Environment Canterbury

Regional Council

Bromley – Odour Scout Report

September 2020

AQ-2020-198

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 21st September 2020 to 25th September 2020.

1.2 Odour Complaint Locations

Community complaint locations from 21st September to 25th September are presented in figure 1 below. Selected complaints, including surrounding and upwind locations were investigated (note: not all complaints could be investigated due to time constraints).

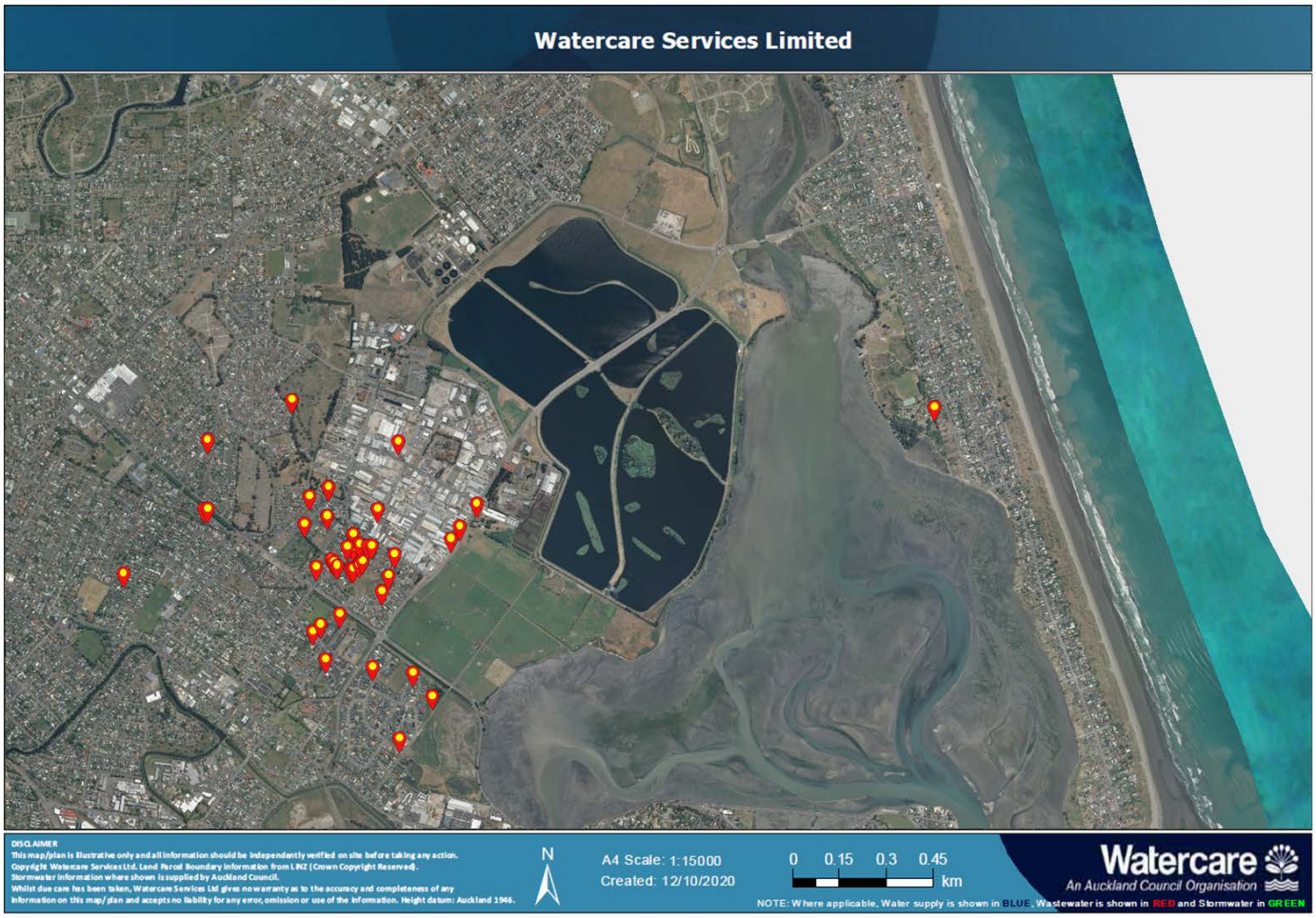


Figure 1: Odour complaints aerial map (21st September to 25th September)

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.

