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A very dirty, dirty headache

Minister: Leachate contamination must be addressed

By **HEMANANTHANI SIVANANDAM**
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PETALING JAYA: The serious and recurring issue of leachate contamination needs to be addressed with an improvement in the design specifications and location of landfills in the country.

Natural Resources and Environment Minister Datuk Seri Dr Wan Junaidi Tuanku Jaafar (*pic*) said there is a need to look for a holistic solution to ensure the safety of raw water resources.

A meeting between the ministry and state executive councillors in charge of the environment will be called soon.

"I will make sure that the Department of Environment (DOE) will table the paper," he told *The Star* yesterday. "We will discuss what everyone can do. We are not just looking at landfills. We are also looking into oil palm plantations that are near rivers to ensure that our water sources are protected.

"The industry must go on but it must be environmentally friendly."

Dr Wan Junaidi said landfills are under the jurisdiction of local councils but most do not follow the specifications set by his ministry.

He added that local councils "sometimes do things independently", and do not consult the ministry.

As the local custodian of the United Nations Framework Convention on Climate Change, the ministry had done well in aspects such as forestry management and reducing carbon emission, he added.

"But we are not doing well in terms of waste disposal or waste management."



Dr Wan Junaidi said the ministry is also looking into mechanisms for the management and proper flow of e-waste - discarded electronic and electrical devices.

"We hope all parties, including politicians, will play a role and not politicise the issue," he added.

On Saturday, *Bernama* reported that six solid waste landfills were found to have serious and recurring leachate contamination issues.

The six are the former ones at Taman Beringin, Kuala Lumpur; Pajam, Negri Sembilan; Sungai Udang, Melaka; Pulau Burung, Penang; Tanah Merah Estate, Negri Sembilan; and CEP Simpang Renggam Estate, Johor.

Dr Wan Junaidi said monitoring by the DOE revealed that the pollution was due to the design of the landfill and existing leachate treatment system that was less efficient compared to the increasing volume of solid waste received.

"The collapse of retention ponds

caused the sediment discharged to flow into nearby rivers and damage the equipment or components at the landfill, which is part of the pollution control system," he said.

He said the lack of competent operators, in terms of environmental control, at the affected solid waste landfills was also another factor.

The DOE had taken enforcement action in 74 instances against those responsible for managing the six landfills, including issuing directives, compounds and taking court action, he said.

Cases of non-compliance were investigated under the Environmental Quality Act 1974, involving a fine not exceeding RM500,000 or a jail term of not more than five years or both, and an additional fine of RM1,000 for each day the offence was continued, in accordance with the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015.

The penalty for violations of the Environmental Quality (Control of Pollution From Solid Waste Transfer Station And Landfill) Regulations 2009 is a RM100,000 maximum fine or jail term not exceeding five years, or both, and a subsequent fine of up to RM1,000 for each day the offence is continued, upon conviction.

He said the Government would not compromise and stern action will be taken against those found to have polluted the environment.



Recent leachate cases

- **June-July 2017:** 150,000 consumers in Simpang Renggam, Johor, were inconvenienced after state water supplier SAJ Ranhill Holdings Sdn Bhd stopped supply due to ammonia detected in the river. The ammonia was from leachate flowing out of the retention pond at the Simpang Renggam dumpsite.

- **December 2016:** A Malay daily reported "thick, black" leachate flowing from Pulau Burung landfill in Penang into the sea.

- **October 2016:** 350,000 households in the Klang Valley went without water supply for one week. A clean-up agency for scheduled waste discovered an illegal landfill just metres away from Sungai Semenyih that was found to be contaminated. Perpetrators had dumped various items such as motor oil and aluminium dross, and covered the mess up with one metre of soil.

- **May 2016:** Environmental group Sahabat Alam Malaysia reported leachate, believed to be from a retention pond at the Pulau Burung landfill, flowing into a nearby mangrove forest.

- **August-September 2014:** Residents near the now-closed Taman Beringin solid waste transfer station in Jinjang Utara, Kuala Lumpur, reported leachate flowing into the nearby Sungai Batu, itself a tributary of the larger Sungai Gombak.

Experts: Problem poses serious health risks

By **VINCENT TAN**
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PETALING JAYA: Leachate from solid waste landfills poses a serious risk to human health, experts say, especially when landfills are near raw water supply areas that serve as drinking water sources.

"The leachate can seep into groundwater and into nearby rivers, carrying pollutants such as ammonia," said Universiti Teknologi Malaysia water expert Prof Dr Maketab Mohamed.

He said researchers had recorded high amounts of ammonia in leachate from dumpsites, ranging from 150mg to as high as 350mg per litre. By comparison, the Health Ministry's Drinking Water Surveillance Programme states that the recommended ammonia level in raw water should be 1.5mg/litre.

Prof Maketab explained that the Simpang Renggam landfill accepted waste not just from the local populace, but from other areas as far away as Batu Pahat, where the solid waste site was closed years ago.

The landfill had been identified last week as the source of pollution into Ulu Sungai Benut after a bund at the storage pond collapsed.

"The landfill is about 12km upstream from the river, and since

The leachate can seep into groundwater and into nearby rivers, carrying pollutants such as ammonia.

Prof Dr Maketab Mohamed

it's a pretty rural area, a small township with oil palm plantations, the source of ammonia pollution can only be the landfill," he said.

According to Association of Water and Energy Research Malaysia president S. Piarapakaran, ammonia has featured increasingly as a leachate pollutant in recent years.

"As pollution increases, this is becoming more and more frequent, and luckily we test frequently for ammonia at water treatment plants.

"The problem is that once you catch ammonia in the water, the treatment plant needs to be shut down and the water cleaned, resulting in water disruptions," said Piarapakaran.

In the case of Simpang Renggam, there were 23,000 water accounts in

the area, which translated to nearly 150,000 people affected by the ammonia leachate.

Piarapakaran explained that even with sanitary landfills, where the sites are prepared by lining the ground with high-density polymer sheets to prevent leachate filtering through, the main issue was enforcement and regulation.

Another issue, he said, was "pollution loading" as more rural to urban migration took place, resulting in the amount of solid waste generated increasing exponentially: "More solid waste filling up the landfill means more leachate."

Food waste comprises the largest segment of waste, resulting in millions spent to treat the landfills which emit greenhouse gases and toxic leachate as the food decays.

Piarapakaran also pointed out that e-waste management was lacking, leading to people just dumping old batteries, phones and computers along with other solid waste destined for landfills.

"From there, you have heavy metals such as cadmium and other toxic metals going into the groundwater too," he said.

Prof Maketab added that conventional water treatment could not totally remove heavy metals from raw water sources.