



memorandum



TO Christchurch City Council

FROM



DATE

24 June 2026

RE Living Earth Odour Monitoring: 1st – 31st May 2026 Summary

1.0 Background

Living Earth Limited (Living Earth) operates an organics processing plant and composting facility located at 40 Metro Place, Bromley, Christchurch (the LE Site). Living Earth's air discharges are subject to the conditions attached to air discharge consent CRC080301.1 ("the consent") from Canterbury Regional Council (CRC) to discharge contaminants (odour and dust) to air.

Specifically, Condition 27 of the consent states that:

"The discharges to air shall not cause odour or dust which is offensive or objectionable beyond the boundary of the site on which this consent is exercised."

While Living Earth operates the composting facility, Christchurch City Council (CCC) holds the consent.

Pattle Delamore Partners Limited (PDP) has been providing assistance to CCC and Living Earth regarding the assessment and management of odour effects from the site. This has included regular odour scouting. The objectives of the odour scouting are to:

- ✧ Correlate the intensity and characters of observed odour (where possible) to:
 - Odour sources in the Bromley area.
 - Specific activities and/or sources on the LE Site.
 - Meteorological conditions.
 - Time of day.
- ✧ Undertake FIDOL assessments to determine if offensive or objectionable odours are present beyond the site boundary.
- ✧ Corroborate the content of community (i.e., Smelt-It) complaints.

This letter provides a summary of PDP's observations of off-site odour scouting for the period between 1st and 31st May 2026. The stockpiles of the outdoor material, namely the unscreened compost, oversize stockpiles and screened fines have been cleared from the site since the 12th of January 2024.

2.0 Summary of Methodology

Odour observations are made by PDP odour scouts. To ensure consistency between scouts, PDP ensures the following:

1. Scouts periodically undertake parallel odour assessments with each other in the field.
2. Scouts periodically visit the LE Site and familiarise themselves with the character of the odour from the various onsite sources.
3. Scouts undergo nose calibration via direct dilution olfactometry according to the requirements of AS/NZS 4323.3:2001 Section 9.7.2.

During an assessment, scouts walk at a comfortable pace through the area downwind of the LE Site, making note of odours detected. PDP has defined a series of observation points in the area where the scout makes more detailed observations, shown in Figure 1. The exact route and observation points visited in an assessment depend on the meteorological conditions (wind speed and direction) and the odour (if any) detected by the scout on the route.

Sites H and M are immediately downwind of the site, located along Dyers Road with sites G and F. Sites I, J, K, and N are located in the heavy industrial zone. Sites A, C, B, D, P, and R are located in the residential zone around Bayswater Reserve. Sites E, L, O, and Q are located roughly along the residential-industrial boundary. In assessments, Sites E, O, D and Q are in the residential zone, while Site L is in the general industrial zone.



Figure 1: Odour Observation Locations

In key areas where odour is detected, or at known sensitive areas, a full 10-minute odour observation is taken. Where 10-minute observations are taken at a site, a FIDOL assessment is completed by the scout and a determination made as to whether the odour is offensive or objectionable.

Determinations made are necessarily the opinion of the odour scout at that time to the conditions they encounter. They are based upon observations in the field but may also include consideration of wider factors such as meteorological conditions and patterns of site activity when considering the potential for offensive or objectionable odour over longer time periods.

Each scout makes their determination with reference to other determinations made, both within PDP, and more widely amongst the air quality profession.

Summaries for each odour scout are included in Section 3.0. Detailed analysis of specific observations is included, where necessary. Results of all 10-minute odour observations, summarised by observation location, are appended to this memorandum. This memorandum presents the results of the odour scouting undertaken. This report does not analyse odour trends across time.

Due to a change in meteorological data availability since October 2024, wind speed, wind direction and temperature data from the Bromley AWS is not as readily available post-scouting. Retrospective windspeed and wind direction data will not be reported for this monitoring window.

