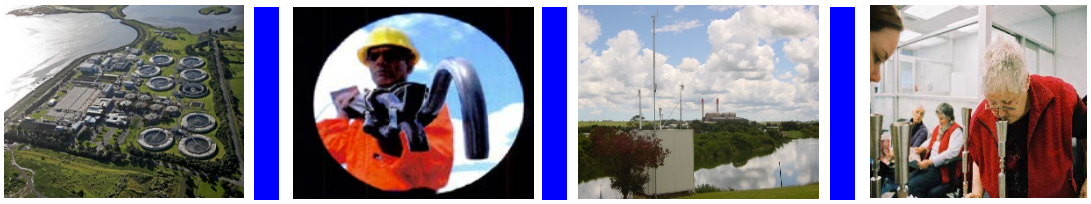
Environment Canterbury

Regional Council

Bromley – Odour Scout Report

October 2020

AQ-2020-223



Watercare Laboratory Services Comprehensive air quality services

AQ Air Quality

Ambient Monitoring | Stack Monitoring | Odour Monitoring | Data Management

A report for: Environment Canterbury Regional Council

Scope of the report: Odour Inspection Report

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1 INTRODUCTION

1.1 Purpose

Watercare Laboratory Services was requested by Environment Canterbury Regional Council to carry out an odour scout in Christchurch East, Bromley and surrounds. Several odour walkovers were carried out daily from 19th October 2020 to 23rd October 2020.

1.2 Odour Complaint Locations

Community complaint locations from 19th October to 23rd October are presented in figure 1 below. Selected complaints, including surrounding and upwind locations were investigated.

Figure 1: Odour complaints aerial map (19th October to 23rd October)

2 METHOD

The odour walkover was carried out based on a modified reference method VDI 3940: 2006 for the assessor selection, measurement planning and single measurement cycle for odour impact. At each nominated location odour is sampled for 10 minutes, recording observations every 10 seconds, from which the percentage odour frequency is determined. The odour walkover was conducted by a qualified assessor whose nose has been 'calibrated' in accordance with AS/NZS 4323.3:2001. Watercare is accredited for the nose calibration.

The inspections included responding to complaints as they were received via the "Smelt-it" app. Based on the weather conditions at the time of the complaint investigation, the assessor would then move to another complaint or to an upwind location if possible to attempt to focus in on the source of the odour. If no complaints were registered, then the assessor would return to the area where the most recent complaints were received, to further assess odour frequency. Weather conditions were recorded using a Kestrel 5500 Weather Tracker in the field.

3 RESULTS

The following five tables represent daily walkover results and show the percentage odour characteristic frequency, percentage odour intensity frequency & percentage odour offensiveness frequency. The odour character was recorded at each location over a 10-minute period. The odour character frequency was then calculated by dividing the number of positive responses by the total number of samples. The odour intensity and offensiveness scores were recorded over a 10-minute period in 10 seconds intervals at each location. Odour frequency of each parameter is calculated by dividing the proportion scored at each level by the total number of samples for each location.

The maps below show locations of offensive and non-offensive odours, including the character and wind direction measured at each point. It is possible to determine the likely area source of the odour based on the location of the information portrayed.

The bar graphs below show the overall offensiveness of each 10-second odour character period observed during the odour scouts for each day.

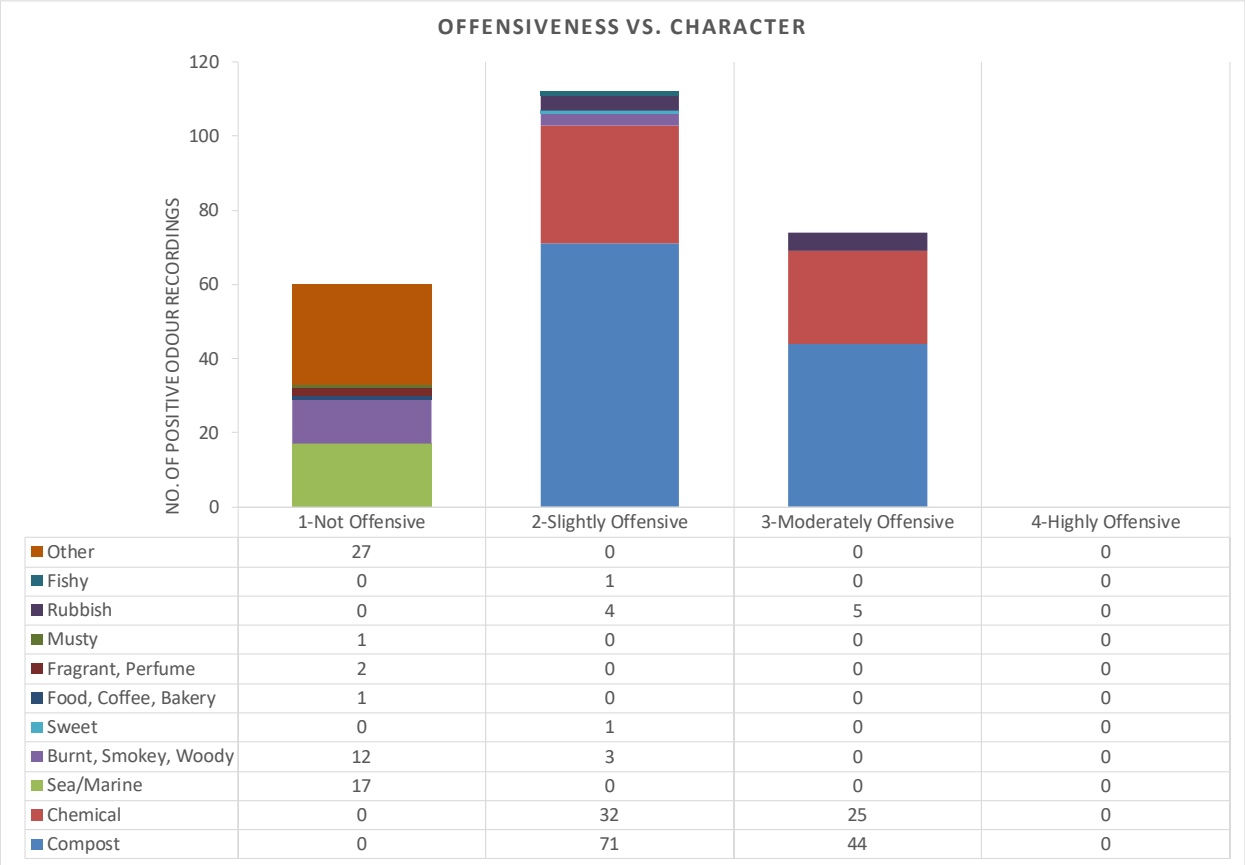
[1] https://www.metservice.com/towns-cities/locations/christchurch

