



More than just a bad smell: Odour pollution and health in Aotearoa New Zealand

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Summary

Historically, foul odours were believed to cause illness and efforts to reduce their impact influenced urban design and public health laws. Research over the last 50 years has re-established odour pollution as causing adverse health effects as well as affecting community mental health.

Such incidents are common in Aotearoa New Zealand (NZ); a search of news media identified 36 examples of communities in NZ experiencing significant odour problems between 2016 and 2025. In a case study from 2014, 13 people had symptoms severe enough to seek medical attention due to foul odours from a wastewater treatment plant.

Even though regional councils are the lead agency for managing odour under the Resource Management Act 1991, public health services have a role in advocating on behalf of communities affected by odour pollution.

The stench invades everything, it gets right inside my house. I can taste it when I'm talking - it's revolting. I suffer from sore throats, sore eyes, headaches, shortness of breath and I miss all my friends. No one wants to come to Bromley anymore.

This is how a resident described the experience of living close to the Bromley Wastewater Treatment Plant in 2022.¹ While most people accept that persistent foul odours can be very unpleasant, odour complaints are often viewed by regulators as an annoyance rather than a health hazard that can make people sick.

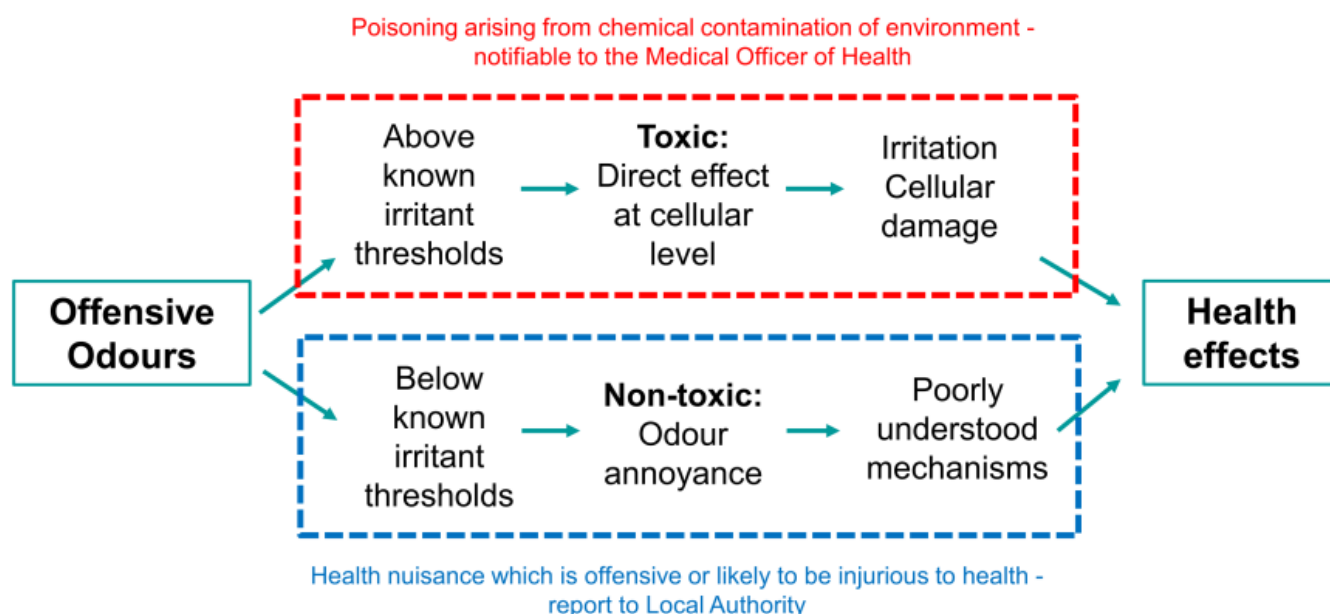
Odours and health

Until the golden age of microbiology between 1820 and 1890, it was generally believed that foul odours caused ill-health.² The word *miasma* comes from a Greek word meaning pollution.³ Many of the towns and cities in NZ designed in the 19th century show evidence of the response to the miasma theory with parks, green spaces, and the drainage of wetlands.⁴ The current public health legislation in NZ, the 1956 Health Act, still has sections such as statutory nuisances and offensive trades which are linked to 19th-century views of public health.⁵

With the arrival of the science of microbiology, foul odours as a cause of illness slipped out of favour unless levels of specific airborne chemicals reached levels demonstrated to cause toxic poisoning effects. Poisoning arising from chemical contamination of the environment is notifiable to the Medical Officer of Health under section 74 and Schedule 2 of the Health Act 1956. In contrast, becoming physically ill with vomiting and headaches because of a foul odour is not notifiable, despite symptoms being similar to poisoning--see Figure 1.

