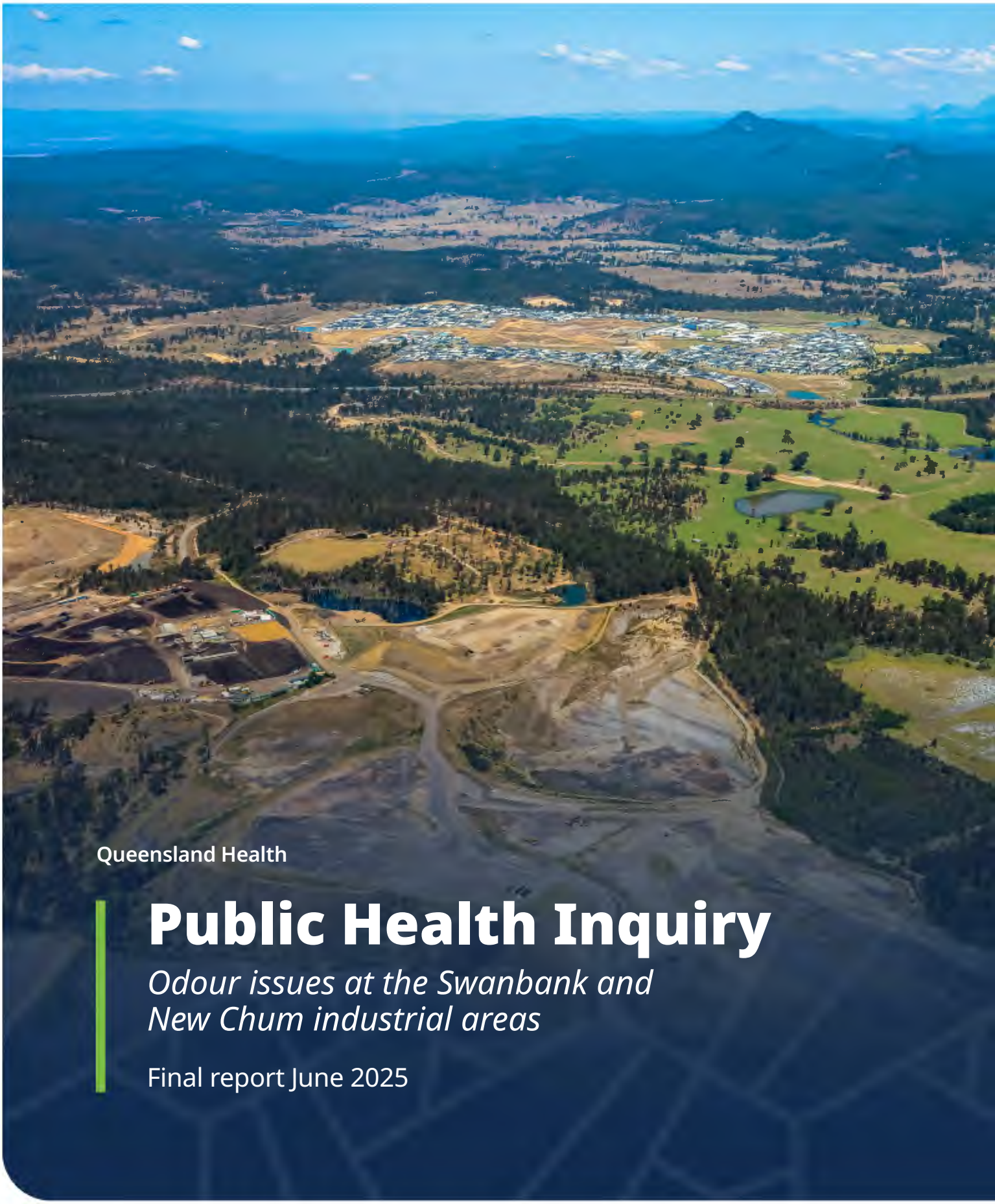

Queensland Health

Public Health Inquiry

Odour issues at the Swanbank and New Chum industrial areas

Final report June 2025

Queensland Government

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Published by the State of Queensland (Queensland Health), June 2025.

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An electronic version of this document is available at https://www.health.qld.gov.au/research-reports/reports/review-investigation/swanbank-public-health-inquiry

ISBN 978-0-6486642-3-9
DOI 10.5281/zenodo.15542004

Acknowledgements

The Department of Health respectfully acknowledges the Traditional and Cultural Custodians of the lands, waters and seas across Queensland and pays our respects to Elders past and present. We value the culture, traditions and contributions First Nations people have made to our communities and recognise our collective responsibility as government, communities and individuals to ensure equitable recognition and advancement of First Nations people in Queensland.

Queensland Government

Queensland Health

The Honourable Tim Nicholls MP

Minister for Health and Ambulance Services

Dear Minister

I am pleased to provide you with the final report from the Public Health Inquiry into odour issues at the Swanbank and New Chum industrial areas, in accordance with the Inquiry's Terms of Reference.

Yours sincerely

Dr John Gerrard

Chair

Public Health Inquiry – Swanbank and New Chum industrial areas

30 June 2025

Contents

Foreword

The Swanbank and New Chum industrial areas have long played a vital role in Queensland's economic and environmental landscape. From mining and power generation to waste management, resource recovery, and other industrial activity, the areas have been critical to the state's growth. Yet, as Ipswich and its surrounding communities have expanded rapidly, the intersection of industry and residential life has created a complex and pressing public health challenge.

This Public Health Inquiry (**the Inquiry**), Queensland's first of its kind, was commissioned in response to deep and sustained community concern about odour impacts from these industrial precincts. Over the course of the Inquiry, the panel of inquiry (**the Panel**) heard directly from residents, community groups, local government, regulators, industry and health professionals. Their collective voices and experiences have shaped this report and its recommendations.

The Inquiry's findings are clear: odour from the Swanbank and New Chum industrial areas is having a tangible and negative affect on the health and wellbeing of many Ipswich residents. Residents have described a daily reality of living with persistent, often offensive odours—affecting their physical health, mental wellbeing and quality of life. Many report symptoms such as headaches, respiratory irritation, sleep disturbance, and stress, as well as broader consequences including reduced outdoor activity, reluctance to welcome visitors and concerns about community reputation.

This report does not seek to assign blame, but rather to chart a constructive path forward. It highlights the unique confluence of factors at Swanbank and New Chum: the scale and diversity of odour-producing activities, the proximity to rapidly growing residential areas, and the legacy of planning and regulatory frameworks not designed for today's urban realities. It also acknowledges the efforts of many operators and agencies to mitigate odour impacts, and the recent legislative and regulatory reforms that provide new tools for improvement. The efforts of the Department of the Environment, Tourism, Science and Innovation (**DETSI**) are worthy of particular recognition.

The Inquiry's recommendations call for sustained, collaborative action—across government, industry and the community—to enhance odour management, strengthen regulatory oversight, increase transparency and ensure public health remains at the centre of decision-making. Addressing these issues will require ongoing vigilance, innovation, and a willingness to adapt as the city continues to grow.

I would like to thank DETSI, Ipswich City Council, West Moreton Hospital and Health Service, local medical professionals, schools, early childcare providers, epidemiologists, industry bodies and business operators for their valuable contribution. I would also like to thank the team who have supported me throughout the Inquiry—fellow panel member Dr Lyn Denison, Robert Samut from legal firm Barry Nilsson, Professor Rachel Thomson from University of

Queensland and Susan Greenbank, Scott Brown, Matthew Brown, Noore Alam and other staff from the Department of Health.

Ipswich is a city with a proud heritage and a resilient, engaged community. The courage and candour of residents who shared their experiences have been instrumental in shaping the Inquiry. It is my hope this report not only validates their concerns, but also serves as a catalyst for meaningful change—ensuring the health and wellbeing of all Queenslanders are safeguarded as we navigate the challenges of sustainable urban and industrial development.

Dr John Gerrard
Chair
Public Health Inquiry—Swanbank and New Chum industrial areas

Executive summary

Background

On 9 January 2025, The Honourable Tim Nicholls MP, Minister for Health and Ambulance Services commissioned a Public Health Inquiry (**the Inquiry**) into odour issues at Swanbank and New Chum industrial areas (**the industrial areas**).

The Inquiry was conducted in accordance with Chapter 7 of the *Public Health Act 2005* by a 'panel of inquiry' (**the Panel**), chaired by specialist physician and Queensland's former Chief Health Officer, Dr John Gerrard. Dr Gerrard was joined on the Panel by Dr Lyn Denison, an expert in air quality and human health.

The Inquiry's scope was to investigate the health effects of odour from the industrial areas and to recommend actions to mitigate the impacts.

Methodology

The Inquiry gathered evidence through personal interviews, a randomised survey of local residents, written submissions, epidemiological analysis, site visits and a review of the published medical literature. Stakeholder engagement and information gathering, community consultation and health outcome data analysis were key phases of the Inquiry.

Summary of findings

The Inquiry concluded the odour from the industrial areas is highly offensive and affecting the health and wellbeing of thousands of Ipswich residents. Planned residential growth near the industrial areas will further exacerbate the problem in the coming years.

The most common symptoms attributed to the odour are respiratory, ear-nose-throat, neurological, gastrointestinal, skin and mental health. These symptoms were generally not mild or transient. The symptoms reported by the community are credible and are consistent in their detail and with the published medical literature.

The Inquiry also found:

- Odorous chemicals in the air do not need to be at toxic levels to impact human health.
- There is no evidence of an increased risk of cancer in the exposed population.
- Composting generates offensive odour. Enclosed composting systems substantially reduce odour, if operated and maintained correctly. However, enclosed composting systems may not eliminate all odour.
- There are other potential sources of offensive odours in the industrial areas such as landfill, fertiliser production sites, recycling/resource recovery sites and asphalt plants.
- The approach to air quality monitoring undertaken by the community may not adequately reflect the range of pollutants they might be exposed to.

- The existing legislative framework may not support effective assessment and management of odour.
- The existing legislative instruments may not enable rapid enforcement to mitigate odour.
- The Inquiry could not determine whether current odour management practices meet best industry practice.

Summary of recommendations

The Inquiry was tasked with recommending actions that may mitigate any health-related impacts on local communities. It was not within the remit of the Inquiry to consider any regulatory or compliance matters except to the extent they provide context for any health impacts experienced by the community.

The recommendations contained in this report provide a pathway to addressing the odour issues over time to mitigate the health impact. As a priority, the recommendations seek to address the most highly offensive odours from composting. Other potential odour sources should be addressed over the medium- and long-term. Improvements to air quality monitoring and suggested improvements to legislative instruments to better manage odour issues are also identified.

The Inquiry recommends the Queensland Government:

1. Provide immediate relief from the most offensive odours by working with composters to cease the acceptance of highly odorous waste sooner than the established timeframe of September 2026.
2. Take action to provide long-term relief from highly offensive odour from composting. There are two options to achieve this:
    2.1. Supporting industry to find a new location to compost.
    2.2. Supporting industry to ensure construction of permanent enclosed facilities within the timelines ordered by the Queensland Courts or negotiated with DETSI.
3. Apply the first and second recommendations to the other commercial composting site operating in Ipswich.
4. Audit all remaining odour-producing companies in the industrial areas and develop an overarching odour management plan for the entire area.
5. Consider undertaking an expanded air monitoring program including canister monitoring of volatile organic compounds and bioaerosols in the industrial areas and surrounding communities.
6. Prohibit future residential developments from encroaching within buffer distances for the industrial areas.
7. Leverage existing laws and consider legislative improvements to better manage odour.

The Inquiry also recommends the Queensland Government establish an inter-departmental Steering Committee to implement the Inquiry's recommendations, with opportunities for input from local government, the Ipswich community and industry.

1 Terms of Reference

1.1 Purpose

On 9 January 2025, The Honourable Tim Nicholls MP, Minister for Health and Ambulance Services commissioned a Public Health Inquiry (**the Inquiry**) into odour issues at Swanbank and New Chum industrial areas (**the industrial areas**).

The Inquiry's Terms of Reference (**ToR**) can be found at Appendix A.

Notification of the establishment of the panel of inquiry was published in the Queensland Government Gazette on 21 February 2025, as per Appendix B.

The purpose of the Inquiry is to report on the circumstances and possible causes of odour-related health concerns of the community living in the vicinity of the industrial areas since 2016 and recommend actions to mitigate the impacts.

In accordance with the ToR, every attempt has been made to:

- Describe industrial activities occurring over time in the industrial areas and summarise available data on odour and air quality in surrounding communities.
- Determine whether the odour issues from the industrial areas contributed to an increase in health impacts.
- Document measures taken by regulatory agencies to address odour-related complaints and health concerns.
- Identify measures taken to address odour related complaints and health concerns of the community in the vicinity of the industrial areas.
- Draw on relevant domestic and internal policy experiences, standards and best practices, where appropriate in the conduct of the Inquiry.

The Inquiry was conducted in accordance with Chapter 7 of the *Public Health Act 2005* (**Public Health Act**) by a 'panel of inquiry' (**the Panel**), chaired by specialist physician and Queensland's former Chief Health Officer, Dr John Gerrard (**the Chair**). A record of proceedings of the Inquiry was maintained.

Chapter 3 of the report describes the approach taken to conduct the Inquiry.

1.2 Panel membership

The Minister appointed the following Panel members:

- Dr John Gerrard, as Chair of the Panel on 6 January 2025.
- Dr Lyn Denison, an expert in air quality and human health on 28 January 2025.

The panel was supported by Queensland Department of Health staff with expertise in public health, environmental health/science, epidemiology, community engagement and communications.

Legal firm, Barry Nilsson, was appointed to provide legal support to the Inquiry.

Refer to Appendix C for biographies of the panel members.

1.3 Scope and limitations

The Inquiry was conducted in accordance with the ToR, focusing on the extent of the health effects of the odours from the industrial areas. Apportioning blame for the impact of the odours was outside of the Inquiry's ToR and scope of investigation.

The Inquiry acknowledges there are other sources of odour in the Ipswich area. These other sources were out of scope of the Inquiry's investigations. However, the recommendations contained in this report could apply more broadly to address odours emitted from other sources.

The Inquiry also acknowledges odour issues have been a long-standing issue for the Ipswich community. The ToR limited the Inquiry to focus on evidence from 2016 to the present day.

1.4 Acknowledgements

The Panel would like to thank all those who contributed to the Inquiry's work, with special thanks to Simone Ventura, Director (Compliance), Swanbank Project from the Department of the Environment, Tourism, Science and Innovation.

The Panel would also like to thank the following government agencies and peak industry bodies:

- Department of the Environment, Tourism, Science and Innovation
- Ipswich City Council
- Ipswich Historical Society
- Queensland Health's Health Contact Centre (13 HEALTH)
- Queensland Health's Forensic Scientific Services (research librarians)
- West Moreton Hospital and Health Service
- Swanbank Community Reference Group
- Waste and Recycling Industry of Queensland
- Department of Education
- Queensland Cancer Register–Cancer Alliance Queensland
- Department of Health.

A special thanks to individual community members and business operators who took the time to meet with the Inquiry team.

The Panel would also like to thank those who made a written submission to the Inquiry. The information contained in these submissions made a valuable contribution to the evidence supporting the Inquiry's findings.

2 Background

This chapter provides some historical context to the industrial areas and details the site's location, current industrial activity and sources of odour.

2.1 Historical context

Ipswich boasts a rich industrial heritage, particularly in coal mining, which began in the mid-1800s. The area's coal industry began in 1843, when John Williams opened the first recorded coal mine at Redbank to supply fuel for the steamship Sovereign[1,2]. By the turn of the 20th century, major coal fields stretched from Bundamba through Blackstone, Swanbank, Redbank Plains, New Chum, and Redbank[2]. By the early 20th century, Ipswich was producing 80% of Queensland's coal, cementing its status as the state's primary coal mining centre[1]. Up until the 1960s, almost all of Ipswich's coal production came from underground mines[2].

Industrial growth and railways

The expansion of Ipswich's coal industry was supported by the construction of Queensland's first railway line in 1865, connecting Ipswich to Grandchester, then Bigge's Camp[3]. This railway made it possible to transport coal efficiently to broader markets and further strengthened Ipswich's industrial base. During the colonial era, Ipswich's economic importance was so significant it was even considered as a potential capital for Queensland[4].

Community and innovation

The coal industry attracted many immigrants, especially from England and Wales, who sought work in the underground mines and supporting industries[1]. By the early 1900s, more than a thousand miners were employed in Ipswich[1], and the city became known for its mining innovations, such as the introduction of Queensland's first electric coal cutters at Box Flat in 1905[5].

Major mines and tragedy

The Swanbank area became synonymous with coal mining, particularly after the opening the Box Flat Mine in 1897[1]. Years later, in a new location slightly to the south, the Box Flat Extended mine was established and played a significant role in supplying coal to the Swanbank Power Station[2], which began operating in the 1960s[1]. Tragically, the mine is remembered for the disaster of July 31, 1972, when a catastrophic underground explosion claimed the lives of 17 men, with another man passing away from injuries just over 18 months later, making it one of Queensland's worst mining disasters[1]. The explosion was so powerful that it was mistaken for an earthquake by the local community[1]. Box Flat Extended

Mines No.5 and No.7 were permanently sealed[1], and a memorial now stands on Swanbank Road to honour those who lost their lives.

Figure 1. Morning of the Box Flat Mine disaster, 1972[6]

Change and decline

The 1974 floods brought further challenges, flooding five underground mines and leading to the permanent closure of three of these mines; a fourth underground mine was already closed at the time of flooding[2]. These two disastrous events—the explosion and the flooding—combined with economic pressures, expedited a shift from underground mining to open-cut operations, which allowed for larger-scale extraction using modern machinery[2].

In the late 1970s and early 1980s, many family-owned mines were purchased by larger Australian and international companies, bringing new investment and further changes to the industry[2].

By the late 1980s and early 1990s, stagnant coal prices led to the closure of the last underground mines—Newhill Mine at Swanbank and Oakleigh Mine at Rosewood—in 1997. Open-cut mining continued until December 2019, when the Jeebropilly Mine closed, ending 176 years of coal mining in the Ipswich-Rosewood region. Over this period, more than 300 underground and 185 open-cut mines operated in the area[2].

Modern legacy

The large voids left by open-cut mining became ideal for landfill and waste disposal, shaping the region's current industrial landscape[2]. The rehabilitation of mining voids through waste disposal became a key aspect of land management[7]. Although the era of coal

mining has ended, its legacy remains visible in Ipswich's landscape, community and identity, reflecting the city's significant contribution to Queensland's economic growth and industrial history[2].

The Inquiry would like to acknowledge Mr Hugh Taylor, President of the Ipswich Historical Society for sharing his time, knowledge and expertise to support the Inquiry team to understand the history of mining in Ipswich.

2.2 Location and size

The industrial areas of Swanbank and New Chum are located approximately six kilometres east of the Ipswich CBD and 27 kilometres west of Brisbane CBD, spanning 2200 hectares[7,8]. This makes it one of Queensland's, and possibly Australia's, largest developed industrial areas, stretching 10 kilometres in length and up to four kilometres in width—large enough to encompass 4400 football fields and surpassing the area of the Amberley Air Base (Figure 2)[9].

The area presents complex challenges for development due to the legacy of historic underground and open-cut mining, as well as the presence of subterranean fires that persist from past disasters. Despite these challenges, the Swanbank and New Chum precincts remain vital industrial hubs, with their history deeply intertwined with both the prosperity and tragedies of Ipswich's mining era.

The site holds significant strategic importance for the future of industrial growth in South East Queensland, but importantly in managing South East Queensland's waste. Industrial scale waste disposal, recycling, resource recovery, energy from waste and composting operations are carried out within the industrial areas.

NB: The Ebenezer industrial area (also located in Ipswich) is a future industrial area which is also set to become one of Queensland's largest industrial areas.

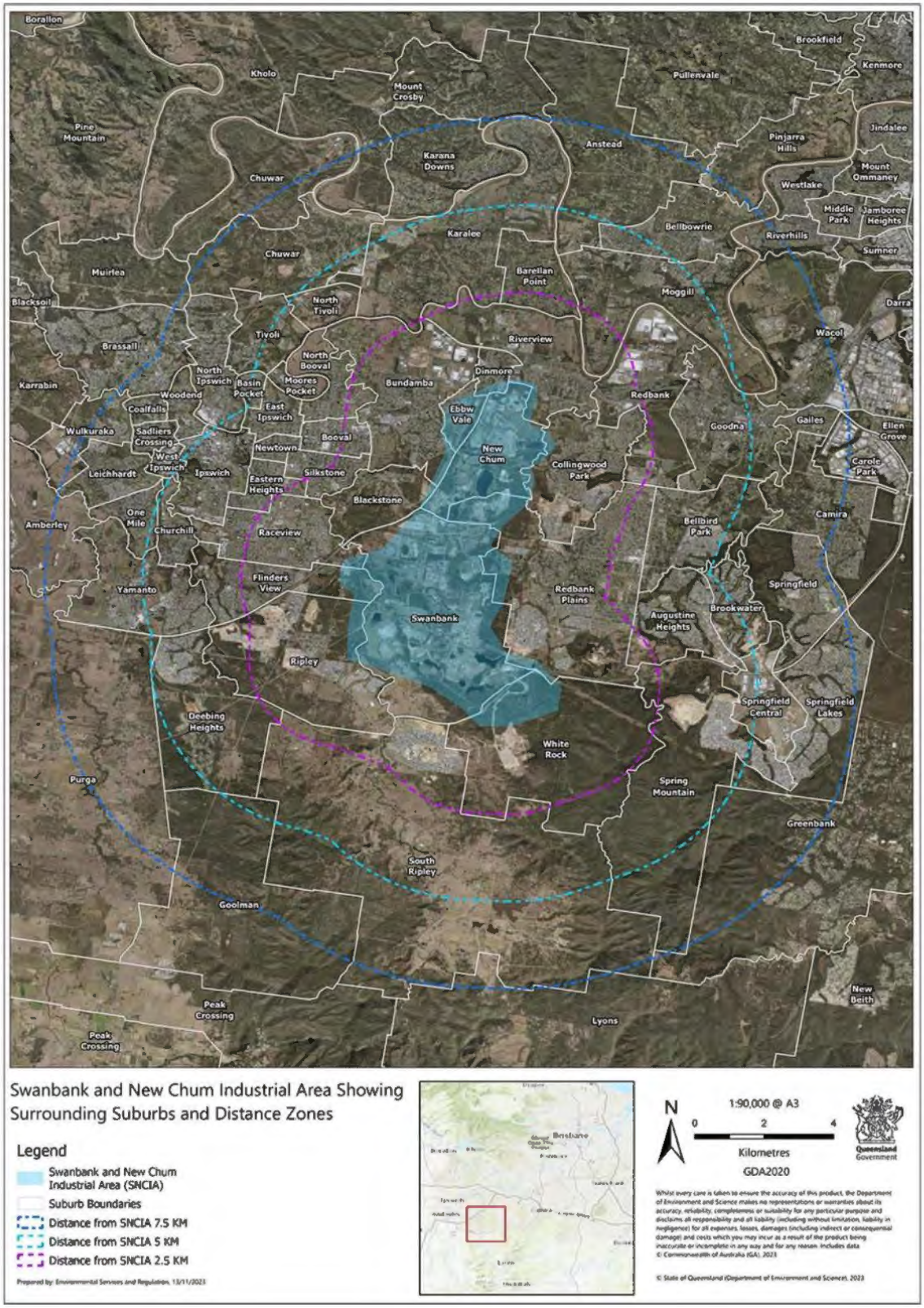


Figure 2. Swanbank and New Chum industrial areas showing surrounding suburbs and distance zones[9]

2.3 A growing city

Ipswich is one of Australia's fastest growing cities[10] and is expected to grow faster than any other LGA in Queensland[11]. By 2046, the population is predicted to double from 260,000 to 533,000[12]. Ultimately Ipswich has a planned capacity of 660,000 people. The city's population has increased from 194,000 in 2016 to almost 260,000 at the time of the Inquiry[13].

There are nine surrounding suburban areas (Statistical Area Level 2, **SA2**) that share a boundary with the industrial areas: Augustine Heights, Bellbird Park, Bundamba, Collingwood Park, Ipswich East, Raceview, Redbank Plains, Ripley and Riverview.

According to the Australian Bureau of Statistics (**ABS**), the combined 2024 estimated residential population for these areas is 131,932. This represents half of Ipswich's current population (131,932/259,886). Between 2016 and 2024, the SA2s have seen a 40 per cent increase in population[13].

Figure 3 illustrates the Development Approval (**DA**) activity over the last 20 years. As shown, each blue dot represents a unique DA. In addition, there are a number of environmentally relevant activities (**ERAs**) undertaken at the industrial areas regulated under the *Environmental Protection Act 1994* (**EP Act)**. These are described in more detail in section 2.5.

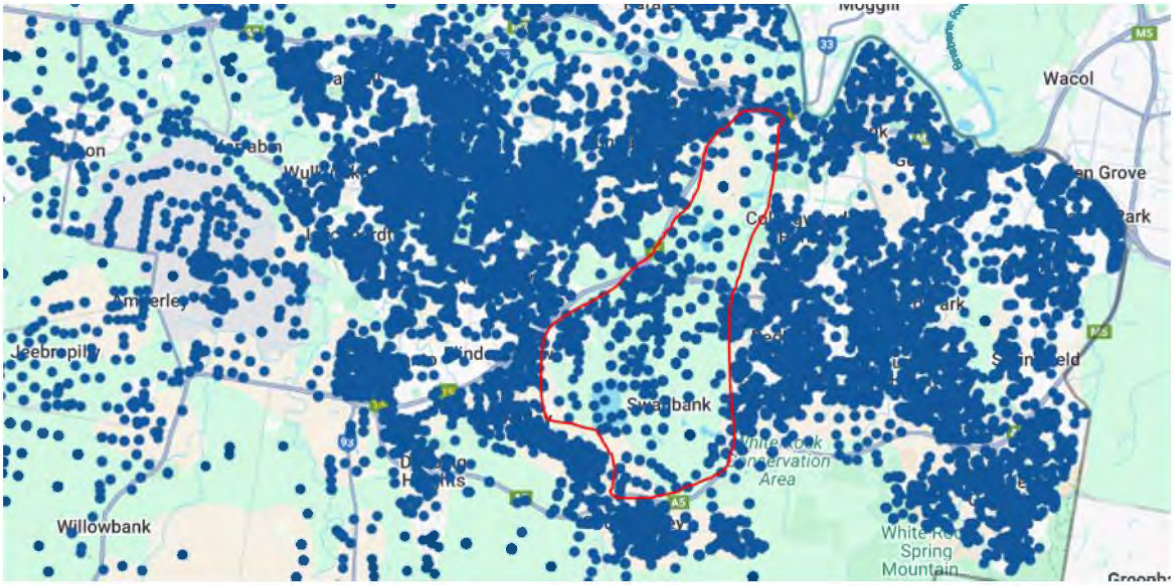


Figure 3. Development approvals in and around Swanbank and New Chum over the last 20 years

NB: SA2 refers to Statistical Areas Level 2 (SA2) as per the Australian Statistical Geography Standard Edition 3.

2.3.1 Ripley Valley

The Ripley Valley, immediately located to the south and south west of the industrial areas[14], is part of SEQ's planned community expansion[15]. By 2031, an additional 50,000 dwellings to house a population of 120,000[16] is planned. At 4680 hectares it is one of the largest urban

growth areas in Australia[11]. The orange border in Figure 4 illustrates the geographical size of the Ripley Valley priority development area.

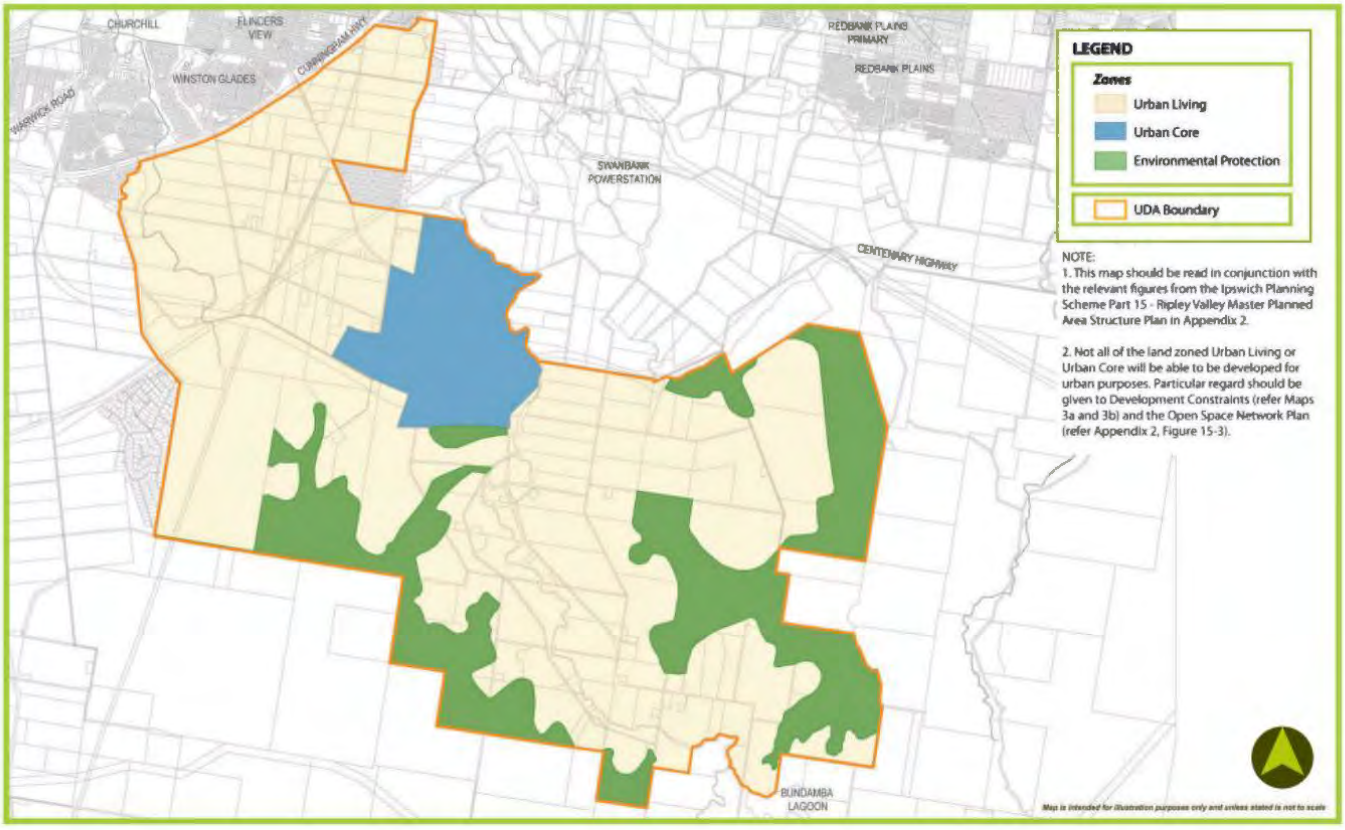


Figure 4. Ripley Valley Priority Development Area[17]

2.3.2 Urban encroachment

In Ipswich, encroachment has been occurring near the industrial areas over the last two decades, where previously approved isolated industrial activities have become incompatible with adjacent land uses due to the growing proximity of residential development. This is a significant factor contributing to odour impacts being experienced by the community.

Census data for the years 2016 and 2021 from the Australian Bureau of Statistics indicate an increase in the number of dwellings in Ripley (530 to 1705) and Redbank Plains (6367 to 8464)[18]. These two suburbs have been the most significantly impacted by odour, representing approximately 60 per cent of community notifications received during 2024 from in and around the industrial area. Figures 5–7 show the progress of residential development from 2010 to 2024.

Figure 5. Aerial imagery of the industrial areas in 2010 (Source: Nearmap)

Figure 6. Aerial imagery of the industrial areas in 2022 (Source: Nearmap)

Figure 7. Aerial imagery of the industrial areas in 2024 (Source: Nearmap)

2.4 Current industrial activity

Ipswich's new planning scheme[19] (Ipswich City Plan 2025) is expected to come into effect this year with a planned commencement date of 1 July 2025. Under the new scheme, the Industrial areas are predominantly zoned *Industry Investigation* (refer to Appendix D). An Industry Investigation zone protects land that may be suitable for future industrial development[20]. In the interim, limited activities may occur on or near these lands that do not constrain their possible future industrial use.

Today, there are 40 sites within the industrial areas operated by multiple companies, state government agencies, Ipswich City Council (**ICC**) and individuals[11]. The following industrial activity is occurring at the sites[14]:

- clay mining and quarrying (10 sites)
- landfilling—putrescible, construction and demolition/industry and regulated waste (six sites)
- concrete batching plants (four sites)
- tyre recycling (four sites)
- power generation/fuel combustion (three sites)
- resource recovery (two sites)
- asphalt plant (two sites)
- composting (two sites)
- other—fertiliser works, machinery maintenance, explosive precursors, soil conditioners, ash deposition (five sites).

Almost half of Queensland's waste (by weight) is received at the industrial areas[11]. This includes household waste, green waste, commercial and industrial waste, construction and demolition waste and other regulated waste. Waste and resource recovery operations in the Ipswich Local Government Area (**LGA**) manage around two million tonnes or 47 per cent of Queensland's total waste[12,21], much of which is generated outside of the Ipswich local community.

The industrial areas are strategically significant to *South East Queensland's Waste Management Plan* and the Queensland Government's *Waste Management and Resource Recovery Strategy*.

South East Queensland's Waste Management Plan notes that although the aggregated landfill capacity across South East Queensland is not constrained, several South East Queensland's LGAs will reach landfill capacity with the next ten years. These LGAs, and the community more broadly, will need access to available landfill capacity. The industrial areas provide South East Queensland with landfill capacity for decades to come.

To help extend the life of existing landfills, *South East Queensland's Waste Management Plan* focuses on organics recovery (mulching, composting) to remove organics from general waste stream[22]. ICC will begin a city-wide Garden Organics (**GO**) service from 1 July 2025, with all

eligible households receiving a GO bin to be collected on a fortnightly basis[23]. Removing green waste from landfills reduces methane emissions (a major contributor to global warming) and helps extend the life of South East Queensland landfills. There is significant organic waste diversion and composting activity undertaken at the industrial areas.

The *Waste Management and Resource Recovery Strategy* sets out a vision for Queensland to become a zero-waste society, where waste is avoided, reused and recycled[16]. Significant resource recovery, recycling, composting and other landfill diversion activities are conducted onsite at the industrial areas.

2.5 Odour from the industrial areas

The information in Section 2.5 has been drawn from the DETSI submission to the Inquiry[11].

The industrial areas are characterised by the close proximity of multiple heavy industry activities, which can compound environmental impacts, including odour emissions. An increase in the intensity of operations can potentially affect nearby communities. In locations like the industrial areas, where multiple industries operate in close quarters, odour issues can also be amplified due to overlapping emissions. Important sources of odour from the industrial areas are composting sites and landfills.

Landfills primarily operate under anaerobic (low-oxygen) conditions, leading to the production of odorous gases such as hydrogen sulphide, which has a strong rotten egg smell. Additionally, landfills generate methane which is odourless but often mixed with other volatile organic compounds (**VOCs**) that contribute to the overall smell.

In contrast, composting occurs under aerobic (oxygen-rich) conditions, resulting in different odour compounds, including ammonia, which has a pungent, sharp smell, and terpenes, which can give off earthy or woody odours. When composting is poorly managed, anaerobic pockets can form, leading to sulphur-based odours similar to those from landfills.

The key distinction is that landfill odours tend to be more persistent and sulfurous, while composting odours are often more transient but can be particularly strong if aeration and moisture levels are not properly controlled.

Other potential sources of odour in the industrial areas include fertiliser production sites, recycling/resource recovery sites and asphalt plants.

DETSI has been investigating and responding to concerns raised by the community about odour, dust and other environmental nuisance in and around the industrial areas for over 10 years.

DETSI advised the concentration of waste, composting and other potential odour generating activities within close proximity to residential development is a unique situation within

Queensland. DETSI has not undertaken this type of resource intensive, enforcement and community engagement approach in any other location in Queensland.

DETSI has taken the lead on this issue, with support from ICC and Queensland Health.

The suburbs surrounding the industrial areas are shown in Figure 2.

DETSI regulates many ERAs within the industrial areas, the majority of which are related to waste management. These businesses must hold an environmental authority (**EA** or licence) to operate. Table 1 and Figure 8 detail the key licenced operators within the industrial areas and the type of waste management operations undertaken within their relevant EA.

Further details about the history, compliance and actions relating to the sites in Table 1 can be found in the site profiles provided in Appendix E.

Table 1. Details of key waste management operators within the industrial areas

Licence holder and number	Common name	Waste types	More information
Chip Tyre Pty Ltd **EPPR00948613**	Chip Tyre (Tyre Recycling)	Tyre recycling facility receiving tyres and other rubber products.	Refer to Appendix E.
Chum Street Pty Ltd **EPPR00422413**	Previously Claypave Brick Factory	Landfilling permitted for clay and brickworks waste, but not operational.	No site profile in Appendix E. The site historically undertook waste disposal but is no longer operating a landfill for brick/clay waste.
Cleanaway Solid Waste Pty Ltd **EPPR00445713**	Cleanaway New Chum Landfill	Landfilling operation receiving: general waste including inert construction and demolition material including concrete, bricks and tiles non-reactive inflammable scrap metal green waste including trees, branches, non- chemically treated timber and other plant material. limited regulated waste asbestos shredded tyres treatment tank sludge contaminated soil.	Refer to Appendix E. At the time of writing, Cleanaway is not currently accepting waste on site.

Licence holder and number	Common name	Waste types	More information
Lantrak Waste and Recycling Pty Ltd **EPPR00703413**	Lantrak Landfill	Landfilling, waste reprocessing and transfer station operation receiving: Construction and demolition waste Asbestos Contaminated soil.	Refer to Appendix E.
NuGrow Ipswich Pty Ltd **EPPR00696713**	NuGrow Composting Facility	Composting operation receiving solid and liquid waste material.	Refer to Appendix E.
Re-Direct Recycling Pty Ltd **EPPR00706313**	Previously Bio-Recycle Greenspot Landfill	Landfilling operation receiving construction and demolition waste and green waste.	Refer to Appendix E.
Remondis Australia Pty Ltd **EPPR00823413**	Remondis Landfill	Transfer station landfilling, reprocessing, treatment and composting operation receiving: general waste regulated waste limited regulated waste Enclosed composting facility operation is permitted however has not yet been constructed or commenced.	Refer to Appendix E.
Veolia Environmental Services (Australia) Pty Ltd **EPPR00633413**	Veolia Wattle Glen Landfill	Waste transfer station operation including commercial waste, recyclable waste and limited regulated waste. Landfilling operation permitted, but not operational.	No site profile in Appendix E. The landfill operation is closed and the site only sorts recyclable materials.
Wood Mulching Industries (WMI) Pty Ltd **EPPR00816413**	WMI Composting Facility	Composting operation receiving solid and liquid waste material.	Refer to Appendix E.

NB: More information on each waste operator is available in Appendix E.

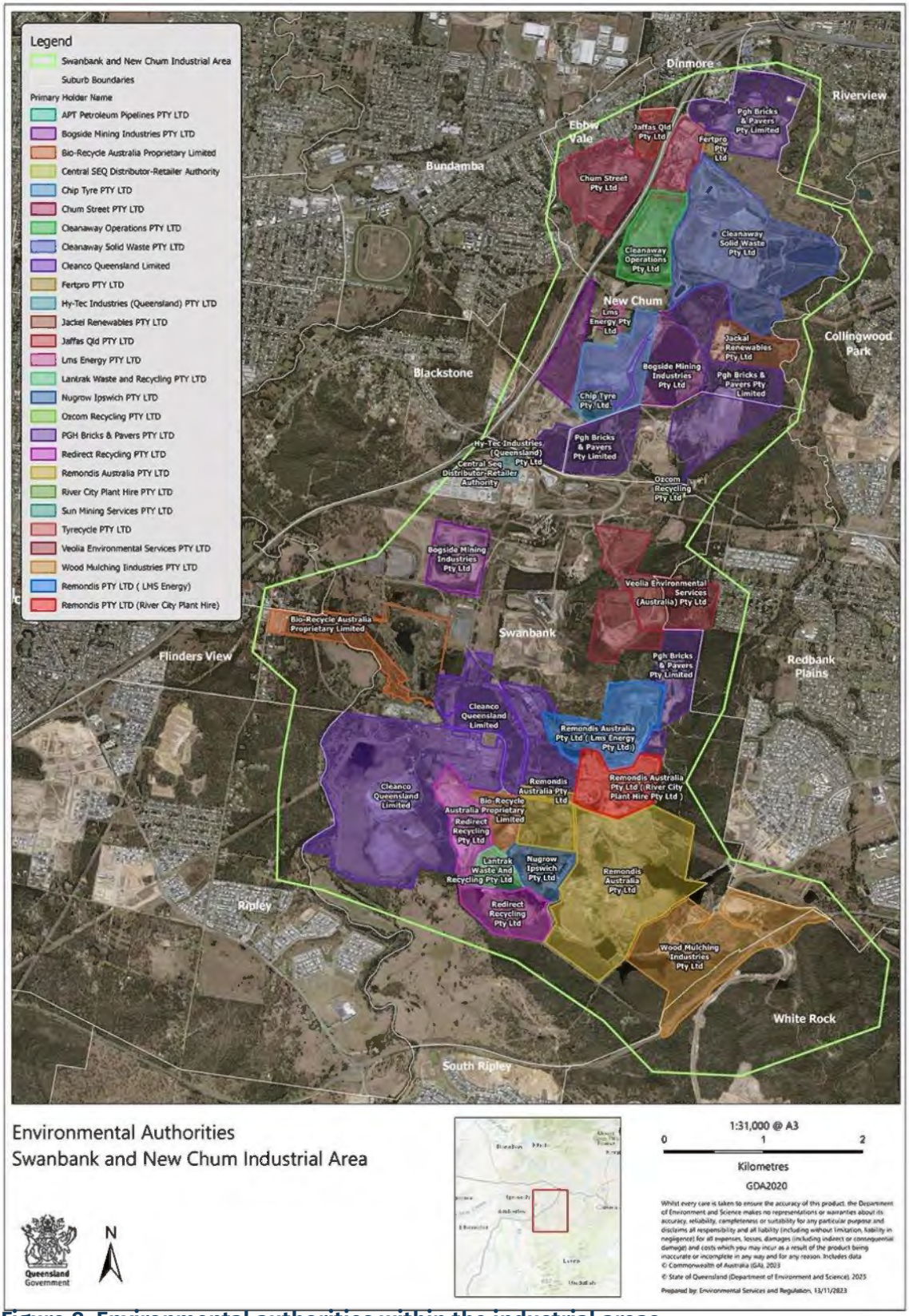


Figure 8. Environmental authorities within the industrial areas

2.5.1 Composting and leachate

Important sources of offensive odour from the industrial areas include composting and leachate. This section summarises the challenges.

Composting

Composting is the controlled biological decomposition of organic materials under aerobic and thermophilic or naturally self-heating conditions[24,25]. The science of composting is complex. It requires a complex inter-relationship of specific environmental conditions (temperature, air, pH and water), metabolic activity (microbial species, diversity and activity) and nourishment with a food source (feedstock)[25]. The physico-chemical composition of the compost is also critical (particle size, porosity, and carbon-to-nitrogen ratio). Managing these requirements carefully generally provides optimal conditions for composting[25].

However, as composting involves biological degradation[26], odours will form during composting even under optimal conditions[25,26] as microorganisms break down organic matter, releasing VOCs and other odorous compounds. Odour emissions can vary significantly throughout the composting process.

Over the life of a stockpile, odour emissions typically start out relatively high, depending on the type and freshness of the feedstocks, and can increase further as the thermophilic (high temperature, >45°C) stage progresses[27,28]. Once the thermophilic stage has concluded and the compost enters the curing or maturation stage, odour emissions begin to decrease until they reach an earthy character of background concentration levels[29].

Failing to maintain optimal conditions for composting can rapidly generate offensive odours and lead to poor product quality[25]. The most offensive odours from composting are associated with the release of different VOCs and other odorous compounds[25,26,29] from compost that:

- is too high in nitrogen, producing excessive ammonia gas (pungent gas)
- has become anaerobic, producing hydrogen sulphide gas—rotten egg smell, which is offensive at low levels
- has too much sulphur containing materials such as food, paper, gypsum, manure and biosolids—this can lead to release of mercaptans and other volatile organic sulphur compounds
- has excessive moisture which hinders aeration and favours anaerobic bacteria
- has been nourished with feedstock high in proteins.

Numerous feedstocks used to nourish compost are considered to have a high and very high odour potential. These include[29]:

- abattoir waste (for example, animal effluent, bone material, blood, paunch material, tallow waste)
- acid sulfate soils and sludge
- animal manure including wastewater from holding yards
- animal processing waste, other than fish or poultry processing waste (for example, dead animals, or parts of dead animals, milk waste, mixed animal manure and animal bedding waste)
- biosolids that are not stabilised biosolids
- brewery and distillery effluent
- fish processing waste (for example, fish bones and other remains, wastewater from fish processing)
- food processing treatment tank, or treatment pit, liquids solids or sludges
- grease trap waste—liquid and solid
- food processing effluent and solids
- poultry processing waste (for example, abattoir effluent and sludges, egg waste, feathers, meat and bones)
- protein-based food organics (for example, expired protein-based food from supermarkets)
- a substance used for manufacturing fertiliser for agricultural, horticultural or garden use (for example, ammonium nitrate, dewatered fertiliser sludge).

There are also multiple areas within a compost facility that can be a source of odour. These include receival and mixing areas, storage areas for feedstock, open-air windrows undergoing the thermophilic stage of composting, windrow turning (for aeration), leachate ponds and biofilters[25,26].

Composting systems

The composting systems commonly used in Queensland include turned open windrows, forced aeration and enclosed or in-vessel systems[29].

Turned open windrows[29]. The most common type of composting system in Queensland and Australia is the turned open windrow. Turned open windrow composting involves the composting material being formed in long rows—left in the open air (that is, are not enclosed) during the composting process. The system involves turning the piles to aerate the mass, improve oxygen levels, alleviate compaction and avoid odour formation. Water may also be added to maintain suitable moisture content for microbial decomposition and to reduce dust generation when turning piles. The size, shape and slope of open windrows depend on the feedstock being composted and the type of machinery used to establish and turn the windrow[24]. Windrows that have a height greater than 3.5 metres can overheat easily and develop anaerobic conditions which result in odour generation[25,30]. Windrows with a height of one metre or less may fail to heat up at all due to heat loss from the windrow

surface[30]. Turning windrows can generate significant odours, particularly in the first few weeks of composting, when odour emissions are typically at their peak[25]. Covering windrows either under a roof or with textile covers is effective at controlling odours from windrows[28].

Forced aeration. In forced aeration systems, oxygen is forced through the composting material (usually through a network of aeration pipes[31]) reducing the need for turning and providing more rapid decomposition, which can shorten the total composting time[29].

Enclosed and in-vessel systems. In enclosed or in-vessel systems, the early (and highly odorous) phase of composting is undertaken within an enclosed structure (for example, a building or part of a building) or a vessel (for example, enclosed concrete rectangular tunnel). These systems are designed to minimise odour from the composting process. Most enclosed and in-vessel systems also use a system of forced aeration to oxygenate the enclosed compost mass[29].

The advantages of enclosed or in-vessel systems include[25,29]:

- more precise process control of composting conditions (for example, temperature, aeration/air flow and moisture addition)
- rapid pasteurisation and rapid rates of decomposition due to more uniform distribution of high temperatures throughout the compost mass
- protection from the elements when under a roof, in a building or vessel
- improved systems for odour containment and control including the use of biofilters.