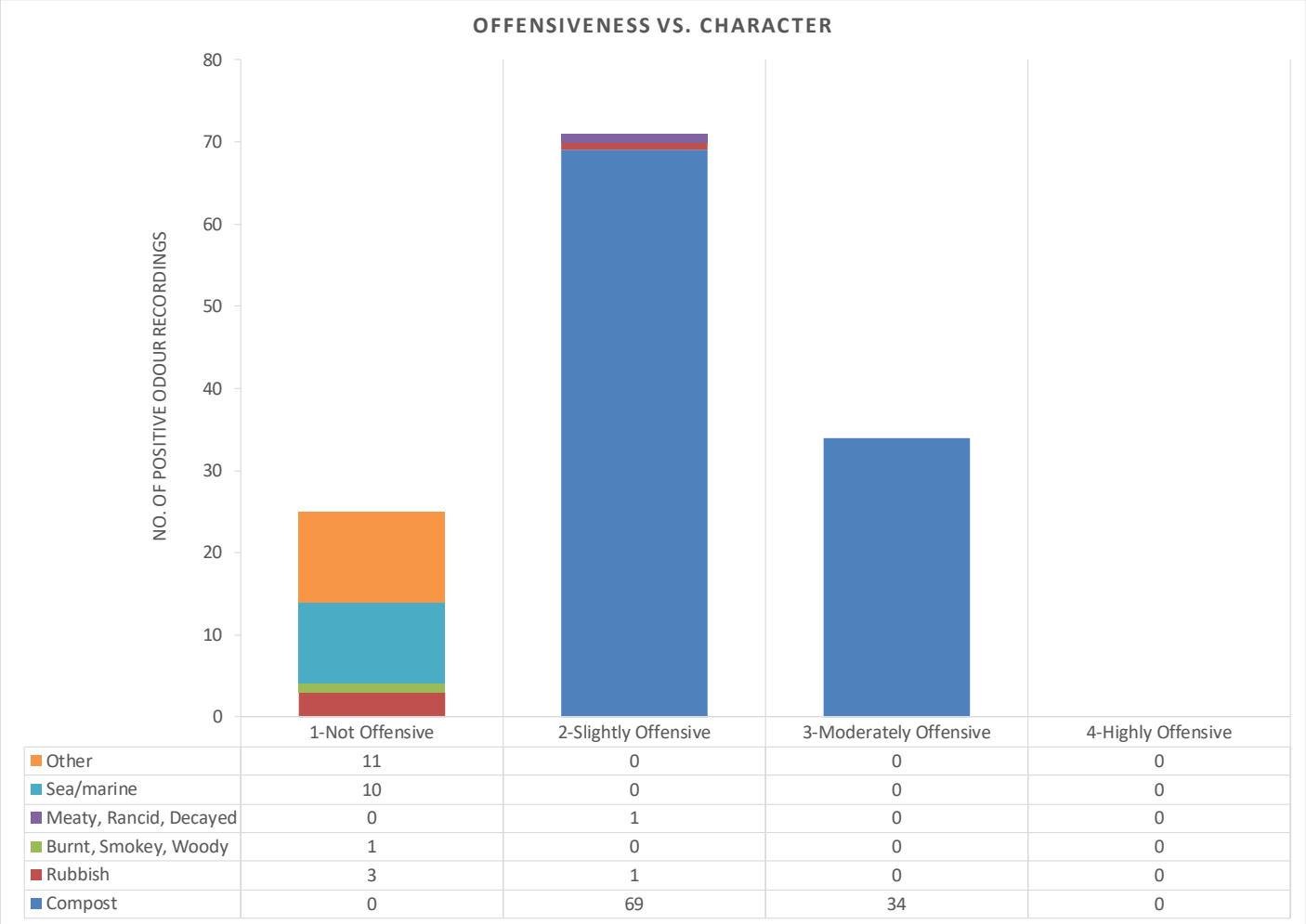
[1] https://www.metservice.com/towns-cities/locations/christchurch

3.1 Day 1 Odour Results

Table 1: Percentages of Odour Frequency, Percentage of Odour Intensity Frequency & Percentage of Odour Offensiveness Frequency on 21 September 2020 (Day-1)

	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**
Time (hrs):	10:02	10:47	11:45	12:08	12:54	13:15	14:03	15:05	15:25
Location:	227 Dyers rd	Upwind dyers	30 Raupo Dr	7 Seascape gardens	281 Dyers Rd, north of complaints	Humphreys drive, South East of complaints	Primo bathroom collection, Dyers Rd	Bottom southeast end of side road behind LE	Top northeast end of side road behind LE
Wind Direction & speed:	0.4 NE	0.6 NE	0.8 ENE	1.5 ENE	2.1 NE	3.0 ENE	1.5 NE	1.0 NE	1.5 NE
Odour Character	Percentage Odour Frequency (Time)								
Fragrant, Perfume	0%	0%	**2%**	0%	0%	0%	0%	0%	0%
Rubbish	0%	0%	**7%**	0%	0%	0%	0%	0%	0%
Compost	**25%**	0%	**33%**	**50%**	0%	0%	**47%**	**28%**	0%
Meaty, Rancid, Decayed	0%	0%	0%	**2%**	0%	0%	0%	0%	0%
Sea/marine	0%	0%	0%	0%	0%	**17%**	0%	0%	0%
Burnt, Smokey, Woody	0%	0%	**2%**	0%	0%	0%	0%	0%	0%
Other	0%	**15%**	**3%**	0%	0%	0%	0%	0%	0%
No odour	75%	85%	53%	48%	100%	83%	53%	72%	100%
Intensity Rating	Percentage Odour Intensity Frequency								
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
No detectable odour	75%	85%	53%	48%	100%	83%	53%	72%	100%
Very slight	**2%**	**15%**	**18%**	**5%**	0%	**17%**	**7%**	5%	0%
Slight	**12%**	0%	**25%**	**20%**	0%	0%	**32%**	13%	0%
Distinct	**5%**	0%	**3%**	**25%**	0%	0%	**8%**	10%	0%
Strong	**7%**	0%	0%	**2%**	0%	0%	0%	0%	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	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
No Odour	75%	85%	53%	50%	100%	83%	53%	72%	100%
Not Offensive	0%	**15%**	**12%**	0%	0%	**17%**	0%	0%	0%
Slightly Offensive	**13%**	0%	**35%**	**32%**	0%	0%	**47%**	2%	0%
Moderately Offensive	**12%**	0%	0%	**18%**	0%	0%	0%	27%	0%
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Notable Activity								
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
			Rubbish day, bins are out					Dump truck loading up piles of compost.	

Figure 2: Day 1 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	11	0	0	0
Sea/marine	10	0	0	0
Meaty, Rancid, Decayed	0	1	0	0
Burnt, Smokey, Woody	1	0	0	0
Rubbish	3	1	0	0
Compost	0	69	34	0

Figure 3: Offensiveness vs. Odour Character – Day 1

Throughout Day 1, the wind was predominantly from the North-east and the East-Northeast.