3.1 Day 1 Odour Results

Table 1: Percentages of Odour Frequency, Percentage of Odour Intensity Frequency & Percentage of Odour Offensiveness Frequency on 19 October 2020 (Day-1)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10	Location 11	Location 12
Time (hrs):	8:37	9:10	9:27	10:02	10:42	11:58	12:32	12:57	13:24	13:44	14:09	14:32
Location:	36 bayswater	Ruru Rd	45 Bromley	5 Cromer Pl	NE Corner of Living earth	251 Dyers rd	7 seascape	18 sweet waters pl	185 Dyers rd	58 Wickham st	Humphreys Rd	Shops on
Wind Direction & speed:	0.6 SE	1.0 E	0.7 ESE	0.5 E	1.1 NNE	1.1 E	1.2 N	1.3 E	2.7 NNW	2.9 NW	4.2 NW	6.3 NNW
Odour Character	**Percentage Odour Frequency (Time)**											
Fragrant, Perfume	0%	0%	0%	**4%**	0%	0%	0%	0%	0%	0%	0%	0%
Rubbish	0%	0%	0%	0%	0%	**15%**	0%	0%	0%	0%	0%	0%
Compost	0%	0%	**70%**	0%	0%	**72%**	**40%**	**10%**	0%	0%	0%	0%
Sea/marine	**3%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**25%**
Burnt, Smokey, Woody	**7%**	0%	0%	0%	**3%**	**5%**	**2%**	0%	0%	**8%**	0%	0%
Fishy	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**2%**
Chemical	0%	0%	0%	0%	0%	0%	0%	0%	**90%**	**2%**	0%	**3%**
Food, Coffee, Bakery	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Sweet	0%	0%	**2%**	0%	0%	0%	0%	0%	0%	0%	0%	0%
Musty	0%	0%	0%	0%	**2%**	0%	0%	0%	0%	0%	0%	0%
Other	**12%**	0%	**3%**	0%	**5%**	0%	**23%**	**2%**	0%	0%	0%	0%
No odour	78%	100%	25%	96%	90%	8%	35%	87%	10%	90%	100%	70%
Intensity Rating	**Percentage Odour Intensity Frequency**											
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**	**Location 11**	**Location 12**
No detectable odour	78%	100%	25%	87%	90%	8%	35%	87%	10%	90%	98%	70%
Very slight	**8%**	0%	0%	**3%**	**7%**	**7%**	**5%**	**3%**	**2%**	**7%**	0%	**18%**
Slight	**12%**	0%	**20%**	**10%**	**3%**	**45%**	**52%**	**7%**	**42%**	**3%**	**2%**	**12%**
Distinct	**2%**	0%	**52%**	0%	0%	**40%**	**8%**	**3%**	**38%**	0%	0%	0%
Strong	0%	0%	**3%**	0%	0%	0%	0%	0%	**8%**	0%	0%	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Percentage Odour Offensiveness Frequency**											
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**	**Location 11**	**Location 12**
No Odour	78%	100%	25%	96%	90%	8%	35%	87%	10%	90%	100%	70%
Not Offensive	**22%**	0%	**3%**	**15%**	**10%**	0%	**25%**	**3%**	0%	**8%**	0%	**25%**
Slightly Offensive	0%	0%	**22%**	0%	0%	**60%**	**40%**	**10%**	**48%**	**2%**	0%	**5%**
Moderately Offensive	0%	0%	**50%**	0%	0%	**32%**	0%	0%	**42%**	0%	0%	0%
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 2: Day 1 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	27	0	0	0
Fishy	0	1	0	0
Rubbish	0	4	5	0
Musty	1	0	0	0
Fragrant, Perfume	2	0	0	0
Food, Coffee, Bakery	1	0	0	0
Sweet	0	1	0	0
Burnt, Smokey, Woody	12	3	0	0
Sea/Marine	17	0	0	0
Chemical	0	32	25	0
Compost	0	71	44	0

Figure 3: Offensiveness vs. Odour Character – Day 1

The wind was variable throughout the day moving from South-east in the morning to North-west in the afternoon.