Although enclosed and in-vessel systems are designed to minimise odour from composting, even a well-located and designed composting facility with the most sophisticated enclosed technology can still generate offensive odour if not maintained or operated correctly[25]. This will occur when:

- risks associated with any given feedstock are not well understood
- physico-chemical characteristics of the mix are not right
- careful process control and monitoring are not followed
- biofilters are not maintained properly
- odour prevention strategies to circumvent potential problems are not implemented[25].

NB: Windrows can be covered with a semi-permeable membrane. A semi-permeable membrane used in combination with another system, such as a forced aeration system, can significantly reduce odour emissions[29].

Leachate

Leachate is a fluid that has been in contact with waste or other contaminants. It is typically liquid that has passed through, or emerged from, landfill or other waste operations[29]. It is characteristically very odorous due to the presence of VOCs and sulphur-containing compounds like hydrogen sulphide[29].

When leachate escapes from waste management sites, it can contaminate groundwater, surface water and soil with harmful organic and inorganic pollutants. Therefore, ensuring

adequate measures are in place to monitor, prevent and treat leachate is essential for protecting human health and the environment[32].

The physical appearance of leachate is a black-, yellow- or orange-coloured cloudy liquid. The smell is acidic and offensive and may be very pervasive because of hydrogen-, nitrogen- and sulphur-rich organic species such as mercaptans[32]. In Australia, waste management sites must manage leachate in accordance with strict conditions of approval. This can involve capturing leachate in ponds to treat onsite or offsite at wastewater treatment plants.

2.5.2 Bioaerosols and volatile organic compounds

Commercial composting and most landfill operations process organic matter from domestic and municipal waste. Composting typically involves aerobic decomposition (oxygen-dependent microbial activity), while landfills generally rely on anaerobic decomposition (oxygen-limited conditions)[33,34]. These processes generate bioaerosols and VOCs during organic breakdown, and both are associated with odour[35,36].

Bioaerosols

Bioaerosols are airborne particles containing biological agents like bacteria, fungi, viruses, pollens, and fragments and metabolites that are derived from organic matter[37,38]. While they are released by waste and composting industries as a result of organic decomposition, they are also common in agriculture and are naturally occurring in ambient air at highly variable concentrations[33,39-43].

There appear to be no established threshold health limits for community exposure to bioaerosols. The risk of health problems attributable to bioaerosols is dependent on numerous factors, including bioaerosol concentration, the type of organism, exposure, duration and the pre-existing medical conditions of exposed individuals. There is also a lack of knowledge regarding dose response relationships[40,44]. These factors make it difficult to establish absolute threshold health values for bioaerosol concentrations.

For the bioaerosols emitted from composting facilities, high level exposures have been associated with a range of conditions. While two recent systematic reviews concluded there is insufficient evidence to comment on the risk of exposure to nearby residents, they acknowledged the most commonly reported health issues are respiratory system problems (for example, rhinitis, asthma, bronchitis and sinusitis), through allergic and non-allergic pathways[39,45].

Volatile organic compounds

VOCs are organic molecules that have a high vapor pressure at room temperature (that is, they turn to gas more easily), and include the mercaptans, organic sulphides, amines, indoles, volatile fatty acids, terpenes, alcohols, ketones and aldehydes[46,47].

The volumes of these aerosols are influenced by waste management practices, including the:

- porosity of organic material (affecting oxygen availability)

- frequency of mechanical agitation (for example, turning compost or compacting landfill waste), which increases aerosolization[45,46,48].

VOCs are considered to be the main source of odour from facilities that manage organic waste as many of these compounds can be smelled at extremely small concentrations[49]. There may also be interactions between various VOCs, bioaerosols and non-odorous co-pollutants that can contribute to malodour and give rise to health concerns[35].

Nationally and internationally, public concerns about odour from industrial waste are widely acknowledged[46,47,50,51]. The literature has frequently recognised that, even when bioaerosols and VOCs are below threshold levels, their odour has potential to impact upon workers and nearby residents[51,52].

Part A—Health impacts of the odour

Dr John Gerrard and Dr Lyn Denison visit DETSI's air monitoring station, Ripley, January 2025

Part A of the report provides an overview of the approach and structure of the Inquiry, a review of the literature as it relates to the human response to odour and an analysis of the health impacts of the odour on the local community.

3 Approach and structure of the Inquiry

The scope of the Inquiry considered any relevant health-related evidence from 2016. This timeframe allowed for accounts of early complaints from the community about odour impacts, up until the commencement of the Inquiry.

As per the ToR, the Inquiry was tasked with:

- Investigating the extent of the health effects of the odours from the Swanbank and New Chum industrial areas.
- Recommending actions that may be taken to mitigate any health-related impacts on local communities.

The Inquiry did not consider any regulatory or compliance matters led by either the State of Queensland or Local Government, except to the extent that it provided context for any health impacts experienced by the community.

The Inquiry was undertaken in three key phases:

- stakeholder engagement and information gathering
- community consultation
- health outcome data analysis.

3.1 Stakeholder engagement and information gathering

3.1.1 Stakeholder engagement

Engagement with the community, industry, local government, and other stakeholders was key to the Inquiry's processes.

DETSI was a key stakeholder and met with the Inquiry team on a regular basis, organised a site visit to the industrial areas and provided a formal submission to the Inquiry.

The Inquiry met with ICC during the information gathering phase of the Inquiry and both ICC and the Ipswich Mayor provided a formal submission to the Inquiry.

The Inquiry participated in multiple site visits of industries based within the industrial areas, as well as a site visit to a recycling facility in Yatala. Site visits were organised by DETSI, the Waste and Recycling Industry of Queensland (**WRIQ**) and individual companies.

The Inquiry sent letters to all odour-producing companies with ERAs operating in the industrial areas overviewing the scope of the Inquiry and inviting a formal submission on their operations and activities, especially as they relate to the mitigation of odours from their premises.

In the conduct of the Inquiry, natural justice was afforded to anyone directly concerned in the matter providing the opportunity to make a defence to all claims made against them. This was achieved by writing to all odour-producing companies with ERAs overviewing the relevant key findings and possible recommendations and seeking feedback on these.

The Inquiry wrote to and met with West Moreton Hospital and Health Service (**West Moreton Health**), the Department of Education and the Department of State Development, Infrastructure and Planning (**DSDIP**). The Inquiry also wrote to all companies based in the industrial areas with an existing ERA requesting a formal submission.

The Inquiry sought more information in writing and provided an opportunity to meet with Dr Gerrard to discuss the health effects of patients from local medical specialists—specifically those practicing in dermatology, ear, nose and throat, respiratory and sleep, and psychiatry—and practice managers of in-catchment medical practices. The Panel also sought advice from researchers and medical specialists, where appropriate.

The Inquiry also wrote to directors of kindergartens and childcare centres and principals of all state, Catholic and independent schools seeking information on the impact of odour on the health of staff and students, including the type and severity of health conditions and the length of absence from work/school.

The Inquiry met with Brisbane City Council to gain an understanding of their management of odorous industries and associated odour complaints and approach to air quality, planning, the use of performance-based frameworks inclusive of benchmarks and odour criteria and other planning instruments.

All information provided informed the Inquiry's findings and recommendations.

3.1.2 Information gathering

A market research agency was commissioned to conduct a telephone survey of 400 residents (specifically from the following suburbs—Augustine Heights, Bellbird Park, Blackstone, Booval, Bundamba, Collingwood Park, Dinmore, Eastern Heights, Ebbw Vale, Flinders View, Newtown, Raceview, Redbank Plains, Ripley, Riverview, South Ripley, Silkstone) to seek quantitative data to determine the extent of the health impact of odours from the industrial areas on local residents.

The Inquiry commissioned air quality monitoring data to be collected via sampling at six sites on a one-in-six-day frequency (for 24 hours), over a four-week period, for the full United States Environmental Protection Agency TO-15 suite of VOCs. To provide a spread of geographic locations, sampling was undertaken at three sites in the community—South Ripley ID 1003; Church ID 1001; Riverview 1004 and three sites within the industrial areas—Swanbank ID 3001; 3004; 2002 as per the locations detailed here: https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring.

To address concerns previously raised by the community, an epidemiological analysis was undertaken to review the incidence and morbidity of certain types of cancers in the

residential areas surrounding the industrial areas, compared with a control, to ascertain if there are any statistically significant differences between the two areas. This focussed on information available from 2016 to present and specifically cancer (lung, liver, kidney and all cancers).

3.2 Community consultation

The Inquiry sought to obtain information from affected community members via a number of public consultation events with residents living in the vicinity of the industrial areas to understand their experiences and the impact of odour on their everyday lives.

The Inquiry met with DETSI and the Swanbank Community Reference Group (**the CRG**) on 5 February 2025 to overview the scope of the Inquiry and plans for community consultation.

On 6 February 2025, Dr Gerrard emailed members of the CRG thanking them for taking the time to meet the day prior and reiterating his commitment to hearing firsthand, people's personal experiences and health concerns. Expressions of interest opened this day for affected community members to register their interest in meeting with Dr Gerrard.

This process was managed by Queensland Health's Health Contact Centre and individuals could telephone or complete a detailed online form (refer to Appendix F). The scope of consultation included all residents of Ipswich, not just those in suburbs surrounding the industrial areas.

A social media tile was provided to members of the CRG to share on their social media pages. This was also provided to DETSI and ICC to share on social media and in newsletters.

Figure 9. Social media tile

A poster promoting the Inquiry and encouraging community participation was distributed to CRG members, ICC, DETSI, West Moreton Public Health Unit (**WMPHU**), and displayed on community notice boards, at shopping centres, and at medical centres in the following locations: Redbank Plaza – Coles, Target, Big W, Australia Post and Redbank Medical Centre; Collingwood Park Family Medical Centre; Redbank Plains Town Square – Coles, Family Services Australia, Redbank Plains Family Health Centre; Medical Centre Mt View; Ripley Town Centre – Coles, Ripley Medical and Skin Clinic, Minka Place; Winston Glades Shopping Centre – Drakes, Winston Glades Family Practice; Silkstone Village – Coles; Silkstone Doctors.

Figure 10. A3 poster

The Inquiry team hosted pop-up displays in local shopping centres as an opportunity to engage with local community members and discuss their experience of the odours and any health impacts they have experienced. These were held at Redbank Plaza and Ripley Town Centre.

Figure 11. Pop-up display at Redbank Plaza, 19 February 2025

Figure 12. Pop-up display at Ripley Town Centre, 20 February 2025, with members of the CRG

A call for formal submissions to the Inquiry was launched online on 24 February 2025 encouraging responses from community, industry, and other stakeholders to be submitted to the Inquiry by 31 March 2025. An email and social media tile (refer to Figure 13) were sent to the CRG, the Ipswich Residents Against Toxic Emissions (**IRATE**) group, DETSI, Neighbourhood Watch Riverview, and ICC encouraging them to promote the online submission process.

Figure 13. Social media tile

A public notice promoting the call for submission process to the general public was published in the Ipswich Tribune, Ipswich West Moreton Today and Local Ipswich Today

newspapers. A notice was also published on the Queensland Times online website (refer to Appendix G for copies of all published notices).

A 30-second radio ad, recorded by Dr Gerrard was aired for one week from 17 March 2025 (ten spots per day) on Ipswich River 94.9 encouraging the public who have health-related concerns to make a submission to the Inquiry.

Meetings with community members who registered their interest to meet with Dr Gerrard to discuss their health concerns were held on 18 and 19 March 2025 at the West Moreton Health Learning Centre, South Street, Ipswich.

NB: these meetings were originally scheduled for 4 and 5 March 2025 however were postponed due to the impending Tropical Cyclone Alfred.

3.3 Health outcome data analysis

Sixty-one community members contacted the Health Contact Centre, completed an online form, or submitted a written submission providing details of health conditions they attribute to the odour. Of these, twenty-eight individuals requested a meeting with Dr Gerrard. An analysis of all responses received was undertaken.

Four hundred residents participated in telephone interviews designed to seek quantitative data to understand community sentiment, attitudes, perceptions and experiences in relation to odour from the industrial areas. An analysis of all interviews was undertaken.

Approximately 20 people shared their experiences related to the odour with the Inquiry team during shopping centre pop-up visits. All but one of these people reported health concerns related to the odour. Around 10 people at each shopping centre declined to speak with the Inquiry team noting they lived out of the area, had no health concerns or were too busy to speak to the Inquiry team. Due to the qualitative nature of these discussions, they have not been analysed as part of the health outcome data analysis.

Information provided from schools, kindergartens and childcare centres, medical practices and local specialists has been included in this analysis.

During interviews with community members, one individual reported they had experienced an uncommon bloodstream infection with a Nontuberculous Mycobacterium (NTM) and had heard of others in the community with similar infections. The individual expressed concern this infection might be related to dust or water from the industrial areas. The Inquiry sought expert advice to determine whether an epidemiological association existed. This report is included in this analysis.

4 The human response to odour

This chapter explores how humans process odours, how it affects people and how health impacts arise from odours. The information presented is derived from a review of over 80 published papers on odours and their impact on health.

4.1 What is odour?

An odour, or a smell or scent, is the sensation we experience when certain chemicals in the air interact with the millions of receptors in our nose. These chemical compounds are volatile, meaning they easily evaporate into the air, allowing us to detect them. Odours can come from a wide range of sources, such as food, plants, animals, industries, chemical reactions, and even other people. For example, body odour is caused by bacteria breaking down substances like sweat on the skin into smaller molecules that emit smells[53,54].

Humans, like all animals, perceive odours on a spectrum from good to bad based on a complex interplay of biology, experience and context.

For example, the smell of blood repels many animals (including humans), while hunters like wolves are naturally attracted by it[55]. In contrast, sweet or floral aromas like fresh fruit can signal safety and nutritional value[56].

Genetic differences between individuals can also play a role. Some people experience specific anosmia—a diminished smell sensitivity to particular compounds.[57] Others experience hyperosmia—a heightened smell sensitivity—which means they are more sensitive to both pleasant and unpleasant odours[58].

Experiences and memories associated with odour are known to trigger powerful emotional responses, and they can be positive, negative and evocative. A favourite meal might trigger a positive response like comfort and happiness, while the odour of hospital disinfectant may provoke a negative reaction like anxiety. The scent of one's kindergarten can transport someone back to that emotional state. These are examples of a phenomenon known as 'olfaction-associated memories'[57,59].

Cultural background and personal context can further influence odour perception. For example, a molecule (3-methylbutanoic acid) can smell like parmesan cheese in one context, or like vomit in another. Similarly, some aromatic cooking compounds and spices may be appealing to some people, while others may dislike them[56].

4.2 How we process odour

Odour is a response to stimulation of the nose's olfactory cells by gaseous molecules, and the perception of odour occurs according to two physiological and psychological channels[36]. There is a physiological response resulting from an interaction between the odorous substances and olfactory receptors, and there is a psychological response resulting from the experiences, memories and emotions that an individual associates with a specific odour[60]. As a result, the perception of odour is subjective, and varies between individuals.

At elevated concentrations, an individual's odour receptors may send signals to the brain causing different reactions. Odour sensations processed in the central nervous system can induce pleasant reactions, positive mood and emotions. However, they can also induce negative responses like irritation, pain, sneezing, salivation, nasal obstruction, bronchoconstriction, mucus secretion and inflammation. Bad odour is often acknowledged as an environmental trigger of health conditions like headache, irritation of the eyes and nose, and fatigue[61-64].

4.3 How we perceive odour

The human sense of smell allows us to evaluate and guide our responses to our environments. However, describing the role of smell in human lives necessitates an acknowledgment that individuals vary in their perception of and response to odour in their environment. For some, the smell from a bakery may be unpleasant. For others, the smell from garbage may be imperceptible. Some of this can be attributed to inter-individual variation in sensitivity. For ambient environmental odour there is robust evidence in the literature (from field studies through to systematic reviews) that an important source of differences in response may also stem from cognitive factors, such as an individual's beliefs and expectations about the consequences of exposure to an odour[34-36,39,45,49,61,62,64-68].

As a result, the study of odour is complex. The relationship between odour, health and wellbeing has a long history. Prior to germ theory, it was generally believed that disease was caused by 'miasma', or bad air[69]. In contrast, the field of aromatherapy is centred on the view that odour can have beneficial impacts on health and wellbeing[70]. Yet concerns persist about the potential health risks associated with exposure to odorous products and environments, even in those fields where 'good odour' is intended to have health benefits[71].

There is general awareness of the direct effects of exposure to toxic gases. However, most studies that consider the effects of odour on human health and wellbeing are in circumstances where the odour is not at toxic levels. Many volatile chemicals produce an odour, and this can elicit a range of responses in many people. Some odorous compounds can be pungent and perceived negatively by some, and favourably by others[72].

In addition, studies have shown that *expectation* can affect odour perception and symptoms. In one example, a group was told that a range of odorous compounds were healthy and

natural, and another group was told the same compounds were potentially hazardous. The latter group showed a higher degree of sensitivity to the compounds.[72] In another example, in 1899 a lecturer in gas diffusion asked that students raise their hands when they smelt a strong chemical odour, and—unbeknown to the students—he proceeded to pour out distilled water. Within a minute the majority of the class had raised their hands and those seated near the front claimed to feel unwell[73]. These examples are not intended to diminish the experiences of those who perceive unpleasant odour—the students may well have perceived unrelated unpleasant smells emanating from a laboratory—but instead is intended to highlight that the study of odour is complex and has many confounders, including high variability in perception from person to person.

4.4 Key terminology

In describing the impact of odour, there is a differentiation in the literature between odour *nuisance* and odour *annoyance*[74]. These are closely related but have distinct meanings, and understanding the difference is important when considering community concerns and in implementing any management strategies.

4.4.1 Odour nuisance

Odour nuisance refers to a persistent and measurable disruption caused by odours that interfere with the normal use and enjoyment of property or public spaces. It is often framed in legal or regulatory terms, where the presence of odours exceeds acceptable thresholds or violates environmental standards[46,74]. Odour nuisance results when:

- the appraisal of the odour is negative
- the perception occurs repeatedly
- it is difficult to avoid perception of the odour
- people believe that the odour has a negative effect on their wellbeing[74].

In this context, a formal assessment of odour nuisance needs to account for a number of parameters. These are collectively known as 'FIDOL', which refers to the following:

- Frequency
- Intensity
- Duration
- Offensiveness
- Location of the odour[46,75].

While there is reasonable consensus in the scientific community that these factors should be considered in evaluating odour nuisance, odorous compounds are not all easy to quantify individually—let alone collectively—as they interact. For example, perceptions of offensiveness will vary from person to person. The offensiveness of an odour is often measured in terms of the 'hedonic tone', which is an individual's judgment of the relative

like (pleasantness) or dislike (unpleasantness) of the odour[76]. Of all the FIDOL elements, some reports suggest offensiveness (hedonic tone) is more likely to correlate to the degree of annoyance and perceptions of impact than odour concentration. However, it is odour *concentration*, not odour *offensiveness*, that is most commonly the regulatory measure[46,75,77,78].

4.4.2 Odour annoyance

Odour annoyance is a subjective emotional or psychological response to unpleasant smells. It reflects an individual's perception and tolerance of odours rather than measurable environmental conditions[64,79]. It is:

- Noted to occur even when odour concentrations are below levels known to be toxic[47,64].
- Strongly influenced by personal factors such as prior exposure, sensitivity, perceived control over the situation and attitudes toward the odour source[46,74].
- Associated with stress responses, mental health impacts (for example, anxiety, depression), and behavioural changes like avoiding outdoor activities or keeping windows closed[64,79].

Odour annoyance clearly represents a public health risk.

4.5 How health impacts arise from odour

The relationship between environmental odour, annoyance and health symptoms is multi-factorial and complex. Numerous studies have sought to determine whether an individual's response to an odour is due to stimulus factors (frequency, duration, hedonic tone) or perceiver factors (attitudes, experience, personality). It is noteworthy that individuals with occupational exposure to odours frequently report less annoyance or symptoms to that odour than naive observers[80]. This could be due to the reduction in perceived intensity or unpleasantness following olfactory adaptation, as well as to reduced concerns about the hazardous nature of the chemical itself.

One area of particular interest—especially for regulators—has been whether health symptoms in response to an odour are *directly triggered by* or are *mediated by* the degree of annoyance that individuals experience[68]. In the context of commercial waste management, the literature notes that impacts—including on health—are unlikely to be *directly* associated with exposures to any toxicological mechanisms, because odours that reach residential areas are nearly always at concentrations well below toxicity thresholds[61,66,81,82].

Instead, most research suggests that adverse effects from odour exposure arise *indirectly*. In these cases, the association between odour exposure and symptoms has been found to be mediated by odour annoyance[49,64,66,76,81,83-85]. In other words, the link between being exposed to something and experiencing symptoms is influenced by the extent to which the odour disrupts or annoys the person.

As a result, the sensory irritation and psycho-hygienic affects arising from the annoyance potential of odour exposure are important considerations[51]. There is evidence of strong dose-response associations between exposures and annoyance, and between annoyance and symptoms, with the research noting that the link between exposures and symptoms (like nausea, headache, dizziness, difficulty concentrating, unnatural fatigue, stress) is annoyance-mediated and indirect[49,66].

Similar suggestions are made in other domains where sensory stimuli affect people's health and quality of life. For example, studies of noise pollution have noted that noise annoyance has a significant and negative affect on both physical and mental health, and that there is also a significant relationship between noise annoyance and odour annoyance[65,85-87].

It is worth noting that, in the context of whether or not odour annoyance is *directly* or *indirectly* responsible for health impacts, such a debate is probably academic. In addition to eliciting symptoms, odour annoyance is a negative health affect per se, in accordance with the World Health Organization's (WHO) definition of health. WHO has defined health as a 'complete state of physical, mental and social wellbeing and not merely the absence of disease or infirmity'[88]. Among recognised health determinants, the environment and its characteristics (for example, air quality, noise pollution, temperature, and crowding) have received growing attention over the last decades and have been consistently linked to impaired physical and mental health[84,89-91].

4.6 Inescapability: links between odour, stress and health

Odorous air does not need to be toxic for it to impact upon health.

Environmental exposures are shown to impact human health and wellbeing by indirect means: through stress responses when environmental demands exceed human adaptative capabilities. The role of stress and annoyance in the relationship between environmental factors and health has been documented in numerous studies and reviews[43,44,65,66,84,89,92-94].

This evidence is not limited to studies involving humans. There is strong evidence of similar stress-related impacts arising when animals are exposed to non-toxic levels of VOCs. For example, exposing animals to predator odours induces a range of stress-related responses including sleep disruption, respiratory changes, avoidance behaviours including loss of appetite, activity inhibition and odour hypervigilance[95-102].

These human and animal studies show close links between the olfactory system, odour, stress responses and a range of physiological and behavioural impacts. They also reinforce that the processing of odour is subjective and the response is variable. For example, even

when prey species are exposed to predator odour, not all animals elicit the same response or degree of impact[96].

Furthermore, the evidence from the animal studies dismisses the possible implication that human health impacts arising from living with non-toxic odours are—essentially—'all in people's minds.' For people living in an odorous environment, the regular presence of an offensive smell, its variability in strength, and the sense that one cannot escape from it, even when at home, creates stress, tension and anxiety among those affected[36].

4.7 Understanding the stress response

A useful description of the mechanism explaining the link between environmental stressors and health is described in *Cantuaria et al*[84]. This study examined exposures to three environmental stressors: odour, noise and smoke. It used an influential model to explain stress responses developed by Lazarus and Folkman (*Stress, Appraisal and Coping*, 1984[103]). The below explanation is adapted from these sources and contextualised to odour:

Stage 1: Odour exposure and individual evaluation

Residents exposed to odours from waste facilities assess whether the odour poses a threat to their health, comfort or wellbeing. This evaluation determines whether the situation is perceived as harmful or merely unpleasant. For instance, individuals may appraise odours as threatening if they associate them with potential health risks, such as respiratory issues or toxic exposure. Stress arises when the odour is deemed significant and harmful[104].

Stage 2: Coping

After identifying the odour as a stressor, individuals evaluate their ability to cope with it. This includes considering if they can reduce exposure (for example, by closing the windows or avoiding outdoor physical activities), access complaints mechanisms or get community support. If they perceive insufficient options for mitigating the odour or its impacts, then feelings of helplessness may intensify the stress (that is, an annoyance response).

Stage 3: Reappraisal over time

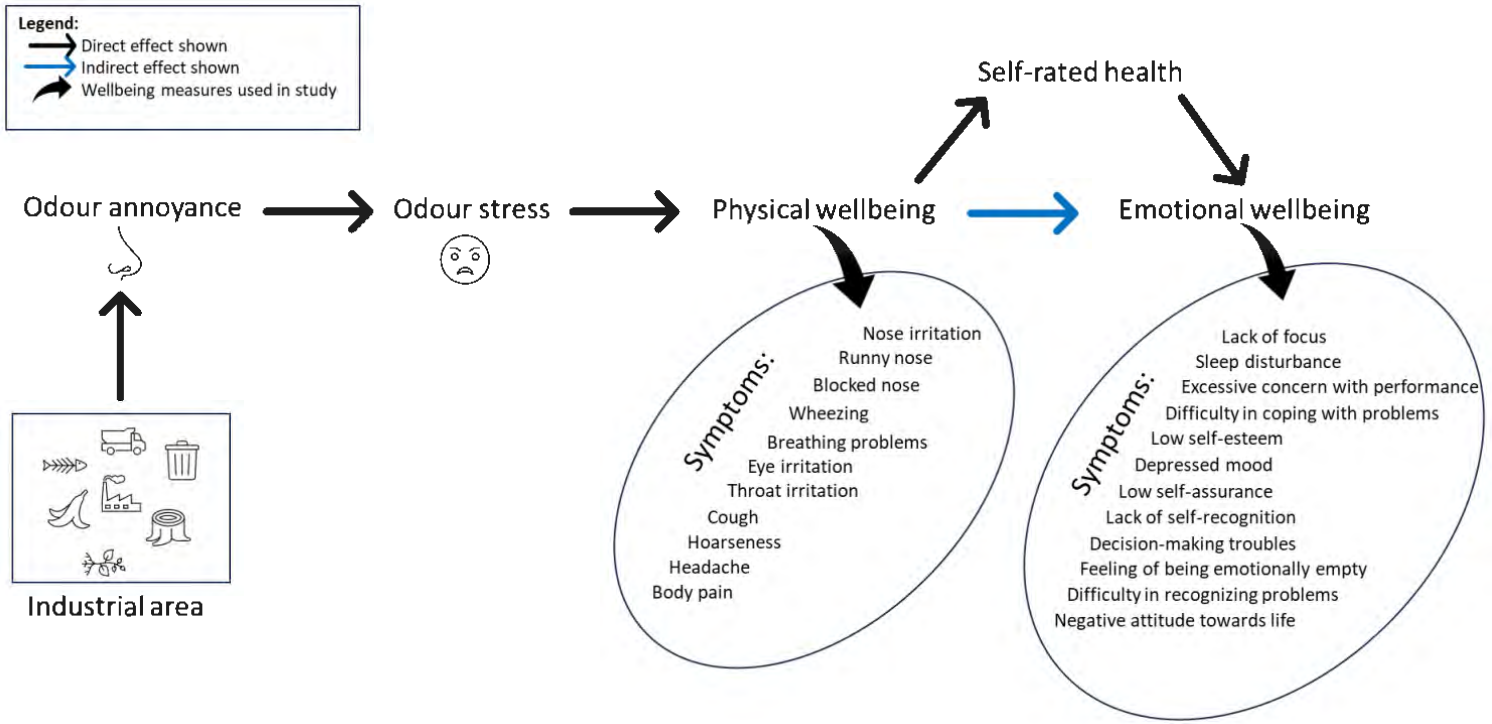
As circumstances change—such as improvements in waste facility management or worsening odour emissions—individuals reassess the situation. Reappraisal can either heighten or alleviate stress depending on whether new information confirms or mitigates perceived threats. For example, if authorities implement measures that successfully reduce odour intensity, individuals may reappraise the situation as less threatening. Alternatively, re-occurrence and intensifying of environmental odours can exacerbate the stress/annoyance response.

The analysis by Cantuaria et al concluded[84]:

*[*The*] findings suggest that environmental stress responses have a direct effect on physical wellbeing and an indirect effect on emotional wellbeing; and that the perception the individuals have regarding their health play a very important role on these relationships.*

The pathway for the direct impact of odour stress on a range of physical and emotional wellbeing symptoms is shown in Figure 14.

Figure 14: Pathway for odour stress impacting physical and emotional wellbeing
Adapted from Cantuaria et al, 2023.



5 Analysis of health impacts

This chapter describes the qualitative and quantitative data collected throughout the Inquiry to inform the public health impact of the odour on the residents of affected communities.

Importantly this chapter includes a thematic analysis of all submissions from the community inclusive of one-on-one meetings with Dr Gerrard, feedback collected from shopping centre pop-up visits, submissions from education providers and companies located in the industrial areas, and meetings and submissions from local medical specialists and general practitioners.

The Inquiry also commissioned market research to be conducted amongst residents of affected suburbs to seek quantitative data on the impact of odour from the industrial areas on the everyday lives of residents. This research employed a robust methodology designed to understand community sentiment, attitudes, perceptions, and experiences related to odour issues at the industrial areas, with particular focus on quantifying the prevalence and nature of health affects attributed to these odours.

This chapter includes a summary of this research, along with an epidemiological analysis focussed on cancer and a summary of Nontuberculous Mycobacterial infections in the Ripley/Swanbank/Ipswich region.

The chapter concludes with a combined summary of all relevant health findings including a table describing the evidence from the medical literature as it relates to these findings.

5.1 The impact of odour on the community

The Inquiry sought to understand the impact of odour on the general public who have health-related concerns they attribute to odour from the industrial areas. Community involvement and input was sought in the following ways:

- All residents of Ipswich were invited to contact Queensland Health's Health Contact Centre via telephone or online to complete a detailed form capturing their health status. It included their contact details, suburb they have spent the most time in since 2016, their symptoms, any relevant chronic health conditions, details of their healthcare providers and details of any treatment they have had including prescription and over the counter medication (refer to Appendix F). All individuals were required to provide their consent to the collection and use of their personal and sensitive information, including their health information; and to acknowledge the information they provided was true and accurate to the best of their knowledge, noting it would be unlawful for them to provide information

which is false or misleading to the Inquiry. As part of this process, individuals were asked whether they would like a one-on-one interview with Dr Gerrard.

- Written submissions were sought from community members on the following matters:
  - The suburb they spent the most time in since 2016 when they were affected by the odour and how long they lived there, including if they are a current or past resident.
  - Their experiences and the impact of the odour on their everyday life since 2016.
  - Their health condition which they attribute to the odour including symptoms, frequency of symptoms, whether or not they have seen a medical professional, received a diagnosis, received treatment, and/or received a prescription to manage their symptoms.
- A total of 61 individuals were interviewed, provided written submissions or provided information to the Health Contact Centre on the impact of the odour on their health and wellbeing. Of these, 28 individuals requested a meeting with Dr Gerrard.
- The Inquiry team hosted two shopping centre pop-up displays at Redbank Plaza and Ripley Town Square. Approximately 20 people shared their experiences and the impacts of the odour on their health and wellbeing, and in many cases, on their family. Apart from one individual, everyone reported health concerns related to the odour. An additional 20 people declined to speak with the Inquiry team noting they lived out of the area, had no health concerns or were too busy at the time. Due to the subjective nature of these discussions, they have not been analysed as part of this health outcome data analysis. Despite this, the Inquiry team found these conversations incredibly valuable and are grateful to everyone who took the time to share their experiences and concerns.
- Four hundred residents from nearby suburbs participated in computer assisted telephone interviews to seek quantitative data to understand community sentiment, attitudes, perceptions and experiences in relation to odour and the nature of health affects arising from the industrial areas. An analysis of all interviews was undertaken.
- All school principals, and directors of kindergartens and childcare centres within the surrounding suburbs were approached in writing seeking to understand the nature and extent of health conditions experienced by staff and students, and to obtain any available information on the number of staff and students who have reported a health condition attributed to the odour from the industrial areas since 2016, including details on the type and severity of the health condition, and the length of absence from work/school.
- Practice managers of medical centres and local medical specialists practicing in dermatology, chronic inflammatory skin conditions, respiratory and sleep medicine, psychiatry and otolaryngology (ear, nose and throat medicine) within the surrounding suburbs were written to seeking advice as to whether any patients had presented to the practice with symptoms they attributed to odour from the industrial areas. They were also invited to have a meeting with Dr Gerrard to discuss their experiences noting they would not be required to refer to any specific patients nor would there be a requirement to provide medical records of individual patients.

- WMPHU were asked to provide de-identified information on people who had contacted the WMPHU with a health condition they attributed to odour.

5.2 Interviews and personal written submissions

Section 5.2 summarises findings from interviews and personal written submissions from individuals experiencing symptoms attributed to exposure to odours from the industrial areas. Interviews were undertaken in March 2025, and conducted by Dr Gerrard and Queensland Health staff.

5.2.1 Demographics

The data includes reports from 61 individuals ranging in age from 12 to 73 years. There were 47 females (77 per cent) and 14 males (23 per cent). Most respondents resided in areas surrounding the industrial areas including Ripley, Redbank Plains, South Ripley, Augustine Heights, and other nearby suburbs.

5.2.2 Symptom overview

Respondents reported a wide range of symptoms across multiple body systems, with many experiencing symptoms in multiple categories. The most commonly reported symptoms were respiratory issues, headaches and skin conditions.

Respiratory symptoms

Respiratory symptoms were among the most frequently reported, with 30 individuals (49 per cent) experiencing respiratory issues.

Several respondents reported their respiratory symptoms improved when they were away from the area and worsened upon return.

A young man stated, 'I was diagnosed with asthma after moving to Redbank Plains. I had a regular, constant cough and became short of breath regularly.'

A woman in her 60s said she experienced heavy chest tightness, and difficulty breathing when exposed to the smell, with gagging and occasional vomiting.

A woman in her 40s said, my asthma has worsened in the last 15 years. Previously I only had exercise-induced asthma, now I require preventer medication. I was hospitalised in ICU two months ago because of a severe asthma attack due to the smell.

A man said, 'The smell causes tightness in my chest like a concrete block sitting on it, sometimes with coughing and gagging.'

A woman said, upon moving in, we were immediately affected by a strong, overwhelming, toxic smell. The odour was so pervasive it would wake us in the middle of the night, leaving us coughing and struggling to breathe. I was particularly concerned for my daughter, who was only five months old at the time, and I watched her health worsen because of the environment we were in. Due to the worsening health effects and the lack of resolution, I made the decision to leave the area in May 2023. It was clear the odour was directly related to the health issues both my daughter and I were facing, and continuing to live there was no longer an option.

Table 2. Overview of all symptoms

Symptom	Frequency (n)	Percentage	Notable patterns
Coughing/wheezing	25	41%	Often described as persistent and worsening with odour exposure
Asthma (new or worsened)	13	21%	Several cases of new-onset asthma after moving to the area
Shortness of breath	12	20%	Particularly during odour events
Chest tightness	8	13%	Described as 'heavy' or like a 'concrete block'

Ear, nose and throat symptoms

Ear, nose and throat (ENT) symptoms were reported by 27 individuals (44 per cent), often occurring alongside respiratory symptoms.

A 36-year-old female reported, I have had nothing but sinus issues for the past five years. I have to close up my house and use air conditioning to prevent it getting worse when the odour is about. I've experienced nose bleeds and have been using steroid and over-the-counter nose sprays on and off for over four years to be able to breathe.

A woman in her 50s reported the odours caused sinus issues and itchy eyes for approximately 10 years, with symptoms worsening over time. Symptoms include constant sneezing, itchy eyes, and a feeling of sinus congestion.

A woman in her 60s reported persistent sinusitis, sinus headaches, and nasal congestion since moving to Redbank Plains in 2021, exacerbated by outdoor odour exposure. Frequent upper respiratory tract symptoms including cough, sore throat, hoarse voice, and loss of voice every one to two weeks.

A woman said, 'My headache and hay fever-like symptoms are not fair as I do not ever suffer with these issues ... well not until a few months ago when I moved into this area.'

Table 3. Overview of ENT symptoms

Symptom	Frequency (n)	Percentage	Notable patterns
Watery/irritated eyes	20	33%	Often described as burning, stinging, or itchy
Sore throat	19	31%	Frequently described as 'scratchy'
Congested/blocked nose	19	31%	Frequently accompanied by post-nasal drip
Sinus congestion	17	28%	Many reporting chronic sinus infections resistant to treatment
Nose bleeds	4	7%	Some requiring medical intervention
Ear congestion/pain	3	5%	Less common but reported by several individuals
Reduced sense of smell	2	3%	Noted as progressive over years of exposure

Neurological symptoms

Neurological symptoms, particularly headaches and migraines, were reported by 32 individuals (53 per cent).

A man described migraines that had worsened since moving to Redbank Plains.

A woman in her 60s said she experienced 'pounding headaches within 10 to 15 minutes of exposure to odours.'

A woman in her 20s said she experienced 'headache and nausea when exposed to the smell.'

A woman in her 60s said the smell caused her to develop 'headaches, and nausea despite a strong stomach.'

A man said, the odour, often resembling rotten food/meat or decaying waste, is particularly noticeable in the early mornings and evenings, depending on wind conditions. It has caused discomfort and health concerns, including headaches, nausea, throat irritation, and difficulty breathing. Despite previous complaints and regulatory actions, the problem persists.

A man said, my wife and I both suffered increased frequency of headaches bordering on migraines, allergy related symptoms such as the constant feeling of having a head cold, asthma, sore throats, sinusitis and general lethargy due to these symptoms. We suspect these to be related to the smell as when we have been away on holidays neither of us suffers from the symptoms. During this period, we chewed through paracetamol, ibuprofen and a range of antihistamines.

Table 4. Overview of neurological symptoms

Symptom	Frequency (n)	Percentage	Notable patterns
Headaches/migraines	30	49%	Often described as severe, triggered by odour exposure
Dizziness	5	8%	Sometimes accompanied by nausea
Visual disturbances	3	5%	Including blurred vision during migraines
Metallic taste	2	3%	Reported during or after odour exposure

Gastrointestinal symptoms

Gastrointestinal symptoms were reported by 15 individuals (27 per cent).

A woman in her 50s reported symptoms include headaches, nausea and anxiety related to the odours.

A woman in her 30s reported gastrointestinal symptoms including severe nausea, inability to retain food, and persistent gastrointestinal disturbances since 2021.

A woman in her 30s, 'migraines only since living here. Headaches as well nausea approximately once a week. All symptoms get much worse on "stinky days".'

Table 5. Overview of gastrointestinal symptoms

Symptom	Frequency (n)	Percentage	Notable patterns
Nausea	15	25%	Often triggered by odour exposure
Vomiting	7	12%	Typically during strong odour events
Abdominal pain	2	3%	Less commonly reported

Skin symptoms

Skin-related symptoms were reported by 26 individuals (43 per cent).

A woman in her 30s who moved to Redbank Plains four years ago developed extensive eczema and hives approximately one month after moving. She was diagnosed with atopic dermatitis, chronic spontaneous urticaria, and allergic contact dermatitis, and developed new allergies to various substances.

A woman in her 60s said that since 2018, she has experienced rashes on her arms after exposure to industrial areas. Rashes become lumpy, itchy, and flare up. One episode of facial skin flare-up, redness, and heat associated with the smell.

A woman said, my daughter, who has a history of eczema, experienced significant flare-ups during our time in the area. As for me, I began to experience hives when I never have before. The impact on our everyday life was tremendous; we couldn't sleep properly, our health deteriorated, and the constant discomfort made living in the area increasingly unbearable. Having to live with the windows closed even in summer and not being able to enjoy the outdoor areas.

Table 6. Overview of skin symptoms

Symptom	Frequency (n)	Percentage	Notable patterns
Rashes	20	33%	Various types including hives, eczema
Itchy skin	14	23%	Often without visible rash
Dryness/flaking	7	12%	Particularly on face and extremities

Burning sensation	5	8%	Described as painful or uncomfortable

Mental health impact

26 individuals (43 per cent) reported mental health symptoms including anxiety, depression, stress, and sleep disturbances related to odour exposure and its health impacts.

A woman in her 60s said she experiences psychological impact from the odours, leading to depression when unable to go outside for three or more consecutive days.

A woman commented, my stress and anxiety has been constant for a number of years, due to the inability to be able to live a normal lifestyle. My everyday freedoms of being able to enjoy outdoor activities, hang washing on the clotheslines, open windows at night for fresh air, has been taken away from myself and family. To maintain a normal lifestyle, I have had to purchase an air purifier and air conditioner for my bedroom, as I am unable to open windows at night for fear of some noxious odour filtering in through my windows in the early hours of the morning. Unfortunately, the waste industry in this city has left me with psychological issues that are triggered everyday by their presence, including media reports.

Another woman said, I find it very depressing to be in my own home when the stench is around. I care for my husband with dementia, and I like to encourage him to step into the garden and be outdoors. Instead, some days we have to close our windows and sit with air conditioning on. The constant smell gets to me and I feel really down and like I am in hell.

Table 7. Overview of mental health symptoms

Mental health symptom	Frequency (n)	Percentage
Mental health symptoms (overall)	26	43%
Depression/anxiety	20	33%
Increased stress/worry	18	30%
Difficulty sleeping	15	25%
Irritability/behaviour changes	11	18%

Temporal and spatial patterns

Many respondents noted that their symptoms:

- Worsened during or immediately after exposure to odours.
- Improved when away from the area.
- Were more severe during certain weather conditions (wind direction, humidity).
- Had developed or worsened since moving to the area.

5.2.3 Lifestyle impacts

Respondents reported using various strategies to manage their symptoms:

- Keeping windows closed and using air conditioning.
- Using air purifiers.
- Taking medications (antihistamines, inhalers, pain relievers).
- Limiting outdoor activities during odour events.
- Some relocated or are considering relocation.

Many people told the Inquiry how much they love Ipswich and how desperately worried they are about the odours.

> A woman at Redbank Plaza said she suffers from chronic sinusitis, headaches, and runny nose that she attributes to the odour and then said, when my nephew visited from interstate, he thought my backyard smelt like dog poo – but I don't have a dog. I was so embarrassed. I have stopped running due to smell. I really worry about the atmosphere. It does cause stress. I love Ipswich. I love where I live. The only thing I hate is the smell. I wish it would just go away.

> Another woman the Inquiry spoke to at Ripley Town Centre described her lived experience. She said, the smell makes me throw up. I don't go outside. My husband and kids do not go outside. I can't enjoy the garden. My husband can't cook outside on nights when it smells. We have to close up the house. It is absolutely putrid. We live in such a beautiful community with such lovely neighbours. We have all agreed to call the kids inside when it smells. It has mental health impacts.

5.3 Community survey

Section 5.3 overviews findings from a survey of a random sample of the affected community to quantify the effect of the odour.

5.3.1 Background and summary

In summary, 400 residents from suburbs surrounding the industrial areas (Augustine Heights, Bellbird Park, Bundamba, Ipswich East, Collingwood Park, Raceview, Redbank Plains, Ripley, Riverview) were surveyed to assess odour detection, perception, health effects, and impact on daily activities.

Key findings indicated 65 per cent of respondents had detected odour. Of these, 46 per cent said they were strong/very strong and 48 per cent said they were offensive/very offensive. 11 per cent (95% CI: 8.15–14.35%) of the total sample (n=400) surveyed directly attributed health effects to the odour.

When extrapolated to the total population of 131,932[13] people in the affected area, this would represent 14,800 individuals (95% CI: 10,800–18,900) who attribute adverse health effects to the odour.

Of those who reported health effects, the most common health effects were respiratory symptoms (56 per cent), headaches/migraines/dizziness (33 per cent), and gastrointestinal issues (29 per cent). With 78 per cent of affected individuals reporting moderate to severe symptoms and 71 per cent experiencing these symptoms for three or more years. These findings suggest significant and ongoing health concerns within the community related to the odour.

NB: A sample of 400 residents has a margin of error of ±4.9% at a 95% confidence interval.

A confidence interval (CI) is a range around a measurement that reflects the uncertainty surrounding an estimate. With a 95% CI, if this survey were to be repeated the true value would fall within this range 95% of the time.

5.3.2 Objective

The primary objective of this research was to quantify community sentiment, attitudes, perceptions, and experiences related to odour issues at the industrial areas, with particular focus on quantifying the prevalence and nature of health affects attributed to the odour.

5.3.3 Methodology

The research used a Computer Assisted Telephone Interview (**CATI**) methodology with random sampling from a list of phone numbers of residents in target suburbs. Other than being advised that the phone call was not related to the pending Federal election, residents were

not told what the survey was about until after they agreed to participate. Eligible participants included any person aged 18 and over living in a target suburb.

A sample size of 400 respondents was achieved, providing a margin of error of ±4.9% at the 95% confidence level. The average interview length was 12 minutes and 27 seconds for those who had detected odour.

Surveys were conducted by professional market research interviewers from Q&A Market Research and carried out in accordance with ISO 20252. Fieldwork was conducted between 17 to 23 March 2025.

Table 8. Demographics of sample

Demographic characteristic	Frequency (n)	Percentage
Age groups		
18–34 years	85	21%
35–54 years	169	42%
55–74 years	116	29%
75+ years	30	8%
Sex		
Male	184	46%
Female	216	54%
Length of residence		
Less than 1 year	11	3%
1–2 years	23	6%
3–5 years	51	13%
6–10 years	64	16%
More than 10 years	251	63%

5.3.4 Prevalence of odour detection

Overall detection rates

The survey revealed nearly two-thirds (65 per cent) of respondents had detected odour from the industrial areas at some point, with 21 per cent of the overall sample having noticed the odour in the last week and 40 per cent of the overall sample with the last month. Conversely, 35 per cent of the overall sample reported never having detected the odour.

Table 9. Timing of last odour detection

Timing	Percentage
Within last week	21%
Within last month	40%
Within last six months	51%

Frequency of detection

Among those who had detected the odour (n=260), the frequency of detection was relatively high. Approximately 42 per cent reported noticing odour at least once a week, with 9 per cent experiencing them daily. An additional 33 per cent noticed odour on a fortnightly or monthly basis, while 25 per cent detected them less frequently than once a month.

Table 10. Frequency of odour detection among those who detected odour

Frequency of detection	Frequency (n)	Percentage
Daily	23	9%
2–5 times a week	42	16%
Weekly	44	17%
Fortnightly	31	12%
Monthly	57	22%
Less than once a month	65	25%
At least weekly (total)	109	42%

Variation by suburb

The prevalence of odour detection varied significantly across different suburbs. The highest rates of detection were observed in Ripley (82 per cent), Redbank Plains (76 per cent), and Collingwood Park (76 per cent). In contrast, Bellbird Park had a significantly lower rate of odour detection at 37 per cent.

Table 11. Odour detection by suburb

Suburb	Frequency (n)	Detected odours	95% CI
Ripley (including South Ripley)	38	82%	70–94%
Redbank Plains	95	76%	67–85%
Collingwood Park	41	76%	63–89%
Raceview (including Flinders View)	73	73%	63–83%
Riverview*	10	70%	42–98%
Augustine Heights*	11	45%	16–74%
Ipswich East	52	48%	34–62%
Bundamba	37	54%	38–70%
Bellbird Park	43	37%	23–51%
Total	400	65%	60–70%

NB: responses for Augustine Heights and Riverview should be interpreted with caution due to the sample size being <30 for these suburbs.

5.3.5 Characteristics of odours

Strength, offensiveness, and annoyance levels

Among those who had detected odour from the industrial areas, the vast majority found them to be noticeable and problematic. Over 90 per cent described the odour as at least noticeable in terms of strength, with 46 per cent characterising them as strong or very strong. Almost all respondents (98 per cent) who had detected odour described it as offensive to some degree, with nearly half (48 per cent) rating the odour as very or extremely offensive. Similarly, 92 per cent reported the odour caused them annoyance, with 43 per cent describing the odour as very or extremely annoying.

