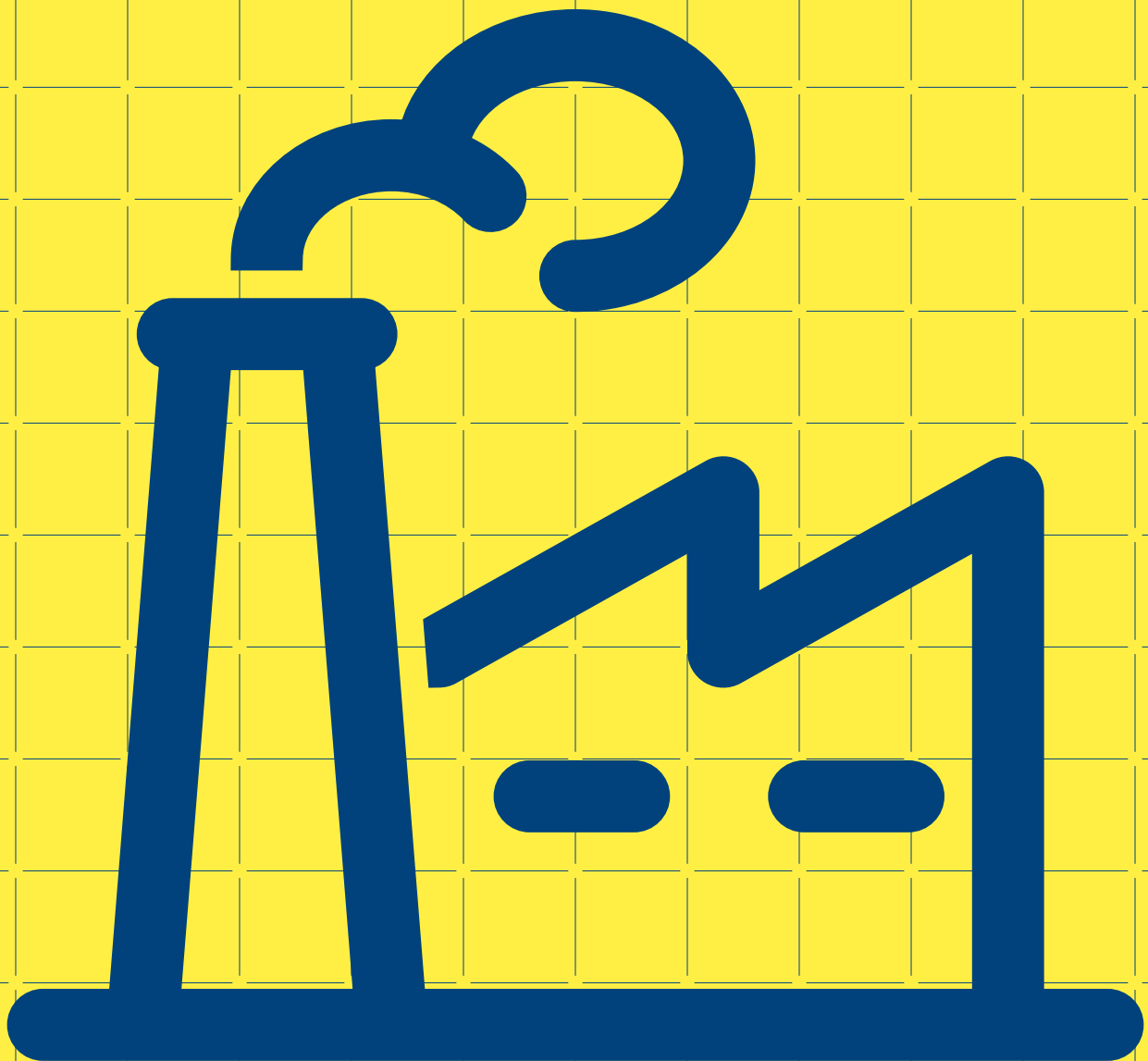




Christchurch City Council Bromley Community Odour: Industry Views

Research Report | November 2020





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Key Findings





93%

Have **noticed an odour** in the Bromley area.



36%

Have had to **change their behaviour** around their workplace as a result of the odour.



65%

Experience odours at their workplace on at least a **weekly basis**.



31%

Say it's from a **single source**. A further **46%** feel it's from two or more sources and **23%** are unsure.