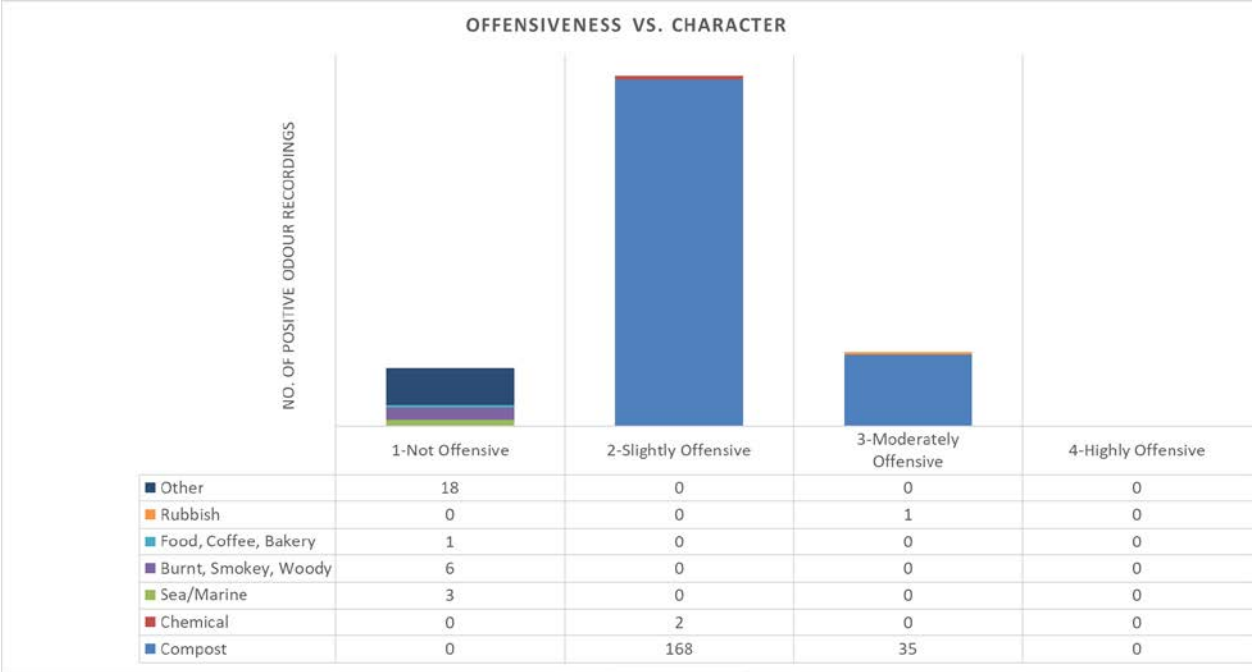
Figure 3 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 1, however the offensive odours included fishy, rubbish, sweet, burnt/smokey/woody, chemical & compost, of which Compost was responsible for 62% & chemical 31% of these.

3.2 Day 2 Odour Results

Table 2: Percentages of Odour Frequency, Percentage of Odour Intensity & Percentage of odour offensiveness Frequency on 20 October 2020 (Day-2)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8
Time (hrs):	7:32	7:57	8:33	9:38	12:50	11:32	13:49	14:25
Location:	3 seascape gardens	Crnr Dyers and edison	Crnr Seafield Pl craddock	230 dyers rd	14 Seascape Gardens	Cemetery	Mace's rd	Seascape reserve
Wind Direction & speed:	1.0 NE	1.5 ENE	1.9 NE	2.2 NNE	2.2 ENE	2.7 NE	3.3 ENE	3.1 ENE
Odour Character	**Percentage Odour Frequency (Time)**							
Food, Coffee, Bakery	0%	0%	0%	0%	2%	0%	0%	0%
Rubbish	0%	**2%**	0%	0%	0%	0%	0%	0%
Compost	**47%**	**80%**	0%	**72%**	**22%**	0%	**80%**	**38%**
Sea/marine	0%	0%	0%	0%	0%	**5%**	0%	0%
Burnt, Smokey, Woody	0%	0%	**7%**	**3%**	0%	0%	0%	0%
Chemical	0%	0%	0%	0%	0%	0%	**3%**	0%
Other	0%	0%	0%	**7%**	**2%**	**20%**	0%	**2%**
No odour	53%	18%	93%	18%	75%	75%	17%	60%
Intensity Rating	**Percentage Odour Intensity Frequency**							
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**
No detectable odour	53%	18%	93%	18%	75%	75%	17%	60%
Very slight	**10%**	**5%**	**7%**	**2%**	**7%**	**20%**	**8%**	**2%**
Slight	**27%**	**37%**	0%	**45%**	**17%**	**5%**	**52%**	**18%**
Distinct	**10%**	**33%**	0%	**33%**	**2%**	0%	**22%**	**17%**
Strong	0%	**7%**	0%	**2%**	0%	0%	**2%**	**3%**
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Percentage Odour Offensiveness Frequency**							
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**
No Odour	53%	18%	93%	18%	75%	75%	17%	60%
Not Offensive	0%	0%	**7%**	**10%**	**3%**	**25%**	0%	**2%**
Slightly Offensive	**43%**	**53%**	0%	**52%**	**22%**	0%	**78%**	**35%**
Moderately Offensive	**3%**	**28%**	0%	**20%**	0%	0%	**5%**	**3%**
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%