Table 12. Characteristics of odour among those who detected it

Characteristic	Rating	Frequency (n)	Percentage
Strength	Weak	21	8%
	Noticeable	117	45%
	Strong	73	28%
	Very strong	47	18%
	Strong/Very strong (Total)	120	46%
Offensiveness	Not at all offensive	5	2%
	Mildly offensive	39	15%
	Moderately offensive	94	36%
	Very offensive	78	30%
	Extremely offensive	47	18%
	Very/Extremely offensive (Total)	125	48%
Annoyance	Not at all annoying	21	8%
	Mildly annoying	57	22%
	Moderately annoying	70	27%
	Very annoying	62	24%
	Extremely annoying	49	19%
	Very/Extremely annoying (Total)	111	43%

Description of odour

When asked to describe the odour in their own words, the most commonly terms used by community members were 'annoying', 'disgusting', 'rotten' and 'foul,' The top ten descriptors mentioned were:

1. Annoying (40 mentions)
2. Disgusting (39 mentions)

3. Rotten (33 mentions)
4. Foul (30 mentions)
5. Pungent (21 mentions)
6. Smelly (21 mentions)
7. Offensive (20 mentions)
8. Gross (18 mentions)
9. Strong (18 mentions)
10. Putrid (17 mentions).

Respondents frequently compared the odour to rot, rubbish, chemicals, and sewerage, highlighting the negative sensory experience associated with them.

Figure 15. Word cloud of collated responses to the question: Finally, what three words would you use to describe the odour?

5.3.6 Health impacts

Percentage reporting health affects

Of the total survey population (n=400), 11 per cent (n=45) directly attributed health affects they had experienced to the odour from the industrial areas. An additional 11 per cent (n=42) were unsure whether their health issues could be attributed to the odour. Among only those who had detected odour previously (65 per cent, n=260), these percentages increase to 17 per cent directly attributing health effects and 16 per cent being unsure.

Table 13. Attribution of health affects to odour

Attribution	Percentage of total sample (n=400)	95% CI	Percentage of those who detected odour (n=260)	95% CI
Yes	11%	8–14%	17%	13–22%
No	43%	38–48%	67%	61–73%
Unsure	11%	8–14%	16%	12–21%
Not noticed odour	35%	30–40%	-	-

Community impact estimate

Based on the survey results, it is possible to estimate the total number of individuals in the community who may be experiencing health effects attributed to the odour. With 11 per cent of the survey sample reporting health effects they attribute to the odour, and a total population of 131,932 in the surveyed area, approximately 14,800 people may be experiencing health impacts directly attributable to the odour. With a 95% confidence interval of 8 per cent to 14 per cent, this estimate ranges from approximately 10,800 to 18,900 affected individuals.

If we include those who are unsure whether their health issues are attributable to the odour (an additional 11 per cent, with up to 14% at 95% CI), the total number of potentially affected individuals could be up to 28,700.

Table 14. Estimated population impacted

Impact category	Percentage	Estimated number of people	95% CI (people)
Directly attribute health effects to odour (n=45)	11%	14,800	10,800–18,900
Unsure if health effects attributable to odour (n=42)	11%	13,900	9900–17,800
Potential total impact (n=87)	22%	28,700	20,700–36,700

Types of health effects

Among those who attributed health effects to the odours (11 per cent, n=45), respiratory symptoms were most common, with 56 per cent reporting coughing, wheezing, or an irritated or sore throat. Other common health affects included headaches, migraines, or dizziness (33 per cent) and gastrointestinal issues such as nausea, vomiting, or diarrhoea (29 per cent).

Table 15. Health effects attributed to odour (NB: more than one response allowed)

Health effect	Frequency (n)	Percentage
Coughing/wheezing/irritated or sore throat	25	56%
Headache/migraines/dizziness	15	33%
Nausea/vomiting/diarrhoea	13	29%
Congested/blocked/runny nose	12	27%
Eye irritation	9	20%
Skin condition (for example, rash, dermatitis)	7	16%
Sleep problems	7	16%
Moodiness (depression, anxiety, stress)	6	13%
Loss of appetite	2	4%
Other	3	7%

Of those who attributed a health concern to the odour, when asked which of their health concerns is the most significant, the top three health effects were:

1. Coughing/wheezing/irritated or sore throat – 31 per cent
2. Nausea/vomiting/diarrhoea – 20 per cent
3. Headache/migraines/dizziness – 16 per cent.

Severity and duration of symptoms

The health effects attributed to the odours were generally not mild or transient. Among those reporting health effects (11 per cent, n=45), 78 per cent described their symptoms as moderate (49 per cent) or severe (29 per cent). These symptoms were also persistent, with 71 per cent reporting they had been experiencing the health issues for three years or more. Moreover, 58 per cent experienced these health issues at least weekly, indicating a frequent and ongoing impact on their wellbeing.

Table 16. Severity and duration of health effects

Characteristic	Category	Frequency (n)	Percentage
Severity	Mild	10	22%
	Moderate	22	49%
	Severe	13	29%
	Moderate/severe (Total)	35	78%
Duration	Less than 1 year	7	16%
	1–2 years	6	13%
	3–5 years	16	36%
	6–10 years	9	20%
	More than 10 years	7	16%
	3+ years (Total)	32	71%
Frequency	Daily	5	11%
	2–5 times a week	12	27%
	Weekly	9	20%
	Fortnightly	9	20%
	Monthly	8	18%
	Less than once a month	2	4%
	At least weekly (Total)	26	58%

Medical attention sought

The impact of these health effects was significant enough that 60 per cent of those experiencing them (n=27 out of 45) had sought medical attention for their symptoms. Among those who sought medical help, the vast majority (89 per cent) consulted a general practitioner, while 33 per cent saw a specialist doctor and 11 per cent visited an emergency department. Almost all (93 per cent) of those who sought medical attention received some form of treatment or medication for their symptoms.

Table 17. Medical attention sought for health effects

Characteristic	Category	Number (n)	Percentage
Sought medical attention	Yes	27	60%
	No	18	40%
Medical professional seen	General practitioner	24	89%
	Specialist doctor	9	33%
	Emergency department	3	11%
Treatment/medication received	Any treatment/medication	25	93%
	Other medications	13	48%
	Antihistamines	11	41%
	Antibiotics	9	33%
	Ointment/cream	5	19%
	Other (inhalers, nasal spray, etc)	10	37%
	No treatment received	2	7%

Impact on daily activities

The odour from the industrial areas not only affected health but also disrupted daily activities for many residents. Among those who had detected the odour (65 per cent, n=260), nearly two-thirds (63 per cent) reported having altered their daily activities due to the odour. These alterations included avoiding outdoor activities such as exercising or entertaining, or keeping windows closed to prevent odour from entering their homes.

Pollution Hotline usage

Despite the significant impact of odour on health and daily activities, very few residents had made formal complaints about the issue. Of those who had detected odour from the industrial areas (65 per cent, n=260), only 13 per cent had made a complaint to the Pollution Hotline. Most of these complaints were not recent, with 49 per cent having been made prior to 2024.

Table 18. Pollution Hotline usage among those who detected odours

Response	Frequency (n)	Percentage
Called Pollution Hotline	35	13%
Did not call	218	84%
Unsure	7	3%

5.3.7 Conclusion

The Inquiry has revealed significant impacts from odour on the health and wellbeing of local communities. With 65 per cent of surveyed residents having detected odour from the industrial areas, and 11 per cent directly attributing health affects to the odour, the issue affects a substantial portion of the population. When extrapolated to the entire community of 131,932 people, an estimated 14,800 individuals (95% CI:10,800–18,900) attribute health impacts to the odour.

On top of that number, a similar sized group is unsure whether symptoms experienced are related to exposure to odour from the industrial areas.

The health effects reported were not trivial or transient. Among those attributing health effects to the odour, 78 per cent described their symptoms as moderate or severe, 71 per cent had been experiencing these symptoms for three or more years, and 58 per cent experienced them at least weekly. The most commonly reported health effects were respiratory (56 per cent), neurological (33 per cent), and gastrointestinal (29 per cent). Furthermore, 60 per cent of those experiencing health effects had sought medical attention, with 93 per cent receiving treatment or medication.

Beyond direct health impacts, the odour significantly disrupted daily life, with 63 per cent of those who had detected odour reporting that they had altered their daily activities as a result. These alterations included avoiding outdoor activities and keeping windows closed.

Despite these significant impacts, formal reporting of the issue was low, with only 13 per cent of those who had detected odour having made a complaint to the Pollution Hotline. This suggests the official record may substantially underestimate the extent of the problem.

5.4 Education – schools and early childcare providers

Fifteen school principals from schools within suburbs near to the industrial areas were contacted to determine the nature and extent of health issues experienced by staff and students. Five school principals responded to this request, and all noted they had no reports of health impacts from the odour on staff and students. One school noted that although the

odour has not hindered the school's operations, it does have a negative impact on the student and staff experience.

Further, the Queensland Department of Education conducted a search of their workplace health and safety reporting system and advised there have been no reports submitted relating to the impact of odour from the industrial areas.

Directors of 19 early childhood and kindergarten providers from suburbs near to the industrial areas were also contacted to understand the nature and extent of health issues experienced by children and staff. A response was received from one provider, who had opened in 2020, noting they have had no record of health conditions or absences from staff or children which identified the odour as the cause of their health condition or absence.

5.5 Local medical specialists, general practitioners and Public Health Unit

Information was sought from nineteen local medical centres based within the surrounding suburbs seeking advice as to whether any patients had presented to the practice with symptoms they attributed to odour from the industrial areas. They were also invited to have a meeting with Dr Gerrard to discuss their experiences noting they would not be required to refer to any specific patients nor would there be a requirement to provide medical records of individual patients.

An interview was held with one general practitioner (GP) who noted they see four to five new patients per week with rashes or asthma that they attribute to odour from the industrial areas. The GP also indicated:

- the smell can be quite intense where they work
- they feel the incidence of rashes and asthma is higher than they would expect in a GP practice
- the rashes are variously diagnosed as eczema, psoriasiform or palmoplantar pustulosis.

Medical specialists practicing in dermatology, chronic inflammatory skin conditions, respiratory and sleep medicine, psychiatry and otolaryngology (ear, nose and throat medicine) at nine clinics within the surrounding suburbs were also approached regarding any patients who had presented with symptoms they attributed to odour from the industrial areas. There was a response from one respiratory physician advising that while they had received anecdotal feedback from patients about the odour issue, they, along with colleagues, had not seen any cluster of disease or exacerbations of chronic respiratory symptoms.

WMPHU advised they had been contacted by three people with symptoms they attributed to odour as outlined in Table 19.

Table 19. Individuals who contacted West Moreton Public Health Unit with symptoms they attributed to odour

Date of report	Symptoms	Symptoms occur with odour	Frequency	Examination findings	Outcome
29 September 2023	Worsening dermatitis	Symptoms worse	Daily	Atopic dermatitis	Seen by specialist who does not believe symptoms are due to odour
6 October 2023	Chest irritation, tickly cough	Yes	Daily	Nil	Individual did not want to be contacted
19 March 2024	Worsening asthma	Symptoms worse	Daily	No examination occurred	Unsure if worsening asthma caused by odour

5.6 Industry

All odour-producing companies with ERAs located within the industrial areas were asked to provide details of the health impact of odours on staff including the number of staff affected, occurrences, types of illness attributed to odours and time off work.

A consistent theme across the written submissions received from industry was that no health impacts related to odour have been reported amongst staff and that there have been no recorded cases of illnesses or time off work attributable to odour.

5.7 Assessment of selected cancer incidence rates around the Swanbank and New Chum industrial areas: 2018–2022

5.7.1 Summary of findings

The epidemiological assessment found the age standardised rates of the selected cancers (lung, liver and kidney), and all cancers for the pooled data for the nine exposed suburbs (**SA2s**) were similar to those of socioeconomically comparable SA2s that were partially exposed, and unexposed SA2s for the same period.

The observed rates of selected cancers for specific SA2s tended to be slightly higher than those of the partially exposed or unexposed SA2s. However, these differences were not statistically significant, nor were there any clear patterns within the exposure groups. That is, the SA2s within the exposed group did not have consistently higher rates for the cancers of interest.

5.7.2 Methods

Study design

This was an ecological (epidemiological) study, which compared the geographical pattern of cancer rates between a defined geographic area and the same for the comparable geographic areas based on the exposure in question and socioeconomic status.

Geographic areas in scope

For this assessment, selected SA2s as per the Australian Statistical Geography Standard (**ASGS Edition 3**) were used. SA2s are generally small geographic areas with a population between 3000 and 25,000. SA2s are used for the release of Australian Bureau of Statistics (ABS) vital data including estimated resident population, health and other vitals data[105].

Nine SA2s surrounding the industrial areas were identified as the 'exposed group' (Appendix H). All of the nine SA2s are administratively located within the LGA of Ipswich[106]. Their populations ranged from 3067 (Riverview) to 24,349 (Redbank Plains). For comparison, 11 SA2s were randomly selected from beyond the 'exposure' area outside of the industrial areas' periphery and outside Ipswich LGA. A further 11 SA2s adjacent to the industrial areas were purposively selected from across the periphery of the affected SA2s and classified as 'partially exposed' SA2s. The majority of the 'partially exposed' SA2s are located in the Ipswich LGA except Karalee – Barellan Point and Karana Downs which fall under the Brisbane LGA[107]. Thus, the three groups of SA2s ('in-scope SA2s') were: 'exposed' (n=9), 'partially exposed' (n=11) and 'non-exposed' (n=11).

Data sources

Cancer data were sourced from the Queensland Cancer Register through the Cancer Alliance Queensland (data provided on 11 March 2025)[108]. Due to small numbers, rates were aggregated for five years: 2018-2022. The in-scope SA2s were comparable according to their socio-economic status categorised by the ABS Socio-Economic Indexes for Areas (SEIFA) quintiles, where quintile 1 = most disadvantaged, and quintile 5 = most advantaged[107].

Data analysis

Analysis of selected cancer (lung, liver, kidney) rates among three sets of SA2s were conducted following two different methods:

- **Directly age standardised rates:** for selected cancers for the 'exposed' SA2s were compared with those of 'partially exposed' and 'unexposed' SA2s as well as the Queensland rates.

- **Indirect standardisation:** due to the small numbers for most SA2s, an indirect standardisation method was used by applying the age-specific cancer rates of the Queensland population (standard) to the study populations. A Standardised Incidence Ratio (SIR) for all SA2s was used to determine if the occurrence of cancer (observed cases) in the exposed SA2s with relatively small populations was different (higher or lower) than Queensland rates if the population in the exposed SA2s had a similar age structure to that of Queensland. The SIR was calculated by dividing the observed number of cases by the expected number cases.

5.7.3 Results

Directly age standardised rates comparison

Age standardised incidence rates (ASR) for the cancers of lung, liver and kidney and all cancers combined for the 'exposed' SA2s were similar to those of 'partially exposed' and 'unexposed' SA2s as well as the Queensland rates. (Refer to Table 20 and Appendix I).

Table 20. Age standardised incidence rates per 100,000 for selected cancers (95% confidence intervals) by exposure category, 2018-2022

Exposure category	ASR per 100,000 (95% CIs)			
	Lung	Liver	Kidney	All cancers
Combined exposed SA2s (n=9)	58.8 (52.1–65.9)	9.1 (6.7–12.0)	18.4 (14.8–22.4)	553.8 (533.0–575.0)
Combined partially exposed SA2s (n=11)	55.5 (49.2–62.3)	9.1 (6.7–12.0)	15.7 (12.5–19.4)	542.5 (522.4–563.0)
Combined unexposed SA2s (n=11)	55.9 (50.4–61.6)	9.9 (7.7–12.4)	14.9 (12.2–17.9)	530.0 (512.8–547.5)

The only exception, however, was kidney cancer in Raceview, an 'exposed' SA2, which had more than double the ASR of kidney cancer (37.8 per 100,000) compared to that of the combined 'exposed' SA2s (18.4), 2.4 times the combined 'partially exposed' SA2s (15.7) and 2.5 times the 'unexposed' SA2s (14.9) (Appendix I). Although not statistically significant, the SIRs for all cancers for the combined 'exposed' SA2s (ASR 553.8 per 100,000) were somewhat higher than for Queensland (543.7 per 100,000), most likely reflecting the greater mix of areas with lower SEIFA among the selected SA2s.

Overall, when looking at the specific cancers, a lot of the counts were very small, even for five years of aggregated data (Appendix H). The associated ASRs consequently had very wide confidence intervals demonstrating imprecise estimate, rendering them less useful for comparison purposes. Thus, an alternative method, indirect standardisation, was used.

Comparison between observed and expected rates – indirect standardisation

The indirectly standardised rates, comparing 'observed' rates with 'expected rates' expressed as standardised incidence ratios or SIRs, showed 24 per cent, and 29 per cent higher rates for cancers of the lung, and kidney respectively for the combined exposed SA2s compared to the standard (Queensland) population. However, if the SIRs for the exposed SA2s are compared with partially exposed and unexposed SA2s, the difference was not statistically significant as indicated by the large overlapping of the respective confidence intervals (refer to Table 21).

Table 21. Standardised incidence ratio (observed over expected rates with 95% confidence intervals) by exposure category, 2018-2022

Exposure category	SIR (95% CIs)			
	Lung	Liver	Kidney	All cancers
Combined exposed SA2s (n=9)	1.24 (1.10–1.40)	1.21 (0.88–1.62)	1.29 (1.03–1.59)	1.02 (0.98–1.06)
Combined partially exposed SA2s (n=11)	1.16 (1.03–1.31)	1.17 (0.85–1.57)	1.13 (0.89–1.40)	1.00 (0.96–1.04)
Combined unexposed SA2s (n=11)	1.17 (1.06–1.30)	1.31 (1.02–1.66)	1.05 (0.86–1.27)	0.97 (0.94–1.00)

NB: although indirect standardisation is a more appropriate approach in this situation, the counts for some of the SA2s were nonetheless so small that the SIRs were associated with very wide confidence intervals, indicating imprecise estimates, particularly for liver and kidney cancers.

When the SIRs for the individual SA2s were examined, the SIRs tended to be slightly higher for the exposed SA2s compared to the partially exposed or unexposed SA2s. However, these differences were generally not statistically significant, nor were there any clear patterns within the exposure groups, that is, the SA2s within the exposed group did not have consistently higher SIRs for the cancers of interest (Appendix I).

Despite the small numbers, one of the main findings is that the observed rate for kidney cancer in Raceview (an exposed SA2) was 2.7 times higher than the expected rate (SIR 2.67, 95% CI: 1.82–3.77, in contrast to the pooled results for kidney cancer in the exposed SA2's (SIR 1.29, 95% CI: 1.03–1.59. Appendix I).

5.7.4 Summary and conclusion

Overall, the observed rates of selected cancers and all cancers for the exposed area were not statistically significantly different from those for the partially exposed or unexposed areas. The higher number of observed versus expected cases (SIR >1.0) within an SA2 for a particular cancer could be due to random variations of cancer incidence. It is possible the higher number

in the exposed group could also be linked to other explanations including lifestyle factors other than the exposure of interest as some of the unexposed SA2s had higher rates of some cancers. For example, the observed number of liver cancer in Inala–Richlands (an unexposed SA2) was nearly three times the expected numbers, despite this SA2 being outside of the exposure area (21 compared to 7.1, SIR 2.95, 95% CI: 1.83–4.51. Appendix I).

Based on the above findings, risk communication is proposed. The observed difference of selected and all cancer rates, most of which are not statistically significant, may be considered as random variations rather than due to the exposure in question. Accordingly, these results may be communicated to the affected community. Risk communication is crucial for building trust and ensuring risk management decisions are transparent and credible[109].

5.8 Nontuberculous mycobacterial infections in Ripley/Swanbank/Ipswich region

During the course of interviews held with community members, one individual explained they had experienced an uncommon bloodstream infection with a Nontuberculous Mycobacterium (**NTM**) and had heard of others in the community with similar infections. The individual expressed concern this infection might be related to dust or water from the industrial areas. The Inquiry asked Professor Rachel Thomson, an internationally recognised expert in the field from the University of Queensland, to determine whether an epidemiological association existed. Professor Thomson's report appears below with some details redacted to preserve patient confidentiality.

In brief, no association between NTM infection and residence near the industrial areas could be identified (noting that because of the rarity of this infection, numbers are small).

Nontuberculous mycobacteria

Pathogenic NTM comprise many species and strains found in water and soil. NTM have been isolated from drinking water pipelines, water tanks, hot tubs, residential faucets, hospital faucets and ice machines, diagnostic laboratories, bottled and municipal water, commercial and hospital ice, potting soil, house dust, water damaged building materials, showerheads, shower aerosols, hot- tub aerosols, coniferous forest soils, brook waters, cigarettes, livestock, coastal mosses and seawater. Reports span multiple countries (including the USA, Australia, the UK, France, the Netherlands, Denmark, Czechoslovakia, Italy, Finland, Germany, Madagascar, Tanzania, Taiwan, Japan and Korea) and various climates. While many isolates were not directly associated with human disease, these reports show that NTM reside in a variety of natural and artificial environments[110].

Inhalation of aerosols appears to be the primary transmission route of NTM causing pulmonary disease. This usually occurs in artificial water environments such as hot-tubs and

showers but may involve garden soil and house dust. Mycobacteria may aerosolise more readily than other bacteria as they have highly hydrophobic cell walls. NTM have been isolated from natural water environments in which aerosolization increases the concentration of NTM in the air[111,112].

To elucidate NTM disease risk, clinical and environmental NTM strains need to be matched to identify critical environmental reservoirs and routes of transmission. Species-level identification of NTM isolates is sufficient to determine the presence or absence in an environment, but strain level identification is required when matching clinical and environmental isolates. A review of studies where clinical and environmental strains of mycobacteria have been matched and a discussion of the limitations to the methodologies employed was published in 2015[110].

There are many areas of uncertainty in the epidemiology of NTM disease, as pathogenicity varies between species, contamination of human samples from environmental sources is common (for example, dust particles and fomites that contain NTM may contaminate samples and the laboratory process), and clinical reporting is not standardised. Furthermore, there is likely to be a lag time between infection and clinical presentation, making it difficult to accurately determine specific exposures and risk factors linked with infection. In most countries, NTM disease is not a notifiable condition and high-quality data are often not available. The state of Queensland in Australia has maintained a mandatory reporting scheme for NTM infections since the introduction of tuberculosis control around 1950. All cases of NTM are notifiable under the Queensland Public Health Act and associated regulations (Parliamentary Counsel, 2005) and recorded in the Notifiable Conditions (NoCS) database. The availability of NTM data over many years, together with Queensland's large geographic expanse over many climatic zones, has provided a unique opportunity to examine epidemiological associations over time and space.

Relevant information about the case

The case in question had three samples positive for NTM. The first was a positive blood culture on 22 December 2023. The laboratory was unable to identify the isolate to the species level, but antimicrobial susceptibility testing noted it was unusually sensitive to multiple antimicrobial agents. Portacath fluid was sampled in January 2024 and an NTM organism was isolated, but not identified by MALDI-TOF. 16s rDNA gene fragment sequencing identified the isolate as most closely resembling *M. fortuitum/acetamidolyticum* with 98.77 per cent similarity; *hsp65* gene fragment sequencing identified it as most closely resembling *M. diernhoferi* (95.63 per cent similarity); this organism had the same antimicrobial susceptibility pattern as the organism identified in blood culture. These isolates were notified to the Queensland Health Notifiable Conditions (NoCS) database as 'NTM not typed.' A further positive blood culture was reported in December 2023 and no identification was reported.

The *M. fortuitum group* (**MFG**) currently includes 17 NTM species *M. alvei, M. boenickei, M. brisbanense, M. conceptionense, M. farcinogenes, M. fortuitum (subs. fortuitum/acetamidolyticum), M. houstonense, M. neworleansense, M. peregrinum, M. porcinum, M. senegalense, M. septicum, and M. setense*[113]. At the time of the 2015 review, there were no

published studies that had identified definitive matching of *M. fortuitum* strains from patients and the environment. *M. fortuitum* subspecies *acetamidolyticum*, first reported in 1986, is a nonphotochromogenic mycobacterium with an intermediate growth rate. It shares 94 per cent DNA homology with *M. fortuitum*, but has a different mycolic acid pattern, therefore was designated as a subspecies of *M. fortuitum*. It was isolated from a 56-year-old patient with lung disease and considered to be a lung pathogen[114]. This is the only case report of human infection due to this subspecies specifically, in the literature to date, though not all studies report or identify MFG isolates to the subspecies level.

Several members of the MFG are implicated in human and animal diseases. *M. fortuitum* is recognised as a cause of pulmonary, bone, skin and soft tissue diseases following surgery and catheter-associated infections[115]. *M. fortuitum* group has been widely reported in environmental sampling studies. Twelve MFG species have been isolated from the environment and non-vertebrates, including from peat, soil and earthworms, aquariums and fishponds, prawns used for fish feed and aquarium plants, alluvial wooden material in karstic caves. Only five MFG species have **not** ever been reported in the environment (including *M. fortuitum/acetamidolyticum*)[113]. MFG species were identified in drinking water from Brisbane Drinking Water Distribution system sampling in 2007–08. Nineteen isolates were identified using 16s rDNA gene fragment sequencing[116]. It is not known if any of these were subspecies *acetamidolyticum*. However, when these water isolates were compared to 53 clinical isolates from patients received by the Queensland Mycobacterium Reference Laboratory in the same time period, none were closely related[117]. Eleven cases of *M. fortuitum* infection in Queensland patients with laparoscopically inserted gastric bands was reported in 2014[118].

NTM and landfill

Studies of the microbiological composition of landfill, and of the biocover remediation of landfill sites to reduce odour, have a reported mycobacteria (not identified to species level)[119]. Methanotrophs (bacteria that utilise hydrogen sulphide and reduce odour) include mycobacteria, and they have been reported in remediation of landfill sites, particularly in warmer temperatures[120]. They have also been reported to contaminate aquifers adjacent to landfill remediation sites[121]. In a geospatial analysis of NTM in Queensland, soil pH was identified as a significant predictor variable for *M. fortuitum* group infection[122].

Queensland NTM notification data

NTM infections in Queensland are notified to the NoCS database, with each notification defined as an incidence case. In this study, all NTM notifications in Queensland, Australia from 1 January 2016 to 31 December 2024 were used. For notifications, if a positive culture is received after a 12-month period from the initial specimen collection (regardless of how many positive cultures were received during that 12-month period), this is classified as a new incidence case. For notifications where the individual had multiple species in a single infection, incidence was duplicated per species. Patient demographic data included age at specimen collection, sex, Indigenous status, sampling dates, and residential address

(including suburb, LGA and Hospital and Health Service). Clinical and microbiological data including site of infection, specimen type and NTM species were also available.

Calculation of NTM incidence rates and suburb population data

The digital boundary files of all suburbs and localities (**SAL**) in Australia, 2021 (ASGS Edition 3) was obtained from the ABS (https://www.abs.gov.au/statistics/standards/australian-statistical-geographystandard-asgs-edition-3/jul2021-jun2026/access-and-downloads/digital-boundaryfiles). A subset of the LGAs of Brisbane, Ipswich and Logan was used for ease of visualisation. The centroid of the Swanbank suburb, a 5 kilometre and 10 kilometre radius from the Swanbank centroid, and all suburbs that intersect with these radii were calculated from the SAL digital boundary files.

NTM incidence rates (based on the NTM notifications data) were calculated per suburb per 100,000 population. Incidence rates were initially averaged over the 9-year period. Suburb population data was obtained from the 2021 Census data from the ABS (https://www.abs.gov.au/census/find-census-data/search-byarea).

For the suburbs with the highest NTM incidence rates overall (n=21), the incidence rate per year (2016-2024) was calculated by dividing the NTM notification counts for that year by the Census 2021 suburb population and extrapolated to 100,000 population for standardisation. Geometry calculations and plots of (i) NTM incidence rate averaged over the 9-year period for suburbs within the 10 kilometre radius from the centre of Swanbank, (ii) NTM incidence rate per year of the top 21 suburbs with the highest NTM incidence rates within a 10 kilometre radius of the centre of Swanbank, (Figure 16) and (iii) a count of each species for the top 21 suburbs were generated using the sf v1.0-16, *dplyr* v1.1.4, *tidyverse* v2.0.0 and *ggplot2* v3.5.1 packages in R v4.2.2. (Figure 17).

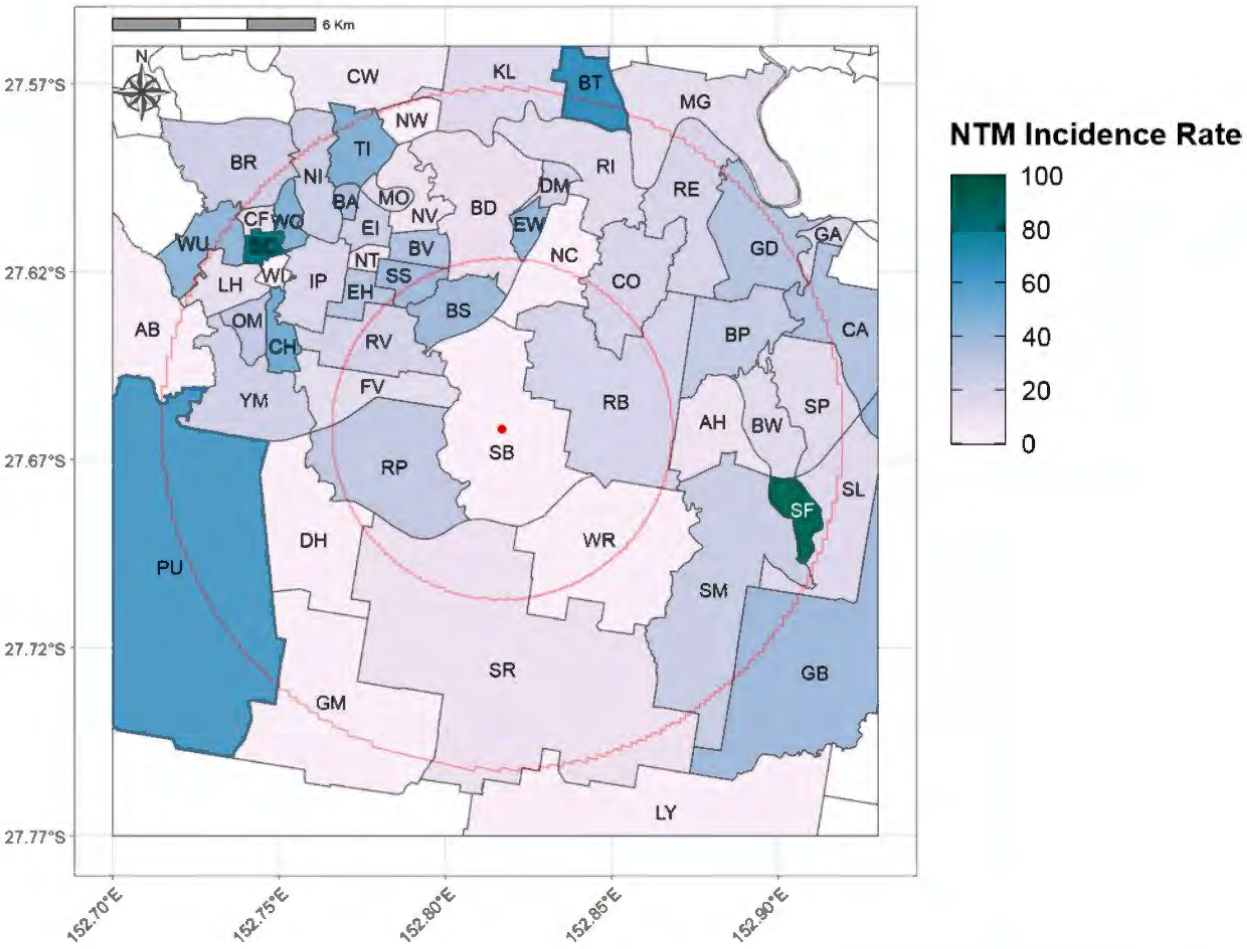


Figure 16. NTM incidence rate 2016–24 (averaged over 9–year period) for suburbs within a 10 kilometre radius of the centre of Swanbank

Suburbs							
AB	Amberley	CW	Chuwar	MO	Moores Pocket	SC	Sadlers Crossing
AH	Augustine Heights	DH	Deebing Heights	NC	New Chum	SF	Springfield Central
BA	Basin Pocket	EH	East Ipswich	NI	North Ipswich	SL	Springfield Lakes
BD	Bundamba	EI	Dinmore	NT	North Tivoli	SM	Spring Mountain
BP	Bellbird Park	EW	Eastern Heights	NV	North Booval	SP	Springfield
BR	Brassall	FV	Ebbw Vale	NW	Newtown	SR	South Ripley
BS	Blackstone	GA	Gailes	OM	One Mile	SS	Silkstone
BT	Barellan Point	GB	Greenbank	PU	Purga	TI	Tivoli
BV	Booval	GD	Goodna	RB	Redbank Plains	WI	West Ipswich
BW	Brookwater	IP	Ipswich	RE	Redbank	WO	Woodend
CA	Camira	KL	Karalee	RI	Riverview	WR	White Rock
CF	Coalfalls	LH	Leichhardt	RP	Ripley	WU	Wulkaraka
CH	Churchill	LY	Lyons	RV	Raceview	YM	Yamanto
CO	Collingwood Park	MG	Moggill	SB	Swanbank		

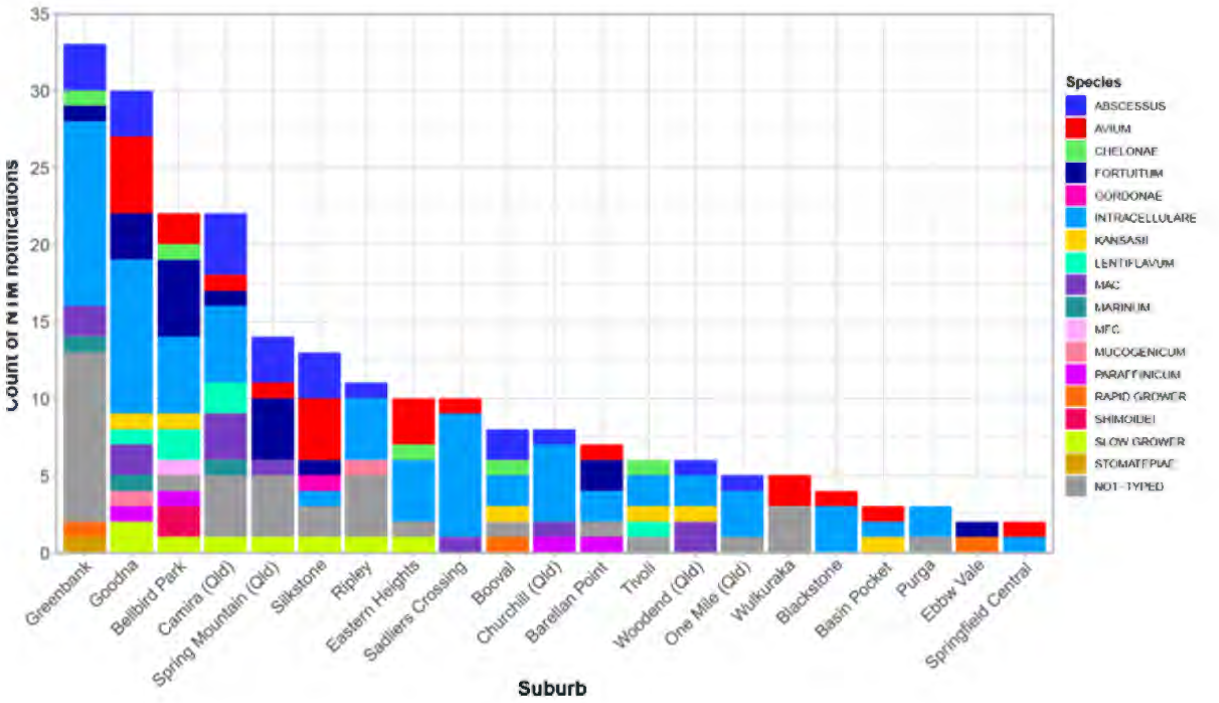


Figure 17. Species counts for the top 21 suburbs with the highest NTM incidence rates within a 10 kilometre radius of the centre of Swanbank

NTM notifications in the Swanbank vicinity

Between 2016–2018 there were 16 notifications of positive isolates of *M. fortuitum* group from people living in the Ipswich area, and 28 notifications from 2019–24. However, these notifications only included cases where *M. fortuitum* complex was definitively reported by the laboratory. For the case in question, it was not reported as such, only 'Mycobacterium not-typed.' Therefore, there may be other cases, reported similarly that have not been identified using NoCS data. An individual manual search of the laboratory database backnotes for each individual notification (74 records for 2016 to 2024) that was recorded as 'Mycobacteria not typed', or 'rapid grower not speciated', would be required to identify any other potential cases. Due to time and resource constraints this has not been performed. Of note, for those notified as *M. fortuitum* group, the subspecies was also not named in the NoCS reporting.

Other cases in Ripley

During the time period 2016 to 2018, there were two notifications of NTM in Ripley (both from sputum and not speciated). From 2019 to 2024 there were six individuals notified with NTM infections. One individual had three notifications (*M. intracellulare* separate infections 2018,2022; *M. abscessus* 2023), another individual had two notifications (*M. intracellulare* 2022 and 2024).

None of the 2016 to 2024 *M. fortuitum* group notifications had a residential address in Ripley or South Ripley, two resided in Flinders View, two in Raceview, one each in Silkstone, Collingwood Park and Booval, three in Redbank Plains and none in Eastern Heights.

NB: the case in question was notified as 'Mycobacteria not typed.'

As environmental organisms that naturally aerosolise from soil and water, it is highly likely there is NTM aerosolisation from the Swanbank site. As the prevailing wind in the area is south easterly, it is feasible the higher notifications of NTM in the suburbs north east of the Swanbank site relate to a higher environmental exposure of residents living in those areas. Refer to Figure 17.

Conclusion

There are multiple environmental factors that may influence NTM disease distribution, including soil variables (for example, top soil depth, pH, nitrogen content), agricultural land use, prevailing winds, climatic events (such as floods, storms, cyclones, dust storms), proximity to surface water, surface water heavy metal concentrations (molybdenum, vanadium), and factors associated with drinking water distribution systems, such as method of disinfection, distance from water treatment plants, bioavailable carbon, and plumbing factors in the home, such as pipe diameter, and hot water storage temperatures.

NTM exposure for Queenslanders in other areas of the state may be equal or higher than for those in the Swanbank vicinity, as demonstrated in previous geospatial analyses[122,123]. For the individual case in question, the infecting strain has almost certainly come from an environmental source, however proving which source is impossible without widespread environmental sampling (including aerosols) and strain typing of organisms, as there have not been previous similar strains identified from environmental sampling done to date. Humans also frequent multiple environments in day-to-day life and determining which contributed to the infection is also impossible.

The data presented here are raw population data, and no statistical analysis has been performed to account for any of the variables listed above, which may confound the interpretation of the results, that is, proximity to the Swanbank site may not explain the incidence rates seen and other factors should be taken into consideration, including individual host risk factors. Each suburb of interest had relatively small numbers of NTM cases, which also makes statistical analysis and interpretation difficult.

In summary, NTM are environmental organisms, and will be present in landfill and biocover used for remediation of sites such Swanbank. However, there are multiple environmental sources of NTM, and individual host risk factors that influence the risk of acquiring infection. There is limited definitive evidence that residence in the vicinity of Swanbank poses an excess risk of acquisition of an NTM infection than other areas of the state.

5.9 Overview of health impacts

Chapter 5 concludes with a summary providing an overview of the frequently reported health risks associated with odour exposure for residents living near landfill, composting and other relevant waste management facilities from the published medical literature.

The symptoms people attribute to the odours described earlier in this chapter are consistent with those described in this section.

Where possible, this review considered research most closely aligned with the context at the industrial areas that are the subject of the Inquiry: it endeavours to consider examples from similar industries, and exposures below toxic and other threshold levels. It integrates systematic reviews, meta-analyses, and community studies.

Several limitations are noted:

- Most community studies rely on self-reported symptoms rather than objective clinical measures.
- Cross-sectional designs are common in the literature, which limit causal inference.
- Exposure assessment is challenging, with few studies directly measuring personal exposure.
- Multiple potential confounders exist in community settings, including socioeconomic factors, pre-existing health conditions, attribution bias, and other environmental exposures.
- Publication bias may favour positive findings over negative or null results.

In these circumstances, five important insights should be noted:

1. Odour annoyance and stress are strong mediators for a range of health conditions. Chronic exposure may result in elevated cortisol levels, exacerbating mental and physical health. Even if a symptom is psychosomatic, it can significantly impact quality of life.
2. Dose responses are noted in the research for a range of conditions, suggesting closer proximity and higher odour frequency and intensity may increase risks.
3. This literature review acknowledges more research is needed to determine the role that low level exposures play in generating these health conditions.
4. This summary finds support for physiological and psychological mechanisms across a range of conditions. For other conditions, there is weaker evidence when research was examined in the context of the relevant industrial areas.

5. Research suggests that interventions that reduce ambient pollutants, but which do not eliminate all odours, may not remediate the concerns and anxieties of residents.[68,124]

The evidence on a range of health conditions is provided in Table 22.

Table 22. Overview of evidence on health conditions associated with relevant odours

Domain	Condition	Overview of evidence
Respiratory	Nasal congestion and irritation, including: • sneezing • hay fever	Nasal complaints arising from landfill and composting odour are frequently reported in field studies and reviews.[39,43,49,61,64,84,125-129] Most commonly, these report nasal congestion and/or irritation. Other complaints like sneezing and hay fever-like symptoms (for example, tickling nose) are infrequently reported,[39,68,127] with the possibility that these and other similar conditions are included as subsets of nasal congestion and irritation. The response to odour, detected by the olfactory receptors of the nasal epithelium, may result in vasodilation which can result in nasal obstruction, mucus secretion and inflammation.[64] This may occur in response to irritation arising from ambient bioaerosols and VOCs[47,130] and in instances of stress-mediated responses derived from odour annoyance.[64,84] Some reviews also acknowledge the risk of confounding associated with pre-existing conditions and potential for attribution bias.[131-133]
	General, including: • cough • shortness of breath • throat irritation	General respiratory complaints are commonly reported by residents in response to malodour.[34,36,64,84,92,129] The strength of the association is moderate for general complaints, with annoyance and stress potentially worsening the conditions.[36,45] In many reviews, respiratory conditions are often aggregated together which makes individual symptom reports harder to ascertain. Cough, shortness of breath and throat irritation are frequently reported.[39,84] One review noted that associations with cough had a biological plausibility, potentially arising from odour modulating autonomic system responses or stress.[64] One cross-sectional study involving a composting site found an association with cough,[94] however several reviews considered this paper and caution should be exercised with its self-reported methodology. Similarly, there was evidence for breathlessness and throat irritation moderated by odour annoyance[49,84].

Domain	Condition	Overview of evidence
Neuro-psychological	Headache	Reviews found that headaches are commonly reported near composting and landfill facilities at statistically increased rates for exposed populations.[34,39,64] It is reported at lower exposure thresholds for a range of odorous gases.[36] The evidence supports a moderate association, with odour intensity, stress, and annoyance often playing a role in the frequency and intensity of headaches.[61,64,66]
	Sleep disturbance	Sleep disturbances are frequently documented by residents near odour-producing facilities.[34,49,129,134] Its association is noted with exposure to low levels of a range of odorous gases.[36] The relationship is primarily mediated by odour annoyance rather than direct physiological effects.[64] Sleep disruption is likely to be a stress response, which in turn affects overall health.[45,61]
	Fatigue	Reviews report that fatigue is one of the most common associations with regular odour exposure.[34,42,64,134] While it is most likely to result from a regular disruption to the sleep cycle, it is also associated with reports of negative mood and mental health.[51,134] Because of its relationship to impacted sleep, fatigue is associated with exposure to low levels of a range of odorous gases,[36] and the relationship is primarily mediated by odour annoyance rather than direct physiological effects and it is likely a stress-related reaction.[39,64,66]
	Mental health, including: • anxiety • depression • mood	An association has been documented between proximity to odorous waste facilities and mental health conditions.[34,74,129,134] It is associated with odour annoyance, the unpredictability of the odour and the inability to defend oneself from it.[36] The resulting psychological distress can include anxiety and depression symptoms. One report noted that environmental stressors affect wellbeing when they exceed human adaptive capabilities.[84] It found an association between the number of physical symptoms and anxiety and mood disorders.[84] The impact on mental health appears mediated by odour annoyance and risk perception rather than biological mechanisms, with reviews finding that exposure was associated with negative mental health outcomes.[64,92]

Domain	Condition	Overview of evidence
Allergy	Asthma (allergic) and airway	While the condition was covered in several reviews, there is limited evidence of causation.[48] One review suggested an association between airway inflammation and bioaerosols but there is limited evidence of causation.[42] Another found mixed evidence for asthma exacerbation in residents.[45] A further review noted some connections to respiratory effects, but evidence of increase asthma risk was not found.[34] Elsewhere, it was noted that there are some suggestive associations with asthma, but the evidence is sparse.[64]
	Eye	Eye irritation often features as a self-reported symptom in malodourous environments.[34-36,45,49,61,64,68,84,94,129] In environments where bioaerosols and irritant gases are below threshold levels, it appears the mechanism for this symptom is likely to be mediated by odour annoyance,[64,84] however the possibility of an allergic reaction low levels of odorous compounds may be plausible.[135]
	Skin, including: • dermatitis • psoriasis • eczema	Several reviews note the potential for skin irritation given associations with various compounds produced from waste management.[39,40,64,132] However, there is limited information to associate skin conditions arising from odour exposure below threshold levels from landfill and composting facilities.[136] In these circumstances, there are suggestions this issue may arise through stress and annoyance, or be associated with attribution bias.[133] One review noted this was an area where further research is required.[40] Other reviews did not specifically address this health issue.
Gastrointestinal	Nausea, including vomiting	Gastrointestinal symptoms represent another common category of complaints associated with odour exposure and intensity, although these may be primarily mediated through stress responses and autonomic arousal rather than direct effects.[35,61,137] An association exists between nausea and proximity to composting and landfill facilities.[34,51,52,132] Research has acknowledged links with the level of odour exposure and nausea symptoms, with a strong association with odour annoyance and stress.[39,49,51,64,66] Unpleasant odours are also able to modulate autonomic system responses, such as vagal nerve inducing nausea or vomiting.[62,64,137]

Domain	Condition	Overview of evidence
Public concern	Cancer	There are numerous methodological issues in studies that describe potential cancer risk.[125] Caution must be exercised when interpreting such literature, especially given their limited relevance where odorous compounds do not exceed toxic thresholds. In a thorough systematic review of risks across a range of solid waste management types, no evidence was found to suggest an increased cancer risk.[34] No causal link is evident between residents living near waste management facilities and increased cancer risk.[34,48] It is noteworthy that studies investigating different cancer types (including kidney cancer) found there was no evidence of association between cancer and odours from landfill and composting sites, and that more plausible associations with cancer could be attributed to smoking patterns and other lifestyle factors.[138-140]

Part B—Response to the odour

Site visit to the industrial areas, January 2025

Part B of the report addresses the challenges experienced within the industrial areas, the response from key stakeholders and an overview of the regulatory framework.

6 Stakeholder response

This chapter provides a summary of measures taken by DETSI, the community, the Public Health Unit, ICC and industry to respond to odour issues and health concerns from the industrial areas.

6.1 DETSI

The information in this section has been drawn from the DETSI submission to the Inquiry[8].

6.1.1 Overview of historical actions related to odour

Odour issues have been experienced by residents surrounding the industrial areas for some time and since 2013, there have been increases in the number of reported odours during certain months of the year. DETSI has undertaken various actions and activities to address increasing odour concerns.

The scope of the Inquiry was to consider any evidence from 2016. The Inquiry understands that prior to 2018, DETSI managed complaints regarding odour at a local level.

Community survey

As part of a process to provide an opportunity for the community to express their concerns regarding odour experienced in the area, DETSI commissioned a community survey for three weeks from 16 April 2018 in the suburbs surrounding the industrial areas.