2.1 FIDOL Analysis

As per Ministry for the Environment's Good Practice Guide for Assessing and Managing Odour (MfE GPG), odours were assessed against the FIDOL factors to determine if they were offensive or objectionable. The FIDOL factors are:

- ✧ Frequency;
- ✧ Intensity;
- ✧ Duration;
- ✧ Offensiveness/Character¹; and
- ✧ Location.

Odour intensity is reported on a scale of (0-6) as per the MfE's GPG Odour. PDP applies the following descriptions to each odour intensity to ensure consistency between scouts:

0. No Odour: No odour.
1. Very Weak: Odour detectable but character not recognisable.
2. Weak: Odour detectable and barely recognisable.
3. Distinct: Odour readily recognisable.
4. Strong: Odour is strong but not causing discomfort to assessor.
5. Very Strong: The odour causes some discomfort; assessor can remain in area but will consider leaving/altering breathing patterns.
6. Extremely Strong: The odour causes assessor to feel nauseous or compelled to leave the area.

¹ "It is preferable to refer to the character of an odour, rather than its 'offensiveness' to avoid confusion between the inherent characteristics of an odour (i.e., whether it is pleasant or unpleasant) and whether there is an 'objectionable or offensive' effect occurring as a result of exposure to odour." (MfE GPG Odour)

When determining whether odour is having an offensive or objectionable effect, odour scouts make their determination with respect to the FIDOL factors. No regulatory standard exists for the specific combination of FIDOL factors that do or do not constitute an offensive or objectionable odour. However, as a broad litmus test when making determinations at the Living Earth site, PDP scouts consider intermittently distinct (3) or continuous weak (2) odours of a negative hedonic tone (such as compost) to be offensive or objectionable in a residential zone.

Within a heavy industrial zone, there is a lower expectation of amenity as it pertains to odour.

Based on PDP's understanding, this approach is generally consistent with that used by other air quality professionals.

3.0 Results Summary

Result summaries for each odour scout are reported below. Results of all 10-minute odour observations, summarised by observation location, are appended to this memorandum.

Scouts were present in the Bromley area on the:

- ∴ 7th May 2026;
- ∴ 18th May 2026;
- ∴ 27th May 2026; and
- ∴ 28th May 2026.

3.1 7th May 2026

██████ was the PDP odour scout. The scout was present for approximately 1 hour. The scout started near Site O and then walked along the boundary of the residential area towards Site D and E. The scout then walked the eastern boundary of the industrial area to site M. Returning to Site O through the industrial area. North-easterly winds were forecast on the day. The odour scout route (yellow dots) and key scouting locations are shown in **Figure 2**.



Figure 2: 7th May 2026 - Odour Scout Route

Results from the odour scout are shown below. Entries within **Table 1** that are highlighted blue denote locations within a residential zone, purple denotes locations within an industrial zone.

Table 1: 7th May 2026 - Odour Scouting Summary

Site	Time	Observations
O	07:57	Very weak (1) odour of an indeterminate character detected.
D	08:00	No odour (0) detected.
E	08:04	Weak (2) compost odour detected.
E	08:08	FIDOL assessment completed. No odour (0) was detected 15% of the time. Very weak (1) odours of an indeterminate character were detected 47% of the time. Weak (2) compost odour was detected 33% of the time. Weak (2) gasoline odour was detected 3% of the time. Weak sea/marine odour was detected 2% of the time. The odour was determined to be neither offensive nor objectionable.
Lolly Shop	08:19	Weak (2) compost odour detected.
F	08:20	Weak (2) manure odour detected.
G	08:23	Very weak (1) odour of an indeterminate character detected.
H	08:25	Very weak (1) odour of an indeterminate character detected.
M	08:28	Weak (2) effluent odour detected.
H	08:32	Distinct (3) solvent odour detected.
I	08:36	Very weak (1) odour of an indeterminate character detected.
J	08:40	Very weak (1) odour of an indeterminate character detected.
K	08:44	Weak (2) effluent odour detected.
K-L	08:45	Distinct (3) refuse odour detected.
L	08:50	No odour (0) detected.
D	08:51	Weak (2) solvent odour detected.
O	08:55	No odour (0) detected.

Some weak (2) compost odour was detected at the boundary of the residential area at site E. This odour was intermittent, and during a 10-minute observation it occurred only 33% of the time.