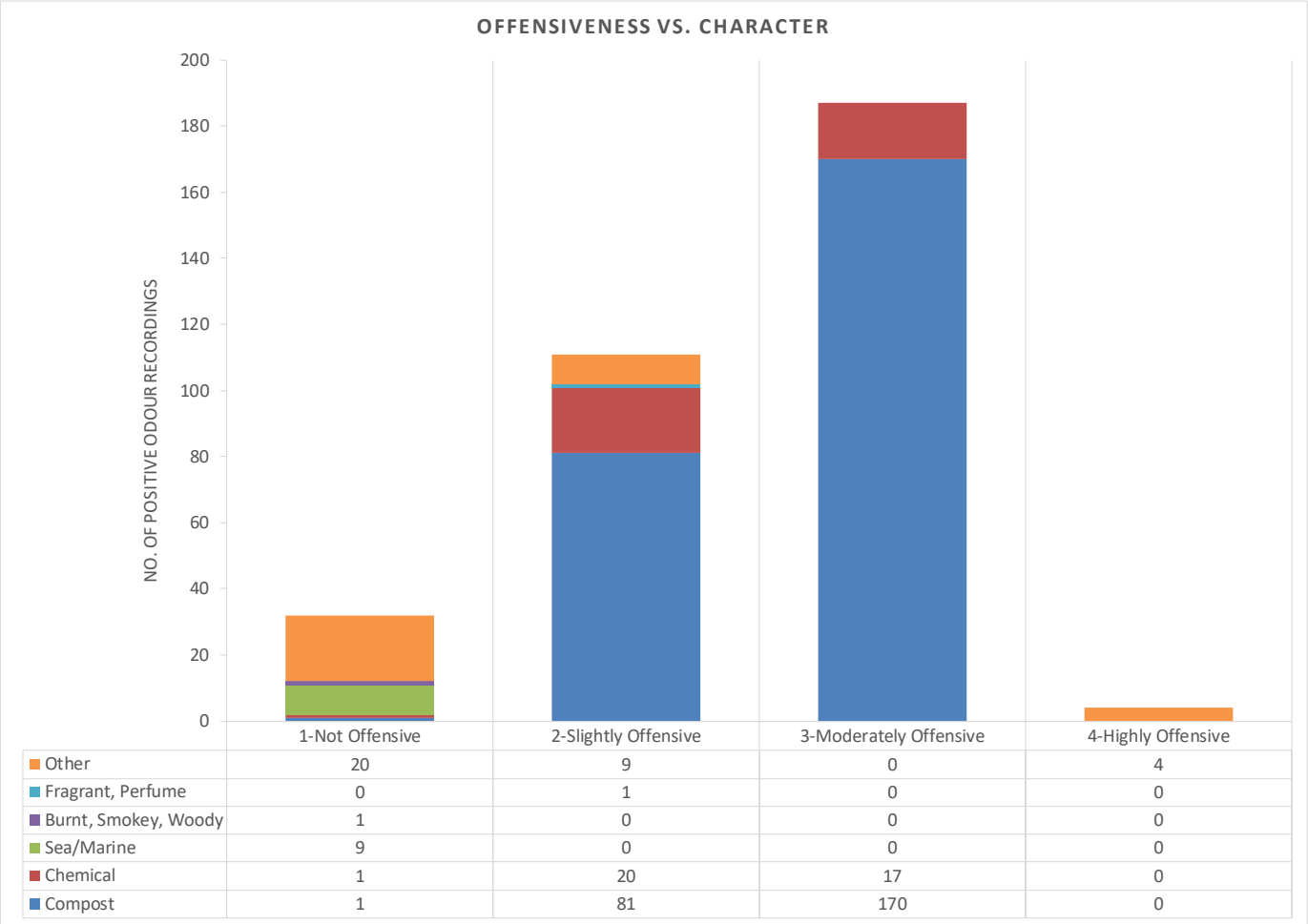
Figure 3 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 1, however the offensive odours included Meaty/Rancid/Decayed, Rubbish and Compost, of which Compost was responsible for 98% of these.