The objectives of this survey included the following:

- better understand community opinions
- gain further insight into the odour residents were being exposed to
- seek opinion on how the odour issues could be managed
- to determine environmental aspects of the greatest interest to the community.

The survey results were used to inform improvements in DETSI's targeted monitoring program, support actions to manage odour generating commercial activities, increase public awareness of the work being undertaken to manage nuisance and waste issues and improve communication and engagement with the community.

At the close of the survey period, around 800 community members had provided responses to the telephone survey and over 500 residents had responded to the online survey. The results of the online survey were released on 19 July 2018, the same day DETSI's Odour Abatement Taskforce (**the Taskforce**) was launched.

In summary, half of the respondents (52 per cent) had noticed an odour nuisance in the local area and about six in ten (57 per cent) were concerned about local air quality.

One year later, a follow up survey was released to the community including questions from the original survey as well as questions specific to the objectives of the Taskforce. The survey was open for 16 days and generated 1359 responses from the community.

The follow up survey found three in five respondents were aware of the Taskforce and that sensitivity about odour remained elevated within the community with one in three respondents still noting odour as an environmental concern.

Odour Abatement Taskforce

Upon its launch in July 2018, the Taskforce initially comprised of a team of specialist compliance, technical, community engagement and intelligence officers, with a remit to engage directly with the community, to identify and develop community and regulatory responses to industrial sources of odour nuisance and other environmental issues. The Taskforce was responsible for:

- intensively examining and reviewing current industry regulation and practice
- reviewing EA conditions against contemporary standards
- proactively engaging with industry stakeholders and encouraging environmental stewardship
- providing an additional on-ground presence and proactive engagement with local communities
- introducing new technologies to monitor air, noise and water quality.

This Taskforce substantially increased DETSI's presence and visibility in the community, through daily odour surveys, letterbox drops, community drop-in sessions, branded vehicles and a shopfront in Redbank Plains. Within three years, DETSI collected over 10,200 community odour reports, conducted over 3000 community interactions and issued over $130,000 in fines to non-compliant operators.

Within a few weeks of commencement of the Taskforce, DETSI identified the industry types believed to be the main odour sources in the industrial areas and composting operators became a focus for compliance activities.

Review of composting operations

In 2019, DETSI engaged an external consultant to undertake a review and prepare two reports on The Critical Evaluation of Composting Operations and Feedstock Suitability, Phase 1 (https://environment.desi.qld.gov.au/__data/assets/pdf_file/0024/226293/phase-1-composting-study-report.pdf)[25] and Phase 2 (https://environment.desi.qld.gov.au/__data/assets/pdf_file/0022/226291/phase-2-composting-study-report.pdf)[141] (**critical evaluation reports**). The Phase 2 report was also independently reviewed by a third party.

In May 2020, the reports were accepted by the Director-General of the then Department of Environment and Science as recognised entity reports (Phase 1 and Phase 2). Acceptance of a report as a recognised entity report provided DETSI with a statutory power to commence a licence amendment process under section 215 of the EP Act.

The recognised entity reports were also used to:

- Develop DETSI's Best Practice Environmental Management Environmentally relevant activity 53(a) Organic material processing by composting guideline (https://www.des.qld.gov.au/policies?a=272936%3Apolicy_registry/era-gl-bpem-composting.pdf)[29]. This best practice guideline replaced previous guidance (Guideline Open windrow composting under ERA 53(a) Organic material processing by composting).
- Update DETSI's Model operating conditions for ERA 53(a) Organic material processing by composting. The model operating conditions provide a framework of conditions for an EA to carry out ERA 53(a). However, they are not mandatory conditions.
- During 2020 and 2021, DETSI continued to invest resources and effort towards understanding the source of odour within the industrial areas. Actions included:
  - Introducing new technology, from a third-party provider, Envirosuite, to improve prediction of odour events and monitor weather conditions enabling officers to respond to issues in real time.
  - Commencing a 12-month trial using 'e-noses', an odour detection system designed to alert officers to the possibility of an odour event occurring to facilitate timely inspections.
  - Introducing drones to undertake aerial inspections at facilities to measure the volume of stockpiles and to check compliance of site activities with approvals.
  - Trialling thermal imaging drones to undertake aerial inspections at facilities and to measure odour generation and movement within the Ipswich area.

In March 2021, the consultant engaged to develop the critical evaluation reports was commissioned to develop an Organic Odour Feedstock Rating Report (https://environment.desi.qld.gov.au/__data/assets/pdf_file/0023/340727/organicfeedstockodourrating.pdf)[142] for DETSI. This report complemented the previous critical evaluation reports by outlining an approach for the assessment of odour potential for:

- Feedstock which is not listed in the critical evaluation reports.
- Feedstock that has been mixed at the point of generation (comprising of two or more feedstocks listed in the critical evaluation report, such as food organics garden organics, or FOGO).

In July 2021, DETSI updated the model operating conditions in the revised composting guideline to reflect the updated best practice guidance, with subsequent minor updates being made after the Organic Feedstock Odour Rating Assessment Report was published in June 2023.

Following the major updates to the model operating conditions in 2021, a dedicated team was established to modernise composting licence conditions across the State. This EA amendment process is subject to a notice of proposed amendment and subsequent review processes and therefore attempts to amend EAs through this process were resource intensive and protracted. Operators were initially encouraged to adopt contemporary conditions voluntarily and amend their EAs by agreement and while there was some success in various parts of the State, operators in and around the industrial areas generally did not agree to the amendments being made to their EAs.

Significant rainfall event

In 2022, following the February intensive rainfall event in South East Queensland, there was a significant spike in odour reports, which was attributed to the Cleanaway Solid Waste Pty Ltd's (**Cleanaway**) New Chum landfill. DETSI identified Cleanaway as the major source of the odour due to large volumes of water ponding in a landfill cell and mixing with leachate.

The water became contaminated with wastes from the site and this mixture became anaerobic through fermentation, releasing hydrogen sulphide.

DETSI issued notices to Cleanaway imposing requirements to treat and remove odorous water, undertake onsite air monitoring, investigate fugitive emissions and develop and implement a gas management plan. DETSI also undertook inspections seven days a week for an extended period of time to monitor compliance and gather evidence to take further enforcement action if required to address the odour issue.

By October 2022, the affected cell was empty of water, community complaints about odour issues had significantly reduced and air monitoring results were generally below nuisance levels.

In March 2023, DETSI charged Cleanaway with a number of offences in relation to its New Chum facility, including wilfully causing an environmental nuisance relating to odour in 2022. The specific charges were:

- One offence contrary to section 440(1) of the EP Act for wilfully and unlawfully causing an environmental nuisance.
- One offence contrary to section 430(2) of the EP Act for wilfully contravening a condition of an environmental authority (EA).
- Ten offences contrary to section 430(3) of the EP Act for contravening a condition of an EA[143].

Response to odour issues

DETSI's response to odour issues in the industrial areas has evolved as more information has been obtained about the odour and the key odour generating sites have been identified.

In response to increasing community reports in early–mid 2023, DETSI bolstered its compliance teams, its compliance activities in and around the industrial areas, and further coordinated internal teams to deliver a five-point action plan focused on:

- increased targeted compliance inspections, including multi-agency operations, and strong enforcement action against non-compliant operators
- enhanced community engagement through actively meeting with a community reference group, increasing community presence through regular drop-in sessions and publishing regular community newsletters
- expanding the long-term air monitoring capability by employing new technology and equipment
- legislative changes to improve and clarify compliance and response powers based on recommendations from an independent review including odour nuisance issues offences
- modernising licence requirements for composting facilities.

In executing the five-point plan, DETSI undertook a 42 per cent increase in the number of inspections conducted each year.

Enforcement action

In addition to community engagement and the use of technology and enhanced regulatory presence in the industrial areas, DETSI has taken enforcement action against operators for non-compliance at different times over the past decade. Not all enforcement action taken by DETSI may be disclosed to the public as DETSI is, for example, bound by legislation governing this information and its role as a model litigant.

Most recently, DETSI has had outcomes through the Courts including:

- In September 2024, DETSI's application for a restraint order was granted by the Planning and Environment Court, against NuGrow Ipswich Pty Ltd in relation to odour. This involved an investigation by DETSI and the contribution of over 70 firsthand accounts from community members who detailed their experiences about being impacted by odour.
- Cleanaway advised the Inquiry they received a penalty of more than $600,000 in November 2024 after pleading guilty to seven offences relating to odour nuisance that impacted surrounding residents in 2022. This also included a public benefit order of $212,000 directly funding community projects.

A summary of actions taken by DETSI to address odour issues since 2018 is included in Appendix J.

6.2 Community engagement, reporting and advocacy

6.2.1 Community engagement

DETSI has worked with ICC and Queensland Health to identify solutions to the odour issues and keep the local community informed.

DETSI has undertaken a range of community awareness campaigns since the commencement of its response to odour issues in the industrial areas in 2019. In 2023, community engagement was enhanced to provide a more regular and consistent approach. Engagement activities included:

- establishing a community reference group (CRG) including monthly meetings with a Swanbank CRG since 2023 to enable DETSI to engage with key community representatives on odour issues affecting Ipswich residents
- publishing community newsletters updating on current events within the area (at least monthly since September 2023)
- hosting scheduled community 'drop-in' engagement sessions with residents to discuss their concerns (including monthly during 2024)
- establishing a 'shopfront' and hosting 'pop-ups' at shopping centres and other venues to provide the community with more direct access to departmental staff
- ensuring air monitoring data is publicly available online.

There are currently over 2000 subscribers for the online newsletter. Targeted social media campaigns are run regularly to promote community reporting, drop-in sessions and inform on significant updates.

Queensland Health and other relevant agencies are invited to participate in drop-in sessions, CRG meetings and contribute to newsletter content. While this has resulted in the community being well-informed and having an open line of communication to DETSI, it has also drawn increasing attention to the odour problems within the industrial areas.

While DETSI provides regular updates to the Swanbank CRG and community through newsletters and drop-in sessions, DETSI is limited in what information can be published or made publicly available. For example, not all enforcement action taken by DETSI may be disclosed to the public. This is typically information the community has a high interest in and may add to the community perception that DETSI is inactive, causing frustration and a lack of trust in within the community.

6.2.2 Community reporting of odour

Industrial and commercial activities can create odours, but not all odours are unlawful. DETSI's role is to investigate concerns about odour released by operators to determine if they have breached their licence or the EP Act.

DETSI has actively engaged with community groups and individuals within and surrounding the industrial areas for nearly 10 years by encouraging residents to communicate their concerns, particularly through promoting the use of the Queensland Government's Pollution Hotline to report environmental nuisance relating to odour. Where possible, DETSI has been transparent with actions taken to address odour concerns.

DETSI does not conduct field inspections in response to every individual odour report. However, a field inspection may be conducted in response to multiple reports that indicate a

potentially significant pollution or nuisance event. Where there is evidence of operators not complying with their environmental obligations, DETSI will take the necessary enforcement action with the aim of ensuring ongoing issues are addressed.

The Queensland Government Community Reports webpage (https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/community-reports) includes a dashboard showing the reports received by DETSI across Queensland. Data is updated weekly, can be filtered by a date range and is presented by:

- the nature of the concern
- description of the nature of concern
- description of the odour (if applicable).

During 2024, the majority of community notifications about odour originated from Redbank Plains, followed by Ripley, together representing approximately 60 per cent of community notifications received from the industrial areas.

Separate to the industrial areas, notifications relating to odour are also received from northern Ipswich suburbs (including Karalee, Barellan Point, Tivoli and North Tivoli), averaging 17 per month during the last 12 months (since April 2024). There are multiple potential odour sources in these areas that are regulated by DETSI including composting facilities, sewage treatment plants and an abattoir.

The impact of odour and subsequent community reports can be influenced by weather conditions. For instance, odour may be more noticeable during warmer months due to higher humidity, increased rainfall and rising temperatures. In cooler months, reduced air movement and temperature inversions can trap odours close to the ground, further intensifying their presence.

DETSI has noticed shifts in suburbs being impacted by odour over time. For example, most odour reports received in 2022 related to odour generated in the northern portion of the industrial areas around New Chum, while odour reports in 2023 and 2024 were concentrated to the south around Swanbank.

Since July 2018, more than 30,000 odour reports have been received statewide by DETSI with over 27,000 surrounding the Swanbank and New Chum industrial areas. During 2023, DETSI received more than 7000 odour reports relating to the industrial areas. In contrast, during 2024, the number of odour reports decreased significantly to approximately 2500. This was largely due to the resolution of odour issues at the Cleanaway site in New Chum. Figure 18 gives an indication of the number of odour related community reports received surrounding Swanbank and New Chum from 2016 to 2024.

Community members submit reports when they are experiencing odour impacts, which can result in affected households reporting multiple times during a reporting period. During the past six months, about 20 per cent of all community reports have been submitted from three individual households. Figure 19 presents an indicative comparison between the number of

households reporting and the total number of notifications received each month from September 2023 to December 2024.

It is possible the high proportion of reports being received from areas surrounding the industrial areas may be influenced by DETSI's extensive community engagement programs to ensure all residents are aware of how to submit odour complaints.

DETSI regularly shares de-identified information provided in community reports that reference potential health impacts with Queensland Health. This includes commentary, including for example, residents feeling sick, coughing, having allergic reactions and breathing difficulties and getting headaches. In the six-month period from October 2024–March 2025, approximately 30 per cent of all community reports received mentioned health impacts.

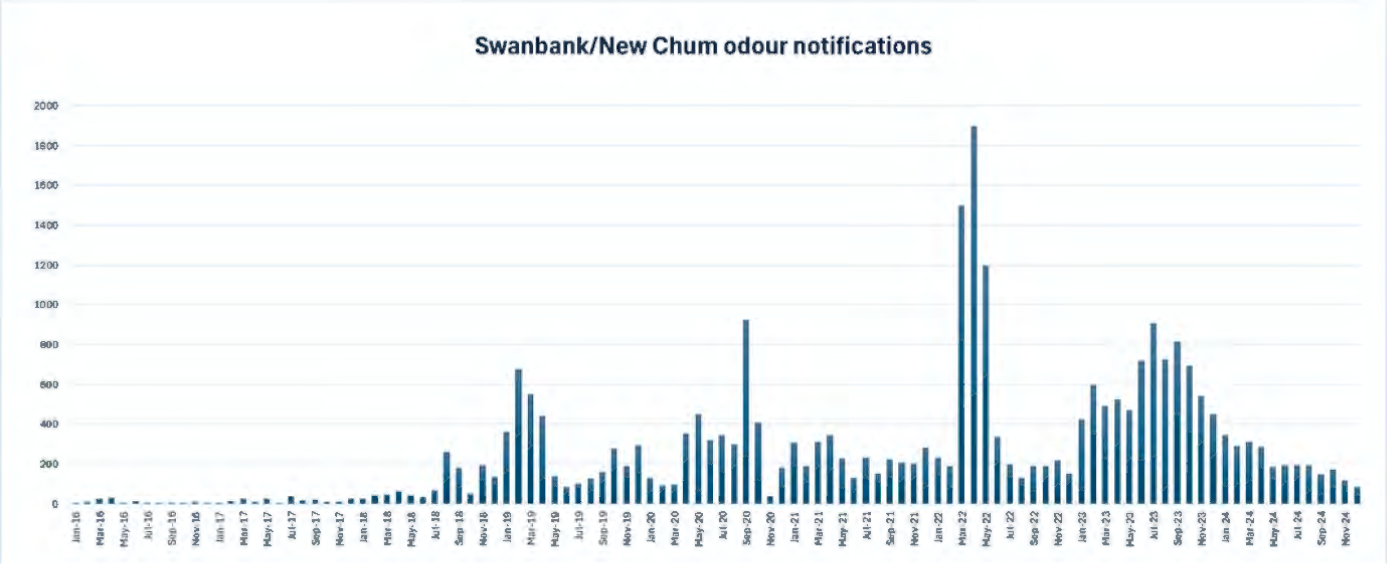


Figure 18. Swanbank and New Chum odour notifications from 2016 to 2024

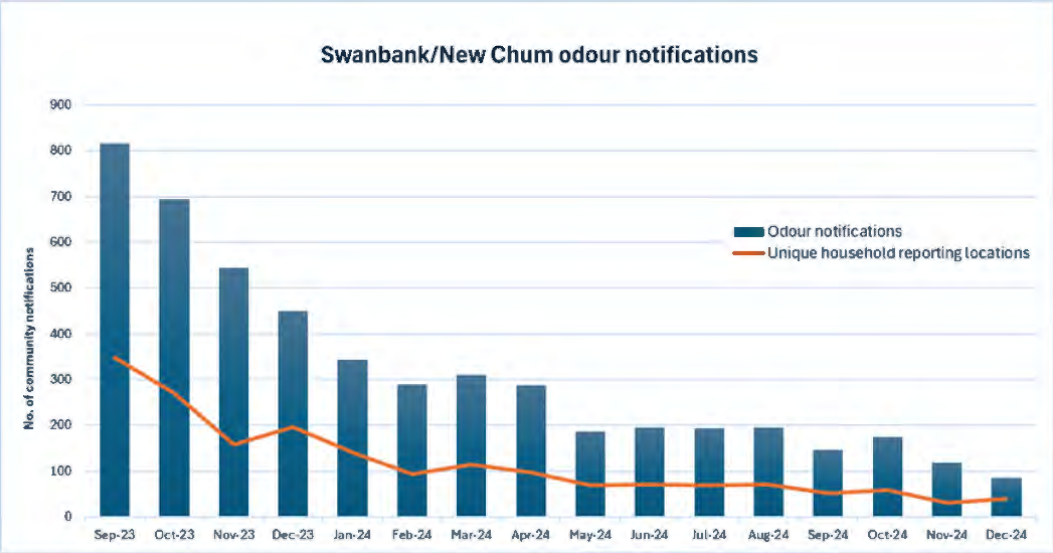


Figure 19. Swanbank and New Chum odour notifications from September 2023 to December 2024

6.2.3 Community advocacy

There are a number of community groups based in Ipswich who have been advocating on behalf of Ipswich residents regarding issues related to odour. Some members of these groups are also represented on the CRG.

The Inquiry is aware of the following:

Ipswich Residents Against Toxic Environments (IRATE)[144]

IRATE is an apolitical, not-for-profit community action group originally formed to represent people from Ipswich suburbs including Dinmore, Riverview, Collingwood Park, Bundamba, Blackstone, Ebbw Vale, Redbank Plains, Booval, Ripley and Flinders View to take a united approach to a healthy environment for Ipswich residents.

IRATE submitted a comprehensive submission to the Inquiry.

Stop the Stink[145]

Stop the Stink is a local Facebook page representing residents of Ipswich suburbs who are affected by odours from waste companies.

The page was created to allow residents affected by air pollution, particularly (but not exclusively) odours caused as a result of waste industry processes, to be able to share their experiences and to collaborate in taking action to 'stop the stink.'

Time to stop the stink of the waste industry in Ipswich – parliamentary E-petition

In September 2023, a parliamentary E-petition was launched calling on the Queensland Government to take action to combat the noxious air pollution impacting residents throughout the Ipswich region. The petition closed in February 2024 and received a total of 2242 signatures.

The E-petition was tabled in Queensland Parliament in February 2024 and was responded to by Hon Leanne Linard MP, then Minister for the Environment and the Great Barrier Reef and Minister for Science and Innovation (refer to Appendix K).

6.3 West Moreton Public Health Unit

WMPHUs written submission provided a detailed account of their involvement in odour issues from the industrial areas since 2016[146]. A summary of key actions taken is detailed below.

WMPHU has:

- Provided public health advice to the regulator, community and general practitioners about the odour. Copies of the GP Health Alerts are available in Appendix L. This has included working in partnership with Queensland Health's Health Protection and Regulation Branch to provide advice on air quality monitoring, air quality sampling data and public information on health-related concerns.

- Participated in regular (and one-off) community forums to answer questions on health concerns from community members and provide health-related information.
- Developed public health fact sheets for community members and issued 'Health Alerts' to GPs in West Moreton, Metro North and Metro South Health. The Health Alerts aimed to inform GPs of the ongoing odour issues, with advice to report incidents to the WMPHU.
- Undertaken enhanced epidemiological analysis of most commonly notified cancers to determine if there is an increased incidence in the affected areas. This was done in response in response to concerns raised by the community about data published in the Australian Cancer Atlas. The analysis did not find an increased incidence, which was communicated to stakeholders and the community.
- Undertaken an epidemiological review of the notifiable condition data to determine if there was an increased incidence of selected notifiable conditions in the Swanbank area. The review compared six-years of notifiable condition data (2011–2016) on *Escheria coli* (Shiga–like toxin producing *E.coli*—STEC and Verotoxigenic *E.coli*—VTEC), Legionellosis, Q Fever and Salmonellosis in the Swanbank area of interest with the remainder of the West Moreton Hospital and Health Service catchment. The analysis found no increased risk for residents in the Swanbank area.

WMPHU has advised that although hydrogen sulphide levels at all monitoring sites are well below the health guideline values, some people could experience both physical and psychological symptoms. WMPHU believes odour can have profound physical and psychological effect on some members of the public.

WMPHU has not received any complaints from members of the public or referrals from local GPs for more than a year. Residents with symptoms are encouraged to visit their GP. Residents were also encouraged to call 13 HEALTH (13 43 25 84) for confidential health advice. GPs are encouraged to contact the WMPHU and speak to a public health physician for advice on health-related matters.

The Queensland Government published an update on their website on odour issues in the industrial areas in 2024 (https://www.qld.gov.au/health/staying-healthy/environmental/pollution-air-quality/swanbank-odour-issue)[147].

6.4 Department of State Development, Infrastructure and Planning

The Department of State Development, Infrastructure and Planning advised the Inquiry that Temporary Local Planning Instruments (TLPI) have been in place since 2018 covering the areas of Swanbank, New Chum, Ebenezer, Willowbank and Jeerbropilly. These TLPIs have provided increased protection to residential areas from the adverse impacts of the development of new or expanded landfills, as well as greater clarity to waste management operators[148].

On 14 February 2025, ICC received approval to adopt its new planning scheme from the Honourable Jarrod Bleijie MP, Deputy Premier, Minister for State Development, Infrastructure

and Planning and Minister for Industrial Relations. The new planning scheme embeds the existing provisions from the TLPI into the planning scheme, ensuring continued protections for the surrounding residential areas. The current TLPI will cease to have affect once new planning scheme is adopted by ICC[148]. There is more information on the Ipswich Planning Scheme in section 8.6.4.

6.5 Ipswich City Council

ICC undertakes regular inspections, monitoring and compliance actions within the industrial areas[11]. These activities are directly linked to ICC exercising its roles and responsibilities under the Planning Act and the EP Act. Importantly, ICC does not have responsibility for the compliance and enforcement of ERAs that are not devolved to Local Government. Odour specific issues from these activities are referred to DETSI as required.

However, ICC has taken steps to advocate on behalf of their community to resolve the odour issues. This includes strongly advocating for health-related concerns to be investigated by the Queensland Government, calling for stronger regulation and participating in regional forums on managing South East Queensland's waste.

ICC has received reports from residents who experience a range of health issues such as respiratory issues, migraines, sore eyes and sore throats. Residents believe these health issues are related to the chemicals in the air, primarily from waste operators 'who are not doing the right thing.'

ICC has published some frequently asked questions and a fact sheet on their website addressing odours from the industrial areas (https://www.shapeyouripswich.com.au/waste-odours-ipswich)[149].

6.6 Industry

Letters were sent to all odour-producing companies with ERAs operating in the industrial areas. This correspondence overviewed the scope of the Inquiry and invited a formal submission on their operations and activities, especially as they relate to the mitigation of odours from their premises. The Inquiry requested the formal submission address the issues below:

- When the company commenced operations at the Swanbank and/or New Chum industrial areas.
- The company's activities from 2016 to present and document any significant change or increase to activities over that time.
- Any documentation assessing odour from the company's premises and outlining the specific steps taken by the company to reduce odour.
- The contact details of consultants and/or contractors engaged by the company to advise and assist with the containment and mitigation of odour.

- The number and nature of complaints received by the company regarding odour from the premises since 2016.
- Details of any engagement with the community in relation to odour from their premises.
- Details of the health impact of odours on staff including the number of staff affected, occurrences, types of illness attributed to odours, and time off work.
- Any other general information the company deems relevant to the Inquiry.

A submission was received from 13 of the 24 companies. A submission was also received from WRIQ.

All companies who responded provided information on when their operations commenced and any significant changes to operations since 2016.

With the exception of Cleanaway, NuGrow, Remondis and WMI, companies reported no need, or regulator request, to respond to odour issues. Cleanaway, NuGrow, Remondis and WMI all reported having odour management plans and mitigation measures in place designed to assess and address odour emissions.

Cleanaway, NuGrow and WMI reported they were aware of complaints regarding odour from their premises. The other responses indicated there had been no complaints related to odour from their premises since 2016.

Cleanaway and Remondis reported they actively undertake community engagement to keep the community informed and undertake waste education sessions and guided facility tours.

The submission from WRIQ proposed a suite of possible solutions to resolve odour issues. These included:

- Creating a system that encourages and fast-tracks new technology innovations.
- Re-investing a greater proportion of the waste disposal levy into Queensland's waste recycling industry to ensure contemporary waste management technology and practices can be implemented.
- Improving Temporary Emissions Licence (TEL) processes and allowing for the release of clean treated water from the industrial areas.
- Developing a precinct strategy to guide long-term land use, precinct planning and infrastructure delivery including updated flood mapping, groundwater management, permanent pathway for stormwater, shared responsibilities for rehabilitation of historical contamination issues, odour monitoring and industry transformation timelines.
- Developing a comprehensive waste recycling and infrastructure planning strategy for South East Queensland.
- Ensuring a stable policy and regulation environment for waste management.
- Supporting energy from waste solutions.
- Implementing industry transformation package for composting.

- Implementing laws to assist industry in the downstream management of odorous waste. Downstream waste encompasses everything that happens to a product after the consumer uses it[150].

All odour-producing companies undertaking ERAs were afforded procedural fairness by way of written invitation to provide feedback on the relevant draft findings and possible recommendations. The Inquiry appreciates the time taken by industry to respond to this request.

6.6.1 Composting operators

DETSI advised the Inquiry composting facilities have been a primary focus for reducing odour impacts to the community considering the open windrow nature of operations being more conducive to generating and releasing odour, predominantly contributing to odour impacts from the industrial areas[8].

While improvements to operator practices have been made, further works to build infrastructure are required.

There are four composting operations within close proximity to each other and nearby residential areas. Three of the four operations are based in the industrial areas. The other operation is outside, but close by.

There are plans for these companies to manage the receipt of odorous waste as described in Table 24.

Table 24. Composting industry response to managing odorous waste

Company	Current status (May 2025)	Future plans	Timeline
NuGrow*	Cease receiving high and very high odorous waste by 18 September 2026, unless additional infrastructure to manage odour is built.	Stage 1—implement a suite of interim measures to minimise odour produced through its operations. These include routine dosing of the liquid waste tank with ferric chloride and hydrated lime to help to neutralise odour and aerating (Mobile Aerated Floor system) and monitoring windrows to better control the composting conditions.	Completed.
		NuGrow must have applied to ICC for all necessary approvals to construct permanent in-vessel (Stage 2) and enclosed (Stage 3) systems by 18 March 2025 to contain odours.	Applications lodged to ICC.
		Stage 2—permanent In-vessel tunnels for composting odorous waste.	Construction to be completed by 18 September 2026.
		Stage 3—permanent enclosed structure for receiving and mixing waste, composting odorous waste, all of which must be built and fully operational within 21 months of the application for an enclosed system being approved by ICC, and no later than 18 September 2028.	Construction to be completed within 21 months of obtaining ICC approval but no later than 18 September 2028.
		If NuGrow fails to meet the timeframes, it will forfeit its ability to receive and process odorous waste until permanent structures are	

Company	Current status (May 2025)	Future plans	Timeline
		constructed and operational.	
Remondis	Currently accepting green waste.	Are licensed to use open windrow compost methods. Have approvals for fully enclosed composting facility and will only compost once constructed.	Unknown
WMI	Cease receiving high and very high odorous waste by 30 September 2026.	Have approvals and plans to construct fully enclosed systems.	Unknown
Candy Soil NB: located in Tivoli, not within the industrial areas	Cease receiving high and very high odorous waste by 30 September 2026 (in lieu of building an enclosed facility).	To build an enclosed facility at Ebenezer (approvals granted). Continue to compost less odorous waste at Tivoli.	Unknown

* DETSI has advised the original restraint order granted by the Court on 18 September 2024 required NuGrow to undertake a three–stage process where the second stage involved utilisation of an engineered membrane by September 2026 at the latest, prior to the commissioning of permanent in-vessel/enclosed infrastructure by September 2028. On 2 May 2025, an Amended Final Order was issued by the Court which accelerated timeframes for new infrastructure by replacing Stage 2 of the order (requiring an engineered membrane system), with shorter timeframes for part of Stage 3 (in-vessel tunnels). The future plans listed in this table reflect the requirements of the Amended Final Order issued in May 2025.

7 Air Quality Monitoring

This chapter provides an overview of the air quality monitoring programs undertaken by DETSI and university researchers and presents results of air quality monitoring commissioned by the Inquiry.

7.1 Swanbank air monitoring program

DETSI has been undertaking air monitoring activities for over a decade in response to odour issues in suburbs surrounding the industrial areas. Initially, this was in the form of periodic odour survey campaigns undertaken by scientific staff and authorised compliance officers.

In 2018, DETSI introduced an intensive program of daily odour surveys in direct response to community reports, with a team of officers based in Redbank Plains responding immediately to odour complaints in order to map occurrence and trends in odour events.

While DETSI continues to undertake odour surveys from time-to-time, DETSI's air monitoring program has evolved to include both:

- a network of air monitoring stations
- portable air quality canisters that can be used at community locations.

7.1.1 Real-time air monitoring network

In late 2018, DETSI engaged Envirosuite to establish an air quality monitoring program for Swanbank. Initially, six air quality monitoring stations were established. At these stations new technology was installed to improve prediction of odour events and monitor weather conditions. This enabled departmental compliance officers to respond in real-time. The technology also assisted in ruling out other potential sources of odour in the area, and provided trajectory modelling capability, to predict the direction of travel of an odour plume and back-cast modelling to identify the path likely travelled by a plume.

Following the peak in community reports in April 2022, DETSI engaged a consultant to develop a more comprehensive and expanded air monitoring plan for the industrial areas. The plan was provided to DETSI in late June 2023. The accompanying technical review concluded that key air quality issues for the industrial areas are odour and dust, with no other pollutants identified as a concern warranting ambient monitoring. DETSI worked with Queensland Health during the development of the air monitoring plan and has shared the air monitoring results with Queensland Health to consider from a health impact perspective.

Considering the experts' recommendations, the monitoring network subsequently expanded in 2024 with more weather stations and commissioning of close to real-time air quality monitors supplied by the existing contractor, Envirosuite.

The current air monitoring network is comprised of the following:

- nine wind/weather stations, which provide real-time monitoring of wind and weather conditions
- five Kunak air quality monitoring units, which provide real-time monitoring of total VOCs, hydrogen sulphide and ammonia
- eight Acrulog units, which provide real-time monitoring of hydrogen sulphide.

Monitoring for total VOCs and ammonia, in addition to hydrogen sulphide, recognises differences in activities contributing to odour. Refer to Section 2.5 regarding the types of odour associated with activities undertaken in the industrial areas.

This air monitoring program is a scalable weather and air quality monitoring network that can be adapted as needed. The equipment operates 24/7, providing a constant stream of close to real-time monitoring data which can be analysed in conjunction with community reports about odour being experienced. This allows for a more efficient and targeted compliance response for those industrial operations that are regulated by DETSI.

In February 2025, DETSI launched an online interactive platform (https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring) that provides a centralised location to view current and historical weather and air quality data. This platform is maintained and updated as expansions to the network occur.

The data collected also informs other agencies including local government and Queensland Health to enable a coordinated response.

7.1.2 Canister program

In addition to the air monitoring network, DETSI coordinates an air sampling program using portable canisters. Air quality monitoring by way of canisters has been undertaken by:

- individual community members
- education and childcare facilities
- DETSI.

The community canister sampling program commenced in response to the 2022 extreme weather event. The program collected 30-second samples at times of peak odour. The canisters were operated by community members who were affected by odour from the industrial areas.

The community canister program was further promoted following an increase in community notifications received in 2023, where residents who were concerned about their health due to odour impacts could request a canister, collect a sample, and have this tested.

The canister sampling program concluded in December 2024; however, canisters are still available from DETSI upon request.

Canisters provide a point in time grab sample specific to the individual household. The samples collected can be highly influenced by the immediate surrounding environment for example, emissions from fuel storages/containers, lawnmowers, or home composting/waste bins and household compounds such as cleaners, solvents and perfumes.

Samples collected in air canisters are analysed by a Queensland Health National Association of Testing Authorities (**NATA**) accredited laboratory that uses US EPA Method TO-15, testing for 74 compounds. The results are compared with national and international air quality guidelines. None of the samples collected had results that exceeded health-based guidelines.

Departmental officers provide copies of laboratory air canister analysis results to community members and discuss what the results mean for them when received.

7.1.3 Education and childcare facility canister sampling

On 17 September 2023, during a community meeting in Redbank Plains, several community members raised concerns about their children's wellbeing and potential exposure to odours while at school.

In response, the air sampling program was extended to potentially affected schools and early childcare centres, addressing concerns raised at the community meeting. The institutions invited to participate were determined considering the proximity to potential odour sources, odour notifications and recommendations provided from Queensland Health.

Ten institutions were invited to participate including four early childhood education centres in Redbank Plains, Ripley and Springfield Central, and six schools in Redbank Plains, Augustine Heights and South Ripley. If an institution agreed to participate, canisters and instructions were delivered within three business days or on an alternative requested date.

Coordination with the Department of Education ensured approval for participation by State schools. Nine institutions agreed to participate and were provided with a canister and information to support sample collection.

All canisters were collected by December 2023.

In early 2024, additional canisters were offered to institutions that remained interested. Participants who submitted a sample could request another canister for further testing. Some institutions collected multiple samples.

The two-year program concluded in December 2024 with a total of 17 canisters provided and 6 samples being collected and analysed. None of the samples collected had results that exceeded health-based guidelines.

The results were conveyed verbally and in writing with participating institutions. Results were also provided to Queensland Health. In some circumstances monitoring results detected compounds not comparable to the standard suite of guidelines. In these cases, results were provided to WMPHU for their analysis. No concerns or follow up was required of these cases.

All results are available to the public and accessible online (https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring).

7.1.4 Community air monitoring program

In 2022, additions to DETSI's air monitoring program included the installation of hydrogen sulphide air monitors at locations around the Cleanaway site and publication of real-time results on DETSI's website.

Residents were also invited to participate in monitoring air quality at their premises. This was done via on-site hydrogen sulphide monitors installed at residents' properties and via air quality canisters which were provided to residents on request monitor up to 74 different VOCs.

The air monitoring program recorded the highest levels of hydrogen sulphide towards the end of May 2022. Hydrogen sulphide concentrations monitored trended downwards from May 2022. There were fewer community reports of odour received by DETSI after this date.

The air monitoring program conducted between April and November 2022 found that none of the VOCs measured from the community air monitoring results exceeded health-based guidelines. Hydrogen sulphide levels remained below the Air EPP health and wellbeing objectives. However, the Air EPP nuisance objective for hydrogen sulphide was exceeded.

Figures 20 and 21 show the change in distribution of community reports received in 2022 compared to 2023 with the source of odour and complaints being localised in 2022 near New Chum, while the 2023 results reflect a more diverse community reporting source profile.

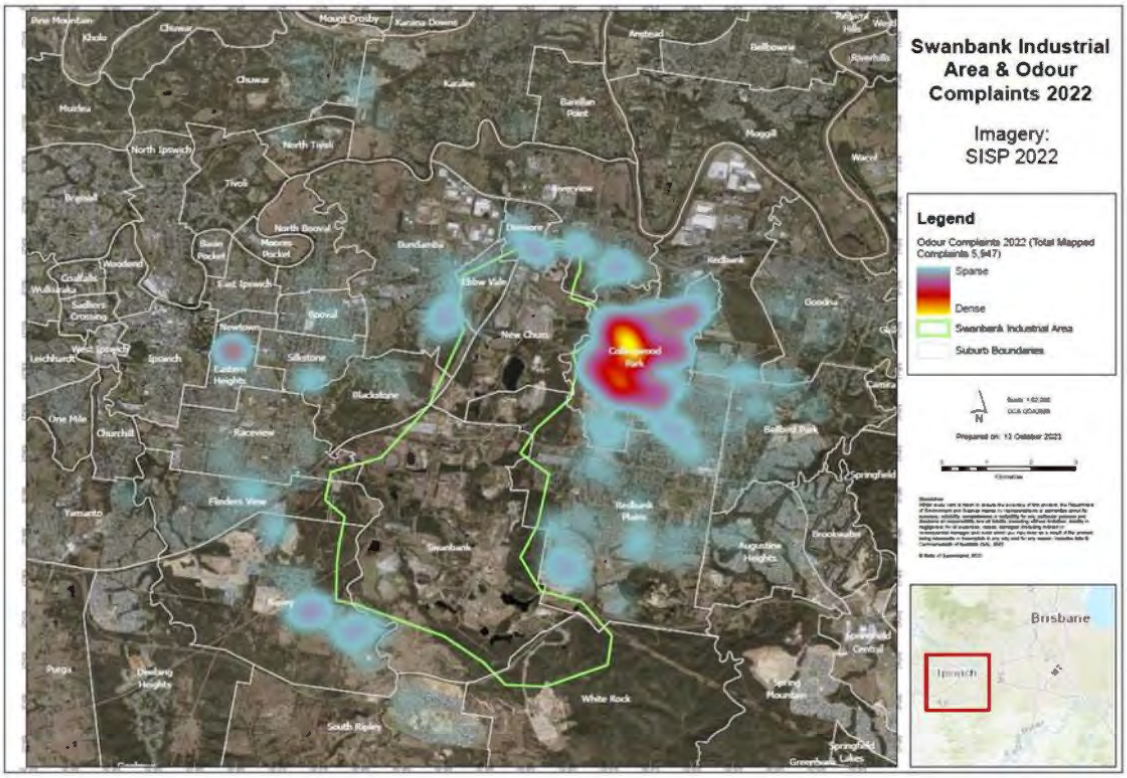


Figure 20. Swanbank industrial area and odour complaints 2022

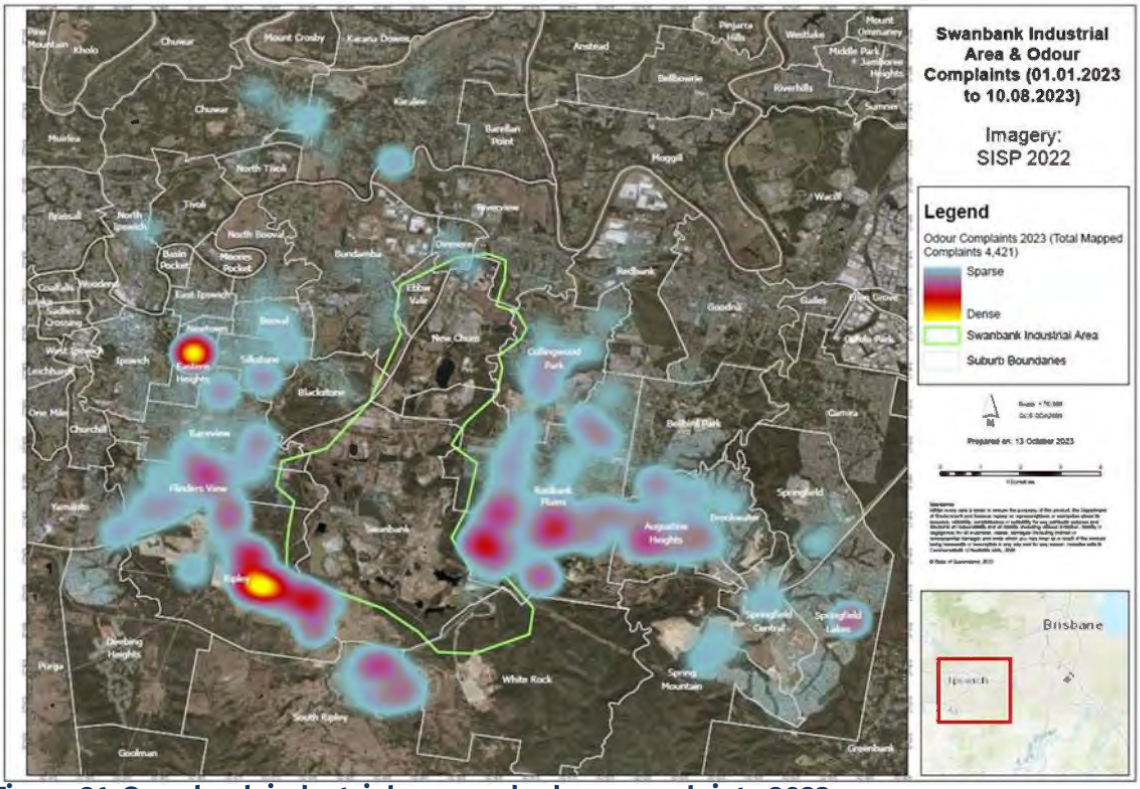


Figure 21. Swanbank industrial area and odour complaints 2023

7.2 Assessment of monitoring results

The current air quality monitoring program is collecting real-time data for three indicator pollutants—hydrogen sulphide, ammonia and total VOCs.

The data collected are compared with air quality guidelines which are used by DETSI as threshold indicators to inform whether further action is required.

Table 23 shows the air quality guidelines that have been used to help assess the results of the air monitoring data collected by the Envirosuite system. These guidelines are used by DETSI as indicator thresholds for health and nuisance to assist DETSI with investigations into the impact of odour on the community. Exceeding one of the concentrations listed in the table indicates there is a potential for the community to be experiencing impacts.

The guideline for hydrogen sulphide is sourced from the Air EPP. The guideline for total VOCs was derived by DETSI. The ammonia guideline has been adopted from the EPA Victoria Guidelines for assessing and minimising air pollution in Victoria[151] which have been drawn from the California Environmental Protection Agency Office Environmental Health Hazard Assessment[152] and the US Agency for Toxic Substances and Disease Registry[153].

DETSI advised the Inquiry these values are not used to determine whether impacts are occurring; rather, they serve as indicative thresholds to guide further investigations. These values represent only one element of a broader response and if levels are below thresholds, this does not mean DETSI will not take action.

Table 23. Air quality guidelines (threshold indicators) to inform further investigations

Parameter	Nuisance level (parts per billion (ppb))	Health level
Ammonia (NH_3)	5000 ppb (10 minutes)	4600 ppb (1 hour) 1700 ppb (24 hours)
Hydrogen sulphide (H_2S)	5 ppb (30 minutes)	108 ppb (24 hours)
Total VOCs	68.6 ppb (10 minutes)	365.4 ppb (1 hour)

Exceedances of 'nuisance' indicator thresholds for hydrogen sulphide are often observed close to odour producing facilities such as landfills in Swanbank. However, exceedances of the adopted 'health' level have not been detected in the community.

Even though monitoring and test results do not demonstrate concentrations that exceed toxicity thresholds, such odour levels can still have health effects.

The Inquiry found the use of the legal term 'nuisance' has been confusing to people without a legal background. It has the potential to be interpreted in a way that understates the impact of odour on the community. Odorous chemicals that cause a nuisance, particularly over a

prolonged period, may result in physical symptoms, possibly through a stress response (as discussed in Chapter 4).

7.2.1 Challenges with quantifying and assessing health impacts

Quantifying and assessing health impacts related to odour exposure presents significant challenges due to the subjective nature of odour perception and individual variability in sensitivity. Unlike other air pollutants with established exposure-response relationships, odours are complex mixtures of compounds that can trigger different physiological and psychological responses.

The health effects of odour can be related to either:

- the toxicity of the individual chemicals in the odour
- the impact of odour from the pollutant mix that can contain thousands of odorous substances—many that cannot be monitored.

The air monitoring conducted by DETSI has focussed on monitoring pollutants that can be analysed and have health-based air quality guidelines. These guidelines consider the toxicity thresholds of individual pollutants. The monitoring has shown that the concentrations measured are below the health-based guidelines, which refers to the toxicity criteria. The monitoring that has been undertaken does not address the health effects associated with general odour which have been identified in the Inquiry.

For those pollutants that also have a defined odour threshold—the concentration at which people can smell it—the monitored concentrations have been compared with those known thresholds. General odour, which includes all the odorous substances that cannot be analysed for, have been assessed using odour surveys. These do not identify whether a pollutant is at a toxic level, but whether the pollutant mix can be smelled and whether the odour is offensive and causes nuisance.

7.2.2 Publication of results

The results of all air monitoring that has been undertaken is available on the DETSI website. The results of the community canister sampling conducted in 2022 as well as the historical DETSI air monitoring data is available online at https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/results.

This provides the community with access to:

- information on the results of the sampling
- information on past enforcement actions taken and links to DETSI's media releases.

The real-time data that is currently being undertaken for hydrogen sulphide, ammonia and total VOCs is provided live at:

https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring. This includes the results of canister sampling undertaken by the community, DETSI and educational institutions. Although the real-time data may not be easy to interpret, it has been made available to the community.

In addition to the sites with air monitoring data, DETSI provides regular odour updates on their dedicated webpage for Swanbank and New Chum https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/updates.

Community members can subscribe to receive odour updates as they are published. The updates are from 2023 to the present and summarise current issues in the industrial areas as well as investigation and enforcement actions being taken. All media releases related to the industrial areas are available at this webpage.

Information on the Swanbank air monitoring program is published online (https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring). This includes locations of stations, parameters tested, air canister laboratory analysis results and other relevant information regarding air testing, including a factsheet (https://www.qld.gov.au/__data/assets/pdf_file/0037/429778/about-community-air-sampling-canisters-factsheet.pdf) that is provided to canister sampling program participants.

7.3 Bioaerosol monitoring[44]

A study was undertaken to monitor bioaerosols from the composting operations at Swanbank as part of a Master of Science Degree at Queensland University of Technology (QUT)[44]. The thesis was published in 2015. A monitoring program was implemented to assess suitability of potential microbial bioaerosol indicators. This study included impacts of season, meteorological conditions and degree of, and operational activity on composting operational activity and bioaerosol dispersal from two industrial green waste composting facilities in Swanbank—Nugrow and WMI.

Samples of measurements of potential compost associated bioaerosol indicators *Thermoactinomycetes* and *Aspergillus fumigatus* (including the presence/absence of aflatoxin-producing *Aspergillus* spp.) and the more general total fungi, bacteria and coliform bioaerosol indicators were collected using the direct agar impaction technique for 12 months at each site. The impacts of meteorological conditions, seasonal-related factors and composting operational activities on these bioaerosols were also studied.

Bioaerosol concentrations were up to 100–fold higher within composting facility boundaries (≤ 0.5 kilometres from compost) compared to background levels. An inverse relationship between bioaerosol concentration and increasing distance from control (< 10 metres downwind of area of high operational activity) was evident for all indicators except total fungi. Concentrations above respective upwind sites, and similar to control levels, were detected at distances between 0.25–1 kilometres for *A.fumigatus* and *Thermoactinomycetes*, and were related to

fluctuations in meteorological conditions and emissions from other proximal composting facilities operations.

Aflatoxin producing *Aspergillus* spp. were detected in compost-associated bioaerosols at each composting facility, but rarely at distances > 0.5 kilometres from control. *Thermoactinomycetes* and *A. fumigatus* were assessed as presenting the best potential as compost-associated bioaerosol microbiological indicators for monitoring at industrial green waste composting facilities. This was based on respective dispersal patterns, sensitivity of organisms as compost-associated indicators and practicability of associated analytical logistics. Bioaerosol concentrations exceeded the study's threshold limits at the majority of the sampling locations. It is possible that this may pose elevated health risks to staff from these facilities and to residents nearest to the composting sites. As the existing monitoring is limited, further monitoring is required within the community to assess potential exposure to bioaerosols.