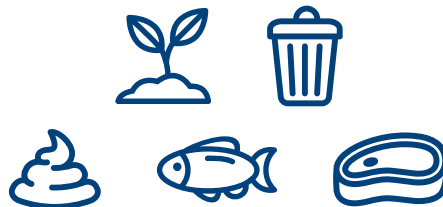
27%

Of workers **would not report**, or **don't know how** they would report, offensive odour in the future.



38%

Would **use the Smelt-It app** to report offensive odour.



Odours

Workers describe five main types of odour: **compost, rubbish, faecal-sickening, fishy** or **meaty-rancid**.



Sources of Odour

Main sources of concern for workers are **EcoDrop, Living Earth** and the **sewage treatment plant**.

Background



2.1 Bromley Area

The Bromley area is a suburb in Christchurch to the east of the city centre. It is home to a mix of industries, including fish and seafood processing, fibre glass manufacturing, scrap metal recycling and many of the city's essential services such as the wastewater treatment plant, composting facility and Metro transfer station.

The Bromley community have reported serious concerns with odour for a number of years. These complaints have been investigated, however it has been extremely difficult to identify the source, as odour can come and go and often changes direction and intensity quickly with wind and other weather patterns.

2.2 Pilot Study

Environment Canterbury (ECan) and the Christchurch City Council (CCC) conducted a pilot study in March 2020 to track and trace odour plumes. Residents were asked to report odour via the "Smelt-It" app. This data was then cross-referenced with weather conditions and onsite observations. As a result, the odour was traced back to two facilities: Living Earth and EcoDrop.

Over several months, CCC have trialled an action plan to reduce odour production at both facilities. All operational changes were completed in August 2020.

2.3 Objectives of Research

To understand the outcome of the trial, CCC wish to understand the views of industrial workers in the area to understand their perceptions of the odour.

Key objectives of the research are to:

1. Understand which types of odours experienced by industrial workers.
2. Determine whether odour perceptions have changed over the last six months.

Method



For industries, it was important to allow all levels of employee to participate in the research.

Field interviewers were deployed and visited companies in the Bromley area. Businesses were given cards for each employee, which had a link to the survey. An 0800 number was provided for those respondents who had difficulty or wished to do the survey via telephone. Following the card drop, businesses also received a telephone call reminder to encourage participation.

The research was conducted on the 10th of November 2020 with over 600 postcards given to different organisations. Respondents were given until the 16th of November to provide their responses. There were 28 responses at the end of the week.

Due to the low number of responses, all percentages in this report should be viewed as highly indicative only. Any interpretation should be done with caution.

General Odour Perceptions



“ It is so bad sometimes it makes me feel sick, we also can't have windows open due to the smells.

Most workers have noticed an odour in the neighbourhood (93%). For almost half, it does not change what they do (46%) but for over a third of workers, the odour is causing behavioural change (36%).

Table 3 Odour Intensity

		%	n
No odour	I haven't noticed an odour	7%	2
Noticed odour but no behavioural change	I noticed a smell outside. It doesn't change what I do.	46%	13
	I noticed a faint odour outside. I wonder what it is.	11%	3
Behavioural change as a result of odour	I struggle to be outside. If I keep my windows closed, it's okay inside.	14%	4
	I can smell the odour inside my workplace.	14%	4
	I don't want to be at my workplace because of the odour	7%	2
Total responses		100%	28