Figure 1. Reporting pathways under the Health Act 1956 (based on the

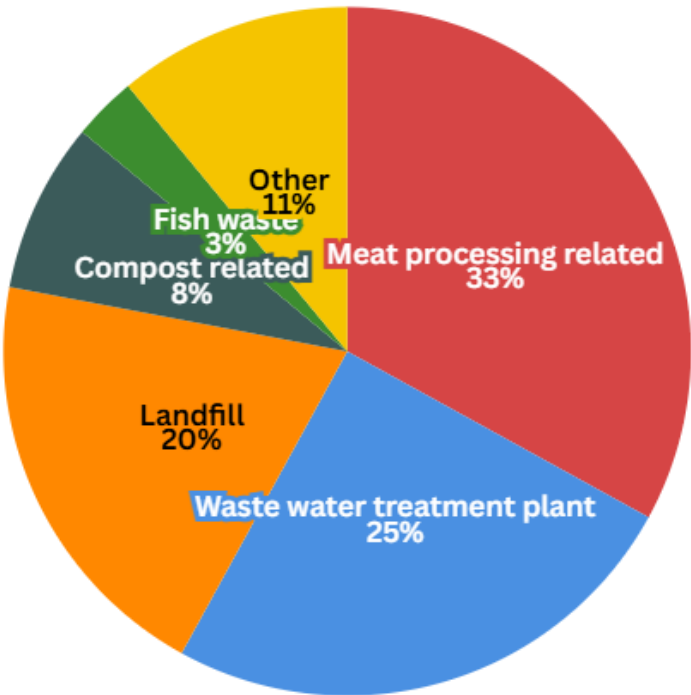
mechanisms of odour-induced health effects outlined in *Odours and Human Health*⁶).



Odour pollution is common in Aotearoa New Zealand

Odour pollution incidents are common and are a leading cause of environmental complaints to local authorities.⁷ A search of news media stories identified 36 persistent odour pollution incidents between 2016 and 2025. The most common sources of the foul odours were meat processing related (33%), wastewater treatment plants (25%), and landfills (20%). Some of the odour pollution incidents had lasted years or even decades. In total, 18 out of the 36 news articles described significant quality of life impacts such as social isolation, having to keep doors and windows shut even on warm days, and being unable to spend time outside when the foul odours were strong. We summarise the types and locations of incidents in Figures 2 and 3, with [full details in Appendix 1](#).

Figure 2: Sources of persistent odour pollution reported in New Zealand news media, 2016-2025.



Note: Based on a total of 36 incidents

Figure 3. Locations of persistent odour pollution incidents 2016-2025

Click on an incident for more detail

Source: ● Meat processing related ● Wastewater treatment plant ● Landfill
● Compost related ● Fish waste ● Other



Note: Locations are approximate to allow all points to be displayed

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A bad smell is a signal to the nervous system to stay away

A large number of studies show that health and wellbeing are indeed linked to environmental odours. A review of more than 50 studies published between 1975 and 2013 found that residents of communities located near odour-emitting facilities were found to report a higher number of health symptoms compared to residents of control communities.⁶ A more recent systematic review and meta-analysis of 30 odour studies found a statistically significant association between populations exposed to odour pollution and adverse health effects such as headaches, coughing, and phlegm.⁸

Smell is the oldest sense of the five senses from an evolutionary perspective.⁹ For humans, smell is a gatekeeper sense—a bad smell is a signal to the nervous system to stay away.⁹ Exposure to foul odours is associated with stress and annoyance, and the level of annoyance is strongly associated with symptoms that impact quality of life and mental health as shown in Table 1.^{6,8,10} Different life experiences and natural variation within communities can result in different sensations and emotional responses by individuals to the same odorous compounds.^{7,10}

Table 1. Common symptoms from exposure to environmental odours^{6,8,10}

Organ / health domain	Symptom
Brain	Headache ^{*†} , drowsiness [*] , dizziness [*]
Nose	Irritation [*] , congestion [*]
Eyes	Irritation, watery or dry [*]
Throat	Irritation ^{*‡} , hoarseness [*] , sore throat [*]
Lungs	Cough/phlegm ^{*†} , chest tightness [*] , shortness of breath [*] , wheezing [*] , sleep problems from irritation or cough [*] , asthma [*]
Heart	Palpitations [*]
Gastrointestinal	Nausea/ vomiting ^{*‡} , diarrhoea [*]
Mental wellbeing	Annoyance ^{*†} , sleep problems [*] , depression [*] , stress [*] , anger [*] , fatigue [*] , confusion [*] , anxiety [*] , mood states ^{*.#} , lower quality of life [*]