The QUT study found there is evidence compost-associated bioaerosol indicators can travel beyond the compost facilities boundaries at concentrations above background levels and may cause potential health risks in surrounding residential populations. The following is a summary[44] of dispersal profiles for each bioaerosol indicator before returning to near to/or below background concentrations:

- *A.fumigatus*—50% of all seasonal sampling events observed concentrations decreased with increasing distance, decreasing to below background concentrations within 0.9–2.75 kilometres from NuGrow (summer/autumn), and 0.5–1 kilometres from WMI (autumn/winter).
- *Thermoactinomycetes*—concentrations decreased to below/near background values for > 75% of seasonal sampling events within 0.25–3 kilometres at NuGrow (autumn/winter/spring) and 0.25–2 kilometres at WMI (all seasons).
- Total bacteria—> 75% of seasonal sampling events observed concentrations decreased with increasing distance, decreasing to below background values within 0.5–3 kilometres at NuGrow (spring/autumn/winter) and 0.25–1 kilometres at WMI (all seasons).
- Total coliforms—all seasonal sampling events but one (WMI in summer) showed a decrease in total coliform bioaerosol levels to below background concentrations within 0.25–3 kilometres at NuGrow and > 1 kilometres at WMI.

Given there has been limited bioaerosol monitoring conducted in the community, the Inquiry recommends additional bioaerosol monitoring be undertaken in industrial and nearby residential areas to identify any potential impact from bioaerosols in the community. The Fewkes study has shown bioaerosols are present at distances from the composting sites[44].

7.4 Air Quality Monitoring March to April 2025

During the course of the Inquiry, the results of the existing VOC monitoring conducted by DETSI were reviewed. This monitoring, discussed earlier in this chapter, was based on 30-second grab samples when the community noticed the odour being present. While these data are useful to give a snapshot in time of what people might be exposed to when the odour is present, it may not give an accurate picture of what people are exposed to over time. As the odour is a frequent event in residential areas close to the industrial areas, the Inquiry initiated additional monitoring over 24-hour periods at six DETSI monitoring stations. This included three sites within the community (Redbank Plains, Riverview and South Ripley) and three industry sites in Swanbank.

Given the timing of the Inquiry only five samples were able to be collected on a one-in-six-day cycle. The canisters were operated by DETSI and sent to ALS Laboratories (a NATA Accredited Laboratory) for analysis. The canister samples were analysed for the US EPA TO-15 suite of VOCs. In total 64 VOCs were analysed, refer to Table 24.

Table 24. VOCs analysed in Air Quality Monitoring, March to April 2025

VOCs analysed				
• Freon 12	• 1.2-Dichloroethane	• Ethylbenzene	• 1.2.4-Trichlorobenzene	• Hexane
• Chloromethane	• 1.1.1-Trichloroethane	• meta- & para-Xylene	• Hexachlorobutadiene	• Isooctane
• Freon 114	• Benzene	• Styrene	• Acetone	• Isopropyl Alcohol
• Vinyl chloride	• Carbon Tetrachloride	• 1.1.2.2-Tetrachloroethane	• Bromodichloromethane	• 2-Butanone (MEK)
• Bromomethane	• 1.2-Dichloropropane	• ortho-Xylene	• 1.3-Butadiene	• Methyl iso-Butyl ketone
• Chloroethane	• Trichloroethene	• 4-Ethyltoluene	• Carbon disulfide	• 2-Hexanone (MBK)
• Freon 11	• cis-1.3-Dichloropropylene	• 1.3.5-Trimethylbenzene	• 1-Chloro-2-propene (Allyl chloride)	• Propene
• 1.1-Dichloroethene	• trans-1.3-Dichloropropene	• 1.2.4-Trimethylbenzene	• Cyclohexane	• Methyl tert-Butyl Ether (MTBE)
• Dichloromethane	• 1.1.2-Trichloroethane	• 1.3-Dichlorobenzene	• Dibromochloromethane	• Tetrahydrofuran
• Freon 113	• Toluene	• Benzylchloride	• 1.4-Dioxane	• Bromoform
• 1.1-Dichloroethane	• 1.2-Dibromoethane (EDB)	• 1.4-Dichlorobenzene	• Ethyl acetate	• Vinyl Acetate
• cis-1.2-Dichloroethene	• Tetrachloroethene	• 1.2-Dichlorobenzene	• trans-1.2-Dichloroethene	• Vinyl bromide
• Chloroform	• Chlorobenzene		• Heptane	• Naphthalene

The results of the analysis for the VOCs above detectable limits are shown in Table 25 for the community sites and Table 26 for the industry sites. The results were compared with the 24-hour ambient air quality guidelines from the Ontario Ministry of the Environment. These values were chosen as they are 24-hour guidelines which is a consistent averaging period with the sampling time and are based on health endpoints.

The results in Tables 25 and 26 show the levels of VOCs detected in the samples are below the health-based guidelines. This means the concentration of VOCs detected were at levels below those that can cause adverse effects due to the toxicity of the individual pollutants. This is consistent with the monitoring undertaken during DETSI's air monitoring program. The types of VOCs detected are similar to those detected by DETSI however the DETSI monitoring identified a larger number of VOCs.

On the days the sampling was done, DETSI received a number of odour complaints. The results of the analysis in Tables 25 and 26 show that although people were being impacted by odour, the concentrations of the individual VOCs were below toxicity thresholds. Therefore, any health effects experienced during this period attributable to odour would not be due to the individual VOCs but to the effect of the odour mix as a whole. This is consistent with the other findings of the Inquiry.

Table 25. Results of canister sampling at community sites, March to April 2025

POLLUTANT	AIR QUALITY GUIDELINES	RIVERVIEW					REDBANK PLAINS					SOUTH RIPLEY				
	24-hour average µg/m3	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025
Chloromethane	320	1.4	1.8	1.6	1.4	2.1	1.6	2.3	2.1	1.4	2.1	1.6	2.3	2.3	1.6	2.3
Benzene	2.3	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	2000 (odour); 830 (health–eye irritation)	ND	2.6	ND	ND	2.6	2.6	3.0	ND	ND	2.2	ND	ND	ND	ND	ND
Acetone	11,880	15.2	7.8	5.4	5.4	11.6	6.9	12.6	5.4	6.2	7.1	6.4	5.9	5.0	6.4	6.9
Cyclohexane	6100	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol	7300	2.0	ND	2.4	ND	ND	ND	1.2	ND	ND	3.4	ND	ND	1.2	ND	1.5
Naphthalene	22.5	3.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND: Not detected

Table 26. Results of canister sampling at industry sites, March to April 2025

POLLUTANT	AIR QUALITY GUIDELINES	SWANBANK 1 AIR QUALITY STATION					SWANBANK 4 AIR QUALITY STATION (WMI)					SWANBANK WEATHER STATION (POWER STATION)				
	24-hour average	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025	31/03/2025	7/04/2025	9/04/2025	15/04/2025	21/04/2025
Chloromethane	320	1.6	1.8	2.1	1.4	2.3	1.4	1.8	1.8	1.4	2.1	1.4	2.1	1.8	1.4	2.3
Toluene	2000 (odour); 830 (health–eye irritation)	ND	ND	ND	ND	ND	20.0	ND	ND	ND	ND	ND	ND	6.0	ND	ND
ortho-Xylene	730	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	11,880	5.7	10.7	5.2	5.0	6.2	19.5	6.6	10.7	5.2	6.4	5.2	10.0	8.8	9.5	10.7
Cyclohexane	6100	ND	ND	ND	ND	ND	90.1	ND	ND	ND	ND	ND	ND	15.5	ND	ND
Ethylacetate	19,000 (odour)	ND	ND	ND	ND	ND	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptane	11,000	ND	ND	ND	ND	ND	50.0	ND	ND	ND	ND	ND	ND	4.5	ND	ND
Hexane	2500	ND	ND	ND	ND	ND	10.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropyl Alcohol	7300	ND	ND	ND	ND	ND	16.2	ND	1.5	ND	ND	ND	1.7	4.2	ND	ND
2-Butanone (MEK)	1000	ND	ND	ND	ND	ND	2.4	ND	2.1	ND	ND	ND	ND	2.1	ND	ND
Naphthalene	22.5	ND	3.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND: not detected

8 The regulatory framework

The chapter explores Queensland's regulatory framework to manage the industrial areas and details other jurisdictional approaches to environmental regulation.

There are several pieces of legislation and statutory instruments that set the framework for the regulation and management of the industrial areas, including:

- *Environmental Protection Act*[154]
- Environmental Protection Regulation 2019[155]
- *Public Health Act*[156]
- *Planning Act 2016*
- Ipswich Planning Scheme[157]
- State Planning Policy[158]

There are several pieces of subordinate legislation and guidelines that sit under these documents, including for example, Environmental Protection Policies (EPPs).

8.1 Environmental obligations under the *Environmental Protection Act 1994*

The information in this section has been drawn in part from the DETSI submission to the Inquiry[8]. DETSI is responsible for administering the EP Act.

Section 3 of the EP Act sets out the objectives of the Act:

> *The object of this Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (ecologically sustainable development).*

Section 4 of the EP Act sets out how the objectives are to be met.

The primary goal of the EP Act is to safeguard Queensland's environment. This protection should be balanced with allowing for development that enhances the overall quality of life, both now and in the future. The EP Act aims to achieve this through ecologically sustainable development, which includes maintaining the ecological processes on which life depends. This sets the foundation for the EP Act's approach to environmental protection and development, promoting a balance between economic progress and environmental stewardship.

Under the EP Act there are obligations and duties to prevent environmental harm, including environmental nuisance or contamination. Three primary duties that apply to everyone in Queensland are:

- General environmental duty (**GED**)—not to carry out an activity that may cause, or is likely to cause, environmental harm without taking measures to prevent or minimise the harm (section 319 of the EP Act).
- Duty to notify of environmental harm—to inform the relevant authority and landowners when environmental harm has occurred or might occur.
- Duty to restore the environment—where an incident has resulted in unlawful environmental harm, to take measures to rehabilitate or restore the environment to its condition before the harm.

Environmental harm is an adverse effect or potential adverse effect on an environmental value. This includes environmental nuisance, for example, odour, some types of noise etc. The impact can be either temporary or permanent, may occur on a small to significant scale and may differ significantly in the duration or frequency of impact.

An activity can cause environmental harm, whether the harm happens directly or indirectly and whether it's caused by that activity alone or together with other factors.

Section 14 of the EP Act provides the definition of environmental harm. Section 15 of the EP Act provides the definition of environmental nuisance. Sections 16 and 17 of the EP Act provide definitions of material and serious environmental harm respectively, which include monetary value thresholds.

Examples of activities that may cause environmental harm include management of waste products, or activities that may generate noise, odour or dust.

For air quality, environmental values are set out in the Air EPP. The environmental values to be enhanced or protected under this policy are the following—

- the qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems
- the qualities of the air environment that are conducive to human health and wellbeing
- the qualities of the air environment that are conducive to protecting the aesthetics of the environment, including the appearance of buildings, structures and other property
- the qualities of the air environment that are conducive to protecting agricultural use of the environment.

The focus of the EP Act and the Air EPP is on the protection of the environment. The environmental value relevant to human health is focussed on enhancing or protecting the qualities of the air environment that are conducive to human health and wellbeing but not directly to the protection of human health.

The Air EPP does not include odour and there is no separate policy that addresses the management of odour. This means that there is no specific environmental value that needs to be protected in regard to odour. This presents a gap in the regulatory framework for the management of odour from the industrial areas.

The only guidance for the assessment of odour is the Guideline—Odour impact assessment for developments[159]. While this Guideline applies to the assessment of odour from new

developments it does not provide any guidance for the management and assessment of odour from existing industries.

To strengthen the regulatory framework for the assessment and management of odour consideration should be given to the development of an EPP for odour that defines environmental values with respect to odour and provides a framework for managing the impacts of existing industry to meet the requirements of GED.

8.1.1 Independent review and recent legislative and regulatory amendments (2022 to 2024)

In addition to significant investigations and enforcement actions undertaken by DETSI, in 2022 the previous Queensland Government initiated an independent review of the EP Act that focused on the powers and penalties available, in part due to the significant odour nuisance issues in the industrial areas, but it also had relevance across Queensland.

The review was undertaken by retired Planning and Environment Court judge Mr Richard Jones and Barrister Ms Susan Hedge. The review aimed to identify whether the tools available under the EP Act, particularly in relation to nuisance, were sufficiently contemporary to deal with the challenges of the future and make any recommendations for improvement of the EP Act for the regulation of Queensland's environment.

The final report, including recommendations, was published in May 2023. The review made 18 recommendations, all of which were supported or supported in principle by the Government at the time. Some of the recommendations were addressed through the Environmental Protection and Other Legislation Amendment Act 2023 (https://www.legislation.qld.gov.au/view/pdf/asmade/act-2023-006/lh).

A consultation paper on the remaining recommendations was released in September 2023. Following consultation, the Government prepared the *Environmental Protection (Powers and Penalties) and Other Legislation Amendment (EPOLA P&P) Bill 2024*, which was passed in June 2024.

The Environmental Protection (Powers and Penalties) and Other Legislation Amendment Act 2024 (EPOLA (P&P) Act) (https://www.legislation.qld.gov.au/view/whole/pdf/asmade/act-2024-030) amended definitions of 'environment' and 'environmental value' in sections 8 and 9 of the EP Act to include the concepts of human health, safety and wellbeing. These amendments reinforce the aspects of the environment conducive to human health, wellbeing and safety that were already prescribed as environmental values through environmental protection policies (including the Air EPP), while also limiting that human health is only protected by the EP Act to the extent it is affected by the environment.

The EPOLA (P&P) Act also amended definitions for 'serious environmental harm' and 'material environmental harm' to clarify that, despite a matter having prescribed characteristics of environmental nuisance (for example, unreasonable interference from release of aerosols, fumes, light, noise, odour, particles or smoke), it may constitute serious or material environmental harm. This amendment opened a greater range of enforcement tools for these matters, as well as stronger penalties that are more proportionate to the impact on the community. DETSI in their submission to the Inquiry acknowledged these legislative amendments may not address the odour issues from the industrial areas

immediately, but they will give a greater range of tools to the regulator to take action and are applicable at other locations across the State for the future[8].

Further amendments were made to the Environmental Protection Regulation 2019 (EP Regulation)[155] in late 2024 to strengthen regulations to help reduce odour impacts from composting facilities on nearby communities. While the amendments apply across Queensland, the issues were brought to the forefront by the odour concerns of residents near the industrial areas. The amendments:

- Require DETSI to consider mandating new or expanding composting facilities within four kilometres of residential zones that propose to receive odorous feedstock to use in-vessel or enclosed processing.
- Add grounds for DETSI to require existing composting facilities that are accepting odorous feedstocks within four kilometres of residential areas to move to either an enclosed system or an in-vessel system.
- Ensure transporters of odorous feedstock do not take waste to sites that do not meet these requirements.

Odorous feedstock is defined in Schedule 18A of the EP Regulation[155].

Following these legislative amendments, DETSI has updated composting licences within the industrial areas. Further details are provided in section 8.1.2 of this report.

8.1.2 Amendments to environmental authorities for composting facilities

Through work conducted in 2023, DETSI identified composting facilities in the industrial areas, that is, WMI and NuGrow as the primary sources of odour in the community. In late 2024, DETSI secured transitional arrangements for those operators to move from open windrow composting operations to enclosed or in-vessel facilities, and the environmental authorities were amended accordingly to incorporate transition requirements.

This followed the legislative updates made to the Environmental Protection Regulation in 2024 to strengthen regulations for composting facilities which helped set the expectations of DETSI for this industry when operating in close proximity to residential areas. DETSI taking restraint action against a local operator also assisted in reinforcing this expectation for industry.

Changes made to the conditions of EAs ultimately require composting operators to either cease receiving highly odorous waste or construct purpose-built infrastructure to capture and treat odour from the most odorous phases of the composting process (predominantly waste receipt and pasteurisation). The timeframes provided for this transition were determined considering the timeframe needed to obtain all relevant approvals (including those from local government), secure any funding, engage contractors and undertake construction.

Recognising the impact odour is having on local communities, several improved practices were also imposed on composting operators within the industrial areas in the short term to assist mitigating odour during this transition period that relate to:

- limitations on the activity's geographical footprint

- incoming waste receipt and mixing requirements (including timeframes for mixing and placement)
- incoming liquid waste treatment and management (dosing)
- improved initial composting processes (for example, utilising forced aeration methods)
- weather station installation
- development and implementation of several additional plans including:
  - feedstock management plan
  - compost process plan
  - odour management plan
  - biocover placement on windrows
  - windrow size limits
  - leachate collection and maintenance.

The relevant environmental authorities facilitating these requirements (available on DETSI's Public Register Portal) are:

- EPPR00816413—Open windrow composting under which WMI is currently operating which includes interim measures for transitioning to an enclosed facility.
- P-EA-100119834—Not yet operational enclosed facility, to which WMI's operations are transitioning.
- EPPR00696713—incorporates the transition from open windrow to enclosed composting at NuGrow.

8.1.3 Legacy environmental authorities

Development approvals (DAs) for waste facilities are typically submitted to and managed by ICC and are referred to State Assessment and Referral Agency (**SARA**) for assessment concurrently with EA assessments conducted by DETSI. Within the DA assessment process, the land use and location of the activity is considered and approved. The EA assessment process is limited to assessing and conditioning from an environmental harm perspective and is required to be consistent with the DA.

While it is not the role of the EA assessment process to assess changes to land use and urban encroachment, DETSI can require enhanced odour modelling to impose prescriptive conditions to require more stringent controls. However, this conditioning cannot cater for all future development and potential encroachment.

Operators can change aspects of their operation over time without requiring further consideration by DETSI, provided it is within the bounds of their approval. The prescriptiveness of conditions relating to odour are dependent on the risk of impacts to sensitive areas (including residential dwellings) that considers both the likelihood of impacts occurring and consequences, based on circumstances existing at the time of approval.

The EP Act does not prescribe an expiry or regular renewal or review for licences and, once approved, licences can only be amended either with the consent from the operator, when an operator applies for an amendment (to which the decision must be limited only to that

which is relevant to the application) or when a specific trigger in the legislation is met. Operators should continue to upgrade their systems and operations to meet environmental best management practice. However, the inability for DETSI to update conditions presents challenges for maintaining the currency of licence requirements consistent with evolving industry standards and changing environmental risks.

Recent legislative changes, as described in section 8.4.1, have improved DETSI's ability to consider imposing conditions for composting facilities located within 4 kilometres of a residential zone. These requirements are not retrospective and therefore only apply to new composting activities and major expansions going forward. While an additional provision was included in legislation to enable DETSI to initiate updating the licences of existing composting facilities on a site-by-site basis, it should be noted that any imposed change to licence conditions is subject to internal review and appeal provisions.

Coordinating regulatory responses across multiple facilities also demands a collaborative approach, often requiring negotiations with different operators who may have varying levels of compliance. These factors can hinder timely and affective mitigation, prolonging community exposure to odour nuisances. Monitoring and compliance efforts require advanced odour tracking technologies, such as air dispersion modelling and real-time sensors, which can be resource intensive.

8.2 Regulated activities

DETSI is responsible for regulating ERAs through a range of assessment, compliance, investigation and enforcement activities, in accordance with the EP Act.

Schedule 2 of the Environmental Protection Regulation 2019 (https://www.legislation.qld.gov.au/view/pdf/inforce/current/sl-2019-0155) lists which activities are considered ERAs (regulated activities) and require an EA. These activities are regulated because they have a higher risk of causing environmental harm or impact on the environment and community. These include, but are not limited to, composting facilities (ERA 53 Organic material processing) and landfill operations (ERA 60 Waste disposal).

An EA regulates potential impacts on environmental values, such as air (including odour), water, land, and biodiversity and are approved for the life of the activity. They may include requirements for pollution control measures, waste management practices, monitoring and reporting obligations, and compliance with relevant environmental standards.

To prevent or minimise environmental harm, a person carrying out an activity must take all reasonable and practicable steps to ensure that best practices in environmental management are used.

Conditions on a licence relating to odour may include:

- limits on emissions of air pollutants
- requirements to monitor emissions or ambient air quality
- requirements to comply with an end outcome (for example, not cause a nuisance at a sensitive place).

The Air EPP establishes environmental values to be protected and enhanced for air and include air quality conducive to human health and wellbeing. To help achieve this, long-term

air quality objectives have been established for multiple compounds such as sulphur dioxide, nitrogen dioxide, ozone, carbon monoxide, particles, lead and a number of air toxics. DETSI considers these objectives when making decisions on whether to approve or refuse an application, and when imposing licence conditions on regulated activities. The Air EPP does not include objectives for odour.

When assessing an application for a new or amended licence, DETSI must consider the environmental and community impacts of the proposed activity and imposes conditions to prevent or minimise those impacts. In doing so, DETSI must give consideration to a core set of criteria called the 'standard criteria', which is defined in Schedule 4 (Dictionary) of the EP Act.

DETSI in their submission to the Inquiry noted that considering the standard criteria requires fine balance[8]. An application that is inconsistent with one or more criteria may not be automatically refused. It must be determined whether the inconsistency is outweighed by the environmental, social and economic benefits that may come from approving the application.

To support operators to comply with EP Act obligations and licence conditions, a variety of guidance material has been developed by DETSI. For example, for the composting industry, DETSI released model operating conditions and best practice environmental management guidance, which includes information about managing air quality (including odour), surface and ground water contamination, noise, fire risks, pests, litter and contamination.

DETSI is responsible for managing compliance with the EP Act and for regulated activities, the licence conditions, and responds to breaches of the legislation with consistent and proportionate enforcement action in accordance with its Enforcement Guidelines (https://environment.desi.qld.gov.au/management/compliance-enforcement/guidelines).

If an operator causes or is believed to have caused environmental harm, the EP Act steps out the actions DETSI (as the administering authority) can take to make sure laws are complied with. If it can be demonstrated that, when the environmental harm occurred, an operator was meeting the GED (as defined in the EP Act), this can be used as a defence. Actions DETSI can take to attempt to secure an operator's compliance with the law before resorting to prosecution include:

- issuing an environmental enforcement order
- requiring an environmental investigation to determine the extent of the impact, which may then inform further enforcement action taken by the administering authority
- issuing penalty infringement notices (PINs, also known as fines).

In serious cases, operators can be prosecuted under the EP Act and/or DETSI may commence civil proceedings to remedy or restrain an offence against the EP Act.

8.3 Interaction with other legislation

Queensland's planning framework is established in the *Planning Act 2016* (**Planning Act**), which consists of three parts:

- plan-making
- development assessment
- dispute resolution.

State and local governments share responsibility for the delivery and operation of these systems. The development assessment system sets out if, and how, developments may occur. Generally, each local government carries out development assessment through their own local planning scheme, however sometimes additional assessment is required. When this occurs, the State becomes involved as the assessment manager or as a referral agency through the SARA.

Typically, composting and landfilling activities will require an assessment through the SARA in order to obtain a DA, along with an EA under the EP Act.

A DA authorises assessable development and must be obtained prior to commencing certain development or building work. DAs are in place indefinitely unless the landowner seeks to cancel it, or there are specific conditions requiring the land use to cease. DAs include a range of conditions such as hours of operation, layout of the site, the standard of construction of internal and external infrastructure and some site operational matters.

As each piece of legislation has a different purpose, proponents for waste management facilities such as composting and landfill operations must navigate both legislative frameworks, due to the potential impacts to the environment and surrounding land uses and the fact that they are classified as ERAs under the EP Act.

8.4 The policy framework

Under the *Waste Reduction and Recycling Act 2011*, the State has an obligation to establish a Waste Strategy.

The Waste Management and Resource Recovery Strategy (**Waste Strategy**) (https://www.qld.gov.au/__data/assets/pdf_file/0028/103798/qld-waste-management-resource-recovery-strategy.pdf) is supported by Queensland's waste disposal levy (https://www.qld.gov.au/environment/circular-economy-waste-reduction/disposal-levy). The Waste Strategy provides the strategic framework for Queensland to become a zero-waste society, where waste is avoided, reused and recycled to the greatest possible extent, with targets set to reduce the waste generated, diverted from landfill and recycled in Queensland.

On 1 May 2025, the Crisafulli Government launched consultation on a new strategy Queensland Waste Strategy 2025–2030—Less Landfill, More Recycling (https://www.qld.gov.au/environment/circular-economy-waste-reduction/strategy-plans/draft-waste-strategy) to reduce rubbish and boost recycling, to deliver a better environment for Queensland.

Additionally, the Queensland Organics Action Plan 2022–2032 (https://www.qld.gov.au/environment/circular-economy-waste-reduction/strategy-plans/organics-strategy#action-plan) provides guidance to create less organic waste, create economic opportunities through the reuse of organic materials, and minimise impacts on nature and communities. The Growing the Recovery of Organic Waste via Food Organic Garden Organic Fund (**GROW FOGO**) (https://www.qld.gov.au/environment/circular-economy-waste-reduction/funding-grants/grow-fogo) provides support to assist Queensland councils to implement or expand kerbside FOGO collection services that form part of a core waste service.

8.5 Public Health Act 2005

As part of the Inquiry, advice was sought as to whether the Public Health Act might have a role in addressing the odour issues.

The overview of the Act below was provided by legal firm Barry Nilsson, engaged by the Inquiry for legal support.

Purpose

The Public Health Act received Royal Assent on 2 November 2005. At the time, the introduction of the Public Health Act was a significant step taken to modernise the approach to traditional public health concerns.

The Public Health Act introduced a new category of harm, that being a 'public health risk.' The Explanatory Note accompanying the Public Health Bill 2005 (**the Bill**) describes the reason for the reform as follows:

> *Preventing, controlling and reducing risks to public health.*
>
> *The Bill introduces a new term, 'public health risk', to deal with particular types of environmental health risks such as breeding grounds for mosquitos, vermin infestations, and hazardous water or waste. State and local governments will work together to reduce, control or prevent these risks to public health.*
>
> *The powers in the Bill provide authority to issue public health orders to require the recipient of the order to take action to reduce, control or prevent a public health risk. The Bill also provides complementary powers to enable authorised persons to inspect and take appropriate action to enforce compliance with public health orders.*
>
> *The Bill provides for the establishment of a register for an environmental health event to monitor and analyse any health affects resulting from the event, and to help in the prevention, minimisation or treatment of the health effects.*

The Explanatory Note reveals that the basis for the introduction of 'public health risks' into the Public Health Act was to introduce designated statutory public health risks, such as

hazardous waste, which might be reduced, controlled or prevented by local and state governments working together to protect public health.

The Public Health Act also introduced Public Health Orders as an instrument to use in reducing, controlling or preventing public health risks. The scope of the orders which may be sought under a Public Health Order is wide, tempered by a requirement that the Public Health Order must be proportionate to the risk to public health that it seeks to address.

The Public Health Act has two stated objectives (Section 6):

1. To protect the health of the Queensland public.
2. To promote the health of the Queensland public.

The Act sets out how these objectives may be achieved which includes:

- Preventing, controlling and reducing the risks to public health (Section 7(a)).
- Inquiring into serious public health matters.

The ToR required the Panel of Inquiry to:

- investigate the extent of the health effects of the odours emanating from the Swanbank and New Chum industrial areas on the surrounding community

and

- recommend actions that might be taken to mitigate the health-related impacts on the local community.

Public health risks

Section 11 of the Public Health Act 2005 provides an exclusive definition of 'public health risk'—

> *11(1) Public health risk means – ...*
>
> *(a) ....*
>
> *(b) any of the following that is, or is likely to be, hazardous to human health, or that contributes to, or is likely to contribute to, disease in humans or the transmission of an infectious condition to humans –*
>
> *(i)*
>
> *.....*
>
> *(v) Waste.*

Waste is defined in section 11(3)—

> *11(3) In this section:*
>
> *...*
>
> ***waste** includes an accumulation or deposit of a substance or a thing.*

Waste located at the composting and landfill sites in the Swanbank and New Chum industrial areas would fall within this definition.

Is the odour emanating from waste operations at the Swanbank and New Chum industrial areas a public health risk?

The Panel of Inquiry has found (refer to Chapter 9):

- Odour from the Swanbank and New Chum industrial areas are having a tangible and negative affect on the health and well-being of many Ipswich residents.
- Composting generates offensive odour that may be reduced, but not eliminated, through the construction of enclosed systems.
- Landfill waste sites are another potential source of offensive odour (particularly the tipping face and leachate ponds).
- The most common symptoms attributed to odour are respiratory, ear-nose-throat, neurological, gastrointestinal, skin and mental health. These symptoms were generally not mild nor transient.
- The symptoms experienced by the community are credible and are consistent in their detail and with the published medical literature.
- Odorous chemicals in the air do not need to be at toxic levels for them to impact human health.

The threshold question then is whether the odours emanating from the waste deposits and accumulations are, or are likely to be, a risk to public health. Based on the findings made by the Panel, the answer to this question is 'yes.'

On this basis the odours emanating from waste operations at the Swanbank and New Chum industrial areas are therefore a public health risk.

What steps might be taken under the Public Health Act to prevent, control or reduce the public health risk?

Is it a state or local council issue?

Under the Public Health Act a public health risk needs to be categorised as either a:

(a) State public health risk

or

(b) local government public health risk (Sections 12, 13, 14).

In Queensland, waste management is a shared responsibility between the State and local councils. The State sets the overarching regulatory framework, and local councils typically manage waste collection and disposal services however private companies may also undertake these services. Waste activities conducted in the industrial areas are undertaken by private operators.

On this basis, the public health risk created by odour emissions from waste operations in the Swanbank and New Chum industrial areas is, on balance, a State public health risk.

Steps may be taken by the State under the Public Health Act 'to protect the health of the Queensland public.' One such response to the public health risk is the delivery of a Public Health Order to the offending persons.

Public Health Orders

The Public Health Act provides that:

(a) If an 'authorised person' believes that a person is responsible for a public health risk at a particular place, then the authorised person may give a Public Health Order to that person.

(b) The Chief Executive (Queensland Health) may appoint any of the following persons as an authorised person—

(i) a public service officer or public service employee

or

(ii) a health service employee.

Under section 23 of the Public Health Act the authorised person must believe that the person is responsible for the public health risk, and his or her belief must be reasonably based on all available evidence.

A Public Health Order may require a person to do something at a place that is—

(a) reasonably necessary to remove or reduce the risk to public health from a public health risk, or to prevent a risk to public health from recurring

and

(b) appropriate in the circumstances having regard to the nature and seriousness of the risk to public health at the time the Order is made (Section 21).

The Public Health Act provides examples of what a Public Health Order may require a person to do which includes (Section 21(2)(g)—

> *stop using the place, or part of the place, for a stated purpose, within a stated period or until stated steps are taken*
>
> *remove stated material or items from the place to another place stated in the order in the way stated in the order*

The terms of the Order are not limited by the Public Health Act, save for the Order:

(a) having to be reasonable and proportionate to the risk to public health that it seeks to address

and

(b) not requiring something to be done that is unlawful.

A Public Health Order must be in writing and state a period within which the person to whom it is given must comply with the Order. The period allowed for must be reasonable having regard to the risk to public health from the public health risk (Section 21 (3)(4)).

A Public Health Order is a very flexible statutory instrument to use for the purpose of removing, mitigating or controlling a public health risk. Ideally, its use ought to be coordinated with steps being taken by other agencies (for example, DETSI) or authorities (for example, ICC) as part of a coordinated approach to dealing with the problem. The Public Health Act was drafted on the basis there would be co-operation between the State and

local authorities, and by implication that there would be a level of co-operation between relevant State agencies and departments.

Based on the findings made by the Inquiry, Queensland Health may consider, through an authorised person, delivering a Public Health Order to waste operators requiring them to take certain steps, or to refrain from doing certain things, for the purpose of mitigating the health impact of odours emanating from these sites on the local community.

Breach of a Public Health Order is punishable by a penalty of up to 200 penalty units. A breach of a Public Health Order also triggers other remedial and enforcement measures which include:

(a) The authorised person has a right to enter the place to check whether the Public Health Order has been complied with.

(b) Where the Public Health Order requires the person to take steps at the place to remove or reduce the risk created by the public health risk, or to prevent the risk to the public health from recurring, the issuing authority by its employees or agents may, at reasonable times, enter the place to take the steps stated in the Order (Sections 388, 393).

Enforcement of a Public Health Order

A recipient must comply with a Public Health Order, unless it has a reasonable excuse (Section 23 (4)).

If the recipient contravenes a Public Health Order, the issuing authority may apply to a Magistrate to enforce the order (Section 24). The Magistrate may issue an order enforcing compliance with the Public Health Order (or part of it) where the Magistrate is satisfied that:

(a) A Public Health Order was given to the person.

(b) The Public Health Order was appropriate in the circumstances having regard to the nature and seriousness of the risk to public health from the public health risk at the time the Order was given.

and

(c) The person has contravened the Public Health Order.

The Magistrate may make an enforcement order in the same terms as the Public Health Order, or in other terms the Magistrate considers appropriate.

8.6 Jurisdictional approaches

8.6.1 General environmental duty

As discussed in Section 8.1, all persons in Queensland must fulfill their GED which states that a person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonably practicable measures to prevent or minimise the harm[160]. The GED imposes a legal obligation to proactively prevent and minimise the risk of environmental harm[160]. The GED supports the environmental protection principle that prevention of harm to the environment is preferred to remedial or mitigation measures. It also reinforces the 'polluter pays' principle; that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement.

As discussed in Section 8.1, in Queensland, environmental harm is defined as any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value. It can range from environmental nuisance right through to serious environmental harm.

It is clear from the descriptions above the focus of the GED is protection of the environment and is not explicit about its role in protecting human health. By comparison, the GED in Victoria explicitly states the goal is both the protection of human health and the environment[161].

> *A person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable[161].*

In Victoria the definition of harm is also explicit in regard to human health.

> *What is harm?*
>
> > *(1) In this Act, harm, in relation to human health or the environment, means an adverse effect on human health or the environment (of whatever degree or duration) and includes—*
> >
> > > *(a) an adverse effect on the amenity of a place or premises that unreasonably interferes with or is likely to unreasonably interfere with enjoyment of the place or premises*
> > >
> > > *or*
> > >
> > > *(b) a change to the condition of the environment so as to make it offensive to the senses of human beings*
> > >
> > > *or*
> > >
> > > *(c) anything prescribed to be harm for the purposes of this Act or the regulations.*
> >
> > *(2) For the purposes of subsection (1), harm may arise as a result of the cumulative effect of harm arising from an activity combined with harm arising from other activities or factors.*
>
> *What is material harm?*
>
> > *(1) In this Act, material harm, in relation to human health or the environment means harm that is caused by pollution or waste that—*
> >
> > > *(a) involves an actual adverse effect on human health or the environment that is not negligible*
> > >
> > > *or*
> > >
> > > *(b) involves an actual adverse effect on an area of high conservation value or of special significance*
> > >
> > > *or*

(c) results in, or is likely to result in, costs in excess of the threshold amount being incurred in order to take appropriate action to prevent or minimise the harm or to rehabilitate or restore the environment to the state it was in before the harm.

(2) For the purposes of subsection (1), harm may become material harm regardless of the period of time in which the harm occurs and as a result of—

(a) a single occurrence of harm arising from an activity

or

(b) multiple occurrences of harm arising from the same activity

or

(c) the cumulative effect of harm arising from an activity combined with harm arising from other activities or factors[161].

Queensland's Environmental Protection Regulation[162] is focused on meeting environmental quality objectives. As there is no environmental quality objective for odour in the Air EPP, there are no specific requirements in the Regulations to address odour. By comparison, in Victoria, the Environment Reference Standard[163] establishes an environmental reference standard (**ERS**) for odour which sets the benchmark that odour emitting operations must meet. The ERS for odour is 'an air environment that is free from offensive odours from commercial, industrial, trade and domestic activities.'

The ERS:

- identifies environmental values that the Victorian community want to achieve and maintain
- provides a way to assess those environmental values in locations across Victoria.

The ERS is part of the Victorian *Environment Protection Act 2017* (**Environment Protection Act**)[161]. An environmental value is an aspect of the environment that is important to Victorians. It is an outcome Victorians want for human health and the environment. Odour is a key environmental issue set out in the Environment Protection Act. Odour is also clearly defined as a form of pollution and offensive odour constitutes a harm in accordance with the Environment Protection Act. Under the Environment Protection Act, the risk of harm from odour that is offensive to the senses of human beings must be reduced as far as reasonably practicable, with the overall objective of an air environment that is free from offensive odours.

In addition to the ERS, the Environment Protection Authority Victoria has published a guideline for the assessment of odour risk from new and existing sources—Guidance for assessing odour – publication 1883[164]. This publication sets out a process for assessing the risk of offensive odour on a variety of land uses including sensitive uses such as residential areas. If the risk assessment process establishes there is a high risk of offensive odour then additional assessment is required which could include a human health risk assessment.

The Victorian regulatory system is an example of how consideration of human health is explicitly included in the regulation of the environment. As there is an intrinsic link between human health and exposure to environmental pollution integrating protection of human health into the environmental legislation keeps health—both human and environmental—as a focus in the management of the environment as a whole.

In light of the findings of this Inquiry, consideration should be given to strengthening the Queensland legislation to make specific reference to the protection of human health as one of the objectives of environmental protection. In addition, an EPP for odour should be considered which establishes an environmental value specific to odour. This is currently a gap in odour management in Queensland and if rectified could provide a framework for the assessment of odour emissions from industry. The development of guidelines to assess the potential risk of offensive odour from industry which would also support industry specific guidance such as composting and landfill guidelines should also be considered.

In addition to strengthening the legislation to make specific reference to the protection of human health, a clear definition of 'health' should be considered for inclusion in the EP Act and any EPP that is subsequently developed. For example, in Victoria, the definition of health in the EP Act was amended in 2019 to include psychological health. Given the findings of the Inquiry that the health effects being experienced by the Ipswich community are affecting both physical and mental health, consideration should be given to including psychological health in any definition of health adopted by the Queensland Government.

8.6.2 Approaches to licencing and management of odorous industries

The information provided in this section has been adapted from the DETSI submission to the Inquiry[8] which provides a comparison of several environmental regulatory matters for Queensland, New South Wales, Victoria, South Australia and Western Australia. These matters focus on keeping licences current and the regulation of industries (including composting and landfills). Refer to Appendix M.

A summary of the jurisdictional review is provided in Table 26.

Key outcomes of this review indicate Queensland differs from other jurisdictions regarding processes to keep environmental licences contemporary including completing regular statutory reviews of licence conditions. However, Queensland is the only jurisdiction that has statutory powers to require specific composting processes when using odorous feedstocks due to recent legislative amendments.

Both Queensland and NSW issue licenses that do not expire, although NSW has a formal review trigger. Other jurisdictions issue licenses for a set term and have an expiry date. These terms commonly range from one to twenty years (depending on the jurisdiction and the activity) and there are processes in place to support licence renewals.

Other Australian jurisdictions, with the exception of Queensland, have the ability to undertake statutory and/or regular reviews of issued licences. The drivers and scope of

these reviews vary between jurisdictions but generally relate to keeping the licence conditions contemporary and ensuring that harm to the environment is minimised or avoided. The inability to do this in Queensland has led to the situation where some operations do not have to meet current environmental standards which results in higher levels of pollution being emitted from those sites.

A clear example of this is for PM_{10}. Some industries are required to meet an air quality standard for PM_{10} of 150 µg/m^3 which was the standard in 1996 while others are required to meet the current PM_{10} standard of 50 µg/m^3. This means that there is no consistency in how the industries are regulated with some industries allowed to emit higher levels of pollution than others, and some industries not operating to current environmental standards.

Table 26. Jurisdictional review within Australia for several regulatory matters

Regulatory Matter	Queensland	NSW	Victoria	SA	WA
Do environmental approvals issued within the jurisdiction expire?	No	No	Yes	Yes	Yes
Do environmental approvals issued within the jurisdiction undergo a review after a certain timeframe?	No	Yes	Yes	Yes	Yes
Can the administering authority initiate an amendment to an environmental approval?	Limited	Yes	Yes	Yes	Yes
Can the jurisdiction require a specific composting process based on the feedstock?	Yes	Non statutory guidance	Non statutory guidance	No	Non statutory guidance
Does the jurisdiction identify high-risk feedstocks/wastes and require different handling/ treatment prior to composting?	Yes	Non statutory guidance	Non statutory guidance	Non statutory guidance	Non statutory guidance
Does the jurisdiction prescribe/ recommend buffer distances for composting activities?	No*	No	Non statutory guidance	Non statutory guidance	Non statutory guidance
Does the jurisdiction prescribe/ recommend buffer distances for landfill activities?	Non statutory guidance	Non statutory guidance	Non statutory guidance	Non statutory guidance	Non statutory guidance
Does the jurisdiction prescribe/ recommend buffer distances for other potentially odorous activities?	Non statutory guidance	No	Non statutory guidance	Non statutory guidance	Non statutory guidance

* Regulation requires enclosed or in vessel treatment if within 4 kilometres of the boundary of a residential zone.

Consideration should be given to amending the EP Act to enable DETSI to undertake regular reviews of the EAs within the industrial areas. This could be a regular review, for example every five years, or if there are changes to environmental standards that apply to those industries. This would ensure that the industrial areas were being managed in accordance with contemporary environmental regulations and standards.

All Australian jurisdictions can initiate an amendment to a licence. However, the circumstances in which licences can be amended in Queensland differ in comparison to other jurisdictions. In Queensland, DETSI can only initiate an amendment of an EA if the amendment is triggered by certain criteria as outlined in section 215 of the EP Act.

Due to the odorous nature of compost and landfill activities, most Australian jurisdictions recommend some form of minimum buffer distance between sites undertaking these activities and the closest sensitive receptors. The buffer distance is the minimum distance between the composting facility and any nearby sensitive land uses such as residences, schools or health facilities. In Victoria, if a recommended buffer distance can't be met then a risk assessment must be undertaken to support the reduction in buffer. This applies to the agent of change whether that be industry or through reverse amenity impacts (residential encroachment). The results of the risk assessment must show there is low risk of offensive odour at any sensitive location.

Due to recent legislative amendments, Queensland is the only jurisdiction that has statutory requirements to consider imposing conditions for managing composting processes when using odorous feedstocks. While these regulatory amendments were largely in response to odour impacts from the industrial areas, they apply statewide to ensure composting operators near residential areas are processing odorous waste in enclosed or in-vessel systems. This ensures problems that have been identified in one area (like the industrial areas) do not move to another area of the state.

8.6.3 Strengths of Queensland's regulatory framework in comparison to other jurisdictions

While Queensland does not specifically recommend buffer distances for composting activities, recent legislative amendments provide DETSI with the power to impose odour controls on composting operators in this jurisdiction. Under the amendments, DETSI must consider imposing conditions for new and expanding composting facilities located within four kilometres of a residential zone that require one of the following:

- the activity to be undertaken without using odorous feedstock (as defined in Schedule 18A of the EP Regulation)
- the adoption of in-vessel or enclosed processing if odorous feedstock is to be used.

These requirements may also be imposed on existing operators through a site-by-site EA amendment process.

While these regulatory amendments were largely in response to odour impacts from the industrial areas, they apply statewide to ensure composting operators near residential areas are processing odorous waste in enclosed or in-vessel systems. This is intended to help prevent the problems that have been identified in the industrial areas from occurring in another area of the state.

Further, the four kilometre distance prescribed by Queensland as a trigger for more stringent odour controls is significantly greater than the buffer distances recommended by other jurisdictions which range from 150 to 1000 metres depending on composting process and feedstock.

8.6.4 Ipswich Planning Scheme

ICC is responsible for the development and implementation of the Ipswich Planning Scheme (**Planning Scheme**)[157]. The Planning Scheme currently in place was adopted in 2006.

A new Planning Scheme has been approved by the Queensland Government and is expected to be implemented from 1 July 2025. The Inquiry has reviewed the draft Planning Scheme[19] and TLPIs as well as the new Planning Scheme.

While the below commentary cites elements of the current Planning Scheme and TLPI, the issues discussed in this section should be considered for the current and new Planning Schemes.

It is recognised the DA assessment process for many of the activities relevant to the Inquiry are for a combination of a material change of use assessed against the relevant Planning Scheme and TLPI and assessment for an EA under the EP Act.

ICC is responsible for assessing and issuing DAs for any new buildings, structures etc within the industrial areas. DETSI is responsible for assessing any ERA and issuing an EA under the EP Act. Assessment of proposals that require a DA and involve a concurrence ERA are coordinated through the development assessment process where typically ICC is the assessment manager and the State is involved as a referral agency through SARA.

The Inquiry understands if the activity is an ERA and applies for a DA for a material change of use of the premises under the Planning Act then this application is considered an application for an EA under the EP Act. DA amendments do not necessarily lead to EA amendments.

It should be noted that:

- Before a development can be constructed, all necessary regulatory approvals must first be obtained.
- In the event that the benchmarks for assessment can be satisfied, agencies can approve (including in part) any proposal, including the imposition of conditions as provided for in the relevant legislation.
- In the event that the benchmarks for assessment cannot be satisfied, including satisfied through the imposition of conditions, that ICC or State Government can refuse all or aspects of a development.

and

- If the State Government refuses an application, ICC must refuse the development.

Composting and landfilling activities are designated as ERAs and require both local government assessment and referral to SARA in order to obtain a DA, and an EA. All relevant approvals must be obtained prior to commencing the operation.

Part 3 of the Planning Scheme establishes the desired environmental outcomes and the performance indicators for Ipswich LGA. The key desired environmental outcome relevant to

the odour issues arising from the industrial areas is '*the health and safety of people, and the amenity they enjoy, are maximised, particularly in the urban and township areas where different types of uses are located close together*[157].'

The most relevant key performance indicator identified in the Planning Scheme is—'*where development has occurred, has it been designed and located to minimise impacts on adjoining residential uses*.' This needs to be considered when assessing and issuing DAs.

Part 6 of the Planning Scheme establishes the Regionally Significant Enterprise and Business Areas[157] and the provisions to be met for industries in these zones, which includes the industrial areas. Of particular relevance are the following:

Amenity

> *6.6 (c) There is a high standard of amenity in regionally significant business and industry areas and uses in these areas are generally compatible.*
>
> *6.6 (d) A land use pattern is created for each area where there is a transition from lower impact uses on the edge to higher impact activities towards the centre, with buffer areas on the periphery to separate incompatible or sensitive uses.*

Environmental Management and Greenspace

> *6.6 (h) Uses and works are located and designed to minimise risks and nuisance to people and property.*
>
> *6.6 (i) Buffers are created between incompatible uses to ensure that there are no discernible amenity or environmental impacts which affect adjacent sensitive land uses.*

Part 6.7 of the Planning Scheme is specific to the Swanbank and New Chum industrial areas. One of the key provisions relevant to the industrial areas is:

> *6.7c (6) Waste recycling or treatment activities are discouraged unless it can be demonstrated with a high degree of certainty that such activities will not adversely affect any nearby residential areas (either existing or proposed).*

Other relevant clauses in the Planning Scheme relating relation to the impacts of odour include:

- *Achieve a high standard of amenity with particular regard to minimising environmental and amenity impacts on existing and proposed residential areas and promoting overall visual attractiveness.*
- *Uses or works which have significant environmental impacts—including air, water, noise, odour, dust and vibration emissions outside of the designated Business and Industry areas, are avoided.*
- *Voids may be used for the disposal or recycling of waste products and the generation of soil conditioners and commercial gases provided it can be demonstrated with a high degree of certainty that such activities will not cause adverse environmental*

impacts or significantly affect the amenity of nearby residential areas, either existing or proposed.

Temporary Local Planning Instrument

In November 2023, ICC adopted TLPI No. 1 of 2023 (Resource Recovery and Waste Activity Regulation). The purpose of the TLPI is to regulate resource recovery and waste activity uses within the industrial areas of Swanbank/New Chum and Ebenezer/Willowbank/Jeebropilly Regulation Areas (as mapped in the instrument). The TLPI took effect from 11 December 2023[165].