3.2 Day 2 Odour Results

Table 2: Percentages of Odour Frequency, Percentage of Odour Intensity & Percentage of odour offensiveness Frequency on 22 September 2020 (Day-2)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10	Location 11	Location 12	Location 13	Location 14
Time (hrs):	8:46	9:24	10:04	10:44	11:11	11:39	10:55	12:20	13:27	13:53	14:19	15:16	12:43	14:55
Location:	114 Bayswater cres	187 Dyers rd	33 McGregor rd	Dyers Road South West of suspect	Wickham Street West of suspect	185 Dyers rd	177 St Johns st	Humphreys rd	14 seascapes gardens	Metro Road	7 Seascape Gardens	Crn St Monica and St lukes	Down dirt road off roundabout bridge st	Jellicoe St
Wind Direction & speed:	0.1 NE	1.2 NE	1.0 NE	1.8 NE	0.8 NE	2.1 NE	1.5 NE	1.5 ENE	1.0 NNE	2.0 NE	1.5 ENE	1 NE	1.3 NE	2.4 ENE
Odour Character	**Percentage Odour Frequency (Time)**													
Fragrant, Perfume	0%	0%	0%	0%	0%	0%	0%	0%	**2%**	0%	0%	0%	0%	0%
Compost	**53%**	**72%**	**5%**	**75%**	0%	**43%**	**32%**	0%	**63%**	0%	**73%**	**3%**	0%	0%
Sea/marine	0%	0%	0%	0%	0%	0%	0%	**15%**	0%	0%	0%	0%	0%	0%
Burnt, Smokey, Woody	0%	0%	0%	0%	0%	0%	0%	0%	**2%**	0%	0%	0%	0%	0%
Chemical	**2%**	0%	0%	0%	**27%**	0%	**15%**	0%	**3%**	0%	0%	0%	0%	0%
Other	**2%**	0%	**13%**	0%	0%	**7%**	0%	**13%**	0%	**8%**	0%	**12%**	0%	0%
No odour	43%	28%	82%	25%	73%	50%	53%	72%	30%	92%	27%	85%	100%	100%
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**	**Location 13**	**Location 14**
No detectable odour	43%	28%	82%	25%	73%	50%	53%	72%	30%	92%	25%	85%	100%	100%
Very slight	**13%**	0%	**7%**	**8%**	**3%**	**3%**	**2%**	**23%**	**22%**	**2%**	**5%**	**13%**	0%	0%
Slight	**27%**	**20%**	**5%**	**27%**	**12%**	**27%**	**23%**	**5%**	**33%**	**5%**	**15%**	**2%**	0%	0%
Distinct	**17%**	**37%**	**7%**	**25%**	**10%**	**15%**	**22%**	0%	**15%**	**2%**	**35%**	0%	0%	0%
Strong	0%	**15%**	0%	**15%**	**2%**	**5%**	0%	0%	0%	0%	**17%**	0%	0%	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**3%**	0%	0%	0%
Extremely Strong	0%	0%	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**	**Location 13**	**Location 14**
No Odour	43%	28%	82%	25%	73%	50%	53%	72%	30%	92%	25%	85%	100%	100%
Not Offensive	0%	0%	**13%**	0%	0%	0%	**2%**	**15%**	**2%**	**8%**	0%	**12%**	0%	0%
Slightly Offensive	**57%**	**7%**	**5%**	0%	**25%**	0%	**18%**	**13%**	**67%**	0%	**2%**	**3%**	0%	0%
Moderately Offensive	0%	**65%**	0%	**75%**	**2%**	**43%**	**27%**	0%	**2%**	0%	**73%**	0%	0%	0%
Highly Offensive	0%	0%	0%	0%	0%	**7%**	0%	0%	0%	0%	0%	0%	0%	0%
Offensiveness	**Notable Activity**													
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**	**Location 11**	**Location 12**	**Location 13**	**Location 14**
			Lawns just been cut.					Location on roadside next to cow field						

Figure 4: Day 2 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	20	9	0	4
Fragrant, Perfume	0	1	0	0
Burnt, Smokey, Woody	1	0	0	0
Sea/Marine	9	0	0	0
Chemical	1	20	17	0
Compost	1	81	170	0

