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Media Release

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GROUNDWATER PROPOSAL FOR PENANG IS GROUNDLESS

- **There is insufficient volume of groundwater to meet Penang's future water demand of approximately 1,000 million litres per day (MLD) until 2050.**
- **Groundwater consumption can lead to land subsidence and is very dangerous for areas with high-rise buildings.**
- **Penang wants to lower its water risks. However, it does not wish to incur higher risks of flooding and other urban disasters.**

PENANG, Monday, 14.3.2022: The proposal for Penang to explore groundwater withdrawals is groundless, irrational and fraught with risks.

In a 4.3.2022 report published by *Sinar Harian*, the Minister of Environment and Water (KASA Minister) was quoted as stating that Penang could pursue alternative means, such as groundwater withdrawals (as in the case of Kelantan), to address its water needs.

Perbadanan Bekalan Air Pulau Pinang Sdn Bhd (PBAPP) would like to clarify and reiterate that **groundwater is an unsuitable raw water solution for Penang.**

The following facts, figures, findings and warnings explain why:

1. Penang's land area is only 1,048 km², with a small footprint. Studies by Federal agencies have shown that Penang does not have reliable and sufficient availability of groundwater within its territories to meet the state's water demand until 2050.

2. In 2020, Penang's population density was 1,695 persons/km². These statistics reflect the fact that Penang is a highly urbanized state.

Digging into the ground for water in Penang's urban areas will create unnecessary inconveniences for the people and businesses. More importantly, groundwater prospecting and abstraction activities will inevitably place thousands of lives and properties at risk in Penang, especially in areas with tall multi-storey buildings.

3. The US Environment Protection Agency (EPA) and Centers for Disease Control and Prevention (CDC) have published online warnings regarding the dangers of using or consuming potentially contaminated groundwater, especially in areas where the human population is high and human use of land is intensive.

Due to socioeconomic circumstances, the risks of groundwater contamination is exponentially higher in Penang.

PBAPP does not intend to tap a potentially hazardous raw water resource for its water supply operations in Penang.

4. It has been documented that groundwater withdrawals have caused land subsidence (sinking) in Kelantan, Bangkok, Venice and Java.

In Malaysia, Kelantan is one of the highest groundwater consumption states. A 2018 paper published by researchers from the University of Otago, Dunedin, New Zealand* notes that land in northern Kelantan has been subsiding at a maximum rate of about 4.22mm a year.

Penang wants to reduce its water risks but we do not wish to incur higher risks of buildings collapsing.

5. The Ministry of Environment and Water (KASA)'s Engineering Study Interim Report (September 2021) does not consider groundwater as a reliable and sufficient source of raw water for Penang's future water demand of approximately 1,000 MLD until 2050.

* "Groundwater extraction-induced land subsidence: a geodetic strain rate study in Kelantan, Malaysia" – Chien Zheng Yong, Paul H. Denys and Christopher F. Pearson, Journal of Spatial Science

In summary, PBAPP has not tapped groundwater because the risks are too high while the potential rewards (if any) are too low for Penang.

As such, to meet Penang's future water needs, PBAPP will:

- Continue to optimise raw water abstraction operations from all its in-state raw water resources, especially from Sungai Muda at the Lahar Tiang Intake in Seberang Perai Utara;
- Implement its "Raw Water Contingency Plan 2030" (RWCP 2030) water treatment projects to ensure treated water supply sufficiency until 2030;
- Continue to monitor developments regarding the Sungai Perak Raw Water Transfer Scheme (SPRWTS); and
- Deploy desalination technology to tap a potentially unlimited volume of seawater as an alternative raw water resource beyond 2030, as recommended in the Penang Water Supply Initiative 2050 (PWSI 2050).

This is the way we will achieve long-term water supply sustainability for Penang.

Thank You.

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