In 2018 the first of a series of TLPIs addressing emerging and urgent waste issues in Ipswich commenced. These earlier TLPIs refined the regulatory framework to address the prevalence of waste uses and provide a contemporary policy approach to their regulation. Subsequent TLPIs commenced in 2020 to ensure ongoing contemporary regulation of waste activities. The 2020 TLPIs coincided with the commencement of work on a new planning scheme for Ipswich. The 2020 TLPIs were repealed immediately prior to the commencement of the 2021 TLPI which continued the regulation of waste activities in Ipswich[165].

The purpose of the TLPI is to manage new or expanded waste activities within the TLPI boundary to:

- ensure the regionally significant economic areas are developed appropriately to provide economic benefits to the city and local area
- facilitate and manage the restoration of areas affected by past mining operations
- ensure sensitive receiving uses are protected from adverse impacts associated with waste activities

and

- safeguard the immediate and long-term protection and improvement of the natural environment.

To achieve this purpose, the TLPI[165]—

1. *suspends parts of the Ipswich Planning Scheme set out in Part 7*
2. *includes the following additional Strategic Outcomes (called 'Desired Environmental Outcomes' in the Planning Scheme) for the LGA:*
    - i. *a Waste Activity protects existing and future residential amenity through onsite management of off-site impacts*

    and

    - ii. *ultimate site use considers and responds to the safety, geotechnical stability*

    and

    - iii. *releases to the environment including the visual impact that the final landform of the site might have on a natural setting*

    and

    - iv. *voids and end-of-life sites are restored to a natural or pre-mining landform through a range of appropriate options which respond to the existing infrastructure, topographical, environmental and social opportunities and constraints of the site*

and

v. Energy from Waste Facilities are separated from existing or planned areas for sensitive Receiving Uses to avoid all adverse impacts.

Overall, there should be adequate buffers between uses as described, as well as good decision making on where these uses should and should not be located. In addition, where uses are currently impacting the community, there should be adequate controls to protect the community. If such controls are not effective or are not possible, consideration should be given to the relocation of uses to more appropriate locations.

Buffers between industrial areas and residential areas are a critical element of the land use planning system. Planning instruments should consider prohibition of uses that may be absolutely incompatible.

There are planned buffer areas designated in the Swanbank New Chum Land Use Concept Master Plan as shown on Figure 6-7-1 of the Planning Scheme[157]. There are also regulation areas contained within Figure 2 Swanbank New Chum Regulation Area TLPI 1/2023[165]. It is evident these buffer areas are not protecting the communities from the impacts of these uses. One must conclude that either the buffer or regulation area is inadequate, the uses are not capable of containing their impacts to the buffer, or both. This may have contributed to the public health issues being experienced by the local communities.

The Inquiry understands there are a number of existing tools within the State and Local Planning schemes that could be used to help resolve the issues contributing to the health impacts being experienced in the local communities. Furthermore, consideration should be given to a range of policy measures including applying a planning overlay to designate the area as a high-risk industrial area. The overlay should lock the remaining buffers so further residential encroachment is not possible.

If additional regulatory and policy tools are applied, DETSI, ICC and Queensland Health should work together to identify the best tools available under each piece of legislation to address the issues at the industrial areas. This could include tighter legislation for industries within the overlay.

It appears from Section 6 of the Planning Scheme[157] that it was not the intent to have highly odorous industries within the industrial areas and if they were present they should have been developed to control its impacts, or located further away from sensitive uses such as residential areas.

Two key issues arose in discussions with ICC:

1. The current penalty and enforcement regime is not sufficient to deter some operators from non-compliance with the conditions of the DAs and EAs. Consideration should be given to a review of the current penalty and enforcement regime to ensure they are a deterrent for non-compliance and that action can be taken, with a united and collaborative approach between local and state government.
2. In circumstances where changes to site operations are sought, including changes to an EA, these do not always trigger a change to the application assessed against the Planning Scheme, and vice versa. This should be corrected such that a coordinated process for changing planning applications, ERAs and EAs is considered.

8.7 Roles and responsibilities in managing public health risks from odour

As discussed in Section 8.1, the focus of the EP Act and the Air EPP is on the protection of the environment. The environmental value relevant to human health is focussed on enhancing or protecting the qualities of the air environment that are conducive to human health and wellbeing but not directly to the protection of human health. As the Air EPP does not include odour there is no environmental value specific to odour. The explanatory notes for the EPOLA (P&P) Act note DETSI's role is limited to the protection of human health to the extent it is affected by the environment.

While DETSI has responsibility under the EP Act for the management of environmental issues, there is a need to establish clear roles and responsibilities for the assessment and management of public health risks with respect to odour.

There may be a number of options to address this which involve both DETSI and Queensland Health. DETSI has advised they do not currently have expertise within their department to address public health issues caused by environmental impacts.

To date, Queensland Health has had a role in providing advice to DETSI on air quality guidelines and the interpretation of air quality monitoring results. However, there are no public health guidelines on how to respond to general odour (below toxic levels) impacting the population.

DETSI and Queensland Health should identify and agree on the most effective approach to managing public health risks associated with general odour. It is recommended that the following options be considered:

- Establishing an environmental health function within DETSI, similar to what has been done in Victoria.
- Queensland Health developing a statewide guideline for Queensland's network of public health units to respond to general odour which falls below toxic levels.
- Queensland Health playing a more active role, in partnership with DETSI, in managing the health impacts of odour. This could include providing alerts when odour is likely to be present, possibly using predictive weather modelling, so residents can plan to reduce their potential exposure to odour.

Part C—Findings and recommendations

The Inquiry team on-site at the industrial areas, March 2025

Part C of the report documents the Inquiry's findings and recommendations.

9 Findings

Ipswich City is one of Australia's fastest growing cities[10] and is expected to grow faster than any other LGA in Queensland[11]. By 2046, the population is predicted to double from 260,000 to 533,000[12]. About half (132,000 people) of Ipswich City's current population reside in suburban areas (**SA2s**) that share a boundary with the industrial areas.

Large scale waste disposal, recycling, resource recovery and composting operations are carried out within the industrial areas.

The industrial areas are exceptional due to:

- the scale and diversity of odour-producing operations at the industrial areas
- the proximity of the operations to each other
- the proximity of residences to the industrial areas
- the large volume of waste received at the industrial areas.

This Chapter presents the Inquiry's findings.

The findings are based on the evidence gathered through personal interviews, telephone surveys, written submissions, epidemiological analysis, site visits and an extensive review of the published literature.

The findings presented in this chapter conclude that odour from the Swanbank and New Chum industrial areas (the **industrial areas**) are impacting the community's health. The symptoms reported by the community are credible. They are consistent in their detail:

1. No matter how they were assessed be it personal interviews, telephone survey interviews, shopping centre pop-ups or written submissions.
2. Regardless of whether subjects volunteered to provide information or were selected unprepared at random.
3. With reports of health-related impacts made by the community to the Pollution Hotline.
4. With the published medical literature and odour-affected communities overseas.

Finding 1: Thousands of Ipswich residents experience symptoms they attribute to odour from the industrial areas

- To quantify the prevalence and nature of health effects attributed to the odour, the Inquiry conducted a random survey of 400 residents living in suburbs surrounding the industrial areas.
- Eleven per cent (95% CI: 8–14%) of the 400 surveyed directly attributed health affects to the odours. A further 11 per cent (95% CI: 8–14%) were 'unsure' whether their health issues were attributable to the odour.
- When extrapolated to the total nearby population of 132,000, these results indicate more than 14,000 individuals (95% CI: 10,800–18,900) directly attribute adverse health effects to the odours.
- The number of people whose health is potentially impacted increases to more than 28,000 people (95% CI: 20,700–36,700), when results from the 'unsure' attribution are included.

Finding 2: The most common symptoms include respiratory, ear-nose-throat, neurological, gastrointestinal, skin and mental health

- The Inquiry found people are experiencing a wide range of symptoms across multiple body systems. The health effects attributed to the odour were generally not mild or transient.
- This finding is made following a random survey of 400 residents living in suburbs surrounding the industrial areas as well as analysis of information obtained from 61 interviews and personal written submissions.
- From the survey:
  - The most commonly reported health effects were respiratory symptoms (56 per cent), headaches/migraines/dizziness (33 per cent), and gastrointestinal issues (29 per cent).
  - Seventy-eight per cent of effected individuals reported moderate to severe symptoms and 71 per cent experienced symptoms for three or more years.
  - The majority (60 per cent) of people who experienced symptoms sought medical attention by consulting a general practitioner, a specialist doctor or presenting to emergency.
  - Almost all (93 per cent) of those who sought medical attention received some form of treatment or medication for their symptoms.
- From interviews and personal written submissions:
  - The commonly reported symptoms were:
    - coughing/wheezing, congested/blocked nose, irritated/sore throat, asthma-new or worsened, shortness of breath, chest tightness
    - watery/irritated eyes, sinus congestion/issues, nose bleeds, ear congestion/pain, reduced sense of smell, sore throat
    - headaches/migraines, dizziness, visual disturbance, metallic taste

  - nausea, vomiting, abdominal pain
  - rashes, itchy skin, dryness/flaking and skin conditions
  - depression/anxiety, increased stress/worry, difficult sleeping, irritability/behaviour changes overall mental health.
- A consistent theme across many interviewees was that they had noted that their symptoms worsened during or immediately after exposure to odours, improved when away from the area, were more severe during certain weather conditions (wind direction, humidity) and had developed or worsened since moving to the area.

- The information obtained from an additional 20 random interviews at shopping centre pop-ups is also consistent with the symptoms documented through the survey, interviews and submissions.
- This finding indicates that people can experience health symptoms even when the concentrations of odorous chemicals in the air lie below toxic level. Refer to finding 6.

Finding 3: The symptoms experienced are consistent with those described in the medical literature

- The Inquiry completed a comprehensive literature review of more than 80 scientific papers on the health risks associated with odour, with a particular focus on odour exposure for residents living near landfill, composting and other relevant waste management facilities.
- The literature review found respiratory, neuro-psychological and gastrointestinal symptoms were the commonly reported health conditions associated with odour.
- The health conditions published in the literature align with the health conditions experienced by residents near the industrial areas.
- The literature review also found that:
  - Closer proximity and higher odour frequency and intensity may increase risks.
  - Odours are linked to physiological and psychological mechanisms.
  - Interventions that reduce the concentration of pollutants, but do not eliminate odour, may not prevent reports of associated symptoms in the community.
- The literature review also found very limited evidence to support a link to cancer.
- The full literature review is detailed in Chapter 4.

Finding 4: The odour is highly offensive and is impacting the wellbeing of residents

- The Inquiry met with many individuals who lamented the impact of odour on their quality of life. Many were clearly distressed by the odours.
- A random survey of 400 residents living in suburbs surrounding the industrial areas found:
  - Nearly two thirds (65 per cent) detected the odours at some point, with many experiencing it on a frequent basis. Of those who had detected the odour, 40 per cent of respondents detected the odour in the last month.

  - Almost half (48 per cent) of those who had detected odours described them as 'very' or 'extremely' offensive. When extrapolated to the total nearby population of 132,000, this result indicates more than 41,000 people living near the industrial areas find the odours very or extremely offensive.
- The wellbeing impacts include:
  - avoiding outdoor exercise and play
  - avoiding outdoor socialising
  - living behind closed doors and windows
  - living in air conditioned environments.
- Community members compared the odours to 'rot, rubbish and sewage.' The most used words to describe the odours were 'annoying, disgusting, rotten and foul.'
- Some respondents reported they had relocated out of the area due to the odour. Some respondents indicated they were planning to relocate.

Finding 5: There is no evidence of an increased risk of cancer in the exposed population

- Due to specific concerns raised by the community, the Inquiry undertook an epidemiological assessment of cancer in the suburbs adjoining the industrial areas (affected areas).
- The epidemiological analysis was undertaken for the select cancers of lung, liver and kidney—as well as all cancers—for a five-year period (2018 to 2022).
- The epidemiological assessment found the age standardised rates of the selected cancers were similar to other local unaffected areas and other comparable socio-economic areas in Queensland.
- For one cancer type (kidney) in one affected area, the observed rate was slightly higher than other areas. However, this finding was not statistically significant and is no cause for concern.
- Further information on the epidemiological assessment can be found in Chapter 5.

Finding 6: Odorous chemicals in the air do not need to be at toxic levels for them to impact human health

- The Inquiry reviewed more than 80 published scientific papers on the effects of odour on human health.
- The impact of toxic concentrations of chemicals in the air on human health has long been understood.
- What is now established in the literature is that odorous chemicals below toxic concentrations can also affect human health.
- Research has found a clear link between exposure to odour and symptoms like nausea, headache, dizziness, difficulty concentrating, unnatural fatigue and stress.
- This evidence is not limited to studies involving humans. There is evidence of similar health impacts arising when animals are exposed to non-toxic levels of volatile organic compounds (VOCs).

- These human and animal studies show close links between the olfactory system, odour, stress responses and a range of physiological and behavioural impacts.
- For people living in an odorous environment, the regular presence of an offensive smell, its variability in strength, and the sense that one cannot escape from it, even when at home, creates stress, tension and anxiety from those affected.
- This finding is consistent with the evidence gathered by the Inquiry indicating odorous chemicals below toxic concentrations have an impact on people's health.

Finding 7: There are certain types of waste which are highly odorous and play a significant role in causing the health effects being experienced by those living in close proximity to the industrial areas

The type of waste used to feed the compost (known as feedstock) is a major contributor to highly offensive odours. The most odorous feedstock products include:

- abattoir waste
- animal waste and animal processing waste
- biosolids that are not stabilised biosolids (human waste)
- fish processing waste
- food processing effluent (wastewater) and solids (including sludges) from protein based food
- grease trap waste–liquid and solid
- poultry processing waste.

Finding 8: Composting generates offensive odours

The Inquiry found:

- Many activities undertaken at the industrial areas have the potential to produce odour. However, it is apparent composting stands out as a major source of highly offensive odours.
- The early stages of composting are the most odorous stage of the composting process.
- As per finding 7, feedstock is a major contributor to highly offensive odours.
- There are currently four businesses in close proximity to each other and the Ipswich community permitted to undertake composting. Three of these businesses are within the industrial areas and one is just outside.
- Best practice composting requires the receipt of composting waste and the early stages of compost formation to occur in enclosed systems in order to reduce odour.
- Plans are in place for the construction of enclosed systems. The total cost would be substantial (possibly greater than $100 million collectively).
- Enclosed composting systems substantially reduce odour from the early phase of the process if operated and maintained correctly. However, enclosed composting systems may not eliminate all odour.

Finding 9: There are other potential sources of offensive odour in the industrial areas

- In addition to composting, there are other commercial activities and sources in the industrial areas that have the potential to produce odour. These other activities include:
  - landfill (particularly the tipping face and leachate ponds)
  - fertiliser production sites
  - recycling/resource recovery sites
  - asphalt plants.
- Uncovered leachate ponds across the industrial areas are also a source for offensive odours. Leachate is a fluid that has been in contact with waste or other contaminants. It is typically liquid that has passed through, or emerged from, landfill or other waste operations[29]. Leachate is characteristically very odorous due to the presence of VOCs, particularly sulphur-containing compounds like hydrogen sulphide—a pungent gas that smells like rotten egg.
- Large bodies of standing stormwater following heavy rain events also represents an odour risk, particularly if the water turns anaerobic (as occurred on a landfill site in 2022). Stagnant water high in organic matter represents a major odour risk.

Finding 10: The Inquiry could not determine whether current odour management practices meet best industry practice

- Given the many odour-producing activities undertaken at the industrial areas, the Inquiry was unable to determine whether current odour mitigation practices at every site meet best industry practices.
- Whether a gap (or not) exists should be determined by independently qualified industrial auditors.
- The audit is needed to provide a comprehensive assessment of whether odour management practices meet best industry practices, and if there are gaps, provide recommendations to remediate.

Finding 11: The approach to air quality monitoring undertaken by the community may not adequately reflect the range of pollutants they might be exposed to

- For a two-year period, air sampling canisters were made available to residents, education facilities and childcare centres within the community of Ipswich as part of a sampling program.
- The program concluded in December 2024; however, air sampling canisters are still available upon request.
- The monitoring was based on a point in time (30-second) grab sample taken by the community when they smell the odour.
- Although the samples are meant to be taken at the peak of an odour event it may have been difficult for the community to gauge when that occurs; samples may be taken when the odour is experienced but before the peak is reached.

- The samples are analysed for a range of volatile organic compounds (VOCs) only.
- There has been limited assessment of general odours. This has mainly been done through surveys conducted by DETSI staff.
- To gain a better understanding of what the community is exposed to, monitoring over a longer period of time is recommended. The Inquiry conducted sampling over 24-hour periods, but this provided limited data due to time constraints.
- A study found bioaerosols from composting were detected beyond the boundary of the industrial areas. No monitoring of bioaerosols has been conducted in the residential areas.

Finding 12: The existing legislative framework may not support effective assessment and management of odour

- Although included in the Environment Protection Act (1994) there are no regulatory instruments that address the assessment and management of odour. The Environment Protection Policy for Air (Air EPP) does not include odour.
- There is DETSI guidance on how to assess odour from new developments but nothing for existing industries. This document is guidance and does not have any statutory basis therefore it cannot be enforced.
- There is no reference to odour in the *Public Health Act 2005*.
- The ICC Planning Scheme includes discussion on odour and how offensive odours in residential areas should be avoided however there are no measures to manage odours from industries within the Swanbank/New Chum industrial area.
- The Inquiry found that the lack of a regulatory framework for managing odour, including performance targets, is contributing to the issues in the industrial areas.

Finding 13: The existing legislative instruments may not enable rapid enforcement to mitigate odour

- Existing legislation does not provide the primary regulator (DETSI) the power to retrospectively review conditions in Environmental Authorities to ensure sites are operated consistent with best practice, standards, guidelines, policies and legislation. This results in an inability to rapidly enforce change to mitigate odour.
- Current penalties for non-compliance may not be an adequate driver for complying with the conditions of Development Approvals.
- There are additional town planning levers to better manage odorous industries in the industrial areas. The State Planning Policy outlines specific planning overlays that could potentially enable tighter regulation of highly odorous industries.
- There may be an opportunity to invoke the *Public Health Act 2005* when a public health risk is identified.

10 Recommendations

The Inquiry concluded the odour from the industrial areas are affecting the health of thousands of nearby residents. The planned residential growth near the industrial areas will further exacerbate the problem in the coming years.

Addressing the odour will not be simple. The industrial areas are very large and contain many contiguous odorous sources on sites operated by multiple companies, government agencies and individuals. The industrial areas are currently important to managing South East Queensland's waste.

The recommendations in this chapter are underpinned by the fundamental public health principle of creating a supportive environment[88] which promotes health, provides a safe community, and opportunities to enhance health and wellbeing.

Action must be taken to address the odours as they are making the people of Ipswich feel sick and affecting their wellbeing.

The recommendations detailed in this chapter provide an approach to addressing the odour issues.

Recommendation 1: Provide some immediate relief from the most offensive odours from composters

It is recommended the Queensland Government work with composters to cease the acceptance of highly odorous waste sooner than the established timeframe of September 2026. This should provide some immediate relief and reduce the public health risk confronting Ipswich residents that is attributable to highly odorous waste.

The Consent Orders relating to the management of odorous waste made by the Planning and Environment Court on 18 September 2024 in the case of one composting operator, and the agreements entered into between DETSI and other composting operators, reflected in the terms of various EAs, were made and entered into without explicitly recognising the urgent need to mitigate and control the public health risk attributable to highly odorous waste.

The Queensland Government should explore possible options to bring forward the September 2026 timeframe for composting operators accepting highly odorous waste.

- Highly odorous waste includes:
  - abattoir waste
  - animal waste and animal processing waste
  - biosolids that are not stabilised biosolids (human waste)
  - fish processing waste
  - food processing effluent (wastewater) and solids (including sludges) from protein based food
  - grease trap waste—liquid and solid
  - poultry processing waste.

Action should be taken against composting operators who do not comply with a revised timeframe.

Recommendation 2: Consider two options to provide long–term relief from highly offensive odour from composting

There are two options for the Queensland Government to consider to manage the public health risk associated with odour from composting operations in the industrial areas:

- **Option 1: Support industry to find a new location to compost.** The Queensland Government support industry to identify an alternative location in South East Queensland for commercial composting and relocate composting operations in the industrial areas to this new location. The new location must be well away from residential areas and protected by an appropriate quarantined buffer. Composting should be undertaken in enclosed systems at the new location. This option eliminates the public health risk associated with composting odour from the industrial areas. Legislative change may be required to implement this option.
- **Option 2: Support industry to ensure construction of permanent enclosed facilities.** The Queensland Government support industry to ensure the established timelines to address odour are met. This will result in the construction of permanent enclosed facilities. The actions and timelines have been ordered by the Queensland Courts[166] or

negotiated with DETSI. (Refer to Part B). This should start to provide the Ipswich community with significant odour relief by September 2026. If operated and maintained correctly, this will mitigate the public health impact but may not eliminate all odour.

Recommendation 3: Apply recommendations 1 and 2 to the other commercial composting site operating in Ipswich

The Inquiry also heard from people impacted by one other open-air commercial composting operation just outside of the industrial areas, close to residents. This operation is also a source of highly offensive odours. The Queensland Government should consider applying recommendation 1 and 2 to address this odour source.

Recommendation 4: Audit all remaining odour-producing companies in the industrial areas and develop an overarching odour management plan

There are other companies producing some odours of different severity and type within the industrial areas. To address these other potential odour sources, it is recommended the Queensland Government:

- Engage independent certified Industrial Facilities Auditors to audit every individual odour-producing business in the industrial areas to review current practices and make recommendations with implementation timeframes to meet best practice by 31 December 2025.
- Based on the audit findings an overarching odour management plan for the entire industrial area be developed, in partnership with industry peak bodies, by 31 December 2026. The plan should include strategies for managing stagnant stormwater and protecting human health.
- The Public Health Act could be invoked to enforce this recommendation.

Recommendation 5: Consider undertaking an expanded air monitoring program in the industrial and nearby residential areas

Consider an expanded air monitoring program in the industrial and nearby residential areas to better understand the impact on human health by 30 September 2025. The air monitoring program should:

- Include canister monitoring for VOCs that are collected over a 24-hour period and analysed for the USEPA TO-15 suite of VOCs.
- Be undertaken at the existing DETSI monitoring locations.
- Monitor on a one-in-six-day-day cycle for 12 months across all seasons.
- Include bioaerosol monitoring for 12 months across all seasons.
- Be reviewed (both air quality and bioaerosol monitoring programs) after 12 months from commencement to determine ongoing requirements.

Recommendation 6: Protect industrial buffer zones from development

It is recommended the regulations around industry buffer zones are clarified and enforced to ensure no further encroachment of residential areas with the aim of reducing the risk to public health.

Recommendation 7: Leverage existing laws and consider improvements to legislation to better manage odour

The Inquiry understands there are existing planning instruments that can be applied to assist with the management of odour. These could potentially enable tighter regulation of highly odorous industries, for example, by using specific planning overlays through state and/or local planning policies. There are powers under the *Public Health Act 2005* that might also be used. Every opportunity should be explored to fully leverage existing tools to manage potential odorous industries to protect human health.

The Inquiry also learned environmental legislation from other jurisdictions takes a performance-based approach to managing odour. Consideration should be given to amending the Queensland Government's Environmental Protection Policy for Air (Air EPP) to include performance measures for managing odour or alternatively a specific EPP for Odour could be developed as a standalone instrument.

Other regulatory improvements that could be considered include:

- Making it more explicit that the *Environmental Protection Act 1994* has a role in the protection of human health.
- Requiring operators to maintain a 'state of knowledge' to understand the risk operations pose to human health and the environment and operate at current best practice.
- Increase the penalties for non-compliance with council development approvals.
- Require management plans to be performance-based and contain measurable targets.
- The ability to review and amend EA and DA approval conditions on a routine basis (for example, every five years) to keep up with best practice and current legislation. Consideration should be given to establishing a dedicated team within both DETSI and ICC to conduct these initial reviews.
- Temporarily cease a company's operations if odour is not managed and creates a public health risk or if an odour management plan is not approved.
- More timely approval of DAs related to enforcement actions from the regulator (for example, within six weeks of receipt of all required documentation).
- The Queensland Government should review, and if necessary, develop legislation to ultimately achieve two outcomes to protect the health of the Ipswich community:
  - Existing odour-producing businesses must demonstrate they can manage their odour in accordance with industry best practice or move to a new location.
  - New odour-producing businesses will not be approved to operate unless they demonstrate they can effectively manage their odour emissions in accordance with industry best practice.

Recommendation 8: Establish an inter-departmental steering committee responsible for implementing these recommendations

It is recommended the Queensland Government establish an inter-departmental Steering Committee to ensure the odour issues in the industrial areas are addressed in accordance with the Inquiry's recommendations.

The Steering Committee is to provide expert guidance and advice to the Minister for Health and Ambulance Services and the Minister for the Environment, Tourism, Science and Innovation on the implementation of the Inquiry's recommendations.

The Committee should have an independent chair and include representatives from Queensland Health and DETSI, with opportunities for input from the Department of State Development, Infrastructure and Planning, local government, the Ipswich community and industry.

An inter-departmental steering committee is required for two reasons:

1. There are multiple government agencies involved with the operations of the industrial areas. A steering committee will ensure there is a single body accountable for implementing the recommendations.
2. Many in the community have lost faith in all arms of government to stop the odours—given it has been a long-standing issue for the people of Ipswich. A steering committee with community involvement will restore confidence in addressing the odours.

Through this steering committee, DETSI and Queensland Health should work together to clarify roles and responsibilities around assessing and managing public health risks associated with odour. The community will expect Queensland Health to play a greater role. This could include issuing joint alerts in response to an odour event so residents can modify their activities to reduce their potential exposure.

11 List of acronyms

AAQC	Ambient Air Quality Criteria
ABS	Australian Bureau of Statistics
Air EPP	Environmental Protection (Air) Policy 2019
ASGS	Australian Statistical Geography Standard (ASGS Edition 3)
CRG	community reference group
DA	Development Approval
DETSI	Department of the Environment, Tourism, Science and Innovation
EA	Environmental Authority
EP Act	Environmental Protection Act 1994
EPOLA	Environmental Protection (Powers and Penalties) and Other Legislation Amendment Act 2024
EPP	Environmental Protection Policy
ERA	environmentally relevant activities
ERS	environmental reference standard
FIDOL	Frequency, Intensity, Duration, Offensiveness, Location
FOGO	food organics garden organics
GED	general environmental duty
GO	garden organics
ICC	Ipswich City Council
IRATE	Ipswich Residents Against Toxic Emissions
LGA	Local Government Area
NATA	National Association of Testing Authorities
NTM	Nontuberculous Mycobacterium
QUT	Queensland University of Technology
SA2	Statistical Area Level 2
SARA	State Assessment and Referral Agency
SAL	suburbs and localities
SEQ	South East Queensland
TCEQ	Texas Commission on Environmental Quality
TLPI	temporary local planning instrument
ToR	Terms of Reference
VOCs	volatile organic compounds

WHO	World Health Organization
WMI	Wood Mulching Industries Pty Ltd
WMPHU	West Moreton Public Health Unit
WRIQ	Waste and Recycling Industry Association of Queensland

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13 Appendices

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Appendix A. Terms of Reference—Public Health Inquiry into odour issues at Swanbank Industrial Estate

1. Purpose

A Public Health Inquiry into Odour Issues at Swanbank Industrial Estate (the Inquiry) has been being commissioned under s 294 of the Public Health Act 2005 (PH Act) by the Honourable Tim Nicholls MP, Minister for Health and Ambulance Services and Member for Clayfield (the Minister).

The purpose of the Inquiry is to inquire into and report on the circumstances and possible causes of odour-related health concerns of the community living in the vicinity of the Swanbank Industrial Estate and recommend actions to mitigate the impacts.

2. Background

The Swanbank Industrial Area has been in place for many years. There are several landfill and composting sites within the Swanbank and New Chum industrial areas which are known sources of odour.

A significant number of residential developments, combined with infill from areas such as Redbank, have led to increased urban encroachment around the Swanbank Industrial Estate.

The Department of the Environment, Tourism, Science and Innovation (DETSI) regulates environmentally relevant activities within the Swanbank Industrial Estate under the Environmental Protection Act 1994. DETSI has been investigating and responding to concerns raised by the community about odours, dust, and other environmental nuisance in and around these areas for several years. A range of actions have been taken, including significant regulatory and compliance actions. A summary is available online at: https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/updates.

Queensland Health's role has been to provide health advice and related support to the other lead agencies undertaking investigations.

To support the community, DETSI and Queensland Health have worked collaboratively to engage with the community, including establishing referral pathways for community members to access clinical services.

3. Scope of the Inquiry

The Inquiry will consider any relevant health-related evidence from 2016 to present day. This timeframe accounts for early complaints from the community about odour impacts, up until now.

The Inquiry will:

- investigate the extent of the health effects of the odours from the Swanbank Industrial Estate; and
- recommend actions that may be taken to mitigate any health-related impacts on local communities.

As part of this Inquiry, a number of public consultation events will be held with residents living in the vicinity of the Swanbank Industrial Estate to understand their experiences and the impact of odour on their everyday lives.

The term of the Inquiry is up to six (6) months.

The Inquiry will not consider any regulatory or compliance matters led by either the State of Queensland or Local Government, except to the extent that it provides context for any health impacts experienced by the community.

4. Appointment

The Minister has appointed Dr John Gerrard as the chairperson of the Panel of Inquiry (the Panel).

5. Role of the Panel

The key role of the Panel will be to undertake the Inquiry and prepare a Report for the Minister.

In undertaking the Inquiry, the Panel will be responsible for making decisions regarding commissioning any project briefs, evaluating impacts, and formulating recommendations, as part of the Report to the Minister. The Panel of Inquiry will specifically seek to:

- describe industrial activities occurring over time in the Swanbank Industrial Estate and summarise available data on odour and air quality in surrounding communities over the same period;
- determine whether the odour issues from the Swanbank Industrial Estate contributed to an increase in health impacts, having regard to any relevant evidence for the period 2016 to present day;
- document measures taken by relevant regulatory agencies to address odour-related complaints and health concerns and whether they have had any impact to date from a health perspective;
- identify measures taken (including by relevant regulatory agencies) to address odour-related complaints and health concerns of the community in the vicinity of the Swanbank Industrial Estate and whether they have had any impact on addressing health impacts; and
- draw on relevant domestic and international policy experiences, standards and best practices, where appropriate, in the conduct of the inquiry.

6. Conduct of the Inquiry

In conducting the Inquiry, the Panel will comply with the relevant provisions of Chapter 7 of the PH Act. This includes observing natural justice and acting as quickly, and with as little formality and technicality, as is consistent with a fair and proper consideration of the issues.

7. Report to the Minister

The Panel will provide a draft report to the Minister on 30 May 2025, with a final report to be provided by Friday 30 June 2025, or other date as agreed by the Minister.

The report will detail the Panel's findings, including any recommendations the Panel considers appropriate and other relevant matters.

As required under the PH Act, the Minister will table a copy of the final report in Parliament within fourteen (14) sitting days of receipt.

8. Media

Enquiries from media representatives should be referred to the Media Unit, Integrated Communications, Queensland Health, news@health.qld.gov.au

Appendix B. Gazette notice

[233]

Queensland Government Gazette

GENERAL

PUBLISHED BY AUTHORITY ISSN 0155-9370

VOL. 398] **FRIDAY 21 FEBRUARY 2025** **[NO. 24**

Public Health Act 2005

ESTABLISHMENT OF PANEL OF INQUIRY – INQUIRY INTO SERIOUS PUBLIC HEALTH MATTER

A Public Health Inquiry into the health impacts of odours from the Swanbank and New Chum Industrial Estates upon local communities living near to these Estates has been being commissioned under s 294 of the *Public Health Act 2005* by the Honourable Tim Nicholls MP, Minister for Health and Ambulance Services and Member for Clayfield (the Minister).

The Minister has appointed a Panel of Inquiry to inquire into and report on the extent of the health effects of the odours from the Swanbank and New Chum Industrial Estates on local communities, and to recommend actions that may be taken to mitigate any health-related impacts on these local communities.

The Panel is comprised of:

- Dr John Gerrard, Former Queensland Chief Health Officer, Chairperson [appointed 6 January 2025]
- Dr Lyn Denison, Director LD Environmental [appointed 28 January 2025].

The Panel will provide the Minister with a Report containing the Panel's findings, including any recommendations the Panel considers appropriate and other relevant matters.

The Report is to be provided to the Minister by 30 June 2025, or other date as agreed by the Minister.

Appendix C. Panel member biographies

Dr John Gerrard, panel Chair

Dr John Gerrard is a specialist physician and former Chief Health Officer of Queensland.

Dr Gerrard trained in Internal Medicine and the subspecialty of Infectious Diseases in Sydney and London before moving to Queensland in 1994. There he took on the roles of Director of Infectious Diseases and Director of Medicine at the Gold Coast University Hospital.

Between 2021 and 2024 he became Chief Health Officer of Queensland during the peak of the COVID-19 pandemic before returning to clinical practice in 2025.

His primary research interest is in emerging infectious disease. Among other work, he identified the earliest case of AIDS in Australia and even has a human pathogen named after him (*Heterorhabditis gerrardi*).

He has been actively involved in the international response to emerging infectious threats including Ebola in West Africa in 1994 and the early stages of COVID-19 in Japan and the Dutch Antilles.

Dr Gerrard regards his most important and fulfilling role as a clinician caring for individual patients.

Dr Lyn Denison, panel member

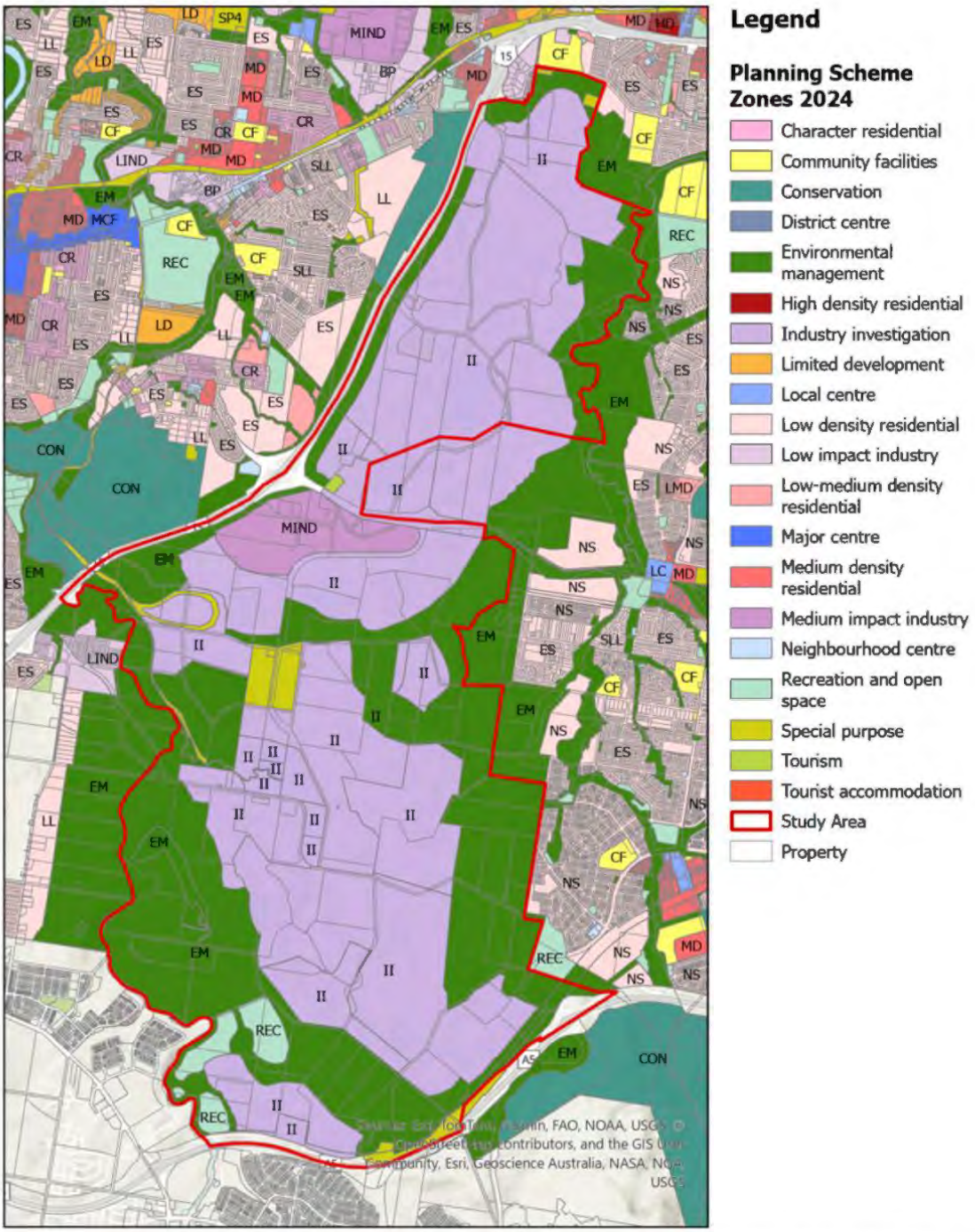
Dr Lyn Denison is an expert in assessing environmental pollutants and their impact on health, with particular expertise in human health risk assessment.

Dr Denison is the Director and Principal Consultant with LD Environmental. She has more than 30 years' experience in air quality and human health risk assessment in both government and consulting. Her work has focused on the assessment of environmental pollutants and their impact on human health.

Dr Denison has extensive experience in human health risk assessment including the application to environmental standard setting, health impacts from transport and industrial emissions, air pollution, noise, accidental chemical releases and fires and contaminated land. Her work has focused on the assessment of environmental pollutants, including air pollution and odour and their impact on human health.

She has been involved in the development of national and state policy including the development of air quality standards aimed at the protection of human health.

Appendix D. Ipswich City Council Planning Scheme Zones 2024



Notes: The draft new planning scheme (Ipswich Plan) and draft LGIP is now in the adoption stage of the plan making process having received State Government approval to proceed to adoption, with conditions, on 14 February 2025.

Zone changes have largely reverted back to Industry Investigation Zone, with a new overlay (OV5 - Growth Management) applied to underpin future development in the area. These changes have been made in order to reflect Council's policy direction in the waste management space. It should be noted the draft scheme also includes a new development code, the Resource Recovery and Waste Activity Code to direct future development of this type.

Appendix E. Site profiles

Chip Tyre Pty Ltd

Site name	Chip Tyre Pty Ltd (Chip Tyre) waste recycling facility
Environmental Authority	EPPR04313816 https://storagesolutiondocsprod.blob.core.windows.net/register-documents-ea/EPPR04313816.pdf • ERA 7(5)(c) Chemical manufacturing • ERA 7(6)(c) Chemical manufacturing • ERA 54(3)(c) Mechanical waste reprocessing • ERA 61(3)(b) Thermal waste reprocessing and treatment • ERA 62(2) Resource recovery and transfer facility operation • ERA 57 Regulated waste transport DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: 62 Austin Street, New Chum Qld 4303 and 191 Whitwood Road, New Chum 4303 • Lot 2 RP147482, Lot 251 S3185, Lot 4 RP22539, A RP843905
Site overview	• The site receives tyres and other rubber products for recycling and reprocessing whilst the incineration or thermal treatment remains under construction and is not operational. • Condition 2A-1 of the environmental authority requires 'Other than as permitted within this environmental authority, odours or airborne contaminants must not cause environmental nuisance to any sensitive place or commercial place'.
Odour potential	• Chip Tyre accepts tyres and other rubber products for recycling, reprocessing, and incineration or treatment. These activities may contribute to odour. • The activity is within proximity of residential land-uses.
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the Environmental Protection Act 1994. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. No enforcement notices have been issued for odour.

Figure 1. Chip Tyre site from Queensland Globe

Cleanaway Solid Waste Pty Ltd

Site name	Cleanaway New Chum landfill
Environmental Authority	EPPR00445713 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=100847 • ERA 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (h) more than 200,000t • ERA 54 - Mechanical waste reprocessing 2: Operating a facility for receiving and mechanically reprocessing, in a year, the following quantity of general waste- (c) more than 10,000t • ERA 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (b) general waste DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: 20 Rhondda Road, New Chum QLD (Lot 227 on SP103913) and Chum Street New Chum QLD (Lot 268 on SP103913) • Lot 268 and 277 on SP103913, approximately 170.3 hectares including landfill cells, Cell 1, Cell 2, 2B, Cell 3A, 3B, Cell 4A, 4B, Cell 5, 5A, 5A1, 5B.
Site overview	• Waste authorised to be received at the landfill includes inert construction and demolition waste and limited regulated waste, including asbestos, shredded tyres and treatment tank sludge. • Since February 2022, due to an extreme weather event impacting the site, Cleanaway New Chum has been closed and has not accepted waste, with the exception of soil for capping and site maintenance. • Cleanaway are planning to reopen and commence landfilling in 2025 to fill Cell 3B. Once Cell 3B is full and capped, the activity will transition to a closed landfill. • The location of activities undertaken on the site are conducted in the areas in Figure 2.
Odour potential	• As stated in DETSI's *Landfill Siting, Design, Operation and Rehabilitation Guideline*, '*the environmental hazards and potential risks posed by a landfill site will vary due to the types of wastes accepted and the location of the site*.' The guideline identifies odour from landfill has the potential to cause nuisance and identifies some potential on site sources of odour and mitigation measures. • The activity is within proximity of residential land-uses.
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. The following enforcement actions have been taken by DETSI in

	relation to odour at the site. Direction Notice (STAT-E-100230380) • In March 2022, a Direction Notice was issued alleging that environmental nuisance was being caused. Direction Notice (STAT-E-100230420) • In April 2022, a Direction Notice was issued alleging that environmental nuisance was being caused. Environmental Protection Order (EPO) (STAT-E-100235131) • In April 2022, an EPO was issued alleging that Cleanaway was failing to comply with the conditions of its EA and failing to uphold its general environmental duty. Environmental Protection Order (STAT-E-100256441) • In June 2022, an EPO was issued alleging that Cleanaway was failing to comply with the conditions of its EA and failing to uphold its general environmental duty. Environmental Protection Order (STAT-E-100330457) • In November 2022, another EPO was issued alleging that Cleanaway was failing to comply with the conditions of its EA and failing to uphold its general environmental duty. Since July 2024 and as an outcome of an environmental evaluation issued to Cleanaway in 2019, Cleanaway constructed a water treatment plant (WTP) used to treat collected water prior to discharging offsite, providing an avenue to decrease on-site contaminated water storage.

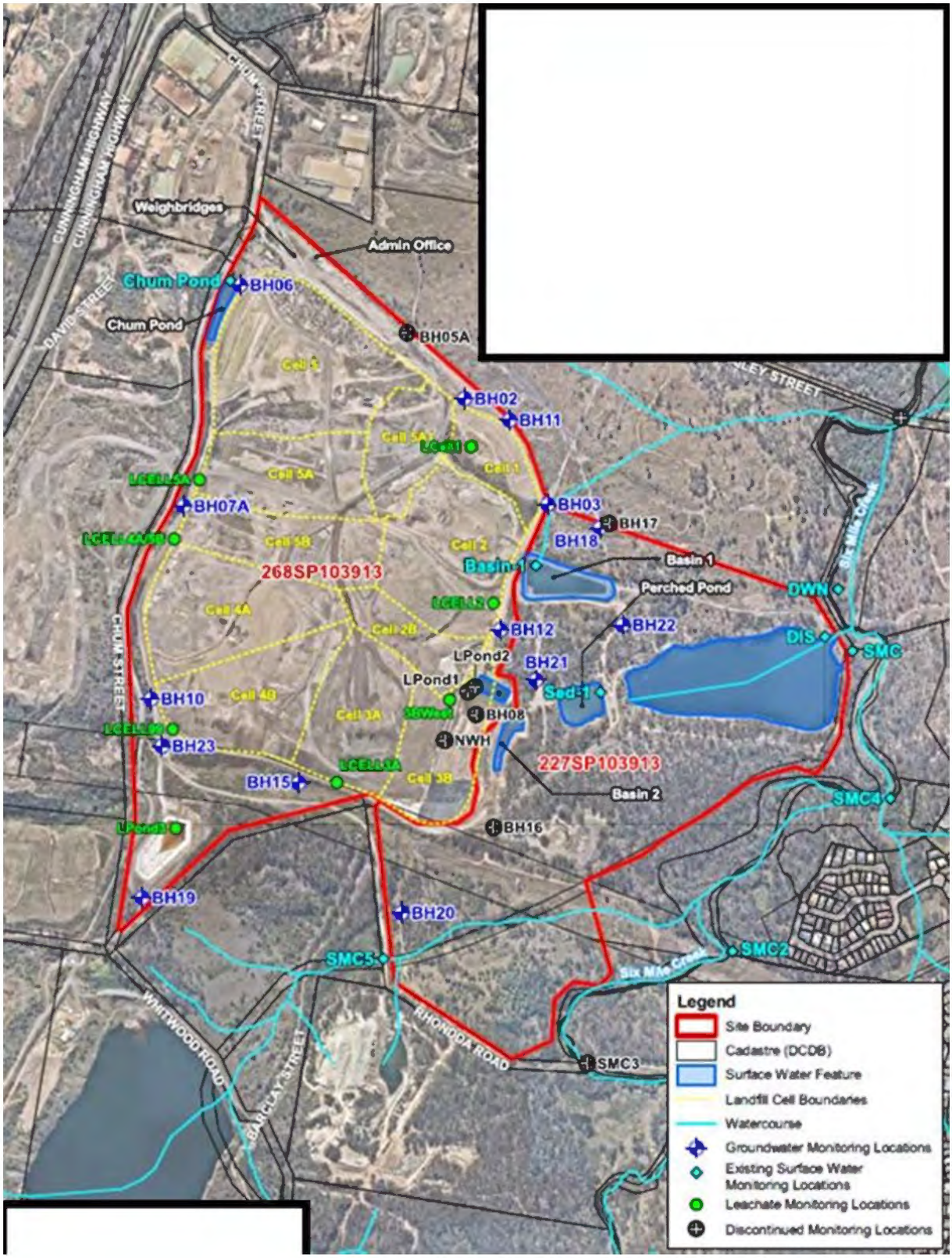


Figure 2. Cell and site boundary

Lantrak Waste and Recycling Pty Ltd

Site name	Lantrak landfill
Environmental Authority	EPPR00703413 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=111250 • ERA 60(1)(a)(d) Waste disposal • ERA 62(1)(a) Resource recovery and transfer facility operation • ERA 54(1) Mechanical waste reprocessing • ERA 16 (3)(a) Extraction and Screening DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: Memorial Drive, Swanbank Qld 4305 • Lot 5 SP225229
Site overview	• The site consists of the current operation cell that is near end of life where it will cease to receive waste, and the final landform will be finalised. • Condition P1-A1 of the environmental authority requires 'Odours or airborne contaminants which are noxious or offensive or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any sensitive place or commercial place.'
Odour potential	• As stated in DETSI's *Landfill Siting, Design, Operation and Rehabilitation Guideline*, '*the environmental hazards and potential risks posed by a landfill site will vary due to the types of wastes accepted and the location of the site*.' The guideline identifies odour from landfill has the potential to cause nuisance and identifies some potential on site sources of odour and mitigation measures. • Lantrak accepts construction and demolition waste and small amounts of incidental or comingled green waste for recovery, reprocessing, and/or disposal that do not have an odour rating, and that has a low odour rating respectively, in accordance with DETSI's *Best Practice Environmental Management Guideline ERA 53(a) Organic material processing by composting*.
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. No enforcement notices have been issued for odour.