Figure 4: Day 2 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	18	0	0	0
Rubbish	0	0	1	0
Food, Coffee, Bakery	1	0	0	0
Burnt, Smokey, Woody	6	0	0	0
Sea/Marine	3	0	0	0
Chemical	0	2	0	0
Compost	0	168	35	0

Figure 5: Offensiveness vs. Odour Character – Day 2

Throughout Day 2, the wind was predominantly from the East-northeast to North-northeast.

Figure 5 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 2, however the offensive odours included rubbish, chemical & compost, of which Compost was responsible for 99% of these.

3.3 Day 3 Odour Results

Table 3: Percentages of Odour Frequency, Percentage of Odour Intensity Frequency & Percentage of Odour Offensiveness Frequency on 21 October 2020 (Day-3)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10
Time (hrs):	7:43	8:36	9:07	9:46	10:22	11:52	12:25	13:20	13:38	13:59
Location:	Reserve	Breezes rd	230 dyers rd	23 Wickham rd	250ish dyers rd	Beach	Beach caspian end	Dyers rd	Metro	240 dyers rd
Wind Direction & speed:	2.1 NNE	1.7 NE	1.6 ENE	1.7 NE	1.9 ENE	3.2 E	2.9 E	1.7 ESE	3.1 ESE	0.7 ENE
Odour Character	**Percentage Odour Frequency (Time)**									
Rubbish	0%	0%	0%	**8%**	**5%**	0%	0%	**43%**	0%	0%
Compost	**37%**	0%	**47%**	**27%**	**75%**	0%	0%	**33%**	0%	**67%**
Sea/marine	0%	0%	0%	0%	0%	**18%**	**18%**	0%	0%	0%
Burnt, Smokey, Woody	0%	0%	0%	0%	**2%**	0%	0%	0%	0%	**3%**
Chemical	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	**2%**
Other	0%	**10%**	**3%**	0%	0%	0%	**0%**	**2%**	0%	0%
No odour	63%	90%	50%	15%	18%	82%	82%	22%	100%	28%
Intensity Rating	**Percentage Odour Intensity Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No detectable odour	63%	90%	50%	15%	18%	82%	82%	22%	100%	28%
Very slight	**3%**	**10%**	**5%**	**5%**	0%	**15%**	**15%**	0%	0%	**2%**
Slight	**18%**	0%	**18%**	**32%**	**25%**	**3%**	**3%**	**23%**	0%	**33%**
Distinct	**15%**	0%	**27%**	**37%**	**47%**	0%	0%	**47%**	0%	**37%**
Strong	0%	0%	0%	**12%**	**10%**	0%	0%	**8%**	0%	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Percentage Odour Offensiveness Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No Odour	63%	90%	50%	15%	18%	82%	82%	22%	100%	30%
Not Offensive	0%	**10%**	**3%**	0%	**2%**	**18%**	**18%**	**2%**	0%	**3%**
Slightly Offensive	**37%**	0%	**30%**	**38%**	**45%**	0%	0%	**43%**	0%	**55%**
Moderately Offensive	0%	0%	**17%**	**47%**	**35%**	0%	0%	**33%**	0%	**12%**
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 6: Day 3 - Investigated Locations