Some weak (2) compost odour was also detected up wind of site E in the industrial area by the Lolly Shop.

The odour at H had a detergent/solvent odour and appeared to originate from the Mr Boats wash yard.

The compost odour detected was not determined to be offensive or objectionable.

3.2 18th May 2026

██████████ was the PDP odour scout. The scout was present for approximately 45 minutes. The scout started in the residential area on Bayswater crescent heading past site P and E, before walking along the boundary of the industrial area towards Site H, returning to site E via the same route, then on to site D. North-easterly winds were forecast. The objective was to undertake odour monitoring in the area downwind of the LE Site. The odour scout route (yellow dots) and key scouting locations are shown in Figure 3.



Figure 3: 18th May 2026 - Odour Scout Route

Results from the odour scout are shown below. Entries within Table 2 that are highlighted blue denote locations within a residential zone and purple denotes locations within an industrial zone.

Table 2: 18th May 2026 - Odour Scouting Summary

Site	Time	Observations
P	14:46	Weak (2) floral odour detected.
E	14:50	Weak (2) compost odour detected.
E	14:52	FIDOL assessment completed. No odour (0) was detected 39% of the time. Very weak (1) odours of an indeterminate character were detected 41% of the time. Weak (2) compost odour was detected 19% of the time. Weak (2) cut grass odour was detected 2% of the time. The odour was determined to be neither offensive nor objectionable.
F	15:09	Weak (2) to distinct (3) compost odour
G	15:12	Very weak (1) odour of an indeterminate character detected.
H	15:16	Distinct (3) solvent odour detected.
G	15:17	Very weak (1) odour of an indeterminate character detected.
F	15:27	Weak (2) manure odour detected.
E	15:31	Very weak (1) odour of an indeterminate character detected.
D	15:33	No odour (0) detected.

Some weak (2) compost odour was detected at the boundary of the residential area at site E. This odour was intermittent, and during a 10-minute observation it occurred only 19% of the time.

Some distinct (3) compost odour was also detected up wind of site E in the industrial area at site F and as such both observations are most likely attributable to the Living Earth site.

The odour at H had a detergent/solvent odour at appeared to originate from the Mr Boats wash yard.

The compost odour detected was not determined to be offensive or objectionable.

3.3 27th May 2026

██████ was the PDP odour scout. The scout was present for approximately 40 minutes. The scout started in the residential area on Bayswater crescent heading past site P and E, before walking along the boundary of the industrial area towards Site M, returning to site E via the same route, then on to sites L and D. North-easterly winds were forecast. The objective was to undertake odour monitoring in the area downwind of the LE Site. The odour scout route (yellow dots) and key scouting locations are shown in Figure 4.



Figure 4: 27th May 2026 - Odour Scout Route

Results from the odour scout are shown below. Entries within Table 3 that are highlighted blue denote locations within a residential zone and purple denotes locations within an industrial zone.

Table 3: 27th May2026 - Odour Scouting Summary

Site	Time	Observations
P	10:30	No odour (0) detected.
E	10:34	Very weak (1) odour of an indeterminate character detected.
F	10:38	Very weak (1) odour of an indeterminate character detected.
G	10:42	Very weak (1) odour of an indeterminate character detected.
H	10:44	Weak (2) solvent and effluent odour detected.
M	10:47	No odour (0) detected.
H	10:51	Distinct (3) solvent odour detected.
G	10:54	Very weak (1) odour of an indeterminate character detected.
F	10:55	Intermittent weak (2) compost odour detected.
E	11:01	No odour (0) detected.
L	11:05	No odour (0) detected.
D	11:07	Weak (2) solvent odour detected.

No compost odour was detected in the residential area. Some intermittent weak (2) compost odour was detected at the eastern boundary of the industrial area at site F.

The odour at H had a detergent/solvent odour at appeared to originate from the Mr Boats wash yard.

The compost odour detected was not deemed to be offensive or objectionable.