Figure 3. Lantrak site from Queensland Globe

NuGrow Ipswich Pty Ltd

Site name	NuGrow Ipswich (NuGrow) composting facility
Environmental Authority	EPPR00696713 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=105366 • ERA 33—Crushing, milling, grinding or screening • Crushing, grinding, milling or screening more than 5000t of material in a year • ERA 53—Organic material processing • Processing more than 200t of organic material in a year by composting the organic material • ERA 54—Mechanical waste reprocessing • 1—Operating a facility for receiving and mechanically reprocessing, in a year, more than 5,000t of inert, non-putrescible waste or green waste only • ERA 55—Other waste reprocessing or treatment • 3(c)—Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 1 regulated waste - more than 10,000t • ERA 55—Other waste reprocessing or treatment • 2(c)—Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste - more than 10,000t • ERA 55—Other waste reprocessing or treatment • 1(c)—Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of general waste - more than 10,000t • ERA 57—Regulated Waste Transport • Transporting regulated waste • ERA 61—Thermal waste reprocessing and treatment • 1(a)—Thermally reprocessing or treating, in a year, the following quantity of general waste—not more than 5000t DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: Swanbank Road, Swanbank Qld 4306 • Lot 3 on Plan SP289972
Site overview	• NuGrow operates one of the largest composting facilities in Queensland, serving a large number of Queensland waste generators

	and waste transporters and providing compost and soil conditioners to the landscape, infrastructure and agricultural industries. • Condition 1–A1 of the Environmental Authority requires: '*Odours or airborne contaminants must not cause environmental nuisance to any sensitive place or commercial place.*' • Activities undertaken on the site must be conducted within the designated areas for each activity, as outlined by the prescribed areas in Figure 4 below, pursuant to EA condition 1–G1-1(a). • NuGrow is in the process of transitioning from an open windrow composting facility to an in-vessel/enclosed composting facility by September 2028. The site is being developed in accordance with the conditions of EPPR00696713. Areas for future approved activities are as prescribed in Figure 5.
Odour potential	• NuGrow operates an open-air composting activity that accepts odorous waste as categorised by DETSI's *Best Practice Management Guideline* – ERA 53(a) Organic Material processing by composting. The guideline is accessible at: https://www.des.qld.gov.au/policies?a=272936:policy_registry/era-gl-bpem-composting.pdf. • The activity is within proximity of residential land uses.
Odour mitigation	• NuGrow' s environmental authority requires it to upgrade its waste processing infrastructure and processes for the purpose of reducing odour emissions. These upgrades are reflected in the EA, and specifically at condition 1-G1.
Compliance history	<u>Enforcement actions</u> DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. The following enforcement actions have been taken by DETSI in relation to odour at the site. Direction Notice (STAT1182) • In 2017, DETSI issued a Direction Notice to NuGrow Metro Pty Ltd who was the holder of the EA which alleged breaches of conditions of its EA with authorised officers determining that an odour emanated from a burning stockpile of 'finished' compost located at the site. Environmental Evaluation (EE) (STAT1365) • In April 2019, NuGrow was issued a Notice to conduct or commission an Environmental Evaluation as DETSI believed on reasonable grounds that the activity being carried out on the premises was causing or was likely to cause environmental harm (environmental nuisance – odour) at a nuisance sensitive place. Transitional Environmental Program (TEP) (MAN-E-100025166) • In 2019, following the EE, NuGrow submitted a TEP. Court ordered amendments in September 2020 identified that the TEP outlined actions, performance indicators, monitoring and reporting to be undertaken over the following three years to reduce odour emissions from the site to prevent nuisance at surrounding sensitive receptors. Environmental Protection Order (STAT-E-100084662) • In May 2021, DETSI issued an Environmental Protection Order (EPO) in respect of leachate and contaminated stormwater management. Court ordered amendments to the requirements of

	the EPO in August 2022 stated that the EPO would end when certain requirements had been met, including an impervious barrier established over the areas identified in a condition of the EA. <u>Other</u> Restraint order (No.3527 of 2023) In September 2024, the court issued a restraint order against NuGrow, including to minimise any adverse effect, or potential adverse effect, of the activity on odour. Amendments to its EA followed.

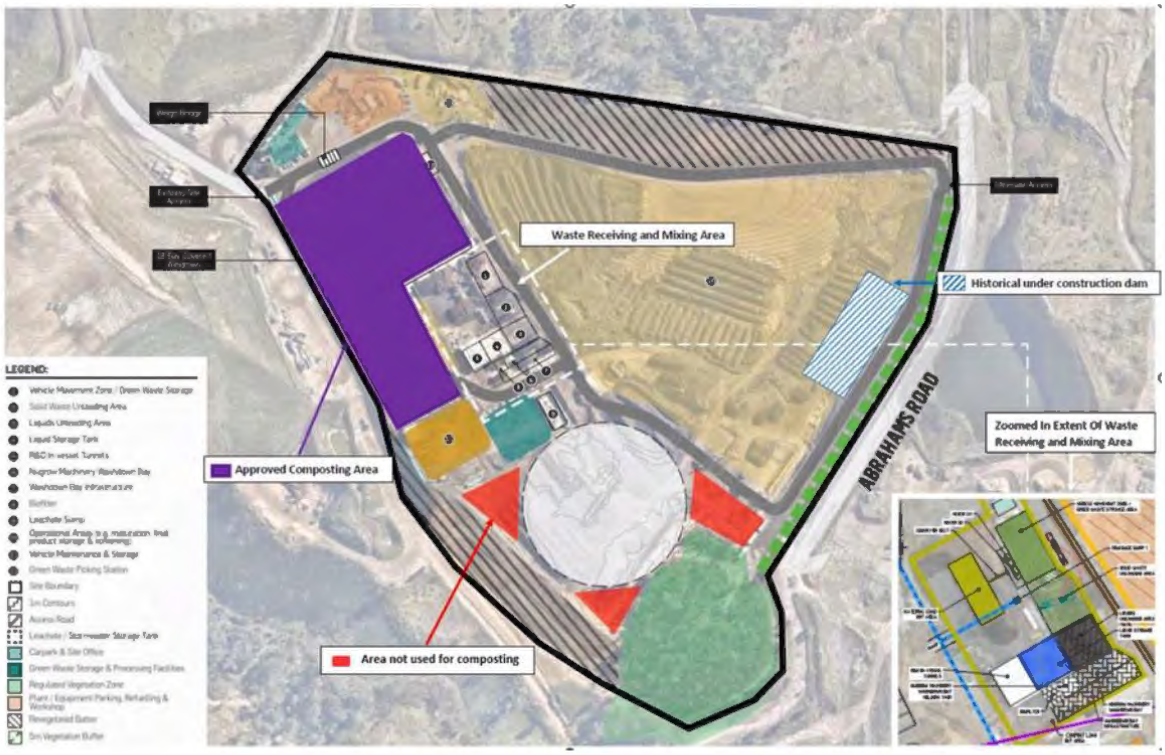


Figure 4. As per EPPR00696713

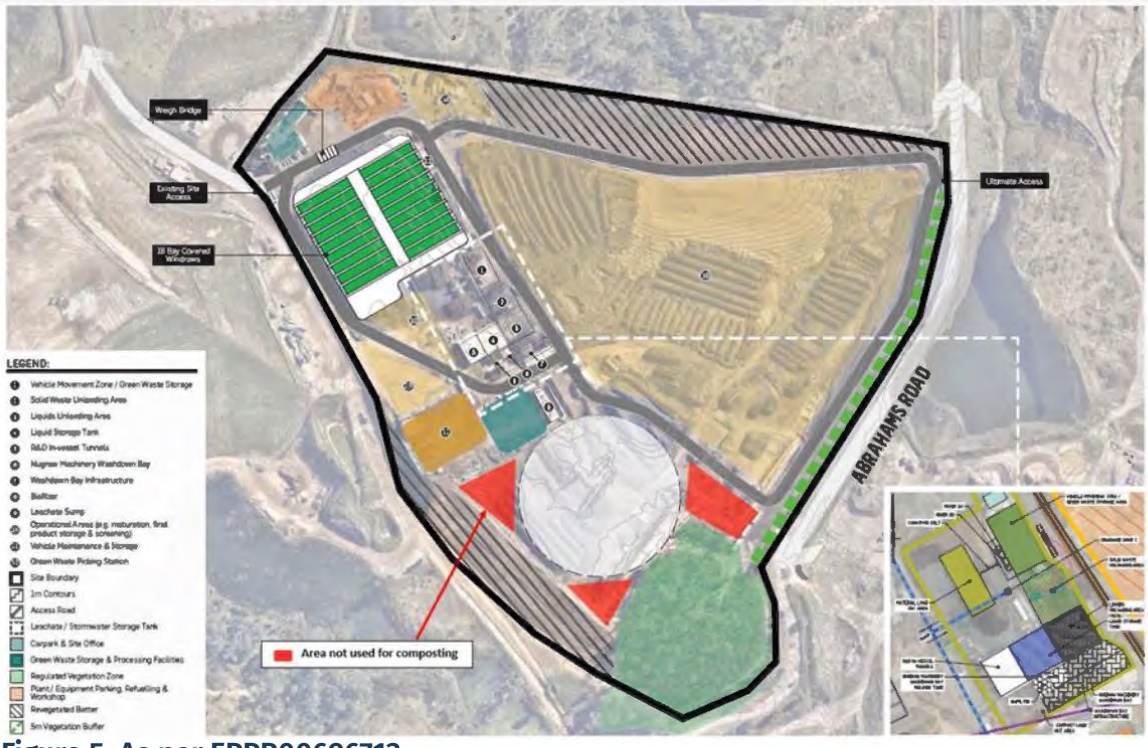


Figure 5. As per EPPR00696713

Re-Direct Recycling Pty Ltd

Site name	Re-Direct Recycling Pty Ltd (Re-Direct)—Re-Direct landfill
Environmental Authority	EPPR00706313 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=104530 • ERA 54(1) Mechanical waste reprocessing • ERA 60(2)(g) Waste disposal • ERA 62(1)(a) Resource recovery and transfer facility operation DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: 30 Memorial Drive, Swanbank Qld 4306 • Lot 1 SP225229, Lot 4 SP225229
Site overview	• The site comprises two physically separated lots with Lot 1 to the north having an operational landfill in the northern part of Lot 1 and construction of a cell in the southern part of Lot 1 has commenced whilst Lot 4 to the south is a historical landfill cell.
Odour potential	• As stated in DETSI's *Landfill Siting, Design, Operation and Rehabilitation Guideline*, 'the environmental hazards and potential risks posed by a landfill site will vary due to the types of wastes accepted and the location of the site.' This guideline identifies odour from landfill has potential to cause nuisance and identifies some potential sources and measures to help manage odours. • Re-Direct accepts construction and demolition waste and green waste for recovery, reprocessing, and/or disposal. • Condition B1 of the environmental authority requires 'Notwithstanding any other condition of this approval no release of contaminants from the approved place is to cause noxious or offensive odour beyond the boundaries of the approved place'. • The activity is within proximity of residential land-uses.
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. No enforcement notices have been issued for odour.

Figure 6. Re-Direct site from Queensland Globe

Remondis Australia Pty Ltd

Site name	REMONDIS Swanbank landfill
Environmental Authority	EPPR00823413 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=102021 • ERA 33 Crushing, milling, grinding or screening. • ERA 53(a) Organic material processing. • ERA 54(2)(c) Mechanical waste reprocessing. • ERA 54(3)(c) Mechanical waste reprocessing. • ERA 54(4)(c) Mechanical waste reprocessing. • ERA 55(1)(c) Other waste reprocessing or treatment. • ERA 55(2)(c) Other waste reprocessing or treatment. • ERA 55(3)(c) Other waste reprocessing or treatment. • ERA 60(1)(d) Waste disposal. • ERA 62(1)(b) Resource recovery and transfer facility operation. • ERA 62(1)(c) Resource recovery and transfer facility operation. • ERA 62(1)(d) Resource recovery and transfer facility operation. DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: Swanbank Road, Swanbank Qld 4306 • Lot 103 SP189609, Lot 104 RP839073, Lot 101 RP839072, Lot 102 RP839072, Lot 3 RP214256
Site overview	• The site is one of the largest commercial landfills (no public access) and waste management operations in the region, with staged landfilling approved to occur. • This site has stages of development. Stage 1 comprises historical cells and the current operational cell whilst Stage 2 comprises the historical hardfill cell (hardfill), construction of a new cell and construction of a new enclosed composting facility has also commenced.
Odour potential	• As stated in DETSI's *Landfill Siting, Design, Operation and Rehabilitation Guideline*, 'the environmental hazards and potential risks posed by a landfill site will vary due to the types of wastes accepted and the location of the site.' This guideline identifies odour from landfill has potential to cause nuisance and identifies some potential sources and measures to help manage odours. • REMONDIS accepts a range of general and regulated wastes for recovery, reprocessing, treatment and/or disposal that have an odour rating ranging from low to very high in accordance with DETSI's *Best Practice Environmental Management Guideline ERA 53(a) Organic material processing by composting*. • Condition B3-1 of the environmental authority (Stage 1) requires 'Notwithstanding any other conditions of this environmental authority, no release of contaminants from the site is to cause a noxious or offensive odour beyond the boundaries of the site to which this environmental authority applies.'

	• Condition 1-B1 of the environmental authority (Stage 2) requires 'odours or airborne contaminants which are noxious or offensive or otherwise unreasonably disruptive to public amenity or safety must not cause environmental nuisance to any sensitive place or commercial place.'
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. No enforcement notices have been issued for odour.

Figure 7. REMONDIS site from Queensland Globe

Wood Mulching Industries Pty Ltd

Site name	Wood Mulching Industries (WMI) composting facility
Environmental Authority	EPPR00816413 https://apps.des.qld.gov.au/public-register/pages/ea.php?id=100176 • ERA 53—Organic material processing—(a) Processing more than 200t of organic material in a year by composting the organic material • ERA 54—Mechanical waste reprocessing—1—Operating a facility for receiving and mechanically reprocessing, in a year, more than 5000t of inert, non-putrescible waste or green waste only. DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. A copy of this environmental authority can be accessed through the Public Register Portal (https://apps.des.qld.gov.au/public-register/search/ea.php).
Location	• Address: Centenary Highway, Swanbank Qld 4306 • Lots 400, 402, 403 and 405 on SP283238 and Lot 404 on SP313797
Site overview	• WMI serves waste generators and transporters providing compost and soil conditioners to the landscape, infrastructure and agricultural industries. • Condition A1 of the Environmental Authority requires: *'Odours or airborne contaminants must not cause environmental nuisance to any sensitive or commercial place.'* • Composting activities undertaken on the site must be conducted within the designated areas for each activity, as outlined by the prescribed areas in Figure 8, pursuant to EA condition G1.1. • WMI are in the process of transitioning from an open windrow composting activity to an in-vessel composting activity that uses anerobic digestion. The new activity is authorised by a separate EA currently in voluntary suspension (P-EA-100119834) Figure 9.
Odour potential	• WMI operates an open-air composting activity that accepts odorous waste as categorised by DETSI's *Best Practice Management Guideline – ERA 53(a) Organic Material processing by composting*. • The activity is within proximity of residential land-uses.'
Odour mitigation	• WMI's environmental authority requires it to upgrade its waste processing infrastructure and processes for the purpose of reducing odour emissions. These upgrades are reflected in the EA, and specifically at condition G1.1. • WMI must cease receiving certain odorous waste under its current EA by September 2026. • WMI are in the process of transitioning to an in-vessel composting activity that uses anerobic digestion. The new activity is authorised by a separate EA currently in voluntary suspension (P-EA-100119834). • WMI will be able to receive certain odorous waste upon construction of its proposed facility.
Compliance history	Enforcement actions DETSI maintains a public register of records related to the regulation of environmentally relevant activities. This is provided in accordance with the *Environmental Protection Act 1994*. Copies of enforcement notices can be accessed through the Public Register Portal at https://apps.des.qld.gov.au/public-register/search/enforcement.php. The following enforcement actions have been taken by DETSI in relation

	to odour at the site. Environmental Evaluation (STAT1367) • In 2019, DETSI issued WMI an EE notice requiring it to commission an investigation into the source and causes of odour and recommend mitigation measures. WMI appealed this notice and in March 2020, the Planning & Environment (P&E) Court ordered the EE to be set aside. The court required an amended EE, which required WMI to submit a final report in January 2021 which was accepted by DETSI in April 2021. Environmental Protection Order (EPO) (STAT-E-100573195) • An EPO was issued to WMI on 12 January 2024 and amended on 25 January 2024 requiring it to comply with its general environmental duty. • Following on from the EPO, WMI's EA was amended through a Notice of Proposed Amendment (NOPA) process to include stockpile conditions that aligned with DETSI's guideline. <u>Other</u> In 2024, after consultation, DETSI issued WMI a NOPA to amend its EA to include stricter odour management conditions to reduce the generation of odour onsite.

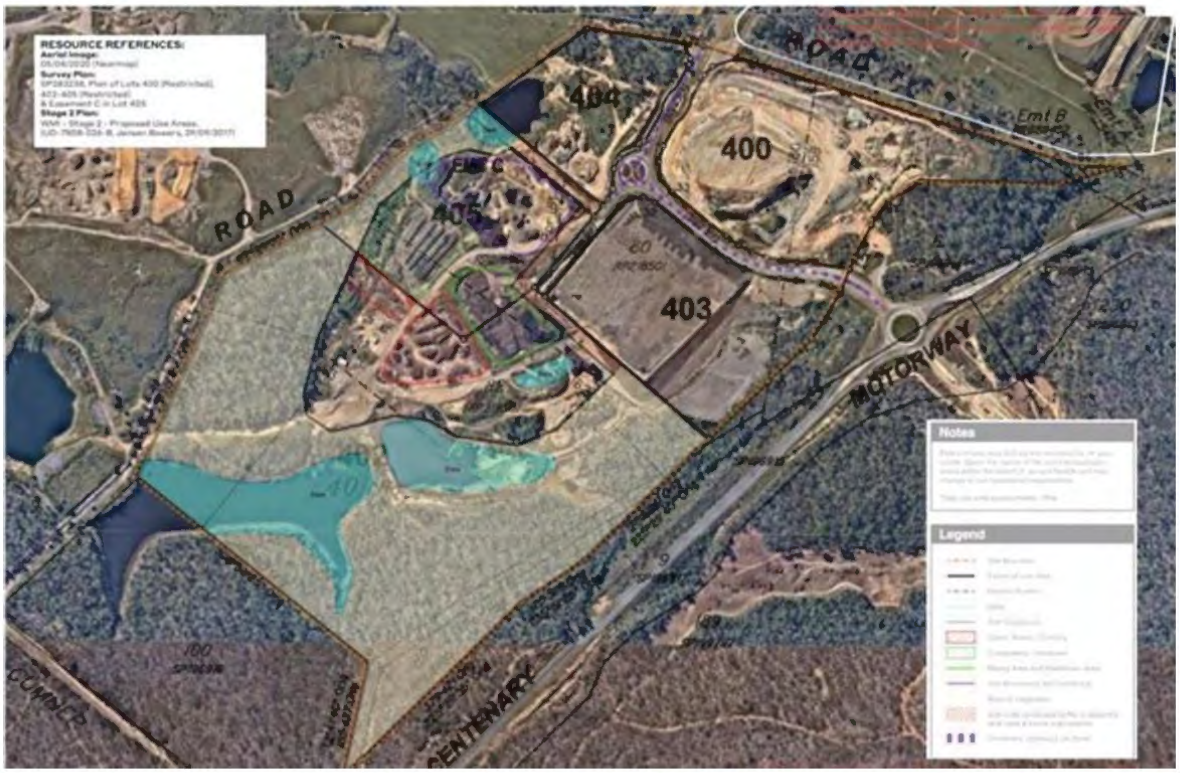


Figure 8. As per EPPR00816413

Figure 9. As per P–EA–100119834

Appendix F. Questionnaire

A survey about your health concerns—Public Health Inquiry, Swanbank and New Chum industrial areas

Terms and Conditions
The Queensland Government has initiated a Public Health Inquiry into possible health impacts from odours emanating from the Swanbank Industrial Estate. A Panel of Inquiry, chaired by Queensland's former Chief Health Officer, Dr John Gerrard, has been established to investigate the potential health effects from these odours. Before I begin to ask you questions relating to your exposure to odours and the impact which they may have had upon your health, I am required to: 1. Provide you with information relating to the purpose of the Public Health Inquiry into odour issues at Swanbank Industrial Estate, and its process; and 2. Obtain your consent to the collection and use of your personal and sensitive information, including your health information. The Panel of Inquiry is seeking to obtain information from affected community members by online form and by phoning 13HEALTH. Dr Gerrard will meet with community members to document health concerns they have attributed to the odour from the industrial estate. The information that you provide to me today will assist Dr Gerrard in determining priority appointments. Not everyone who registers their interest will be able to meet with Dr Gerrard. It is important to be aware that these meetings will not be medical consultations. If you do not have symptoms, there is a section at the end of this form where you can provide addition information about the odour issues at Swanbank Industrial estate. The information that you provide to me today must be true and accurate to the best of your knowledge. It is unlawful to provide information which is false or misleading. The information will be provided to the Panel of Inquiry for the stated purposes of the Inquiry only. The information will be held by 13 HEALTH and won't be used for any other purpose. The Panel of Inquiry can lawfully collect this information under the *Public Health Act 2005*. When the Panel has completed these public consultations and its other investigations it will prepare a report for the Health Minister. The Minister is required to table the report in Parliament. Information that you provide may form part of this Report. You will not be identified in the Report. Nor will you be able to be identified by the information that you provide. Queensland Health may contact you further to follow up on your health concerns, contact may be by phone or email.

The Panel has no authority to award compensation for injuries allegedly suffered as a consequence of odours emanating from the Swanbank and New Chum Industrial Estate. Any claim for compensation that you may have, or wish to inquire about, cannot and will not be dealt with as part of this process.			
Do you consent to your personal and sensitive information, including your health information, being collected and used for the current inquiry into the Swanbank Industrial estate?		[select yes]	Mandatory
By clicking **proceed** you are confirming that you understand and agree to the above terms and conditions.		[Click proceed] *If any of the above questions are not ticked pop up "Without your consent we are unable to process your request"* *If you are concerned about your symptoms at any time, you should see your GP* *For more information or support you can visit www.123.@health.qld.gov.au or contact 13HEALTH.*	Mandatory
New page			
Date	[Auto capture]	Date of call/form access	Hidden
		Time of call/form access	Hidden

Title	Field type	Options/data capture	Visibility
About you	**Heading**		
First name	[free text]		Mandatory
Last name	[free text]		Mandatory
Date of Birth	[Date: 00/00/0000]		Mandatory
Phone number	[free text]	Allow mobile and landline '0412 345 567 '07 1234 5678'	Mandatory
Additional/alternative phone number	[free text]	Allow mobile and landline '0412 345 567 '07 1234 5678'	Optional

Email	[free text]		Mandatory
Residential address	[free text] – auto finder	*Capture:* • House/apartment number • Street number • Street name • Suburb • Postcode	Mandatory
Are you the person experiencing symptoms? *'For each family member with symptoms please fill out a new form'*	[Yes/No]	***If yes** client will continue on to first symptom* ***If no**, pop out additional questions* below	Mandatory
Provide details of the person experiencing symptoms			
Relationship to you	[Drop down]	• Child • Parent • Partner/married/defacto • Carer • Other, family • Other, friend	Mandatory
Their first name	[free text]		Mandatory
Their last name	[free text]		Mandatory
Date of Birth	[Date: 00/00/0000]		Mandatory
Symptoms have been reported in those who resided in or frequented the suburbs surrounding the Swanbank Industrial estate, Tell us about your experience.	**Heading/ wording ahead of next section**		
Select the suburb you spent the most time in	[Drop down]	• Augustine Heights • Bellbird Park • Blackstone • Booval • Bundamba • Collingwood Park • Dinmore • Eastern Heights • Ebbw Vale	Mandatory

		• Flinders View • New Chum • Newtown • Raceview • Redbank Plains • Ripley • Riverview • Silkstone • South Ripley • White Rock	
Select the options that apply to you	[multi select]	• I currently live in this area • I previously lived in this area • I currently work or study in this area • I previously worked or studied in this area • I spent time conducting other activities in this area	Mandatory, at least 1 option selected
How long were you in this area?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How often were you in this area?	[Drop down]	• Every day • A few times a week • Once per week • Less than once per week	Mandatory
Your Health	**Heading**		
Do you have a chronic health condition? For example, asthma or other chronic lung conditions, allergies, anxiety, depression	[Yes/No]	*If yes, fields pop out/become visible* *If no, client will continue onto 'tell us about your symptoms'*	Mandatory
Has your chronic health condition worsened or do you think your ability to manage your condition has been impacted?	[Yes/No]		Mandatory

Any further details you would like to provide:	[free text, 100 word limit]		Optional
Tell us about your symptoms	**Heading**		
Do you or have you experienced skin symptoms?	[Yes/No/I don't know]	*If yes, Fields pop out/become visible* *If no, client will continue to next symptom*	Mandatory
Please describe your symptoms	[free text, 100 word limit]	*+ Tick option to say* • *I have nothing further to add* • *I am not sure*	Mandatory Text or tick to progress
Are your symptoms:	[drop down]	• Mild • Moderate • Severe	Mandatory
How long have you been experiencing these symptoms?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How frequently are you or were you experiencing these symptoms?	[drop down]	• Daily • Weekly • Fortnightly • Monthly • Less than once a month	Mandatory
Have you seen a medical professional for your symptoms?	[drop down]	• General Practitioner (GP) • Emergency Department (ED) • Specialist doctor • Other	Mandatory
Did you receive treatment or prescriptions?	[Yes/No]		Optional
	If yes, pop out What kind of treatment did you receive? [multi select]	• Antibiotics • Ointment/cream • Sun protection • Antihistamines • Medications • Specialist referral • Other	Optional

Do you or have you experienced any respiratory symptoms?	[Yes/No/I don't know]	*If yes, Fields pop out/become visible* *If no or I don't know, client will continue to next symptom*	Mandatory
Congested or blocked nose	[select if yes]		Optional
Irritated or sore throat	[select if yes]		Optional
Coughing or wheezing	[select if yes]		Optional
Please describe your symptoms	[free text, 100 word limit]	*+ Tick option to say* • *I have nothing further to add* • *I am not sure*	Mandatory Text or tick to progress
Are your symptoms:	[drop down]	• Mild • Moderate • Severe	Mandatory
How long have you been experiencing these symptoms?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How frequently are you experiencing these symptoms?	[drop down]	• Daily • Weekly • Fortnightly • Monthly • Less than once a month	Mandatory
Have you seen a medical professional for your symptoms?	[drop down]	• General Practitioner (GP) • Emergency Department (ED) • Specialist doctor • Other	Mandatory
Did you receive treatment or prescriptions?	[Yes/No]		Optional
	If yes, pop out What kind of treatment did you receive? [multi select]	• Antibiotics • Inhaler • Nebuliser • Nasal spray or saline wash • Lozenges or throat spray • Antihistamine tablet	Optional

		• Medication/tablets • Other	
Do you or have you experienced any eye symptoms?	[Yes/No/I don't know]	*If yes, Fields pop out/become visible* *If no or I don't know, client will continue to next symptom*	
Watery or irritated eyes	[select if yes]		Optional
Please describe your symptoms	[free text, 100 word limit]	*+ Tick option to say* • *I have nothing further to add* • *I am not sure*	Mandatory Text or tick to progress
Are your symptoms:	[drop down]:	• Mild • Moderate • Severe	Mandatory
How long have you been experiencing these symptoms?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How frequently are you experiencing these symptoms?	[drop down]	[drop down]: • Daily • Weekly • Fortnightly • Monthly • Less than once a month	
Have you seen a medical professional for your symptoms?	[drop down]	[drop down]: • General Practitioner (GP) • Optometrist • Emergency Department (ED) • Specialist doctor • Other	Mandatory
Did you receive treatment or prescriptions?	[Yes/no]		Optional
	If yes, pop out What kind of treatment did you receive?	• Antibiotics • Eye drops • Eye protection	Optional

	[multi select]	• Antihistamine tablet • Pain relief tablet • Medication/tablets • Specialist referral • Other	
Do you or have you experienced any other symptoms?	[Yes/No/I don't know]	*If yes, Fields pop out/become visible* *If no or I don't know, client will continue to next symptom*	
Nausea and/or vomiting	[select if yes]		Optional
Headaches and/or migraines	[select if yes]		Optional
Please describe your symptoms	[free text, 100 word limit]	*+ Tick option to say* • *I have nothing further to add* • *I am not sure*	Mandatory Text or tick to progress
Are your symptoms:	[drop down]	• Mild • Moderate • Severe	Mandatory
How long have you been experiencing these symptoms?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How frequently are you experiencing these symptoms?	[drop down]	• Daily • Weekly • Fortnightly • Monthly • Less than once a month	Mandatory
Have you seen a medical professional for your symptoms?	[drop down]	• General Practitioner (GP) • Emergency Department (ED) • Specialist doctor • Other	Mandatory
Did you receive treatment or prescriptions?	[Yes/No]	If yes, drop down	Optional

	If yes, pop out What kind of treatment did you receive? [multi select]	• Antibiotics • Antihistamine tablet • Nausea tablet • Pain relief tablet • Specialist referral • Other medication/tablets • Other	Optional
Do you or have you experienced mental health symptoms?	[Yes/No/I don't know]	*If yes, Fields pop out/become visible* *If no or I don't know, client will continue to 'Do you have any additional details to provide'*	
Irritability or behaviour changes	[select if yes]		Optional
Depression or anxiety	[select if yes]		Optional
Increased stress or worry	[select if yes]		Optional
Difficulty sleeping	[select if yes]		Optional
Please describe your symptoms	[free text, 100 word limit]	*+ Tick options to say* • *I have nothing further to add* • *I am not sure*	Mandatory Text or tick to progress
Are your symptoms:	[drop down]	• Mild • Moderate • Severe	Mandatory
How long have you been experiencing these symptoms?	[drop down]	• Less than 1 year • 1 - 2 years • 2 - 5 years • 5 - 10 years • >10 years	Mandatory
How frequently are you experiencing these symptoms?	[drop down]	• Daily • Weekly • Fortnightly • Monthly • Less than once a month	Mandatory
Have you seen a medical professional for your symptoms?	[drop down]	• General Practitioner (GP) • Emergency Department (ED) • Specialist/psychologist • Other	Mandatory

Did you receive treatment or prescriptions?	[Yes/No]		Optional
	If yes, pop out What kind of treatment did you receive? [multi select]	• Counselling or psychology • Specialist referral • Medication/tablets • Other	Optional
Do you have any additional details you would like to provide?	[free text, 100 word limit]		Optional
Is anyone else in your family/household experiencing symptoms?	[Yes/No/I don't know]	*Pop out information 'for each member of your family, please fill out a new form so that we can hear about their experience'*	Mandatory
Do you consent for Dr Gerrard contacting your GP/specialist, if needed	[Yes/No]	*If no, client will continue 'appointment preference'* *If yes, Fields pop out/become visible*	Mandatory
Do you have a preferred GP?	Drop down	• *Yes* • *No* • *I don't have a GP* *If yes, pop out 'GP/specialist name'* *If no or 'I don't have a GP' consumer to continue onto 'Register your interest for a meeting with Dr Gerrard'*	Mandatory
GP/Specialist name	[free text]		Mandatory when popped out
Name of GP or Specialist clinic	[free text]		Mandatory when popped out
Address of GP or Specialist clinic	[free text] – Auto finder		Mandatory when popped out
Register your interest for a meeting with Dr Gerrard.	**Heading**		
Do you want to register your interest to meet with Dr Gerrard to discuss your health concerns further?	[select if yes]	*If yes, pop out next section* *If no, questionnaire ends here*	Mandatory
Appointment preference (select those that apply)			

Please note, appointment preferences are not guaranteed and does not mean an appointment has been confirmed.			
Select your preferred date	[drop down]	• Monday 3 March 2025 • Tuesday 4 March 2025 • Wednesday 5 March 2025 • Thursday 6 March 2025	Mandatory
Select your preferred time	[drop down]	• Morning • Afternoon • After hours	Mandatory
A Queensland Health staff member will contact you by phone between 24th February and 28th February to arrange an appointment, this call will be from a blocked number.			
Communication preferences **Please let us know if you require additional support**	**Heading**		
Interpreter services	[select if yes]	*If yes, free text box to enter language*	Optional
National Relay Service	[select if yes]		Optional
I would like to receive updates regarding this inquiry or further questionnaires related to my symptoms and the Swanbank Industrial estate.	Yes/No		Mandatory
I confirm that I have answered all questions truthfully and to the best of my knowledge	[select if yes]		Mandatory
Click to submit form			
Date	[Auto capture]	Date of form submission	Hidden
		Time of form submission	Hidden

Appendix G. Call for formal submissions—copies of published notices

The Ipswich Tribune. Wednesday, March 5, 2025 - Page 24

Classifieds
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Mother's Day theme

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In Memoriam

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e: admin@boonahnewspapers.com.au

Public Notices

City of Ipswich — PUBLIC NOTICE

NOTICE OF PROPOSAL TO APPLY THE STRATEGIC CONTRACTING PROCEDURES

Ipswich City Council (council) proposes to apply the Strategic Contracting Procedures under Chapter 6, Part 2 of the Local Government Regulation 2012.

The proposed resolution/s for this purpose will be considered at the meeting of Ipswich City Council Finance and Governance Committee on 22 April 2025 at 9:00 am. Subject to the outcome of the Finance and Governance Committee's consideration, the resolution/s will proceed to be adopted at council's Ordinary Meeting on 30 April 2025 at 9:00 am.

Additional details, including the wording of the proposed resolutions, can be found at Ipswich.qld.gov.au

SONIA COOPER,
CHIEF EXECUTIVE OFFICER
PO BOX 191, IPSWICH QLD 4305

Public Notices

HAVE YOUR SAY

19 McEWAN STREET, RIVERVIEW, QLD, 4303

(Lot 12 on SP231901 noting that it will soon be over Approved Lot 901 as part of boundary realignment – 6848/2024/RAL (Subject Site))

PROPOSED SOCIAL HOUSING

Riverview Developments is proposing development of a social housing project at the above address. The project includes:

- 58 units (comprising 38 x 1 Bed units & 20 x 2 Bed units)
- Communal Open Space
- 62 on-site car parks

It will involved a maximum building height of 7 storeys.

This proposal has been submitted as a request for a Ministerial Infrastructure Designation (MID) under the *Planning Act 2016*.

The MID proposal can be viewed at www.statedevelopment.qld.gov.au/mid-consultations

You can make a submission, on or before **04 April 2025,** to the Infrastructure Designation team, Department of State Development, Infrastructure and Planning via:

- **online:** https://www.statedevelopment.qld.gov.au/mid-consultations
- **email:** infrastructuredesignation@dsdilgp.qld.gov.au
- **post:** PO Box 15009, City East Qld 4002

Questions? Contact the Infrastructure Designation team on 1300 967 433 or at the above email address.

The MID proposal **MID-0125-0905** has been made by Riverview Developments to the Planning Minister under Chapter 2, Part 5 of the *Planning Act 2016*.

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Public Notices

Swanbank and New Chum Public Health Inquiry - call for submissions

Submissions to the Swanbank and New Chum Public Health Inquiry are now open to the public.

If you have health-related concerns attributable to odours from the Swanbank and New Chum Industrial Estates you can email a written submission to PublicHealthInquiry_Swanbank@health.qld.gov.au by 5pm on 31 March 2025.

Your submission should:

1. Name the suburb you spent the most time in since 2016 when you were affected by the odour and how long you lived there, including if you are a current or past resident.
2. Describe your experiences and the impact of the odour on your everyday life since 2016.
3. Describe any health condition/s which you attribute to the odour including symptoms, frequency of symptoms, whether or not you have seen a medical professional, received a diagnosis, received treatment, and/or received a prescription to manage your symptoms.

If you have already expressed your interest to meet with Dr Gerrard to discuss your health concerns, you do not need to submit a written submission.

For more information visit https://www.health.qld.gov.au/research-reports/reports/review-investigation/swanbank-public-health-inquiry

Queensland Government

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All Welcome
Live Streaming – YouTube
Enquiries Wayne 5463 7305
Keep in touch through our facebook page facebook.com/Boonahcofc

FASSIFERN LUTHERAN PARISH
Pastor Peter Geyer 5463 2050
Wednesday 5th March – Ash Wednesday NO SERVICE
Sunday 9th March – 1st Sunday of Lent
Kalbar 9.45am
Follow us on facebook Fassifern Lutheran Parish

Call Chris to place your Church Service on 5463 1888 or email: admin@boonahnewspapers.com.au

Church Services

Kalbar Baptist Church
Sunday Service 9.30am
Morning Tea provided
ALL WELCOME
John Blake ph: 0439 532 002
Peter Taggert ph: 0413 750 033
Ladies Craft Thursday, 6th March

Salvation Army Fassifern Corps
Worship Sunday 9am
74 George Street, Kalbar
Family Store Mon-Sat Boonah
Salvos Community Connect Wednesday & Fridays 9am-12 noon at 8 Park Street, Boonah
Doorways Community Support line 07 3001 6288 Mon to Fri 9am-4pm
Lt Peter Hardy **Phone 5463 3700**

Cars For Sale

2012 TOYOTA Land Cruiser Sahara 130,000 klm, tow vehicle for a 2012, 30-foot caravan, Oliron Signature 11, with lots of extras I would like to be able to sell them together as a package. If interested, please call Terry on 0427 761 162 to discuss.

Farming and Accessories

BALER TWINE, Castrol Oils, Case Oils. Tractor parts, bolts, tractor accessories and more. Dover & Sons, 57 High Street, Boonah. Phone 5460 6600.

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Swanbank and New Chum Public Health Inquiry - call for submissions
Submissions to the Swanbank and New Chum Public Health Inquiry are now open to the public.
If you have health-related concerns attributable to odours from the Swanbank and New Chum Industrial Estates you can email a written submission to PublicHealthInquiry_Swanbank@health.qld.gov.au by 5pm on 31 March 2025.
Your submission should:
1. Name the suburb you spent the most time in since 2016 when you were affected by the odour and how long you lived there, including if you are a current or past resident.
2. Describe your experiences and the impact of the odour on your everyday life since 2016.
3. Describe any health condition/s which you attribute to the odour including symptoms, frequency of symptoms, whether or not you have seen a medical professional, received a diagnosis, received treatment, and/or received a prescription to manage your symptoms.
If you have already expressed your interest to meet with Dr Gerrard to discuss your health concerns, you do not need to submit a written submission.
For more information visit https://www.health.qld.gov.au/research-reports/reports/review-investigation/swanbank-public-health-inquiry
Queensland Government
General Notices
PUBLIC NOTICES AND EVENT
Proposed Development
Make a submission from
7 March 2025 to 23 April 2025
• Material Change of Use - Variation Application seeking Preliminary Approval that includes Variation Approval to vary the effect of the Ipswich Planning Scheme (2006) including Level of Assessment for Material Change of Use for Business Uses (including but not limited to Bulky Goods Sales (<25,000m2 GFA), Shop/Professional Office (<250m2 GFA), Café/Restaurant, Fast Food Premises, Medical Centre, Vehicle Sales Premises, Veterinary Clinic), Shopping Centre (<2,000m2 GFA), Recreational Use (limited to Indoor Recreation), Entertainment Uses (limited to Club and Licensed Club), Industrial Uses (including but not limited to Service/Trades Use, General Industry Use, Special Industry Use (limited to Concrete Batching Plant)), Community Uses (excluding Cemetery, Crematorium and Hospital) and Major Utility Uses
Where: 7002, 7003, 7005 & 7006 Unnamed Road and 7008 Mount Juillerat Drive, Swanbank Qld 4306
On: Lots 400, 402, 403 & 405 on SP283238 and Lot 404 on SP313797
Approval sought: Material Change of Use - Variation Application seeking Preliminary Approval that includes Variation Approval
Application ref: 6333/2023/VA
You may obtain a copy of the application and make a submission to:
Ipswich City Council
PO Box 191, Ipswich Qld 4305
council@ipswich.qld.gov.au
(07) 3810 6666
www.ipswich.qld.gov.au
Copies of the full application can be viewed or obtained from the Assessment Manager
Public notification requirements are in accordance with the Planning Act 2016
Buy, Rent & Sell in the Real Estate section of Network Classifieds.
Classifieds 1300 666 808
PUBLIC NOTICES AND EVENT
PROPOSAL TO UPGRADE A TELSTRA MOBILE PHONE BASE STATION WITH 4G/5G AT: LOT 8 PLAN SP229573 KEIDGES ROAD SPRING MOUNTAIN QLD 4300
1. The proposal on the existing monopole consists of:
• Replacement of (6) panel antennas 2.533m long on existing mounts
• Ancillary works including the replacement of (6) tower mast amplifiers behind antennas, replacement of (3) remote radio units on existing mounts, and installation of (3) junction boxes.
2. Telstra regards the proposed installation as Low-impact Facilities under the Telecommunications (Low-impact Facilities) Determination 2018 ("The Determination") based on the description above.
3. In accordance with Section 7 of C564: 2020 Mobile Phone Base Station Deployment Code, we invite you to provide feedback about the proposal. Further information and/or comments should be directed to: Emily Wardlaw on behalf of Telstra, 0422 685 472, PO BOX 586, Elsternwick VIC 3185, consultacon@acquirecomm.com.au by Monday 24th March 2025. Further information can also be obtained from https://www.rfnsa.com.au/4124008
Telstra Limited A.C.N 086 174 781
Acquirecomm Pty Ltd A.C.N: 603 876 240
CLASSIFIED EARLY DEADLINES
Classified deadlines for Thursday, 13th March issue as follows:
Monday, 10th March at 11am
Buy, & Sell in our Motoring section of Network Classifieds.
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Find it in the General section of Network Classifieds.
Network Classifieds
1300 666 808

Greta plans to take opportunity to advocate for healthcare workers

BY ROWAN ANDERSON

GOODNA nurse Greta Mukherjee has been selected as a national finalist for Miss Galaxy Australia 2025.

The 24-year-old India-born healthcare professional, now an Australian citizen, sees the pageant as an opportunity to advocate for healthcare workers and inspire others to succeed.

"I want to inspire people," she said.

"Through being a national finalist, I'm using it as a platform to promote the healthcare field and educate people about the contributions healthcare workers make."

As a clinical coordinator in the National Disability Insurance Scheme (NDIS), Ms Mukherjee leads a team of over 60 staff, providing clinical supervision and education.

She also founded Unsniped Healthcare, an initiative promoting health awareness in Australia.

Having moved to Australia in 2018 to study nursing, she worked hard at taking on challenges, including working full-time while studying and chairing her university's Equity Department.

She was later accepted into the University of Queensland's Doctor of Medicine program in 2022, but life took an unexpected turn.

"After contracting Covid-19 twice and surviving a car accident that left me with a fractured back, I had to withdraw from medical school," she said.

OPPORTUNITY: Greta Mukherjee aims to inspire.

PROUD AUSTRALIAN: Staying true to her values.

"At the time, it felt like the end of everything I had worked for. But setbacks can also lead to new opportunities."

Now, she uses her platform to advocate for healthcare workers, minorities and immigrants navigating similar struggles.

"There is a misconception that young professionals, particularly women in leadership, must prove themselves more than their male counterparts," she said.

"I aim to challenge these outdated views by showing that women can excel in both leadership and advocacy, no matter their age or industry."

Ms Mukherjee believes pageantry is about more than glamour – it's a tool for empowerment.

"Working in healthcare has shown me that beauty goes beyond appearances. It is about compassion, resilience and strength," she said.

If she wins the Miss Galaxy Australia title, she hopes to amplify her advocacy efforts on a national and global scale.

"Intelligence, beauty, and ambition are not separate qualities; they can coexist," she said.

"Success is not just about achievements; it's about staying true to your values, pushing through obstacles, and continuing to grow."

The 2025 Miss Galaxy Australia National Final is in Sydney from April 30 to May 3, with winners earning the chance to represent Australia internationally.

Proudly paving the way for Indigenous medical students

STEPHANIE Towers has achieved a ground-breaking milestone as the first First Nations student to gain admission into the University of Southern Queensland's (UniSQ) Bachelor of Biomedical Sciences (Medicine Pathway) program, paving the way for greater Indigenous representation in the medical field.

Last year, Ms Towers was named Dux of Bremer State High School, recognising her outstanding academic achievements.

"I have always dreamed of pursuing a career in medicine, driven by my desire to give back to the healthcare community that provided incredible care for me when I was younger," she said.

"Being the first First Nations student in the Medical Pathway program is an incredible honour.

"Representation in medicine is so important, and I am proud to be part of a program that is building a stronger, more inclusive healthcare system for our regional and rural communities."

With Ipswich's Indigenous population at 4.5 per cent, Ms Towers' success is a powerful step towards greater representation in the medical field.

GREAT HONOUR: Stephanie Towers is driven by a desire to give back to the healthcare community.

Applicants for UniSQ's Medical Pathway program must meet rigorous entry requirements, including a minimum Australian Tertiary Admission Rank (ATAR) of 95.

Shortlisted candidates undergo an intensive selection process, including a panel interview conducted by the UniSQ School of Health and Medical Sciences.

Successful candidates progress through further interviews before being offered a place in the prestigious program.

UniSQ Bachelor of Biomedical Sciences Coordinator Edward Bliss commended Ms Towers' dedication and perseverance.

"Stephanie's passion for medicine and improving the health and wellbeing of the community is truly inspiring," Dr Bliss said.

"The highly competitive nature of this program makes securing a place a remarkable achievement.

"She is leading the way for future First Nations medical professionals, and we are excited to support her on this journey."