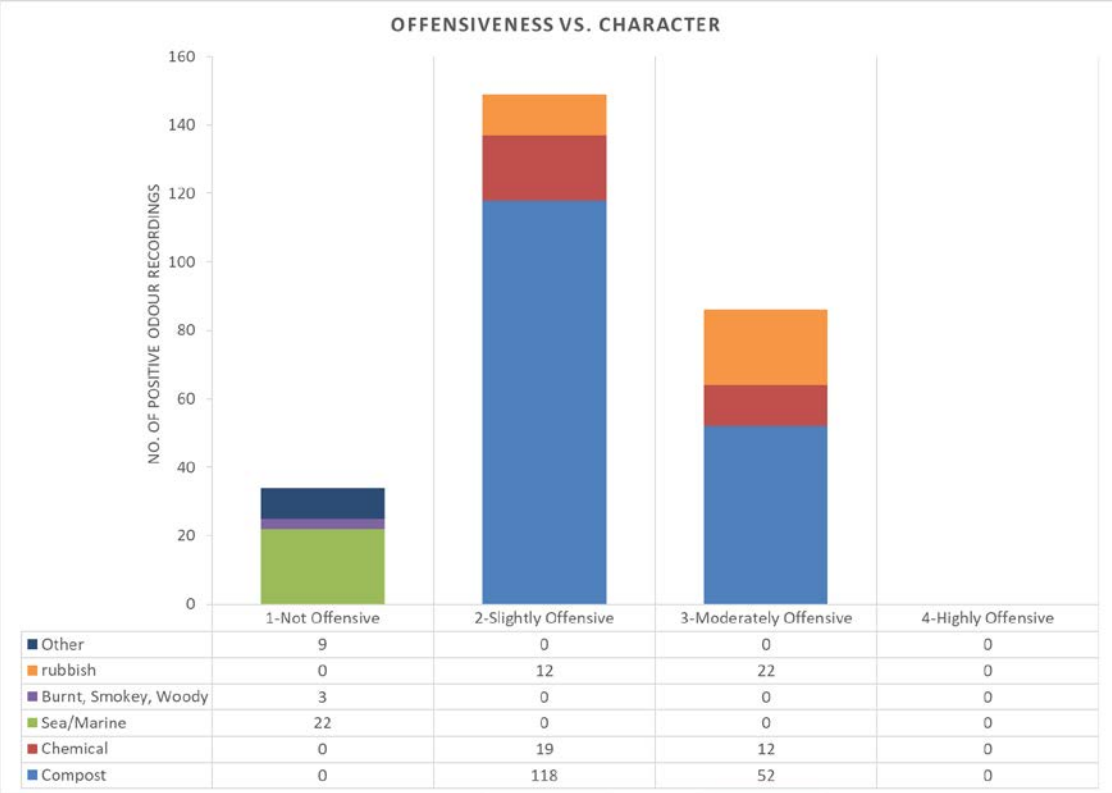


Figure 7: Offensiveness vs. Character Day 3

The wind was variable throughout Day 3 moving between North-northeast and East-southeast.

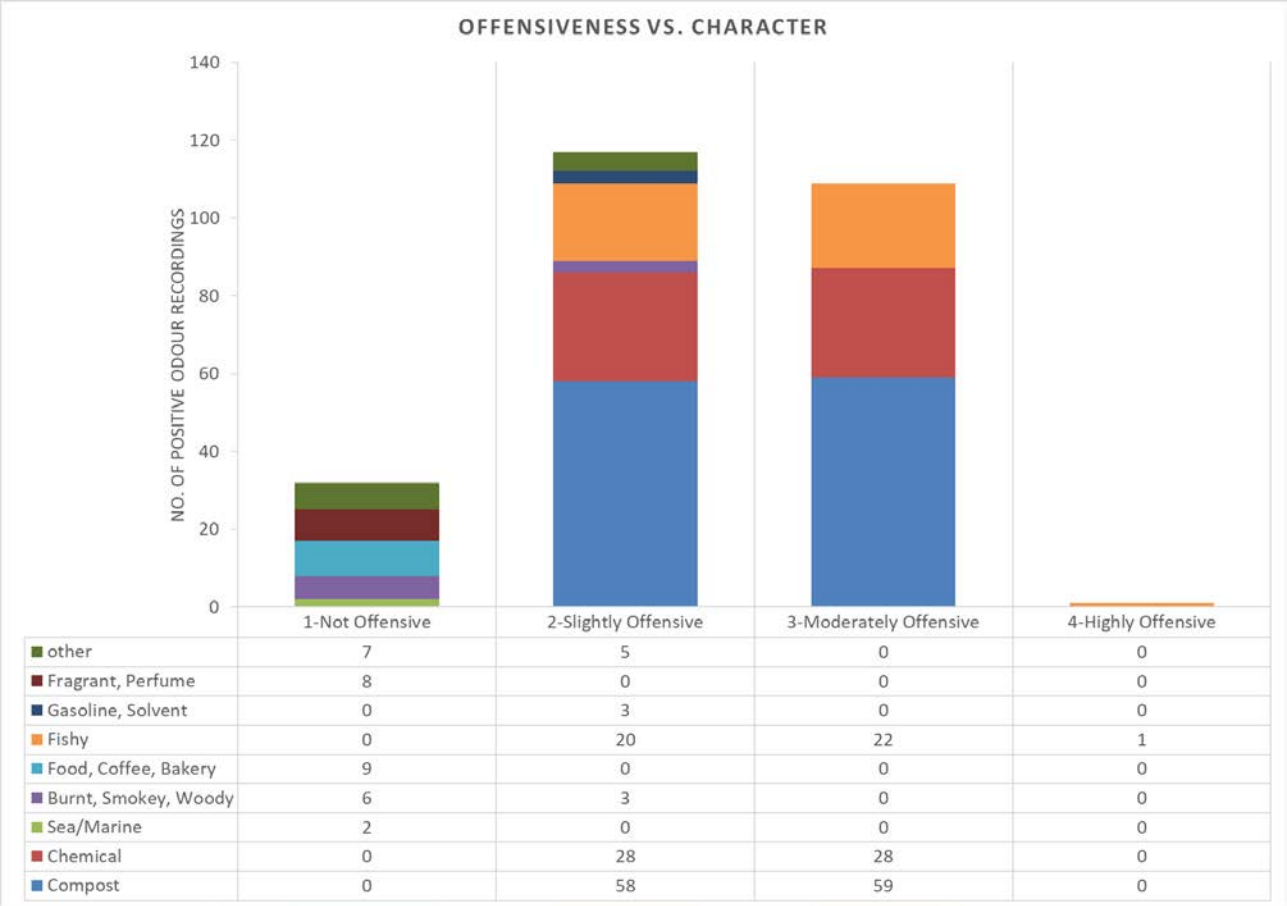
Figure 7 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 3, however the offensive odours included rubbish, chemical & compost of which Compost was responsible for 72%, rubbish 14% and Chemical 13% of these.