*Effects noted in epidemiological studies.⁶

[†]Statistically significant association in a meta-analysis.⁸

[‡]Statistically border-line association in a meta-analysis.⁸

[#]Suggestive association in a meta-analysis.⁶

Case study example - decomposing dairy waste odours at Eltham, Taranaki

Between 3 October 2013 and 28 October 2013, Fonterra discharged three million litres of buttermilk and 150,000 litres of raw milk into a covered anaerobic digesting pond located at the Eltham Wastewater Treatment Plant. The pond had been closed previously because it did not work. Odour complaints started almost immediately, and the people of Eltham suffered offensive odours for many months. General practitioners reported 13 people to the Medical Officer of Health with suspected odour-related illness, though none met the threshold of “poisoning”.¹¹

The devolution of air quality management to regional councils under the Resource Management Act 1991, has largely overshadowed the statutory nuisance sections of the Health Act 1956 that relate to offensive odours.⁵ The South Taranaki District Council was eventually fined \$115,000 and Fonterra fined \$192,000 for breaching the Resource Management Act 1991.¹²

Conclusion

Persistent foul odours from industrial sources, wastewater treatment plants, and landfills are common in Aotearoa New Zealand. Odours that are managed as annoyances by regional councils can cause symptoms similar to chemical toxicity including headaches, nausea, difficulty concentrating, loss of appetite, stress, insomnia, and physical discomfort, and can have a significant impact on community mental health. It is clear that the current environmental approaches under the Resource Management Act 1991 are not fully

protecting communities from prolonged exposure to odour pollution. There is a strong case for public health services to do more to advocate on behalf of affected communities to improve, protect and promote their health and well-being.

What is new in this Briefing

- There is extensive international evidence linking odour pollution to ill-health.
- Repeated exposure to offensive “non-toxic” odours can cause symptoms similar to chemical toxicity.
- Foul odours that impact communities are common in Aotearoa New Zealand and at times have lasted for years.
- Regulators often view offensive odours as an annoyance for a small number of individuals rather than a hazard that can adversely affect health at a population level.

Implications for public health policy and practice

- Primary prevention would include industries doing more to control odours, being a “good neighbour”, and improved zoning to further separate residential areas from the sources of offensive odours.
- The 2016 NZ [*Good Practice Guide for Assessing and Managing Odour*](#)⁷ needs to be updated to reflect the literature and explicitly address the potential health impacts of odour on communities.
- General practitioners in localities with odour pollution should be reminded to notify all illnesses suspected to be caused by chemical contamination of the environment to their local Medical Officer of Health.
- The National Public Health Service should proactively advocate on behalf of communities adversely affected by offensive odours, even once the risk of poisoning and chemical toxicity is excluded.

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Appendix: News media reports of persistent odour pollution incidents 2016-2025

Date of media article	Affected Community	Source of Odour Pollution	Description of Odour Experience	News Media link
2025	Whanganui	Wastewater treatment plant	"The people out there have put up with hell for nine years," said Anderson.	Whanganui council hoping two projects will end wastewater plant odour issues
2025	Whitford, East Auckland	Lack of sewage treatment plant	In September, the <i>Herald</i> spoke to residents who said the smell of raw sewage was making them gag. "It's revolting," said Robyn Newman-Hall, who along with her partner Jim Brown were members of a vocal group of residents angry at a lack of progress building a new wastewater treatment plant.	Receivers appointed at Auckland's Whitford Manor Estate housing development after sewage row, low sales
2025	Ōpōtiki	Wastewater treatment plant	She described the odour as "a sickening smell like dead carcasses".	Ōpōtiki's mystery smell solved, but 'sickening' odour remains
2025	Marton, Rangitīkei	Landfill	The judge referred to victim impact statements in which neighbours said they were embarrassed to invite friends to outdoor activities at their homes, that they were sometimes woken by the smell at night or had to live with doors and windows closed, and laundry hung out to dry sometimes had to be re-washed.	Smelly dump attracts \$202,500 in fines