3.1 28th May 2026

██████ was the PDP odour scout. The scout was present for approximately 50 minutes. The scout started in the residential area on Bayswater crescent heading past site D before walking through the industrial area towards site H. the scout then returned to site D via the eastern boundary of the industrial area followed by site E. North-easterly winds were forecast. The objective was to undertake odour monitoring in the area downwind of the LE Site. The odour scout route (yellow dots) and key scouting locations are shown in Figure 4.



Figure 5: 28th May 2026 - Odour Scout Route

Results from the odour scout are shown below. Entries within Table 3 that are highlighted blue denote locations within a residential zone and purple denotes locations within an industrial zone.

Table 4: 28th May2026 - Odour Scouting Summary

Site	Time	Observations
D	15:31	Weak (2) chemical and compost odour detected.
D	15:35	FIDOL assessment completed. No odour (0) was detected 39% of the time. Very weak (1) odours of an indeterminate character were detected 38% of the time. Weak (2) compost odour was detected 13% of the time. Weak (2) chemical odour was detected 12% of the time. The odour was determined to be neither offensive nor objectionable.
L	15:49	No odour (0) detected.
K	15:56	Weak (2) chemical odour detected.
J	16:00	No odour (0) detected.
I	16:03	Very weak (1) odour of an indeterminate character detected.
H	16:07	No odour (0) detected.
G	16:09	No odour (0) detected.
F	16:11	Very weak (1) odour of an indeterminate character detected.
E	16:16	No odour (0) detected.
P	16:18	Very weak (1) odour of an indeterminate character detected.
D	16:22	Very weak (1) odour of an indeterminate character detected.

Some intermittent weak (2) compost odour was detected at site D at the boundary of the residential area. This odour was intermittent, and during a 10-minute observation it occurred only 13% of the time.

No other compost odour was detected through the rest of the scout, including in the industrial area.

The compost odour detected was not deemed to be offensive or objectionable.

4.0 Summary

PDP undertook odour scouting on four occasions between the 1st of May 2026 and the 31st of May 2026. This included two morning and two afternoon scouts.

Typically, PDP considers that intermittent distinct (3) or continuous weak (2) odours of a negative hedonic tone (such as compost) are offensive or objectionable in a residential zone. Based on PDP's observations:

- ∴ 7th May 2026
 - Morning scout.
 - Some compost odour was detected at the boundary of the residential area at site E. A 10-minute FIDOL assessment at this location observed weak (2) compost odours 33% of the time.
 - Some weak (2) compost odour was also detected up wind of site E in the industrial area by the Lolly Shop.
 - The compost odour detected was not determined to be offensive or objectionable.
- ∴ 18th May 2026
 - Some compost odour was detected at the boundary of the residential area at site E. A 10-minute FIDOL assessment at this location observed weak (2) compost odours 19% of the time.
 - Some intermittent distinct (3) compost odour was also detected upwind of site E in the industrial area at site F.
 - As this compost odour was intermittent at both locations it was not determined to be offensive or objectionable.
- ∴ 27th May 2026
 - Morning scout.
 - No compost odour was detected in the residential area.
 - Some weak (2) compost odour was detected at the eastern boundary of the industrial area at site F.
 - The compost odour was determined to be neither offensive nor objectionable.
- ∴ 28th May 2026
 - Some compost odour was detected at the boundary of the residential area at site D. A 10-minute FIDOL assessment at this location observed weak (2) compost odours 13% of the time.
 - No compost odour was detected in the industrial area.
 - The compost odour was determined to be neither offensive nor objectionable.
- ∴ Distinct (3) solvent odour was also detected at site H during the first three scouts this month. This appeared to be originating from the neighbouring Mr Boats site wash yard.