3.4 Day 4 Odour Results

Table 4: Percentages of Odour Frequency, Percentage of Odour Intensity Frequency & Percentage of Odour Offensiveness Frequency on 22 October 2020 (Day- 4)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10
Time (hrs):	7:48	8:25	9:05	9:34	10:09	10:59	12:07	13:29	13:54	14:15
Location:	Crnr senior Pl Mace's rd	171 Dyers rd lolly shop	Bridges rd	106 francella	23 Mace's rd.	237 dyers rd	Cutler Park	476 linwood	Newtown st	Jellicoe rd Park
Wind Direction & speed:	0.6 NW	0.9 ENE	2.1 ENE	0.5 NE	1.8 ENE	1.5 NNE	3.4 E	3.2 ENE	1.3 NE	3.4 ENE
Odour Character	**Percentage Odour Frequency (Time)**									
Fragrant, Perfume	0%	0%	0%	0%	**2%**	0%	**10%**	**2%**	0%	0%
Compost	0%	**55%**	0%	**7%**	**13%**	**62%**	**2%**	**2%**	**55%**	0%
Food, coffee, bakery	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%
Sea/marine	0%	0%	0%	0%	0%	0%	0%	0%	0%	**3%**
Burnt, Smokey, Woody	0%	**3%**	**7%**	**5%**	0%	0%	0%	0%	0%	0%
Fishy	**72%**	0%	0%	0%	0%	0%	0%	0%	0%	0%
Chemical	0%	0%	0%	**5%**	**58%**	**3%**	0%	0%	**27%**	0%
Gasoline, solvent	0%	0%	0%	**2%**	0%	**3%**	0%	0%	0%	0%
Other	**2%**	0%	0%	**8%**	0%	0%	**2%**	**8%**	0%	0%
No odour	27%	42%	93%	73%	27%	32%	87%	73%	18%	97%
Intensity Rating	**Percentage Odour Intensity Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No detectable odour	27%	42%	93%	73%	27%	32%	87%	73%	18%	97%
Very slight	0%	**2%**	**3%**	0%	0%	0%	**5%**	**5%**	**3%**	**3%**
Slight	**15%**	**22%**	**3%**	**20%**	**37%**	**22%**	**7%**	**17%**	**35%**	**0%**
Distinct	**30%**	**20%**	0%	**7%**	**22%**	**23%**	**2%**	**5%**	**37%**	0%
Strong	**28%**	**15%**	0%	0%	**15%**	**23%**	0%	0%	**7%**	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Percentage Odour Offensiveness Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No Odour	27%	42%	93%	73%	27%	32%	87%	73%	18%	97%
Not Offensive	**2%**	**3%**	**7%**	0%	**2%**	0%	**12%**	**25%**	0%	**3%**
Slightly Offensive	**33%**	**27%**	0%	**27%**	**30%**	**23%**	**2%**	**2%**	**52%**	0%
Moderately Offensive	**37%**	**28%**	0%	0%	**42%**	**45%**	0%	0%	**30%**	0%
Highly Offensive	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 8: Day 4 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
other	7	5	0	0
Fragrant, Perfume	8	0	0	0
Gasoline, Solvent	0	3	0	0
Fishy	0	20	22	1
Food, Coffee, Bakery	9	0	0	0
Burnt, Smokey, Woody	6	3	0	0
Sea/Marine	2	0	0	0
Chemical	0	28	28	0
Compost	0	58	59	0

Figure 9: Offensiveness vs. Character- Day 4

Throughout Day 2, the wind was predominantly from the East to North-northeast.