2024	Seaview, Lower Hutt	Wastewater Treatment Plant	“The stench”, as locals call it, can be so odious, people have to dash between their car and house holding their breath, have stopped eating outside and are considering selling their homes to escape.	Living with ‘the stench’: the smelly New Zealand city with an air of despair
2024	Porirua	Landfill	Most described the smells as a “rubbish bin”, followed by “rotten eggs”.	Could these new fans spell the end of Spicer Landfill’s smelly woes?
2024	Cardinal West, Red Hills, Auckland	Temporary sewage storage	“It’s like Rotorua but a little bit more potent. It smells like poo,” said one woman, who rents a house with her partner and three children across the road from one of the tank farms.	Stink over trucking sewage from West Auckland housing development goes to court
2024	Bromley, Christchurch	Compost plant	Rancid meat or the worst boiled cabbage imaginable! That's how residents in the Christchurch suburb of Bromley are describing the rotting smell they've been putting up with for years, coming from a Christchurch City Council-owned Living Earth compost plant.	Christchurch compost plant stench makes residents sick
2024	Washdyke and northern Timaru	Unidentified source	"We always talk about it. When there's the smell, it's just not nice. We have to leave our doors closed because it's almost like a dead animal smell," she said. Her main concern was for the customers, who were getting a free side of the sickening stench if they opted for al fresco seating.	‘That place smells’: Investigation launched into ‘nasty, meaty’ stench in Timaru
2024	Hastings	Tannery	“It was so bad in summer that I would have to close the doors and windows because the smell would get into your house. You’d have to get your washing in” Wallis said.	Odour from Hastings tannery increasing every year, nearby residents say

2023	Awatoto, just south of Napier	Animal waste products rendering plant	The odours identified included rotting meat, animal effluent and waste, as well as a bark-filter smell.	Hawke's Bay Protein fined \$13,000 for stinky discharge after spending \$1m trying to fix problem
2023	Taylorville, Greymouth	Landfill	A Taylorville resident who contacted the Greymouth Star on Thursday said the smell had been extreme in the past 10 days. The smell would "bring up your morning tea" and it had been a talking point in the neighbourhood.	West Coast Regional Council investigates 'sickening' smell
2022	Bromley, Christchurch	Wastewater treatment plant	Resident Vickie Walker broke down when she spoke of how the smell has affected her. "I can't work effectively or efficiently in my business and neither can my husband. We don't get our sleep and we don't relax. There are thousands like me suffering here," she sobbed. On top of that smell, Bromley residents have also had to deal with the disgusting smell of decaying food waste from the city's compost plant, for the past 13 years.	Bromley locals call on council to remedy stench: 'Do your job - make our health paramount'
2022	Thornbury, Southland	Fish waste processing plant	"It's putrid — it makes you want to vomit sometimes. A rotten, stinking fish smell."	Stench has residents demanding action
2022	Ellerslie	Pet food manufacturing company	"Residents across the suburb of Ellerslie first started reporting the smell of rotten fish and meat back in November 2020, and they say they're still being plagued by more than a year on."	Something fishy going on in Auckland as factory odour plagues Ellerslie locals

2021	Tauranga	Pet food manufacturing company	"The complainants describe having to move indoors to avoid the odour, closing windows and doors and wanting to move house."	Tauranga pet food company Alpine Export NZ ordered to pay \$70,000 fine
2021	Mt Maunganui	Pet food manufacturing plant	"Ziwi Ltd was prosecuted by Bay of Plenty Regional Council for both odour and wastewater discharges in 2018 that were described by complainants as "putrid", "rank" and "overpowering""	Pet food firm gets \$66,000 fine for 'offensive and objectionable odours'
2021	Uruti, Taranaki	Compost and worm farming business	"The stench in the air was just so bad. It made us all cough, it burnt our eyes, it made our lungs feel very heavy and my children, who were in the car at the time, all suffered the same symptoms and one of them in particular got into coughing splutters, so we had to call an ambulance," Bendall said.	Air quality review indicates link between compost site odour and illness
2021	Hastings	Meat industry cartage	Staff from three businesses - The Warehouse, Wheel Plus and Hastings Honda - said people at their premises had been affronted by what was variously described as "a fetid sickening odour that smelt like rotten meat or fish". It made staff feel nauseous, headachy and unable to eat their lunch. There had been numerous complaints about odour from the property between 2010 and 2018 and in February 2019 an abatement notice was issued directing the company to cease the discharge of offensive odour beyond the boundary of its property.	Putrid stench of rotting meat hung over Hastings city centre putting many off their lunch

