine test tracks, this center will perform fuel consumption and pollution testing of domestic vehicles in the future, and will dramatically reduce the amount of time needed for domestic vehicle product R&D. The ARTC was established in 1990 with donations of NT\$117 million from the MOEA, MOTC, EPA, domestic auto and motorcycle firms, and motor vehicle parts and components manufacturers.

### Jurisdictions of EPA Inspection Teams Adjusted

Responding to the need for environmental inspection services, the EPA adjusted the jurisdictions of its northern, central, and southern inspection teams as of July 1. The northern team's jurisdiction, originally consisting of eight cities and counties, was enlarged to nine counties and cities with the addition of Lienchiang County. The central team's jurisdiction, originally consisting of six counties and cities, was enlarged to nine counties and cities with the addition of Kinmen County and Chiayi City, and Chiayi County. The southern team's jurisdiction, originally nine counties and cities, was reduced to seven counties and cities with the loss of Chiayi City and Chiayi County.



Taiwanese adult absorbs a daily average of 0.53pg WHO-TEQ/day/kg body weight, lower than the daily allowable average of 1 to 4 pg WHO-TEQ/day/kg body weight recommended by the World Health Organization.

In order to establish background data for dioxin levels in public blood samples, the DOH obtained blood samples from 55 students between the ages of 18 and 25 at two universities in Taiwan, one in the north and one in the south. Analysis shows that the blood of the 27 male students in the survey showed an average dioxin level of 19.8 pg WHO-TEQ/g fat, while

the blood of the 28 female students revealed an average dioxin level of 19.0 pg WHO-TEQ/g fat. These levels are equivalent to those from similar surveys conducted in the US, Germany, and Japan.

The EPA, pointing out that the dioxin control technology utilized by domestic incinerators is relatively more advanced because Taiwan began constructing its large-scale incinerators at a later date than did developed nations, says that it is natural that Taiwan's dioxin emissions, and consequently dioxin levels in its air, soil, and plants, are lower than those in

other countries. The EPA will continue to conduct surveys of dioxin emissions from its major incinerators and of dioxin concentrations in areas surrounding these incinerators. It will also establish a long-term database of dioxin emissions and concentration monitoring data. This database will be used to facilitate the implementation of future policy, enhance the institution of dioxin pollution controls, and aid operation and maintenance inspections at incinerators. These efforts will ensure the Taiwanese public is protected from the dangers of dioxin emissions.

For more information, please call 02-2311-7722 ext. 2773.

## News Briefs

### *Dual-Fuel Vehicles Using LPG and Gasoline Set to Hit the Road*

The EPA formally issued an exhaust inspection certificate for the first LPG (liquid petroleum gas) and gasoline dual-fuel vehicle to be manufactured in Taiwan to the Formosa Automobile Corp. on July 5. Because the combustion of LPG does not emit the pollutants sulfur dioxide and benzene, it can help reduce pollution from vehicle exhaust and improve air quality in urban areas. Many countries around the world are therefore currently promoting LPG as an alternative vehicle fuel.

### *Number of Firms Required to Report Waste Flow Online Increased*

To strengthen source management of industrial waste and better track waste flow, the EPA announced the expansion of the number of firms required to report their industrial waste flow over the Internet on July 11. The number of firms subject to online reporting requirements has been increased from more than 9,000 to approximately 35,000. Starting on September 16 of this year, these firms must use the Internet to report to the EPA concerning their production, storage, removal, disposal, recycling, and export of waste.

### *New Vehicle Noise Inspections to Accept EU Certification*

The EPA announced on July 1 that when vehicles made in the EU apply for noise inspection certification in Taiwan, vehicles that have passed noise inspection in the EU, and can prove that they meet current EU noise control standards, do not need to undergo testing in Taiwan. When applying to the EPA for certification on behalf of new vehicles, the applicants must provide such documents as photocopies of verifying documents issued in an EU country, a noise testing report conforming to the EU's current testing methods, and a statement from the original manufacturer.

### **Environmental Policy Monthly, Taiwan, R.O.C.**

#### **Publisher**

Dr. Hau Lung-bin, Administrator

#### **Publishing Directors**

Chang Juu-en, Lin Ta-hsiung,  
Chen Yeong-ren

#### **Advisors**

Lu Chiao-song; Chen Chau-teh; Fu Shu-chiang; Chen Shis-how; Yueh Chang-shya; Chang Hoang-jang; Ni Shih-piao; Chen Shean-rong; Chen Lian-ping; Leu Horng-guang; Tung Te-po; Huang Wan-chu; Young Chea-yuan; Chen Hsiung-wen; Wang Lung-chic; Chang Shen-ho; Horng Yuh-fen; Pong Sheng-ming; Wang Pih

#### **Editor-in-Chief**

Roam Gwo-dong

#### **Executive Editors**

Y.F. Liang, Chang Shiuan-wu,  
Hsiao Lee-kuo, Lin Char-hung,  
Stan Blewett

#### **Editorial and translation support provided by:**

Hui-kuo Consulting, Ltd.,  
Pristine Communications

The EPM has been published monthly since July 1997. The EPM is available on the EPA website at [www.epa.gov.tw/english/EPM/](http://www.epa.gov.tw/english/EPM/).

For inquiries or subscriptions to the printed version, please contact:

Environmental Policy Monthly  
Environmental Protection Administration  
Office of Science and Technology  
Advisors  
41, Sec. 1, Chung-Hwa Rd.,  
Taipei, Taiwan, R.O.C.  
tel: 886-2-2311-7722, ext. 2207,  
fax: 886-2-2311-5486  
e-mail: [umail@sun.epa.gov.tw](mailto:umail@sun.epa.gov.tw)

GPN: 2008600068  
Contents Copyright 2002.

 printed on recycled paper

行政院新聞局出版登記證局版北市誌  
字第壹陸壹壹號

中華郵政北台字第6128號執照登記為  
雜誌交寄