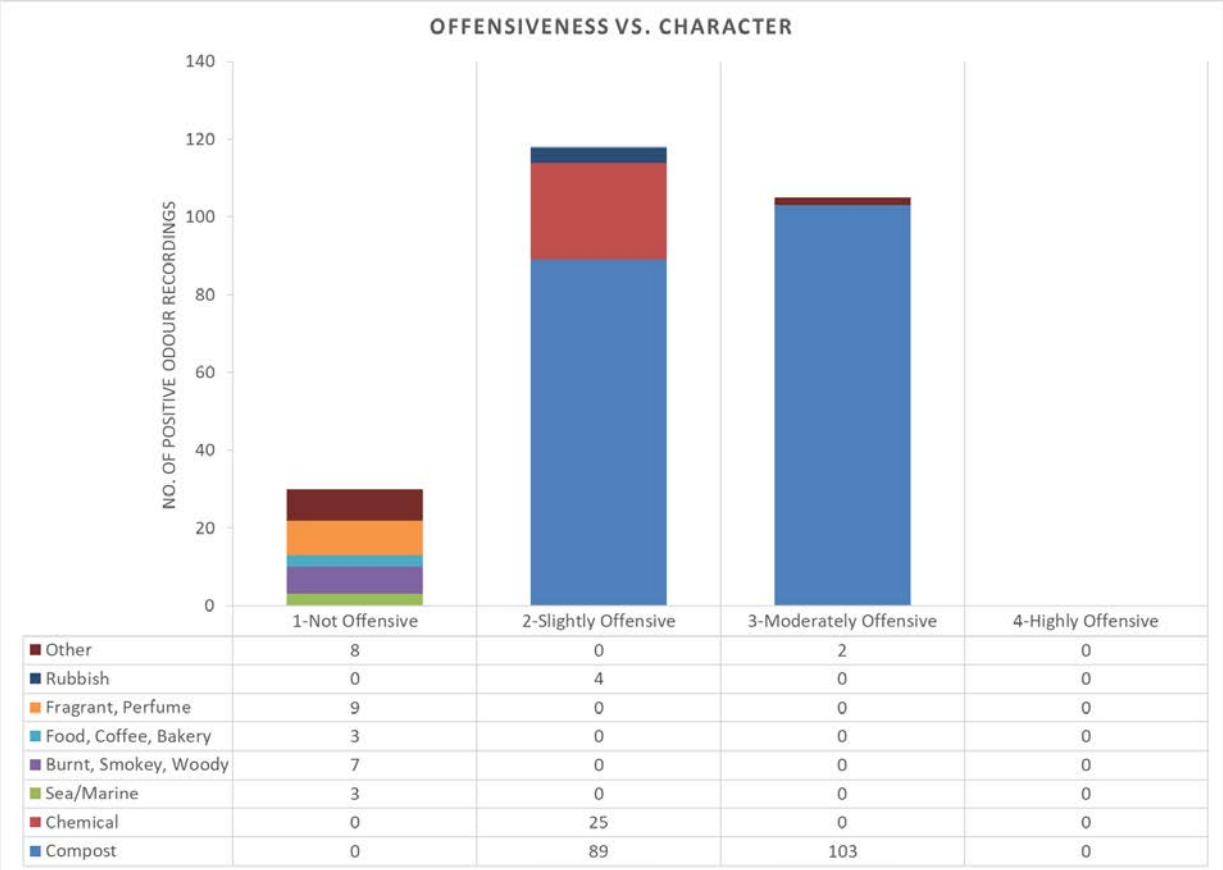
Figure 9 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 4, however the offensive odours included other (metallic), gasoline/solvents, fishy, burnt/smokey/woody, chemical & compost, of which Compost was responsible for 52%, Chemical 25%, Fishy 19% and Gasoline/solvent 1% of these.

3.5 Day 5 Odour Results

Table 5: Percentages of Odour Frequency, Percentage of Odour Intensity Frequency & Percentage of Odour Offensiveness Frequency on 23 October 2020 (Day-5)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10
Time (hrs):	8:28	8:51	9:12	9:29	9:57	10:28	10:48	11:24	11:45	12:51
Location:	185 dyers rd	Seafield	Newtown st	45 Bromley rd	Dyers rd caltex	44 ruru rd, cemetary	35 Bayswater	247 dyers	Crnr Ebbtide/estuary rd	6 flaxwood lane
Wind Direction & speed:	1.9 ENE	0.6 ENE	1.5 ENE	1.2 NE	2.6 NE	1.1 ENE	2.0 NE	1.6 E	2.2 E	0.6 NE
Odour Character	**Percentage Odour Frequency (Time)**									
Fragrant, Perfume	0%	0%	0%	**3%**	0%	0%	**2%**	0%	0%	**10%**
Rubbish	0%	0%	0%	0%	0%	0%	0%	**7%**	0%	0%
Compost	**70%**	0%	**50%**	**3%**	**80%**	0%	**37%**	**80%**	0%	0%
Sea/marine	0%	0%	0%	0%	0%	0%	0%	0%	**5%**	0%
Burnt, Smokey, Woody	0%	**10%**	0%	0%	**2%**	0%	0%	0%	0%	0%
Chemical	0%	0%	**27%**	0%	0%	0%	**15%**	0%	0%	0%
Food, coffee, bakery	0%	**5%**	0%	0%	0%	0%	0%	0%	0%	0%
Other	**3%**	0%	0%	**13%**	0%	0%	0%	0%	0%	0%
No odour	27%	85%	23%	80%	18%	100%	47%	13%	95%	90%
Intensity Rating	**Percentage Odour Intensity Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No detectable odour	27%	85%	23%	80%	18%	100%	47%	13%	95%	90%
Very slight	**10%**	12%	3%	**7%**	**0%**	**0%**	**2%**	**0%**	**5%**	**8%**
Slight	**10%**	3%	**38%**	**12%**	**15%**	**0%**	**28%**	**32%**	**0%**	**2%**
Distinct	**37%**	0%	**30%**	2%	42%	**0%**	**17%**	**32%**	**0%**	0%
Strong	17%	0%	**5%**	0%	25%	0%	7%	23%	**0%**	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Percentage Odour Offensiveness Frequency**									
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
No Odour	27%	85%	23%	80%	18%	100%	47%	13%	95%	90%
Not Offensive	0%	**15%**	0%	**17%**	**2%**	0%	**2%**	0%	**5%**	**10%**
Slightly Offensive	**22%**	0%	**62%**	**3%**	**33%**	0%	**32%**	**45%**	0%	0%
Moderately Offensive	**52%**	0%	**15%**	0%	**47%**	0%	**20%**	**42%**	0%	0%
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 10: Day 5 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	8	0	2	0
Rubbish	0	4	0	0
Fragrant, Perfume	9	0	0	0
Food, Coffee, Bakery	3	0	0	0
Burnt, Smokey, Woody	7	0	0	0
Sea/Marine	3	0	0	0
Chemical	0	25	0	0
Compost	0	89	103	0