2020	Pukemiro	Landfill fire	"It was a toxic plastic smell that brought her "to the point of vomiting" and was so bad at night it had woken them up at times, she said."	Waikato dump fire burning since August: Locals report health problems
2020	Bromley, Christchurch	Unknown	For years residents have bemoaned the putrid pong, claiming the air is so bad they are trapped in their homes, forced to relentlessly wash their bodies and clothes to rid themselves of a smell they liken to a disgusting soup of rotten fish, bins and dead animals.	Tracking down the source of Bromley's mysterious stench
2020	Tuakau, Waikato	Animal products processing plant	The court heard the stench was akin to rotten meat, stale water or raw sewage and had resulted in locals being physically sick and suffering throbbing headaches.	Tuakau residents want company out of town after prosecution over putrid smell coming from animal plant
2019	Waharoa, Waikato	Wastewater treatment plant	Residents near the factory have complained of a "putrid smell" that wafted as far away as Matamata, 6km up the road. They described a range of debilitating effects from having to keep doors and windows shut through to headaches and vomiting.	Dairy firm cops hefty fine for smell that caused sickness
2019	Green Island, Dunedin	Landfill	"So offensive was the malodorous air yesterday morning that Green Island resident Tina Tunster was woken from her sleep by it."	Crying foul over stink coming from landfill
2019	Gibbston, Central Otago	Landfill	"The stench has been there for months, and it's so bad that anybody - not just local travellers but international travellers - would be revolted by it because it's so strong."	ORC ignores smell complaints - Laws

2019	Hororata	Animal rendering plant	"I'm used to country smells and have lived in the country for 30 years," she said. "Bad smells don't worry me but these ones are vomit-inducing." The woman said she had to keep windows permanently shut, stopped going outside and avoided having friends over, and the smell seeped into her laundry.	Stinking meat factory and body parts on the lawn cause years of hell for neighbour
2018	Havelock North	Mushroom farm	Krebs said just because there was a small number of complainants did not mean the other neighbouring residents were not affected by the stench, labelling the case "death by a thousand pongs".	Te Mata Mushroom Company fined \$26k for objectionable odours
2018	Mosgiel	Animal rendering plant	"It's not just a little bit of bad odour, it's absolutely disgusting. The families living next to it, they go to get their washing in and it bloody stinks. The clothes smell worse than when they got them off the kids," he said.	Residents cry foul over 'unbearable' smell from plant
2018	Burnside, Dunedin	Animal rendering plant	Kenmure resident Ian Stewart said he was driving down Kaikorai Valley Rd recently and "dry retching" at the smell. "It's because of the type of smell. It's that real decaying smell."	Gripes over 'disgusting' stench
2017	Hokio, Horowhenua	Landfill	"It's very invasive and noxious, the most appalling smell. It destroys people's lifestyles and their pleasure of life," he said.	Odour appeal withdrawn
2017	Temuka	Wastewater treatment plant	"You have to shut the house up and turn off any air conditioning, otherwise the whole house reeks of... sewage. Clothes are starting to smell of this, and you can't hang anything on the line to dry."	Pungent, revolting odour vexes some in Temuka

2017	Woolston, Christchurch	Gelatine factory	Complaints were from residents living in the wind pattern of the odour, who were catching whiffs of rotting meat.	Christchurch gelatine factory draws more complaints about odours
2017	Waipukurau, Hawkes Bay	Several sources including a wastewater treatment plant	Jo Brabyn lives on Mt Herbert Rd, and said it had been happening almost every night and seemed to have worsened with winter approaching. "It's a very strong, foul smell, it's not sweet like silage, it's a sewage smell."	Foul odour gets up noses of Waipukurau residents
2017	Southern suburbs, Wellington	Wastewater treatment plant	Owhiro Bay Residents' Association spokeswoman Colleen Cox said the "sewage-gassy odour" varied, "from a six to a 10".	Stench of Wellington's sewage wafts through suburbia
2017	Timaru	Meat processing plant	"I have been here for four years and this is the worst it has been. The other night, when it was a really sticky day, I tried to open the windows and the stench was out of this world. It turns your stomach."	Timaru residents' noses put out of joint by smell
2016	Tahuna, South Dunedin	Wastewater treatment plant	"I came home on Thursday and it was that bad you could throw up." Her message to council staff was: "You come and live here."	Tahuna stench sickens

Note: Based on searches of Google and Dow Jones Factiva databases using key words such as "offensive", "foul", and "odours" to find examples of odour pollution in New Zealand, limited to dates between 2016 and 2025. Each odour source is only listed once despite many having multiple news articles stretching over years or even decades.

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