Figure 5: Offensiveness vs. Odour Character – Day 2

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

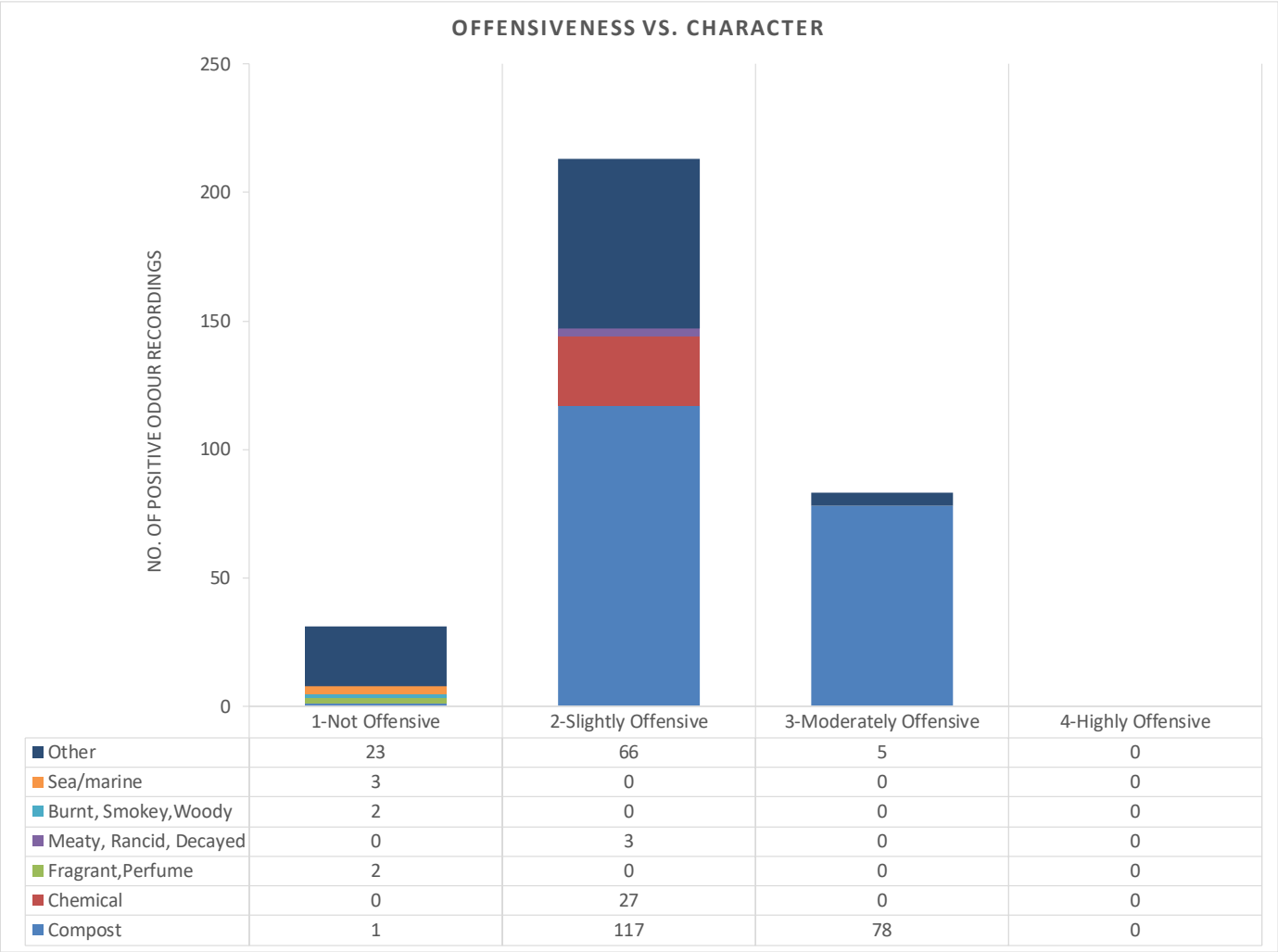
Figure 5 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 2, however the offensive odours included Other (vehicle exhaust and manure), Fragrant/Perfume, Chemical (volatile organics) and Compost, of which Compost was responsible for 84% and Chemical 12% 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 23 September 2020 (Day-3)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15
Time (hrs):	8:35	8:57	9:21	9:45	10:28	10:54	11:19	11:42	12:38	13:22	13:45	14:02	14:29	15:10	12:55
Location:	Ruru Rd northwest of suspect	Dyers rd Downwind	1 Munich	159 St Johns	45 bromley	7-11 Seascape Gardens	19 sweet waters pl	59 Charleswor th	60 wickhams	Dyers rd parking lot behind LE	Dyers rd	10 bayswater	238 Dyers rd	355 Estuary Rd	Down dirt road off roundabou t bridge st
Wind Direction & speed:	1.3 E	1.0 E	2.1 NE	1.8 NE	0.6 NE	0.5 NE	1.0 E	1.5 NE	2.5 E	0.1 NE	1.7 NE	1.2 E	3.1 E	2.1 E	1.7 NE
Odour Character	**Percentage Odour Frequency (Time)**														
Fragrant, Perfume	0%	0%	**3%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Compost	**25%**	**50%**	**25%**	**3%**	**55%**	**17%**	**2%**	**3%**	**23%**	**20%**	**70%**	0%	**33%**	0%	0%
Meaty, Rancid, Decayed	0%	0%	0%	0%	0%	0%	**5%**	0%	0%	0%	0%	0%	0%	0%	0%
Sea/marine	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**5%**	0%	0%	0%
Burnt, Smokey, Woody	0%	0%	**2%**	0%	0%	0%	0%	**2%**	0%	0%	0%	0%	0%	0%	0%
Chemical	0%	0%	0%	0%	0%	**30%**	0%	0%	**15%**	0%	0%	0%	0%	0%	0%
Other	0%	0%	**2%**	0%	**7%**	**3%**	**7%**	**3%**	0%	**65%**	**7%**	0%	**45%**	**8%**	**10%**
No odour	75%	50%	68%	97%	38%	50%	87%	92%	62%	15%	23%	95%	22%	92%	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**	**Location 11**	**Location 12**	**Location 13**	**Location 14**	**Location 15**
No detectable odour	75%	50%	68%	97%	38%	50%	87%	92%	62%	15%	23%	95%	22%	92%	90%
Very slight	**8%**	**5%**	**3%**	**3%**	**7%**	**2%**	**5%**	0%	**5%**	**3%**	**5%**	**5%**	**2%**	**7%**	**10%**
Slight	**5%**	**23%**	**13%**	0%	**28%**	**22%**	**7%**	**5%**	**25%**	**45%**	**35%**	0%	**30%**	**2%**	0%
Distinct	**12%**	**13%**	**10%**	0%	**25%**	**20%**	**2%**	**3%**	**8%**	**35%**	**18%**	0%	18%	0%	0%
Strong	0%	**8%**	**5%**	0%	**2%**	**7%**	0%	0%	0%	**2%**	**15%**	0%	**20%**	0%	0%
Very Strong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	**8%**	0%	0%
Extremely Strong	0%	0%	0%	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**	**Location 13**	**Location 14**	**Location 15**
No Odour	75%	50%	68%	97%	38%	50%	87%	92%	62%	15%	23%	95%	22%	92%	90%
Not Offensive	0%	**2%**	**7%**	0%	**5%**	**3%**	**7%**	**5%**	0%	0%	0%	**5%**	0%	**8%**	**10%**
Slightly Offensive	**25%**	**45%**	**25%**	**3%**	**55%**	**35%**	**7%**	**3%**	**38%**	**68%**	**12%**	0%	**38%**	0%	0%
Moderately Offensive	0%	**3%**	0%	0%	**2%**	**12%**	0%	0%	0%	**17%**	**65%**	0%	**40%**	0%	0%
Highly Offensive	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 6: Day 3 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	23	66	5	0
Sea/marine	3	0	0	0
Burnt, Smokey,Woody	2	0	0	0
Meaty, Rancid, Decayed	0	3	0	0
Fragrant,Perfume	2	0	0	0
Chemical	0	27	0	0
Compost	1	117	78	0

Figure 7: Offensiveness vs. Character Day 3

Throughout Day 3, the wind was predominantly from the Northeast & East.

