RioTinto

Emission Control Device

Fume Treatment Centre

BC Works

Emission Control Devices

Emission control devices are pieces of equipment that are designed to reduce contaminants emitted to the atmosphere from operations through scrubbing, filtration or incineration. Emission control devices are critical for reducing BC Works' environmental footprint.

At BC Works, there are many minor emission control devices located throughout the operation as well as a number of critical devices such as the Fume Treatment Center (FTC), Gas Treatment Center (GTC), Liquid Pitch Incinerator (LPI) & Pyroscrubber.



Fume Treatment Center



RioTinto BC Works Emission Control Device – FTC Information Package

Fume Treatment Center: Location

The Fume Treatment Center (Air compendium Map ID: 311) is located to the East of the Anode bake furnace (ABF). It is used to treat the air from the anode baking process for particulates, fluorides and polycyclic aromatic hydrocarbons using scrubbing and filtration methods



Fume Treatment Center: Function

- Fumes emitted from the anode bake furnace are collected and transferred to the Fume Treatment Centre (FTC). The air is cooled via injection of water before alumina is injected into the gas to capture fluorides, carbon particulates and PAHs before passing through filters to remove particulates.
- Except for maintenance requirements or unplanned upsets, these facilities will be operating 24 hours per day, 7 days a week and year-round.

Planned vs Unplanned Events

Bypass happens when emission control devices have built-in bypass pathways that allow the equipment to pass emissions without treatment. These pathways are designed to protect the integrity of the asset in case of any issue. An upset condition is any device that is not treating the emissions at the expected treatment level. A bypass and/or upset that occur are either planned or unplanned:

- Planned Events: This type of event is typically planned in advance with a known occurrence date and duration. This type
 of planned event must be approved by the Ministry of Environment and Climate Change Strategy prior to commencing.
 The purpose for an approved event is typically due to maintenance or other scheduled works required in order to maintain
 or upgrade the asset integrity while ensuring the work is performed safely.
- 2. Unplanned Events: This type of event is unplanned due to unforeseen circumstances such as a power outage. The date and duration of these types of events are not known until the root cause is rectified.

BC Works strives to reduce the number of bypass/upset hours by achieving regular planned maintenance, developing built-in redundancies and upholding best practices for operational excellence.

Fume Treatment Center Bypass Types

The fume treatment centers require planned bypasses in order to complete maintenance.

The types of bypasses are listed below:

Bypass Type	Bypass Outcome	Controls
Mode 2	The air from the ABF bypasses the cooling tower and filters. The air is not treated and directed by fans to be released out of the stack.	Communication of eventReporting of event to Ministry of Environment
Mode 3	The air from the ABF bypasses the cooling tower and filters. The air is not treated and directed by a diesel-powered fan to be released out of the stack.	 Communication of event ABF personnel evacuated from the building Reporting of event to Ministry of Environment
Mode 4	The air from the ABF bypasses the cooling tower and filters. The air is not treated and directed by natural draft through the stack and ABF.	 Communication of event ABF personnel evacuated from the building Reporting of event to Ministry of Environment