

MEMO

Job **TNG Energy from Waste Facility, Eastern Creek,
Asbestos**
Date **2017.07.14**
From **Ahmet Erol**
To **Whom it may concern**

Background

Ramboll provide the following information regarding Asbestos. In particular, its properties and behaviour in the unlikely event it should enter the waste stream and be incinerated in the EfW facility.

Basis

Asbestos is a natural fibrous mineral used as construction material with good insulating and fire resistance properties. Asbestos has melting point of $> 1500^{\circ}\text{C}$ and is chemically resistant to acids. For technical applications the fibres typically have a length of 10-20 mm and a diameter of approx. 3 micrometre. When Asbestos is processed the fibres tend to break and release fine fragments with a fibre length above 5 micrometre. The health hazard of asbestos lies in the inhalation of these particles, not in the chemical properties of asbestos.

Materials containing asbestos will be separated during the recycling process and will go to landfill. In case some material should remain in the waste stream and end up in the furnace it will not burn, vaporize or vitrify due to its high melting temperature. Depending on the form of asbestos following will occur:

- Tightly bounded asbestos (i.e. in concrete bound materials) will remain bonded and leave the furnace via the bottom ash in larger pieces.
- In case of non- or only slightly-bonded asbestos materials most of the material will remain on the grate and then also leave the furnace with the bottom ash. In the bottom ash extractor it will be quenched with water and embedded in the clay-like matrix of the bottom ash and not be further released.

A minor part of fibres might be entrained with the flue gas. Larger fibres will deposit in the boiler and be removed with the boiler ash. Very fine particles will be entrained to the flue gas treatment and then fully removed by the baghouse filter. Baghouse filters in semi-dry systems have excellent removal efficiency of near to 100% for particles larger than 0.1 micrometre. As asbestos particle will never have a diameter below 3 micrometre it will be fully removed and leave the plant via the APC residues.

Summary

As a result it can be said that even if asbestos enters the facility by mistake it will be fully removed and leave the plant either with the bottom ash or APC residues.

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