ARUP

Indaver Ireland Limited

IE Licence Review Application

IED Article 53 Compliance

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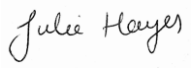
		Signature			
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Contents

1. Compliance with Industrial Emissions Directive, Article 53

1.1 Article 53 (1)

1. Residues shall be minimised in their amount and harmfulness. Residues shall be recycled, where appropriate, directly in the plant or outside.

Three residues are produced by the waste incineration process at Indaver Meath. These are boiler ash, flue gas cleaning residues and bottom ash.

The bottom ash produced is minimised by ensuring that the furnace conditions and residence time are maintained to ensure complete burnout of the waste and to ensure that the TOC of the ash is below 3%. Ferrous and non-ferrous metals are removed from the bottom ash in the bottom ash hall which reduces the total amount of ash produced annually. The bottom ash is stored inside the bottom ash building. The bottom ash is quenched upon leaving the furnace and this suppresses any dust emissions. Trucks removing the bottom ash are covered before exiting the building to prevent any dust emissions during transport and the ash is sent to suitably licensed facilities for recovery. Sufficient space has been provided in the bottom ash hall for the storage of ash and metals prior to removal from the site over long weekends etc.

Flue gas cleaning residues are collected in the bag filter. A portion of the residues are recirculated into the flue gases to improve the efficiency of lime injection for acid gas removal which reduces the overall amount of residues produced. Lime was chosen as the reagent for flue gas cleaning not only for its simplicity in application and its ease of availability but also because it produces a residue that is readily recovered as backfill material in licensed salt mine facilities.

Boiler ash is regularly removed from the different sections of the boiler to avoid over-accumulation. This is done by a combination of mechanical rapping, water soot cleaning and steam soot blowing.

Boiler ash and flue gas cleaning residues are collected in enclosed hoppers within the main process building and transported in enclosed conveyor systems to the boiler ash and flue gas cleaning residue storage silos. The silos are fully enclosed and equipped with self-cleaning filters to avoid dust emissions. The loading out of residues is done via enclosed systems from the silos, whether pre-treated or not, in bags prior to dispatch or loaded directly into tankers.

Every effort is made to ensure that recovery options are found for each of the residues. This is outlined in the waste hierarchy document found in Attachment 4-3-8.

1.2 Article 53 (2)

2. Transport and intermediate storage of dry residues in the form of dust shall take place in such a way as to prevent dispersal of those residues in the environment.

In addition to the measures outlined for all three residues, significant measures are taken to minimise dust emissions during the transport, storage and conveying of these residues on and off the site. This is outlined in Attachment 7-4-1 of this licence application regarding fugitive emissions. Detailed BAT assessment documents for storage and waste incineration have also been completed and can be located in Attachments 4-7-4 and 4-7-1 respectively to this application.

1.3 Article 53 (3)

3. Prior to determining the routes for the disposal or recycling of the residues, appropriate tests shall be carried out to establish the physical and chemical characteristics and the polluting potential of the residues. Those tests shall concern the total soluble fraction and heavy metals soluble fraction.

Bottom Ash, Boiler Ash and Flue Gas Treatment Residues are tested for TOCs, metals and their compounds, total soluble fractions, heavy metals soluble fractions, chloride, fluoride, sulphate, dioxins/furans and dioxin-like PCBs quarterly.

Classification of Bottom Ash is carried out on a quarterly basis, whereas Boiler Ash and Flue Gas Treatment Residues are classified on an annual basis.

As outlined in the waste hierarchy document in Attachment 4-3-8, recovery options are secured for all three residues where possible.