Figure 11: Offensiveness vs. Character-Day 5

On Day 5, the wind was predominantly from the East-northeast, North-east & East.

Figure 11 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 5, however the offensive odours included other (silage), rubbish, chemical & compost, of which Compost was responsible for 86%, chemical 11% and rubbish 2% of these.

3.6 Combined Odour Character Results

Figure 12 shows the total percentage character frequency during the 5 days of odour scouting.

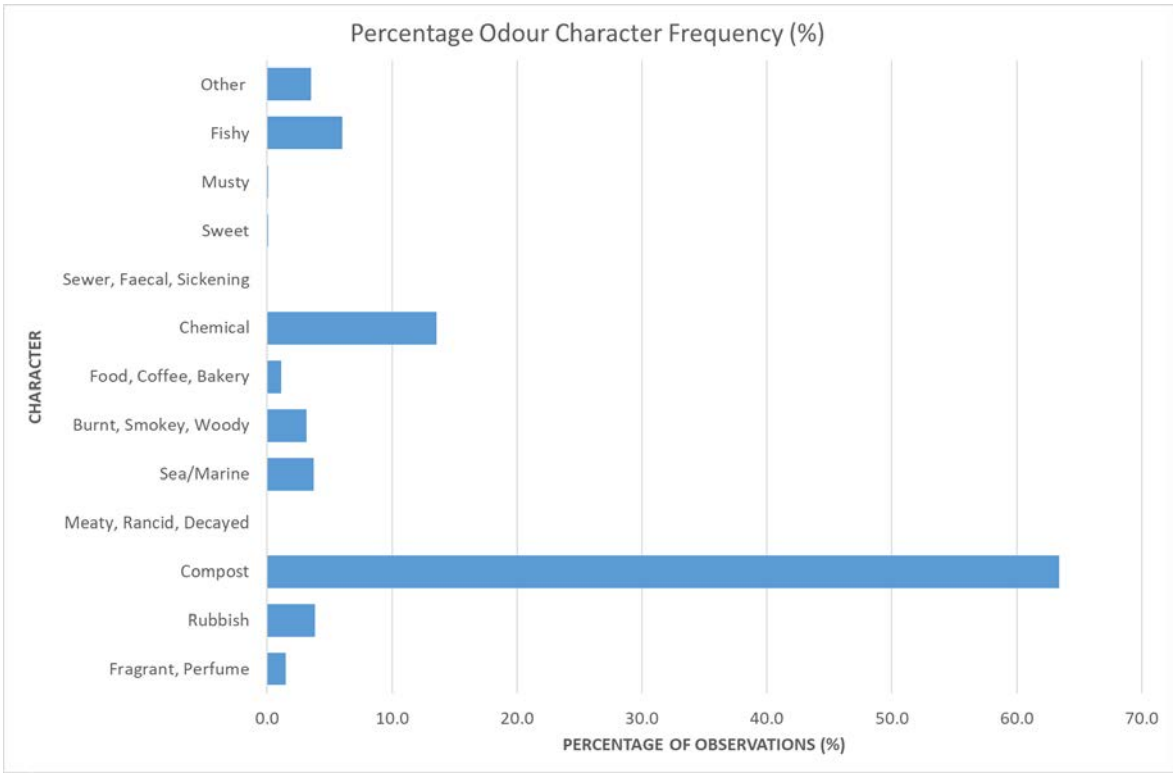


Figure 12: Percentage odour character (from 19th October to 23rd October)

'Compost' was consistently the most commonly observed offensive odour during the week. 'Chemical' odours (described as volatile organics by the assessor) were also notably observed on several occasions during the week.