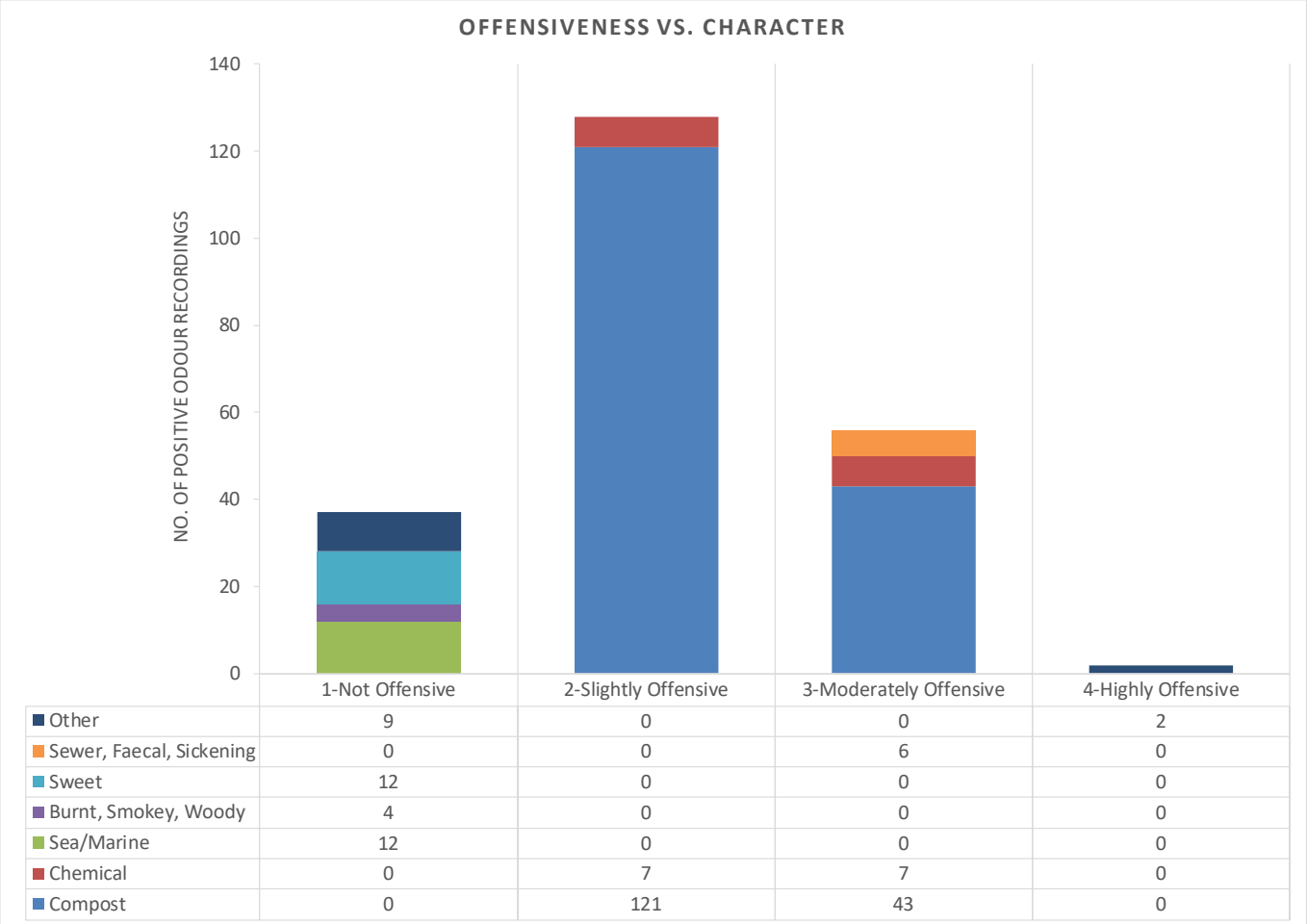
Figure 7 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 3, however the offensive odours included Other (vehicle exhaust), Meaty/Rancid/Decayed, Chemical (volatile organics) and Compost, of which Compost was responsible for 66%, Other 24% and Chemical 9% 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 24 September 2020 (Day- 4)