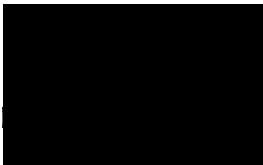
5.0 Limitations

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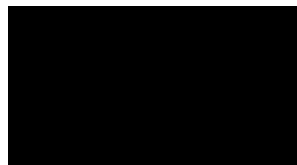
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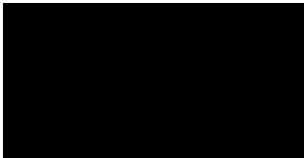
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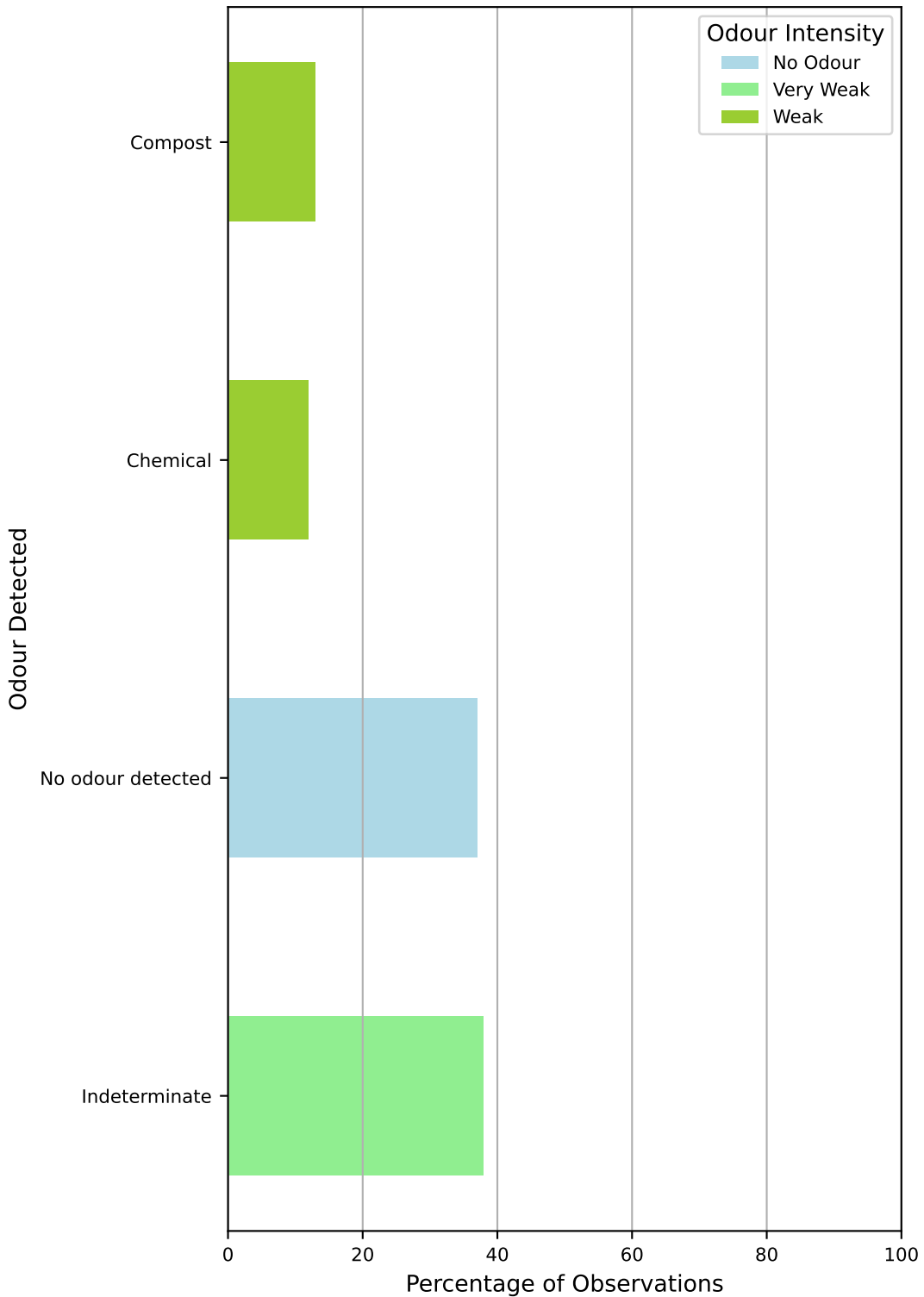
Service Leader - Air Quality

Approved by



Group Director- Water Infrastructure

Site D



Site E

