

Submission -Moss Vale Plastics Recycling Facility

The Garvan Institute of Medical Research (Garvan), as parent company for The Australian BioResources Pty Ltd (ABR), makes this submission in relation to the proposed Moss Vale Plastics Recycling Facility that will be built on land adjacent to the ABR.

The ABR, built by Garvan in 2008, is a state-of-the art facility for the breeding of Specific Pathogen Free laboratory mice to support the Australian medical research community. With client universities and medical research institutes spread across Australia, the ABR is critical to animal-based research in Australia.

Laboratory mice need to be free of infectious diseases, exposure to noxious chemicals and undisturbed by noise and vibration that can severely impact on breeding. As all operational expenses must be cost recovered from researchers, ABR must be protected from any additional operating costs resulting from the construction or operation of the proposed facility.

Given the criticality of medical research supported by the ABR operations, ABR seeks to avoid any impacts on its operations, and the local environment in general, as a result of the development. To ensure that the Moss Vale Plastics Recycling plant is compliant ABR seeks:

- full and free access to impact studies (noise, air pollution etc)
- indemnity on operational impacts arising from the construction and/ or operation of the proposed development.

The potential risks to ABR operations arising from the construction and operation of a major plastic recycling facility built in close proximity include-

1. Construction-

a) Noise and vibration-

Excessive noise and vibration impact on mouse breeding and animal well-being. Mice have a hearing range of 1kHz to 100kHz range (human hearing range is 20 Hz- 20 kHz). Noise above 60 decibels in the mouse hearing range can cause an increase in cannibalism, maternal neglect and foetal loss (S Rasmussen et al 2009). Similarly, vibrations in the 70-100Hz range have been shown to impact negatively on mouse behaviour (R.P. Reynolds et al 2018).

b) Air quality

The main air quality problem during construction is likely to be dust. The air in animal holding areas at ABR is pre-filtered, then HEPA filtered. Excessive dust from the construction site is likely to increase the requirement to change pre-filters, raising the cost of operations.

In addition, ABR relies on roof top solar panels for electricity generation. The increased dust will necessitate cleaning of the panels to ensure their performance is not impacted.

c) Interruption to ABR's access road

If an access road for the Plastics Recycling Facility is built to join with Lackey Rd, it will alter access to the ABR facility. As laboratory mice require care 7 days a week to there must be no disruption to staff access to the ABR facility.

d) *Disruption to Telstra/ Optus optic fibre, water, sewer and gas*

ABR services, including optic fibre, water, sewer and gas, enter the ABR site from Beaconsfield Rd. The new Plastics Recycling access road will be built directly over these service fibres/ pipes. If these services are damaged during the road construction it would have major implications for the daily operations of our facility.

e) *Overflow from shared dam, and retention of water during dam reconstruction*

The plans for the Recycling Facility include the reconstruction of a shared dam. ABR would like its share of the water to be retained and replaced once the dividing wall is completed. In addition, it is critical that an overflow pathway from the ABR side is re-established.

2. *Operations-*

a) *Noise and vibration*

The mice at ABR remain vulnerable to noise and vibration as described in 1.a) once the Recycling Facility is operational.

b) *Air quality*

During plastics recycling there is the potential for both particulate and noxious gas emissions. On-going particulate emissions may increase the frequency of ABR pre-filter replacement and cleaning of the solar panels.

The air filtration at ABR does not include carbon filtration, so any noxious gases have the potential to impact the respiratory tract of mice, interfering with vital medical research.

c) *Fire*

A major industrial fire at the Recycling Facility could have a significant impact on the air quality provided to ABR mice. In addition, an out-of-control blaze in dry conditions, could pose a significant risk to the ABR building itself.

While there are plans to ensure fire mitigation is in place, it is also essential that operation of the recycling plant is performed in such a way that minimises the risks of industrial fires. Garvan requests monitoring of the Recycling Facility operations ensure fire mitigation measures are best practice at all times.

d) *Water*

ABR relies heavily on town water for its daily operations, including washing and treatment of mouse cages, and provision of mouse drinking water. The Recycling Facility building plans indicate that recycling plastics requires significant water. However, plans to collect and recycle water will minimise usage from the town supply.

It is important to flag that until the recycling facility's water storage has accumulated, and in the event of a breakdown in the facility's water recycling, the water supply to ABR must not be diminished.

References

1. R P Reynolds et al (2018)- *Vibration in mice: A review of comparative effects and use in translational research*. Anim. Models & Exp. Med.Vol 1:2, p116-124.
2. S Rasmussen et al (2009)- *Construction noise decreases reproductive efficiency in mice*. JAALAS 48(4): 363-370.