	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15	Location 16
Time (hrs):	8:11	8:30	8:51	9:16	9:39	10:01	10:35	10:54	11:38	13:58	14:16	14:41	15:07	15:48	16:15	12:02
Location:	414 linwood	44 bayswater	187 Dyers rd	485 linwood	14/15 seascape	Bayswater reserve	Charlesworth reserve humphrey	10 Bayswater	159 St johns	Opposite 187 Dyers rd	23 Mace's rd	171 dyers rd	Opp brunch bar 227 Dyers rd	238 dyers	Newton St	Behind Le north end
Wind Direction & speed:	1.2 E	1.3 NE	1.6 NE	0.8 NE	1.1 NE	1.3 NE	1.7 E	1.6 ENE	1.1 ENE	3.4 N	3.4 NW	2.4 NW	2.0 NNW	3.3 WNW	2.3 WNW	2.6 ENE
Odour Character	**Percentage Odour Frequency (Time)**															
Compost	**37%**	**28%**	**85%**	**20%**	**27%**	**65%**	0%	**13%**	**2%**	0%	0%	0%	0%	0%	0%	0%
Sea/marine	0%	0%	0%	0%	0%	0%	**7%**	0%	0%	0%	0%	0%	0%	0%	0%	**13%**
Burnt, Smokey, Woody	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**7%**	0%	0%	0%
Chemical	0%	0%	0%	0%	0%	0%	0%	0%	0%	**12%**	0%	0%	0%	**13%**	0%	0%
Sewer, Faecal, Sickening	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**8%**	**2%**	0%	0%	0%	0%
Sweet	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**20%**	0%	0%	0%	0%
Other	**3%**	0%	0%	0%	0%	0%	**15%**	0%	0%	0%	0%	0%	0%	5%	0%	0%
No odour	60%	72%	15%	80%	73%	35%	78%	87%	98%	88%	92%	78%	93%	82%	100%	87%
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**	**Location 13**	**Location 14**	**Location 15**	**Location 15**
No detectable odour	60%	72%	15%	80%	73%	35%	78%	87%	98%	88%	92%	78%	93%	82%	100%	87%
Very slight	0%	0%	**5%**	**2%**	**10%**	0%	**10%**	**2%**	0%	**3%**	**2%**	**5%**	**3%**	**2%**	0%	**13%**
Slight	**12%**	**8%**	**10%**	**10%**	**5%**	**28%**	**7%**	**5%**	**2%**	**8%**	**3%**	**12%**	**3%**	**7%**	0%	0%
Distinct	**15%**	**12%**	**32%**	**8%**	**7%**	**15%**	**5%**	**3%**	0%	0%	0%	**5%**	0%	**2%**	0%	0%
Strong	**12%**	**5%**	**33%**	0%	**5%**	**15%**	0%	**3%**	0%	0%	**3%**	0%	0%	**8%**	0%	0%
Very Strong	**2%**	**3%**	**3%**	0%	0%	**7%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	2%	0%	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**	**Location 13**	**Location 14**	**Location 15**	**Location 15**
No Odour	60%	72%	17%	80%	75%	35%	78%	87%	98%	88%	92%	78%	93%	83%	100%	87%
Not Offensive	0%	0%	0%	0%	0%	0%	**22%**	0%	0%	0%	0%	**20%**	**7%**	0%	0%	**13%**
Slightly Offensive	**22%**	**12%**	**45%**	**20%**	**25%**	**63%**	0%	**13%**	**2%**	**12%**	0%	0%	0%	0%	0%	0%
Moderately Offensive	**15%**	**17%**	**38%**	0%	0%	**2%**	0%	0%	0%	0%	**8%**	**2%**	0%	**12%**	0%	0%
Highly Offensive	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%

Figure 8: Day 4 - Investigated Locations



	1-Not Offensive	2-Slightly Offensive	3-Moderately Offensive	4-Highly Offensive
Other	9	0	0	2
Sewer, Faecal, Sickening	0	0	6	0
Sweet	12	0	0	0
Burnt, Smokey, Woody	4	0	0	0
Sea/Marine	12	0	0	0
Chemical	0	7	7	0
Compost	0	121	43	0

Figure 9: Offensiveness vs. Character- Day 4

On Day 3, the wind was between Northeast & East in the morning, shifting to between North & West-northwest later in the day.

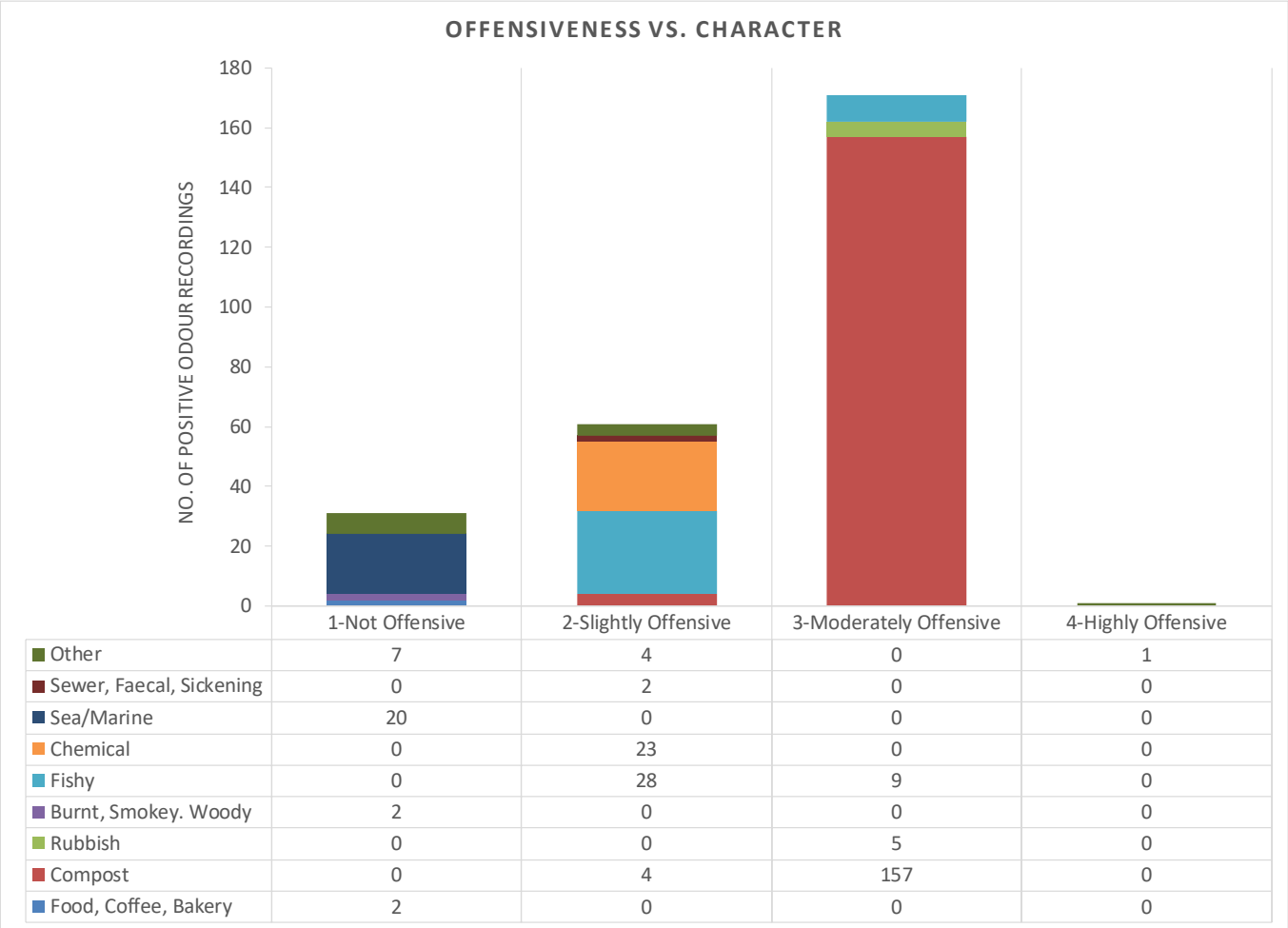
Figure 9 shows the number of 10-second recordings for each character and the associated offensiveness. Several odours were observed during Day 4, however the offensive odours included Other (vehicle exhaust), Sewer/Faecal/Sickening, Chemical (volatile organics) and Compost, of which Compost was responsible for 88% and Chemical 8% 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 25 September 2020 (Day-5)