4.1 Heat Map

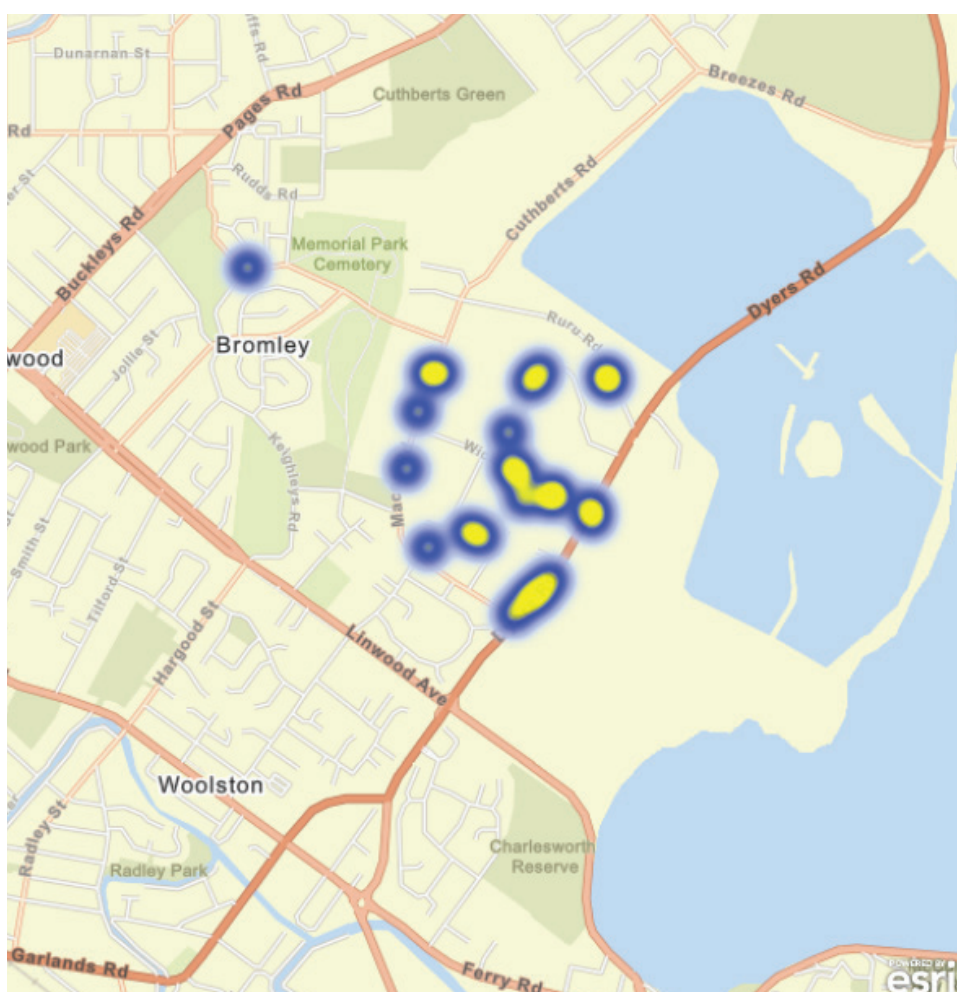
All responses were linked to their workplace location. This allows tracking of the responses by area, to analyse trends by street, block or proximity to industry.

Heat maps show which responses are most densely clustered together. These maps are coded blue to yellow. Where the blue becomes darker, this indicates a higher number of responses. Where the colours turn yellow, this indicates that the highest density of responses are in that location.

The maps also indicate where the largest number of people live according to the 2018 census (see key).

Due to a low sample size, heat mapping can only be shown to indicate where participation was clustered, rather than individual responses. Of the 28 respondents, almost all were from different industries in the Bromley area.

Figure 1 Participation Heat Map



4.2 Odour Descriptions

Those workers who have noticed an odour describe a range of different types of odours affecting their workplace. The most commonly experienced odours are compost (65%), rubbish (45%), faecal-sickening (42%), fishy (31%) and meaty-rancid (19%).

Table 4 Odour Description

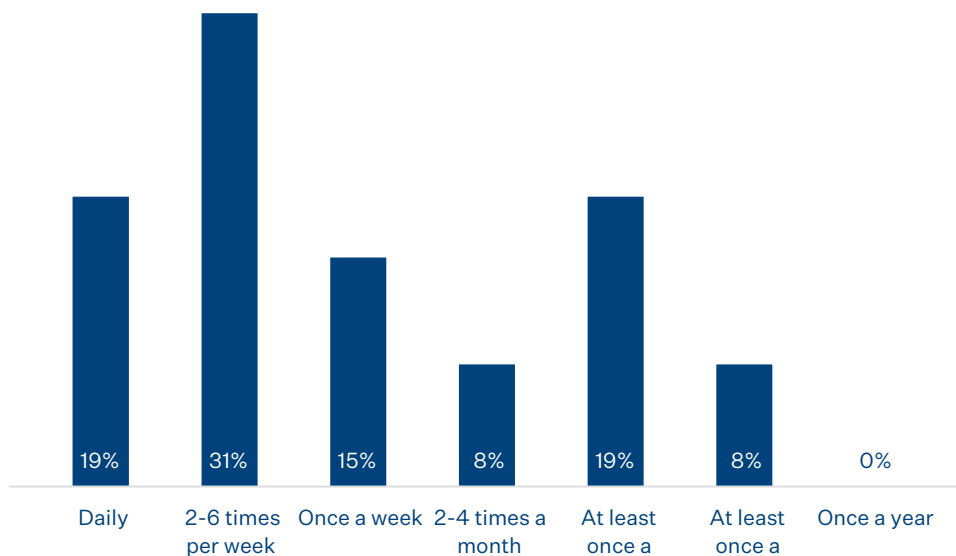
	%	n
Compost	65%	17
Rubbish	54%	14
Faecal-Sickening	42%	11
Fishy	31%	8
Meaty-Rancid	19%	5
Grass	4%	1
Other	12%	3
Don't know	4%	1
Total responses (n)	100%	26