ROWAN ANDERSON


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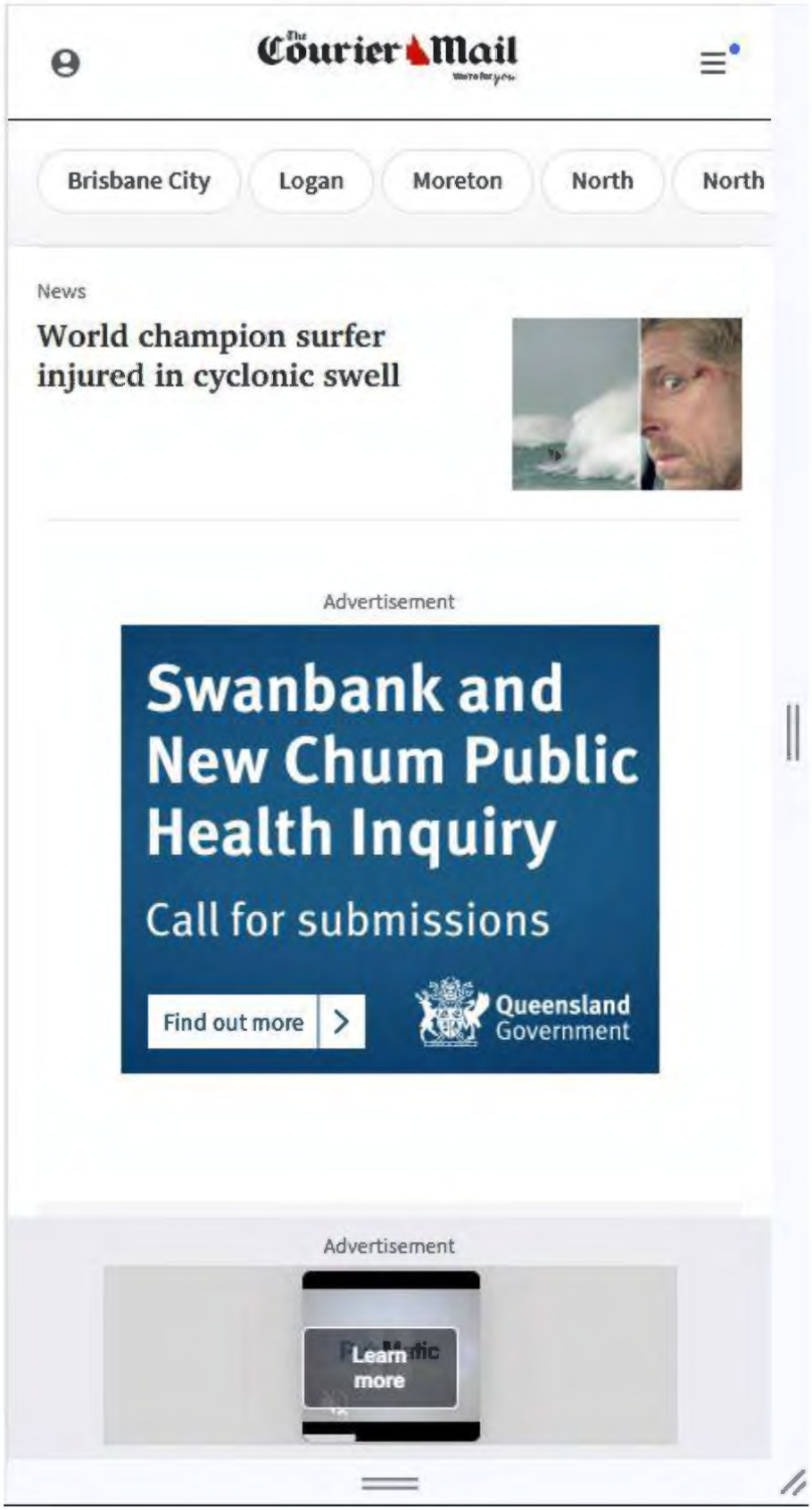
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Appendix H. Incidence and age standardised rates (per 100,000) of selected cancers at SA2 level, Queensland, 2018-2022

SA2 code and name	Exposure status	SEIFA quintile	Incidence (number of cases)				ASR (95% CI)			
			Lung	Liver	Kidney	All cancers	Lung	Liver	Kidney	All cancers
1284 - Bundamba	E	1	33	7	5	280	67.0 [46.4 ,91.7]	13.6 [5.9 ,25.3]	10.8 [4.0 ,22.1]	559.9 [496.3 ,627.3]
1287 - Ipswich - East	E	1	78	13	21	665	65.1 [51.6 ,80.3]	10.7 [5.9 ,17.3]	17.8 [11.2 ,26.2]	566.5 [524.3 ,610.4]
1293 - Raceview	E	2	41	4	32	521	45.7 [32.9 ,60.7]	4.4 [1.4 ,9.6]	37.8 [26.0 ,52.0]	608.1 [557.0 ,661.4]
1294 - Ripley	E	3	8	2	3	172	34.2 [15.7 ,61.7]	3.7 [0.8 ,10.3]	6.2 [1.7 ,14.9]	652.0 [558.5 ,753.0]
1295 - Riverview	E	1	11	3	1	84	49.2 [25.4 ,82.2]	12.6 [3.4 ,30.3]	2.7 [0.3 ,9.9]	405.0 [323.5 ,496.1]
1299 - Collingwood Park - Redbank	E	1	33	2	6	230	80.6 [55.8 ,110.3]	3.8 [0.8 ,10.5]	14.2 [5.7 ,27.7]	516.7 [452.2 ,585.6]
1302 - Redbank Plains	E	1	49	10	13	430	73.1 [54.3 ,94.9]	13.9 [6.9 ,23.8]	15.6 [8.5 ,25.1]	563.0 [511.1 ,617.4]
1565 - Augustine Heights - Brookwater	E	5	7	2	2	136	54.3 [23.4 ,101.3]	5.1 [1.1 ,14.3]	5.1 [1.0 ,14.2]	678.2 [569.4 ,796.9]
1566 - Bellbird Park	E	2	16	1	5	154	46.4 [27.0 ,71.7]	2.5 [0.3 ,9.4]	13.8 [5.1 ,28.3]	451.0 [382.8 ,524.9]
Total exposed (E) SA2s	*E*		*276*	*44*	*88*	*2672*	*58.8 [52.1 ,65.9]*	*9.1 [6.7 ,12.0]*	*18.4 [14.8 ,22.4]*	*553.8 [533.0 ,575.0]*
1311 - Boronia Heights - Park Ridge	PE	1	59	10	16	509	59.5 [45.4 ,75.6]	10.8 [5.4 ,18.4]	18.5 [10.8 ,28.6]	544.9 [498.6 ,593.2]
1297 - Camira - Gailes	PE	2	28	6	8	285	50.4 [33.8 ,70.8]	15.6 [6.3 ,30.3]	15.8 [7.2 ,28.5]	581.5 [516.0 ,650.9]
1285 - Churchill - Yamanto	PE	2	12	3	3	179	33.5 [17.9 ,55.0]	8.3 [2.3 ,20.0]	8.1 [2.2 ,19.6]	528.4 [454.0 ,608.5]
1300 - Goodna	PE	1	25	6	5	230	53.3 [34.8 ,76.1]	12.5 [5.0 ,24.4]	9.9 [3.6 ,20.2]	469.8 [411.2 ,532.4]
1286 - Ipswich - Central	PE	1	29	4	8	232	69.4 [46.8 ,96.9]	9.5 [3.1 ,20.8]	19.0 [8.7 ,34.2]	559.5 [490.0 ,633.8]
1288 - Ipswich - North	PE	3	7	2	6	146	28.3 [12.2 ,52.7]	6.0 [1.2 ,16.8]	18.4 [7.4 ,35.8]	600.0 [506.9 ,701.1]
1289 - Karalee - Barellan Point	PE	4	11	2	1	186	45.1 [23.3 ,75.5]	5.4 [1.1 ,15.1]	5.5 [0.7 ,20.3]	571.4 [492.4 ,656.4]
1290 - Karana Downs	PE	4	16	0	9	196	65.5 [38.1 ,101.2]	- [0.0 ,0.0]	29.6 [14.2 ,51.9]	605.3 [523.7 ,692.9]
1291 - Leichhardt - One Mile	PE	1	32	2	8	215	79.1 [54.4 ,108.7]	5.3 [1.1 ,14.7]	20.8 [9.5 ,37.4]	547.5 [476.9 ,623.1]

1292 - North Ipswich - Tivoli	PE	1	36	4	6	241	74.3 [52.3 ,100.5]	9.9 [3.2 ,21.6]	14.6 [5.9 ,28.4]	526.7 [462.4 ,595.3]
1304 - Springfield Lakes	PE	4	20	6	11	324	52.0 [32.2 ,77.1]	15.1 [6.1 ,29.3]	14.4 [7.4 ,24.1]	551.3 [493.0 ,613.0]
Total partial exposed (PE) SA2s	*PE*		*275*	*45*	*81*	*2743*	*55.5 [49.2 ,62.3]*	*9.1 [6.7 ,12.0]*	*15.7 [12.5 ,19.4]*	*542.5 [522.4 ,563.0]*
1305 - Beaudesert	NE	1	66	9	14	607	59.3 [46.0 ,74.5]	7.3 [3.5 ,12.8]	14.8 [8.3 ,23.6]	561.8 [518.0 ,607.3]
1306 - Beenleigh	NE	1	37	4	10	285	73.0 [51.6 ,98.3]	8.9 [2.9 ,19.4]	19.4 [9.7 ,33.2]	581.5 [516.1 ,651.0]
1314 - Crestmead	NE	1	27	7	9	273	68.4 [45.5 ,96.5]	12.2 [5.3 ,22.8]	16.4 [7.9 ,28.7]	602.1 [532.9 ,675.6]
1329 - Daisy Hill	NE	4	17	2	5	182	52.6 [31.2 ,80.4]	4.3 [0.9 ,11.9]	11.2 [4.1 ,23.0]	493.5 [424.6 ,567.8]
1384 - Dayboro	NE	4	20	2	6	306	32.1 [19.9 ,47.7]	3.5 [0.7 ,9.7]	8.6 [3.5 ,16.7]	577.9 [515.0 ,644.4]
1385 - Eatons Hill	NE	5	12	0	2	202	32.6 [17.3 ,53.4]	- [0.0 ,0.0]	9.1 [1.9 ,25.4]	563.2 [488.4 ,643.5]
1308 - Edens Landing - Holmview	NE	2	30	3	7	199	82.0 [55.7 ,113.8]	8.7 [2.4 ,20.8]	18.9 [8.2 ,35.3]	521.7 [451.9 ,596.7]
1274 - Inala - Richlands	NE	1	72	21	9	436	78.1 [61.2 ,97.2]	22.4 [14.0 ,32.9]	9.5 [4.6 ,16.6]	470.0 [427.0 ,515.2]
1309 - Mount Warren Park	NE	2	17	6	8	198	40.3 [23.9 ,61.6]	12.8 [5.2 ,25.0]	21.6 [9.9 ,38.9]	518.8 [449.2 ,593.5]
1009 - Redland Bay	NE	3	47	8	12	543	43.1 [31.8 ,56.3]	6.8 [3.1 ,12.2]	11.7 [6.2 ,19.2]	518.6 [475.9 ,563.1]
1319 - Regents Park - Heritage Park	NE	2	35	7	20	357	58.3 [40.8 ,79.1]	9.6 [4.1 ,17.9]	26.3 [16.3 ,39.0]	493.2 [443.4 ,545.6]
Total non exposed (NE) SA2s	*NE*		*380*	*69*	*102*	*3588*	*55.9 [50.4 ,61.6]*	*9.9 [7.7 ,12.4]*	*14.9 [12.2 ,17.9]*	*530.0 [512.8 ,547.5]*
Total of selected SA2			**931**	**158**	**271**	**9003**	**56.6 [53.0 ,60.3]**	**9.4 [8.0 ,11.0]**	**16.1 [14.2 ,18.0]**	**540.5 [529.4 ,551.7]**
Queensland			**1509 3**	**2360**	**4277**	**166171**	**47.5 [46.7 ,48.2]**	**7.5 [7.2 ,7.8]**	**14.1 [13.7 ,14.5]**	**543.7 [541.1 ,546.3]**

Appendix I. Observed and expected numbers of selected cancers and the corresponding standardised incidence ratio at SA2 level, Queensland, 2018-2022

SA2 code and name	Exposure status	SEIFA quintile	Observed incidence				Expected (based on age-specific rates for Qld)				SIR (95% CI)			
			Lung	Liver	Kidney	All cancers	Lung	Liver	Kidney	All cancers	Lung	Liver	Kidney	All cancers
1284 - Bundamba	E	1	33	7	5	280	24.0	3.9	7.1	271.7	1.38 (0.95-1.93)	1.81 (0.73-3.73)	0.71 (0.23-1.65)	1.03 (0.91-1.16)
1287 - Ipswich - East	E	1	78	13	21	665	59.7	9.3	16.2	644.4	1.31 (1.03-1.63)	1.40 (0.74-2.39)	1.29 (0.80-1.98)	1.03 (0.95-1.11)
1293 - Raceview	E	2	41	4	32	521	42.9	6.7	12.0	471.1	0.96 (0.69-1.30)	0.59 (0.16-1.52)	2.67 (1.82-3.77)	1.11 (1.01-1.21)
1294 - Ripley	E	3	8	2	3	172	11.0	2.0	4.4	160.0	0.73 (0.31-1.43)	0.99 (0.12-3.57)	0.69 (0.14-2.00)	1.08 (0.92-1.25)
1295 - Riverview	E	1	11	3	1	84	10.3	1.6	2.7	108.6	1.07 (0.53-1.91)	1.91 (0.39-5.59)	0.37 (0.01-2.07)	0.77 (0.62-0.96)
1299 - Collingwood Park - Redbank	E	1	33	2	6	230	19.7	3.3	6.3	238.6	1.68 (1.16-2.34)	0.61 (0.07-2.20)	0.95 (0.35-2.07)	0.96 (0.84-1.10)
1302 - Redbank Plains	E	1	49	10	13	430	30.7	5.3	10.7	400.5	1.60 (1.18-2.11)	1.87 (0.90-3.44)	1.21 (0.65-2.07)	1.07 (0.97-1.18)
1565 - Augustine Heights - Brookwater	E	5	7	2	2	136	9.6	1.8	4.0	141.5	0.73 (0.29-1.51)	1.12 (0.14-4.06)	0.50 (0.06-1.80)	0.96 (0.81-1.14)
1566 - Bellbird Park	E	2	16	1	5	154	14.5	2.4	4.8	179.9	1.11 (0.63-1.80)	0.41 (0.01-2.28)	1.04 (0.34-2.43)	0.86 (0.73-1.00)
Total exposed (E) SA2s	*E*		*276*	*44*	*88*	*2672*	*222.3*	*36.7*	*68.2*	*2616.2*	*1.24 (1.10-1.40)*	*1.21 (0.88-1.62)*	*1.29 (1.03-1.59)*	*1.02 (0.98-1.06)*
1311 - Boronia Heights - Park Ridge	PE	1	59	10	16	509	47.5	7.4	13.0	517.3	1.24 (0.95-1.60)	1.36 (0.65-2.50)	1.24 (0.71-2.01)	0.98 (0.90-1.07)
1297 - Camira - Gailes	PE	2	28	6	8	285	23.3	3.9	7.2	269.3	1.20 (0.80-1.74)	1.56 (0.57-3.39)	1.11 (0.48-2.18)	1.06 (0.94-1.19)
1285 - Churchill - Yamanto	PE	2	13	3	3	179	16.0	2.6	4.8	183.7	0.82 (0.43-1.39)	1.15 (0.24-3.37)	0.62 (0.13-1.81)	0.97 (0.84-1.13)
1300 - Goodna	PE	1	25	6	5	230	23.2	3.8	7.1	270.4	1.08 (0.70-1.59)	1.59 (0.58-3.46)	0.71 (0.23-1.64)	0.85 (0.74-0.97)

1286 - Ipswich - Central	PE	1	29	4	8	232	21.3	3.4	6.0	233.7	1.36 (0.91-1.95)	1.19 (0.32-3.04)	1.34 (0.58-2.64)	0.99 (0.87-1.13)
1288 - Ipswich - North	PE	3	7	2	6	146	11.0	1.9	3.6	130.5	0.64 (0.26-1.32)	1.07 (0.13-3.88)	1.67 (0.61-3.64)	1.12 (0.94-1.32)
1289 - Karalee - Barellan Point	PE	4	11	2	1	186	14.7	2.5	4.8	174.7	0.75 (0.37-1.34)	0.81 (0.10-2.92)	0.21 (0.01-1.17)	1.07 (0.92-1.23)
1290 - Karana Downs	PE	4	16	0	9	196	15.5	2.6	4.9	181.8	1.03 (0.59-1.67)	0.00 (0.00-1.42)	1.82 (0.83-3.46)	1.08 (0.93-1.24)
1291 - Leichhardt - One Mile	PE	1	32	2	8	215	18.4	3.0	5.6	212.2	1.74 (1.19-2.45)	0.67 (0.08-2.41)	1.44 (0.62-2.83)	1.01 (0.88-1.16)
1292 - North Ipswich - Tivoli	PE	1	36	4	6	241	23.6	3.6	6.2	247.9	1.52 (1.07-2.11)	1.11 (0.30-2.84)	0.97 (0.36-2.11)	0.97 (0.85-1.10)
1304 - Springfield Lakes	PE	4	20	6	11	324	22.3	4.0	8.9	326.0	0.90 (0.55-1.39)	1.50 (0.55-3.27)	1.24 (0.62-2.22)	0.99 (0.89-1.11)
Total partially exposed (PE) SA2s	*PE*		*275*	*45*	*81*	*2743*	*236.8*	*38.5*	*72.0*	*2747.4*	*1.16 (1.03-1.31)*	*1.17 (0.85-1.57)*	*1.13 (0.89-1.40)*	*1.00 (0.96-1.04)*
1305 - Beaudesert	NE	1	66	9	14	607	55.9	8.7	15.0	590.3	1.18 (0.91-1.50)	1.04 (0.47-1.97)	0.93 (0.51-1.56)	1.03 (0.95-1.11)
1306 - Beenleigh	NE	1	37	4	10	285	23.7	3.8	6.9	265.2	1.56 (1.10-2.15)	1.05 (0.29-2.69)	1.45 (0.69-2.66)	1.08 (0.95-1.21)
1314 - Crestmead	NE	1	27	7	9	273	19.1	3.3	6.6	241.4	1.41 (0.93-2.05)	1.92 (0.70-4.17)	1.37 (0.63-2.61)	1.13 (1.00-1.27)
1329 - Daisy Hill	NE	4	17	2	5	182	17.5	2.9	5.4	201.8	0.97 (0.56-1.55)	0.70 (0.08-2.53)	0.93 (0.30-2.17)	0.90 (0.78-1.04)
1384 - Dayboro	NE	4	20	2	6	306	27.1	4.4	8.2	306.5	0.74 (0.45-1.14)	0.45 (0.05-1.63)	0.73 (0.27-1.59)	1.00 (0.89-1.12)
1385 - Eatons Hill	NE	5	12	0	2	202	16.0	2.8	5.5	198.3	0.75 (0.39-1.31)	0.00 (0.00-1.34)	0.36 (0.04-1.32)	1.02 (0.88-1.17)
1308 - Edens Landing - Holmview	NE	2	30	3	7	199	16.9	2.8	5.4	204.2	1.78 (1.20-2.54)	1.07 (0.22-3.14)	1.31 (0.53-2.69)	0.98 (0.84-1.12)
1274 - Inala - Richlands	NE	1	72	21	9	436	43.8	7.1	13.1	504.8	1.64 (1.29-2.07)	2.95 (1.83-4.51)	0.69 (0.31-1.30)	0.86 (0.78-0.95)
1309 - Mount Warren Park	NE	2	17	6	8	198	20.3	3.1	5.4	215.8	0.84 (0.49-1.34)	1.92 (0.70-4.17)	1.48 (0.64-2.91)	0.92 (0.79-1.05)
1009 - Redland Bay	NE	3	47	8	12	543	51.1	8.2	14.9	568.3	0.92 (0.68-1.22)	0.98 0.42-1.93)	0.81 (0.42-1.41)	0.96 (0.88-1.04)
1319 - Regents Park - Heritage Park	NE	2	35	7	20	357	33.1	5.6	10.9	401.4	1.06 (0.74-1.47)	1.24 (0.50-2.56)	1.83 (1.12-2.83)	0.89 (0.80-0.99)

Total non-exposed (NE) SA2s	*NE*		*380*	*69*	*102*	*3588*	*324.3*	*52.7*	*97.3*	*3698.0*	*1.17 (1.06-1.30)*	*1.31 (1.02-1.66)*	*1.05 (0.86-1.27)*	*0.97 (0.94-1.00)*
Total of selected SA2			**931**	**158**	**271**	**9003**	**783.5**	**127.5**	**237.4**	**9061.6**	**1.19 (1.11-1.27)**	**1.24 (1.05-1.45)**	**1.14 (1.01-1.29)**	**0.99 (0.97-1.01)**

Appendix J. Summary of actions taken by DETSI to address odour issues since 2018

DETSI has taken a number of specific actions to mitigate and reduce odour generation from the industrial areas including:

- 2018—surveying residents to understand odour concerns
- 2018—setting up an Odour Abatement Taskforce
- 2019—engaged a specialist to undertake a review and prepare two reports on the Critical Evaluation of Composting Operations and Feedstock Suitability
- 2019—the Phase 1 and 2 Critical Evaluation of Composting Operations and Feedstock Suitability reports were recognised as 'recognised entity reports' in order to enable them as grounds for licence amendments
- 2019-2021—in consultation with industry DETSI developed the best practice guideline (https://www.des.qld.gov.au/policies?a=272936%3Apolicy_registry/era-gl-bpem-composting.pdf) and updated the model operating conditions (https://www.des.qld.gov.au/policies?a=272936%3Apolicy_registry/pr-co-composting.pdf)
- 2020-2021—introduction of Envirosuite to predict odour events and monitor weather conditions, commenced a trial using 'e-noses' to detect odour to alert officers to events occurring in real-time and trialled drones
- 2021—engaged a specialist to develop a complementary report on Organic Odour Feedstock Rating Report (https://environment.desi.qld.gov.au/__data/assets/pdf_file/0023/340727/organicfeedstockodourrating.pdf) to determine the odour potential of a feedstock not listed in the recognised entity reports and to consider the odour potential of mixing two or more feedstocks, for example, FOGO
- 2021—made minor updates to the best practice guideline (https://www.des.qld.gov.au/policies?a=272936%3Apolicy_registry/era-gl-bpem-composting.pdf)
- 2022—significant on-ground compliance response to flooding in a landfill cell at a landfill facility including:
  - expanding the air monitoring program at locations around the site
  - installing hydrogen sulphide monitors at concerned residential locations
  - providing volatile organic compound sample collection canisters to concerned residents
  - analysed the results at a Queensland Health laboratory
  - engaged with Queensland Health on the results
  - published the air monitoring results online.
- 2022-2023—engaged a specialist to develop a more comprehensive air monitoring plan for the industrial areas and worked with Queensland Health on the scalable plan, the monitoring equipment and monitoring locations

- 2023—in May the final report from the independent review of the EP Act by retired Planning and Environment Court judge Mr Richard Jones and Barrister Ms Susan Hedge was released including 18 recommendations
- 2023—implemented a five-point plan (outlined in Section 7.2.1) to address odour issues
- 2023—in September DETSI released a consultation paper on the recommendations from the independent report that had not yet been implemented, including the proposal to amend the EP Act to reflect the recommendations
- 2023—in September DETSI expanded the air monitoring program by inviting potentially affected schools and early childcare centres to participate in the monitoring program following several community members at a community meeting in Redbank Plains raised concerns about their children's well-being and potential exposure to odours while at school
- 2023—in December DETSI filed an application for a restraint order seeking NuGrow immediately cease receiving certain waste until enclosed/in-vessel infrastructure is operational and to overhaul its operations to reduce the risk of odour to the community
- 2024—subsequent to the independent review, DETSI amended the EP Act via the EPOLA (Powers and Penalties) Bill which was passed in June 2024
- 2024—in August further amendments were made to the EP Regulation to strengthen regulations to help reduce odour impacts from composting facilities on nearby communities
- 2024—in September the Court granted a restraint order against NuGrow in relation to the odour being caused to the community
- 2024—in November Cleanaway received a penalty of more than $600,000 after pleading guilty to seven offences relating to odour nuisance that impacted surrounding residents in 2022. This also included a public benefit order of $212,000 directly funding community projects. This was the highest penalty ever handed down under the EP Act for offences relating to environmental odour nuisance and set a new precedent in Queensland for odour prosecutions
- 2024—DETSI secured transitional arrangements for WMI to move from open windrow composting to enclosed or in-vessel systems. These requirements require WMI to cease receiving odorous feedstocks if it has not complied with the regulatory requirements for in-vessel or enclosed composting by 30 September 2026
- 2025—in February DETSI launched an online interactive map (https://www.qld.gov.au/environment/management/monitoring/air/air-programs/odour/swanbank-new-chum/air-monitoring) that provides a centralised interactive platform for the community to access data about air monitoring in and surrounding Swanbank and New Chum.

NB: The actions outlined here represent those DETSI can disclose to the public. Some actions however cannot be disclosed.

DETSI continues to respond to community reports, undertake site inspections and hold operators to account through taking enforcement action. More detail on these can be found in the individual compliance site history (refer to Appendix E).

Appendix K. Response to E–petition

Minister for the Environment and the Great Barrier Reef
Minister for Science and Innovation

Your Ref: A1239821
Our Ref: CTS 02556/24

1 William Street Brisbane Qld 4000
GPO Box 5078 Brisbane
Queensland 4001 Australia
Telephone +61 7 3719 7330
Email environment@ministerial.qld.gov.au

14 March 2024

Mr Neil Laurie
The Clerk of the Parliament
Parliament House
George Street
BRISBANE QLD 4000

Dear Mr Laurie

Thank you for your letter of 15 February 2024 enclosing a copy of Parliamentary Petition No. 3957-23 concerning health and amenity impacts from private waste company activities in the Swanbank Industrial Area, Ipswich.

I acknowledge the petitioners' request of the House to do all in its powers to protect the health and safety of residents in the Ipswich region that have been exposed to odour nuisance from the waste industry.

I can assure the petitioners that we are a Government which listens to the community and acts. I would also like to acknowledge the strong advocacy by the Members for Bundamba, Ipswich, and Jordan on behalf of their local community. Last year I attended a community meeting at Redbank Plains to hear firsthand of the odour issues impacting the community. These odour issues are unacceptable and addressing odour has been, and continues to be, a Government priority.

Environmental impacts from a number of industries present increasingly complex regulatory challenges. Odour issues around the Swanbank Industrial Area are not new and are a result of a complex intersect of residential encroachment, difficulties in contemporising licenses issued for some of the high odour producing activities, and some non-compliant operators.

The Department of Environment, Science and Innovation is the environmental regulator charged with the responsibility for addressing community concerns and ensuring environmental authority (EA) holders are complying with their environmental obligations. Where the department identifies non-compliance, enforcement action can be taken to compel operators to comply and to hold them accountable. For the avoidance of any doubt, the Odour Abatement Taskforce is a unit from within the department based in Ipswich, and largely responsible for compliance activities in the Swanbank area. The Taskforce has been supplemented with additional surge staffing drawn from across Queensland given the scale of the issues in the Swanbank area.

Responses to the points raised in the petition are provided below:

- ***Department of Environment, Science and Innovation and the Odour Abatement Taskforce to conduct proactive enforcement and compliance activities for waste operations***

Odour is one of the most difficult and complex issues for the department to investigate and resolve due to the difficulties associated with proving the source of odours to the high standard required by courts. While difficult, the department has engaged external scientists and engineers who specialise in odour to assist with its odour investigations. These people are the premier consultants in this field.

The department received finding from one of its odour experts late last year and was able to identify that NuGrow Ipswich Pty Ltd, who operate a composting facility in the Swanbank Industrial Area is a primary source of odour. The department then sought an interim restraint order from the Planning and Environment Court that if granted, would limit certain aspects of the business. Importantly, this would include restrictions on receiving certain highly odorous wastes, with the aim of bringing relief to the local community. The Court is currently considering the order, and a decision will be delivered at a date in the future. This proceeding demonstrates the department's commitment to holding non-compliant operators to account.

Since July last year, the department has executed several proactive compliance campaigns in the Swanbank Industrial Area and the broader Ipswich area. This has included a multi-agency waste transport intercept in the area, targeted and detailed site inspections of composting facilities in the Swanbank Industrial Area, disaster preparedness inspections for all waste sites in the Swanbank Industrial Area, and site inspections of all licenced activities with the potential to cause odour impacts across the Ipswich region.

Of the operators located just in the Swanbank Industrial Area, 121 site visits have been conducted since June 2023, which is already more than twice that conducted in the previous year. Since June 2023, 14 enforcement actions have been taken, including issuing over $90,000 in on-the-spot fines. Several matters are before Court and other alleged offences remain under investigation with potential future Court action to follow. While not all of these matters relate to addressing odour, again this demonstrates that the department will hold non-compliant operators to account.

- ***The immediate cessation of operations where non-compliance is shown***

Legislation administered by the department contains a list of grounds for the suspension or cancellation of permits, licences or authorities. These grounds include the holder being convicted of an offence under that legislation or not meeting specified suitability criteria. For serious contraventions of legislation, the department does consider suspension or cancellation of permits or licences. However, these actions may only be pursued after the prescribed grounds have been satisfied.

Similarly, Ipswich City Council who is responsible for approving development applications within its jurisdiction, holds the responsibility of ensuring compliance with the conditions of these approvals. Ipswich City Council possesses the authority to enforce measures in cases where businesses fail to meet these conditions. The Queensland Government has encouraged Ipswich City Council to consider the available levers it has to assist in addressing the odour issues impacting community.

On 13 February 2024, the Miles Government introduced new legislation into the Queensland Legislative Assembly to provide stronger protection for communities impacted by environmental issues such as odour, dust and noise. If passed, the Environmental Protection (Powers and Penalties) and Other Legislation Amendment Bill 2024 (the Bill) will give the environmental regulator additional tools to prevent environmental harm before it occurs, punish those breaking the law, and force them to take faster clean-up action. The proposed changes will ensure there is appropriate emphasis on human health, wellbeing and safety in Queensland's environmental laws, and shifts the focus to proactive prevention of environmental impacts.

This Bill will implement the Government's response to a review of the powers and penalties under the *Environmental Protection Act 1994* (Qld) undertaken by retired Judge Richard Jones and Barrister Susan Hedge in 2022, which was initiated in part due to the significant odour nuisance issues experienced by the Ipswich community after the rainfall event in February 2022. The review provided 18 recommendations, several of which have already been delivered through the *Environmental Protection and Other Legislation Amendment Act 2023* which was passed by the Queensland Parliament in March 2023. The Bill will finalise the Government's response to the recommendations.

While these proposed changes do not provide powers for the department to cause the immediate cessation of a business upon identifying non-compliance, they will work towards strengthening the department's regulatory ability to enforce compliance with environmental legislation and community expectations.

- ***Have the regulator direct compost and mulching operations to enclose their facility***

The department is undertaking an EA modernisation process to update composting EAs to best practice standards. This includes requiring enclosed composting infrastructure at facilities receiving highly odorous feedstocks that are nearby to residential areas.

Changes to authorities to date have been through negotiation and agreement, with several operators in Queensland voluntarily adopting best practice composting standards.
Where agreement cannot be reached, a legislative process is required that affords natural justice through consultation, review and appeal rights. This means that for some operators, the modernisation process becomes protracted and resource intensive. This is in addition to timeframes for planning approval and construction.

With this in mind, I have requested the department identify options for Government to consider which would strengthen regulations to expedite progress of EA modernisation and provide a more level playing field across the compost sector.

- ***The establishment of air quality stations in suburbs where odour complaints have been lodged with the Odour Abatement Taskforce***

Over the coming months, the department is also expanding its air monitoring capabilities in the Swanbank Industrial Area. This is based on recommendations provided by an independent air expert engaged by the department.

The expanded air monitoring program will include rolling out and relocating additional wind/weather stations at locations identified to best assist the department's understanding about impacts on community and will adopt new technology to provide close to real time monitoring of certain air quality parameters. Expanding the existing network allows for more contemporary and reliable data to inform compliance activities and will include online viewing access for community.

- ***Quarterly public community meetings to be held by Odour Abatement Taskforce and the Regulator Department of Environment, Science and Innovation***

I am pleased to note that the progress of the department's key initiatives is being communicated to residents regularly through the department's enhanced community engagement activities.
Since September 2023, the department has been releasing regular newsletters, holding monthly community reference group meetings and hosting monthly community drop-in sessions along with representatives of Queensland Health and Biosecurity Queensland from the Department of Agriculture and Fisheries.

The newsletters are currently reaching over 2,000 subscribers and the five most recent editions have yielded strong open rates. These strategies aim to provide a better balance of regular engagement between community and the regulator.

- ***The State Government to direct cleanaway at their New chum landfill site to permanently close Cell 3B and commence rehabilitation***

The department continues to require Cleanaway to raise its environmental performance to protect environmental values and community from any unlawful impacts from its operations through compliance inspections, EA amendments and enforcement action.

To minimise any future risks, the department has amended Cleanaway's EA to strengthen protections and include a raft of strict new conditions to manage groundwater and minimise the potential for odour emissions.

The landfill will only be able to recommence receiving waste once Cleanaway has rebuilt the remaining void and installed necessary infrastructure in accordance with the requirements of its EA and the approvals issued by the Ipswich City Council. Once completed, this will be the only landfill void available to Cleanaway after the Planning and Environment Court refused its application to expand landfilling operations on the site.

The department continues to closely monitor Cleanaway's activities to ensure that it is complying with the conditions of its EA and will continue to respond to any reports or issues that arise at the New Chum facility in accordance with its role as the environmental regulator.

- ***The declaration of an environmental health event in relation to air pollution created by the waste industry; and***
- ***The establishment of a panel of inquiry into the health impacts of the waste industry on residents***

The public health concerns raised by the petitioners are acknowledged. While these concerns fall within the portfolio responsibilities of the Honourable Shannon Fentiman MP, Minister for Health, Mental Health and Ambulance Services, Queensland Health is working closely with the Department of Environment, Science and Innovation, providing advice in response to air monitoring results. To date, no air sample has exceeded health guidelines.

I am advised that various referral pathways have been established for residents to access health advice. Residents are encouraged to visit their general practitioner (GP) or the local Ripley Satellite Hospital to have any health concerns assessed. Residents may also contact 13HEALTH for confidential advice from a registered nurse. As of 28 February 2024, Queensland Health advised that no calls have been received by 13HEALTH relating to Swanbank odour.

Queensland Health has also advised that:

- it has sent out three alerts to GPs in partnership with surrounding Primary Health Networks. These alerts highlight to GPs the possibility that patients may present with symptoms associated with their proximity to the Swanbank Industrial Area. Local GPs have been asked to report individual cases to Queensland Health which will assist in collecting information on any health impacts that may be attributable to the Swanbank Industrial Area;
- the Chief Health Officer has met with medical representative groups, to encourage GPs in the West Moreton community to utilise the referral pathways for community members who may have health issues related to the Swanbank Industrial Area odours – and report these to Queensland Health;
- as of 29 February 2024, only two community members have been referred through this arrangement. A review did not reveal any specific links between each person's medical condition and any odour being caused.

Queensland Health has also assessed cancer rates in selected areas around the Swanbank Industrial Area. Overall, there has not been an increase in the cancer rates for any of the common cancers, including lung cancer, in any of these areas over the last 20 years.

Queensland Health is of the view that the establishment of a Panel of Inquiry or an Environmental Health Event Register would be difficult to justify under the *Public Health Act 2005* as the health-based guideline values for air quality have not been exceeded and currently, there is no substantial information directly linking the Swanbank Industrial Area to any adverse health outcomes in the community.

Regardless, Queensland Health notes that these mechanisms would not provide the remedies sought by the community to alleviate their current health concerns for the following reasons:

- a Panel of Inquiry is unlikely to identify information that is not already known, for example, the source of air pollutants; and
- measures have already been implemented to monitor and track the health concerns of the community which would be the primary focus of an Environmental Health Event Register.

I trust that this information is of assistance to the petitioners.

Yours sincerely

Leanne Linard MP
Minister for the Environment and the Great Barrier Reef and
Minister for Science and Innovation

Appendix L. Copies of GP Health Alerts

GP Health Alert

Re: Odour complaints related to the Cleanaway New Chum solid waste landfill, Collingwood Park

Dear colleagues

I just wanted to draw your attention to this issue as I am sure that some of you may have already seen patients presenting with symptoms, which they feel are related to the odour coming from the landfill. The complaints have mainly come from the suburbs surrounding the landfill and include Collingwood Park, Goodna, Bellbird Park, Redbank, and Riverview.

The most common symptoms are:

- Headaches
- Nausea
- Watery eyes
- Nasal congestion
- Other upper respiratory tract symptoms such as irritated throat, cough, or wheeze especially if the person has allergies, asthma, and other chronic lung problems.
- Sleep problems
- Annoyance
- Depression

All these factors can reduce quality of life so odour complaints should be taken seriously

In general, most substances that cause odours in outdoor air are not at levels that are harmful to health.

The following conditions may trigger symptoms even when odours are below irritation levels.

- If the odour has an unpleasant smell
- If the person has had a previous bad experience with the odour
- If the person believes the odour is harmful
- If the person is stressed by the odour

Sensitive populations:

- The young
- Females
- Non-smokers
- People who suffer from
    - Migraines
    - Allergies
    - Asthma
    - Chronic lung disease

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- Depression and anxiety disorders

As part of your clinical assessment, it is important to obtain details of the odour such as:

- When the odour occurs e.g., time of day
- How often the person is exposed to the odour
- The strength of the odour
- The offensiveness/characteristics of the odour
- The symptoms the person experiences and how soon after the exposure to the odour these occur.
- The type of land use and nature of human activities in the vicinity of the odour

Responses to these questions are invaluable to public health and the Department of Environment and Science (DES), who are responsible for regulating environmental contaminants, and the investigation and management of the odour producing activity.

For further information about the issue please see the following link to the DES website

Cleanaway New Chum odour issues | Environment, land and water | Queensland Government (www.qld.gov.au)

It is important for your patient to advise the DES of the odour and this can be done by contacting the Pollution Hotline on 1300 130 372 which is available 24 hours a day, 7 days a week.

It would be appreciated if you could contact the public health unit on phone 38184700 (business hours) when you see a patient, who is suffering health effects related to odours.

Thank you for your assistance.

Regards

Dr Penny Hutchinson

Public Health Physician

West Moreton Public Health Unit

West MoretonHealth

Health alert

Odour complaints related to the Swanbank Industrial Area

Please be aware that patients may present with symptoms they feel are related to the odour coming from the Swanbank Industrial Area. The complaints have mainly come from the suburbs surrounding the area and include Swanbank, New Chum, Collingwood Park, Ebbw Vale, Ripley, White Rock, Bundamba, Riverview, Brookwater and greater Springfield area.

The most common symptoms reported are:

- headaches
- nausea
- watery eyes
- nasal congestion
- other upper respiratory tract symptoms such as irritated throat, cough, or wheeze, especially if the person has allergies, asthma, and other chronic lung problems
- sleep problems
- annoyance
- depression.

All these factors can reduce quality of life, so odour complaints should be taken seriously.

However, in general, most substances that cause odours in outdoor air are not at levels that are harmful to health.

The West Moreton Public Health Unit wants to find out how many residents are seeking medical attention for the health effects they are experiencing. Please contact the unit on 3271 8744 during business hours to discuss your patient's concerns with a public health physician.

Even when odours are below irritation levels, symptoms may be triggered if:

- the odour has an unpleasant smell
- the person has had a previous bad experience with the odour
- the person believes the odour is harmful
- the person is stressed by the odour.

Sensitive populations:

- young people
- women
- non-smokers
- people who suffer from

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- migraines
- allergies
- asthma
- chronic lung disease
- depression and anxiety disorders

As part of your clinical assessment, it is important to obtain details of the odour such as:

- when it occurs e.g., time of day
- how often the person is exposed to it
- its strength
- offensiveness/characteristics
- symptoms experienced and how soon after exposure these occur
- type of land use and nature of human activities near the odour

Responses to these questions are invaluable to public health and the Department of Environment and Science (DES), who are responsible for regulating environmental contaminants, and the investigation and management of the odour producing activity.

For more information, visit Swanbank odour management | Environment, land and water

It is important for your patient to advise the DES of the odour, and this can be done by contacting the Pollution Hotline on 1300 130 372, which is available 24 hours a day, 7 days a week.

Queensland Government

West Moreton Health

01/11/2024

Enquiries to: Public Health Unit
Telephone: (07) 3271 8744
Facsimile: (07) 3818 4701

GP Health Alert

Re: Health complaints related to odour from the Swanbank Industrial Area and advice regarding available mental health services.

Update

The Department of Environment, Science, and Innovation (DESI) has recently been successful in obtaining a court-ordered restraining order which will require NuGrow Ipswich Pty Ltd to overhaul its operations and reduce nuisance odours.

The odour affected areas continue to be those surrounding the Swanbank site (Swanbank, New Chum, Collingwood Park, Ebbw Vale, Ripley, White Rock, Bundamba, Riverview, Brookwater, and Springfield) have experienced considerable distress and may present to their GP with symptoms.

In general, most substances that cause odours in outdoor air are not at levels that are harmful to health.

Although positive news these changes will take some time and residents may continue to experience significant distress from offensiveness of the smell which can lead to:

- The fear that the odour is harmful to their health.
- Concern physical symptoms experienced are related to the odour.
- Negative impacts on property values so residents are unable to relocate and may feel trapped.
- The need to keep doors and windows closed with no access to fresh air.
- A reluctance to have visitors to their homes.

All these factors can lead to poor mental health and reduced quality of life.

The West Moreton Public Health Unit (WMPHU) has engaged with the Ipswich Medicare Mental Health Centre (who are aware of the issues concerning the residents) and are available to provide free mental health support for adults.

Caring Better Together

Address
Public Health Unit
The Park Centre for Mental Health
Public Health Building
Orford Drive, Wacol Q 4076

Postal address
Locked Bag 500
Archerfield Q 4108

Phone: (07) 3810 4700

www health qld gov au/westmoreton

Please see further information about the Ipswich Medicare Mental Health Centre in the attached flyer.

The WMPHU is still interested in the number of residents who present to their GP with odour related symptoms so please contact the PHU on 07 32718744 during business hours or email Dr Penny Hutchinson, public health physician, at penny.hutchinson@health.qld.gov.au.

For further information about the background to this issue please see the following link to the DESI website

Swanbank odour management | Environment, land and water

It is important for residents to advise the DESI of the odour, and this can be done by contacting the Pollution Hotline on 1300 130 372 which is available 24 hours a day, 7 days a week.

Thank you for your assistance.

Appendix M. Jurisdictional comparison

The below table provides a comparison of several environmental regulatory matters for Queensland, New South Wales, Victoria, South Australian and Western Australia. Tasmanian and the Northern Territory are not included given differences in regulated activities and limited comparative material publicly available.

The information provided in this table has been drawn from the DETSI submission to the Inquiry.

Do environmental approvals issued within the jurisdiction expire?				
Queensland	**New South Wales**	**Victoria**	**South Australia**	**Western Australia**
No. While the *Environmental Protection Act 1994* (EP Act) (https://www.legislation.qld.gov.au/view/pdf/inforce/current/act-1994-062) provides that DETSI can state a period after which an EA lapses (refer to s. 201 of the EP Act), EAs are generally not issued for a	**No**. Once a licence is issued, it comes into force and remains in force until it is surrendered by the licence holder or is revoked or suspended by the NSW EPA. Refer to s. 77 of the *Protection of the Environment Operations Act 1997*	**Yes**. Environmental permits (https://www.epa.vic.gov.au/for-business/permissions/permits#%3A~%3Atext%3DA%20permit%20is%20valid%20for%20a%20maximum%20of%2Cand%20have%20adequate%20risk%20management%20controls%20in%20place) (required for a low complexity activity with medium to high-risk) are valid for a maximum of five years, with the option to renew before it expires. Operating licences (https://www.epa.vic.gov.au/for-business/permissions/licences/operating-licences) (required for complex high-risk industrial and waste activities that are ongoing) will expire after 20 year except for landfills which can have a term of up to 99 years. Refer to s. 75 of the	**Yes.** Environmental authorisations remain in force for a term specified by the South Australian EPA with the option to renew before expiry. Refer to s. 43 of the *Environment Protection Act 1993* – https://www.legislation.sa.gov.au/__legislation/lz/c/a/environment	**Yes.** Works approvals and licences continue in force for the period specified in the works approval or licence with the option to renew before expiry. Refer to s. 63 of the *Environmental Protection Act 1986* – https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_47972.pdf/%24FILE/Environmental Protection Act 1986 - %5B09-w0-01%5D.pdf?OpenElement. The Western Australian Department of Water and Environmental Regulation

specific term and do not expire. The exception is trial EAs which can be issued for no longer than three years (refer to s. 125(7) of the EP Act.	https://legislation.nsw.gov.au/view/html/inforce/current/act-1997-156.	Environment Protection Act 2017 – https://www.legislation.vic.gov.au/in-force/acts/environment-protection-act-2017/016.	protection act 1993/current/1993.76.auth.pdf. The South Australian EPA (https://www.epa.sa.gov.au/business_and_industry/licences) advise that most licences are granted for five years. While the term of a SA EPA (https://www.sa.gov.au/topics/business-and-trade/licensing/environment/environment-licensing) licence is generally five years, it can vary from one to ten years, based on the EPA's assessment of the risk or	(https://www.wa.gov.au/system/files/2023-05/guidance-statement-licence-duration.pdf) advises that it prefers longer term (20 year) licences to provide greater certainty to industry, reduce the administrative burden on both industry and the department.

			duration of the activity.	

Do environmental approvals issued within the jurisdiction undergo a review after a certain timeframe?				
Queensland	**New South Wales**	**Victoria**	**South Australia**	**Western Australia**
No. Environmental authorities issued within Queensland do not undergo a statutory or regular review after a certain timeframe.	**Yes**. Licences are required to be reviewed at least once every five years. The NSW EPA is required to give public notice of its intention to review a particular licence. Refer to s. 78 of the *Protection of the Environment Operations Act 1997*.	**Yes**. The EPA may, in accordance with the regulations, review an operating licence after the operating licence has been in force: • for 4 years; or • for any longer period determined by the EPA. As a result of this review, there may be a variation of licence conditions or revocation of the licence. (Refer to s. 76 of the *Environment*	**Yes**. The South Australian EPA notes conditions on a licence will be subject to regular review to ensure that harm to the environment is minimised or avoided. Amendments to licence conditions may be made through the review or renewal process.	**Yes**. The Western Australian Department of Water and Environmental Regulation (https://www.wa.gov.au/system/files/2022-04/Guideline-Industry-Regulation-licence-reviews.pdf) advised it undertakes licence reviews to ensure a licence remains up to date with current regulation and relevant policy, and to ensure a licence continues to effectively identify and manage the current potential risks of activities undertaken under the licence to the environment and public health. Licence reviews also allow the department to work in a cycle of continual improvement with licence holders to ensure each licence reflects contemporary scientific, social, environmental, and governance standards. Reviews may be undertaken based on: • General triggers (e.g. periodic licence reviews required to evaluate risk

		Protection Act 2017).		associated with premises issued long duration licences (e.g. greater than 10 years duration)) • Strategic triggers. The Western Australian Department of Water and Environmental Regulation advises that strategic licence reviews are part of the systematic analysis of multiple related premises. The group of premises may be derived from an industry sector or several sectors, or from an association with each other by geographical area, emission type, location and siting, or be due to the existence of a sensitive receptor (for example, a review of all premises with emissions to air, in response to an emergent airborne contaminant of concern). The department will undertake licence amendments resulting from a licence review in accordance with the procedure specified in s. 59B of the *Environmental Protection Act 1986*.

Can the administering authority initiate an amendment to an environmental approval?				
Queensland	**New South Wales**	**Victoria**	**South Australia**	**Western Australia**
Under limited circumstances including where the EA holder has agreed to the amendment in writing, the amendment is administrative or there is a significant change to the activity. The administering authority in Queensland can initiate a process to amend an EA where the amendment is considered necessary and desirable, or the EA holder has agreed in writing to the amendment. Where the holder has not agreed in writing to the amendment, the circumstances where the administering authority can propose an EA amendment are stipulated under s. 215. Some examples are:	**Yes, but the NSW EPA will consult with the holder of the authority.** The NSW EPA can initiate a licence variation in consultation with the licensee (refer to s. 58 of the *Protection of the Environment Operations Act 1997*). The EPA will always consult on any proposed conditions or amendments to a licence.	**Yes, but the holder has appeal rights if the amendment is not administrative.** The Victorian EPA can amend a permission by issuing a notice of amendment to the permission holder. Refer to s. 58 of the *Environment Protection Act 2017*. In this situation, the permission holder has the right of appeal. The EPA may also amend a permission for administrative reasons. As these amendments don't alter the obligations of the permission holder, no appeal rights exist. The EPA will discuss any proposed changes to an existing permission with	**Yes, but the holder has a right to appeal an amendment decision for review.** Pursuant to section 45 of the *Environment Protection Act 1993*, the EPA may impose a condition of an environmental authorisation or vary or revoke a condition previously imposed by the EPA, by notice in writing to the person holding the authorisation. Amendments may be made when renewing the authorisation or when the EPA considers the amendment necessary as consequence of prescribed circumstances.	**Yes, but the holder has a right to appeal an amendment decision.** Under s.59 of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Western Australian environment department may amend a licence at any time, including but not limited to: • varying the conditions which apply to a licence • removing redundant conditions, or • imposing new conditions and requirements where necessary. Before making an amendment, a notice about the proposed

• the EA was issued because of a materially false or misleading representation or declaration, made either orally or in writing • there is a significant change in the way, or extent to which, the activity is being carried out.		the permission holder before it is amended.		amendment must be given to the operator and the operator can make a submission about the proposed amendment. Refer to s. 59B of the Environmental Protection Act 1986. If the licence holder or any other person objects to any licence amendments that result from a licence review, they may lodge an appeal with the Minister for Environment within 21 calendar days of the licence holder being notified of the amendment.

Queensland Government