Please note respondents were able to select or describe as many odours as they wished.

4.3 Frequency of Odour

Odour is a constant for most industrial workers. Almost two thirds of workers' experience odours at their workplace on at least a weekly basis (65%). This is slightly higher the number reported by residents (61%).

Figure 2 Odour Frequency at Workplace

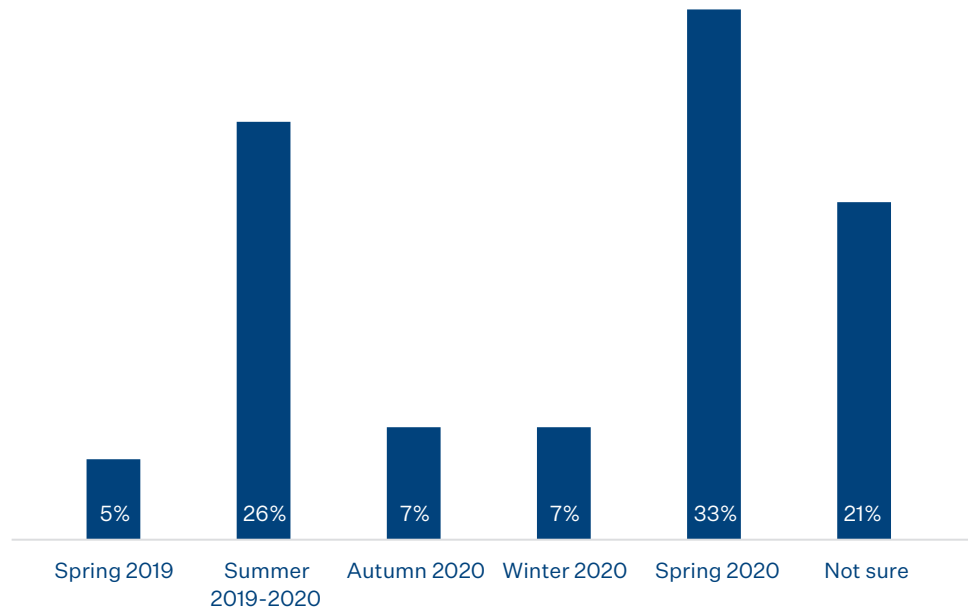


Almost half of the industrial workers surveyed feel the odour changes throughout the year. Most feel the odour has been at its strongest most recently in Spring (33%), while a quarter feel it was strongest in Summer 2019 (26%).

Figure 3 Odour Change Throughout the Year



■ Yes it changes throughout the year ■ No it does not change ■ Unsure



4.4 Source of Odour

Industrial workers are more likely to believe the source of odour comes from multiple sources (46%) compared to residents (30%). The vast majority of industrial workers believe the odour does not originate at their workplace.

Figure 4 Number of Odour Sources

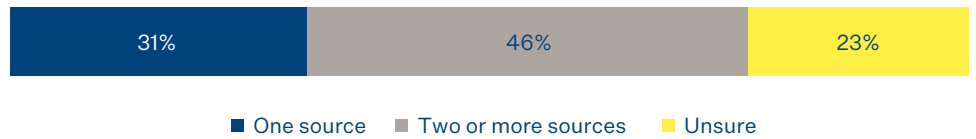
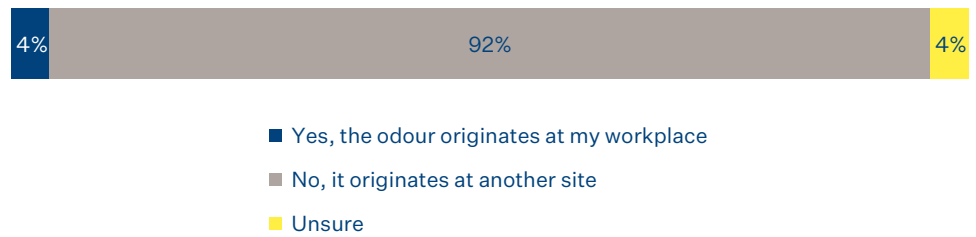


Figure 5 Odour Originating at Workplace



“ I am reasonably confident that the odour is coming from the composting and refuse center - but I bike to work, and I also smell the estuary on low tide when it has the bright green algae.

Industrial workers have suspicions about where the odour comes from. The most likely sources are believed to be EcoDrop (46%) or Living Earth (42%).

Table 5 Presumed Odour Source, by Number of Odour Sources

	Overall
Waste transfer/refuse station/dump/EcoDrop Metro	46%
Living Earth/compost plant/green waste	42%
Sewage/treatment plant/poo ponds	27%
Estuary/ocean/river/sea breeze	12%
Sims Pacific Metal	8%
Fish factory/Aroma Fisheries	8%
Industrial area/other factories/businesses	8%
Don't know	12%
Total responses (n)	26

4.5 Impact on Work

“ I am working in a shop trying to sell a food product to customers. This is made more difficult when customers enter the shop and sometimes almost retch from the stench when they get out of their cars. The smell is hardly conducive to people buying food or eating anything. The smell is so strong some days that we have to keep the door closed and we spend a lot of time making sure the door remains closed.

Most workers report negative impacts of the odour (56%). Their reasons range from customer inconvenience (16%), keeping windows and doors closed (16%) or generally negative statements (16%). Over 40% report no impact (44%).

Table 6 Impact on Work

General negative	16%
Customer inconvenience	16%
Keep doors/windows closed	16%
Can't be outside	12%
Can't work outside	8%
Other	4%
Nothing	44%
Total responses (n)	25

Reporting Offensive Odour



There are a range of ways industrial workers would report future objectionable odour.

- Most would report via the Smelt-It app (38%). This is significantly higher with industrial workers than with residents (only 18%).
- Contacting councils is also common: 23% opting to contact ECan, while 15% would call CCC.
- Significantly fewer industrial workers would not report (19%) or don't know how they would report (8%) objectionable odour, compared with residents (38% and 11% respectively).

Table 7 Objectionable Odour Reporting

	%	n
“Smelt-It” app	38%	10
Call Environment Canterbury	23%	6
Wouldn't report or complain	19%	5
Call Christchurch City Council	15%	4
Contact company that you think is making the smell	12%	3
Complain to others	8%	2
Other	8%	2
Don't know	8%	2
Total responses (n)	100%	26

Please note, respondents were able to select multiple options for the question above.

Most residents provided no further feedback for Environment Canterbury, Christchurch City Council or other industries (57%). Those who provided feedback are either generally negative (11%), believe the odour has lessened in intensity (11%), believe the odour is tolerable for the area (11%), generally positive (7%) or had specific feedback for Environment Canterbury (8%).

Table 8 Feedback for Environment Canterbury, Christchurch City Council or Any Industries Regarding Bromley Odour

	%	n
General negative	11%	3
Odour has lessened	11%	3
Odour is tolerable for industrial area	11%	3
General positive	7%	2
ECan positive	4%	1
ECan negative	4%	1
Nothing	57%	16
Total responses (n)	100%	28

Appendix



No significant differences were noted for key objectives when considering length of time workers have worked in the Bromley area.

Table 9 Length Worked in Bromley Area

	%	n
Less than a year	21%	6
1-3 years	25%	7
4-5 years	4%	1
6-10 years	18%	5
Over 10 years	32%	9
Total responses	100	28



RESEARCH FIRST

Research First Ltd
Level 1, 23 Carlyle Street
Sydenham, Christchurch 8023
New Zealand

0800 101 275
www.researchfirst.co.nz