	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):	8:21	8:42	9:05	9:22	9:43	10:33	10:55	11:31	11:50	12:14	12:34	13:03
Location:	Bayswater reserve	Behind Le North end	South end of back road behind	Very South end of Le back road	Next to biofilter	Wickham Rd opp #39	Cnr Edison & dyers	Downwind of ponds caspian rd	Downwind ponds breezes rd	Breezes Rd s1 downwind ponds	Bridge middle ponds	Newton st
Wind Direction & speed:	0.8 W	0.8 W	0.5 NW	0.9 NW	2.1 NW	1.2 WNW	1.7 W	10.0 W	2.7 SSW	3.0 SSE	2.0 SSE	1.2 W
Odour Character	**Percentage Odour Frequency (Time)**											
Musty	0%	0%	0%	0%	**58%**	0%	0%	0%	0%	0%	0%	0%
Rubbish	0%	3%	0%	0%	**5%**	0%	0%	0%	0%	0%	0%	0%
Compost	0%	**78%**	**90%**	**100%**	0%	0%	0%	0%	0%	0%	0%	0%
Sea/Marine	0%	0%	0%	0%	0%	0%	0%	**17%**	0%	**12%**	**5%**	0%
Burnt, Smokey, Woody	0%	**2%**	0%	0%	**2%**	0%	0%	0%	0%	0%	0%	0%
Food, Coffee, Bakery	**3%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Chemical	0%	0%	0%	0%	0%	0%	**38%**	0%	0%	0%	0%	0%
Sewer, Faecal, Sickening	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**3%**	0%
Fishy	0%	0%	0%	0%	0%	0%	0%	0%	0%	**3%**	0%	0%
Other	0%	0%	**7%**	0%	0%	**2%**	0%	0%	**12%**	0%	0%	0%
No odour	97%	17%	3%	0%	35%	98%	62%	83%	88%	85%	92%	100%
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	97%	17%	3%	0%	35%	98%	62%	83%	88%	85%	90%	100%
Very slight	0%	**3%**	0%	**2%**	**5%**	0%	0%	**10%**	**7%**	**7%**	**3%**	0%
Slight	**3%**	**17%**	**20%**	**5%**	**7%**	0%	**7%**	**7%**	**5%**	**8%**	**7%**	0%
Distinct	0%	**33%**	**52%**	**17%**	**27%**	0%	**20%**	0%	0%	0%	0%	0%
Strong	0%	**15%**	**20%**	**42%**	**23%**	**2%**	**7%**	0%	0%	0%	0%	0%
Very Strong	0%	**15%**	**5%**	**27%**	**3%**	0%	**5%**	0%	0%	0%	0%	0%
Extremely Strong	0%	0%	0%	8%	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	97%	17%	3%	0%	35%	98%	62%	83%	88%	85%	92%	100%
Not Offensive	**3%**	**2%**	0%	0%	**2%**	0%	0%	**17%**	**12%**	**12%**	**5%**	0%
Slightly Offensive	0%	**7%**	**7%**	0%	**43%**	0%	**38%**	0%	0%	**3%**	**3%**	0%
Moderately Offensive	0%	**75%**	**90%**	**100%**	**20%**	0%	0%	0%	0%	0%	0%	0%
Highly Offensive	0%	0%	0%	0%	0%	2%	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	7	4	0	1
Sewer, Faecal, Sickening	0	2	0	0
Sea/Marine	20	0	0	0
Chemical	0	23	0	0
Fishy	0	28	9	0
Burnt, Smokey. Woody	2	0	0	0
Rubbish	0	0	5	0
Compost	0	4	157	0
Food, Coffee, Bakery	2	0	0	0

Figure 11: Offensiveness vs. Character-Day 5

On Day 3, the wind was between West and Northwest in the morning, shifting to between South-southwest and the South-southeast towards midday.

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 (vehicle exhaust & manure), Sewer/Faecal/Sickening, Chemical (volatile organics), Fishy, Rubbish and Compost, of which Compost was responsible for 69%, Fishy 16% and Chemical 10% of these.

3.6 Combined Odour Character Results

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

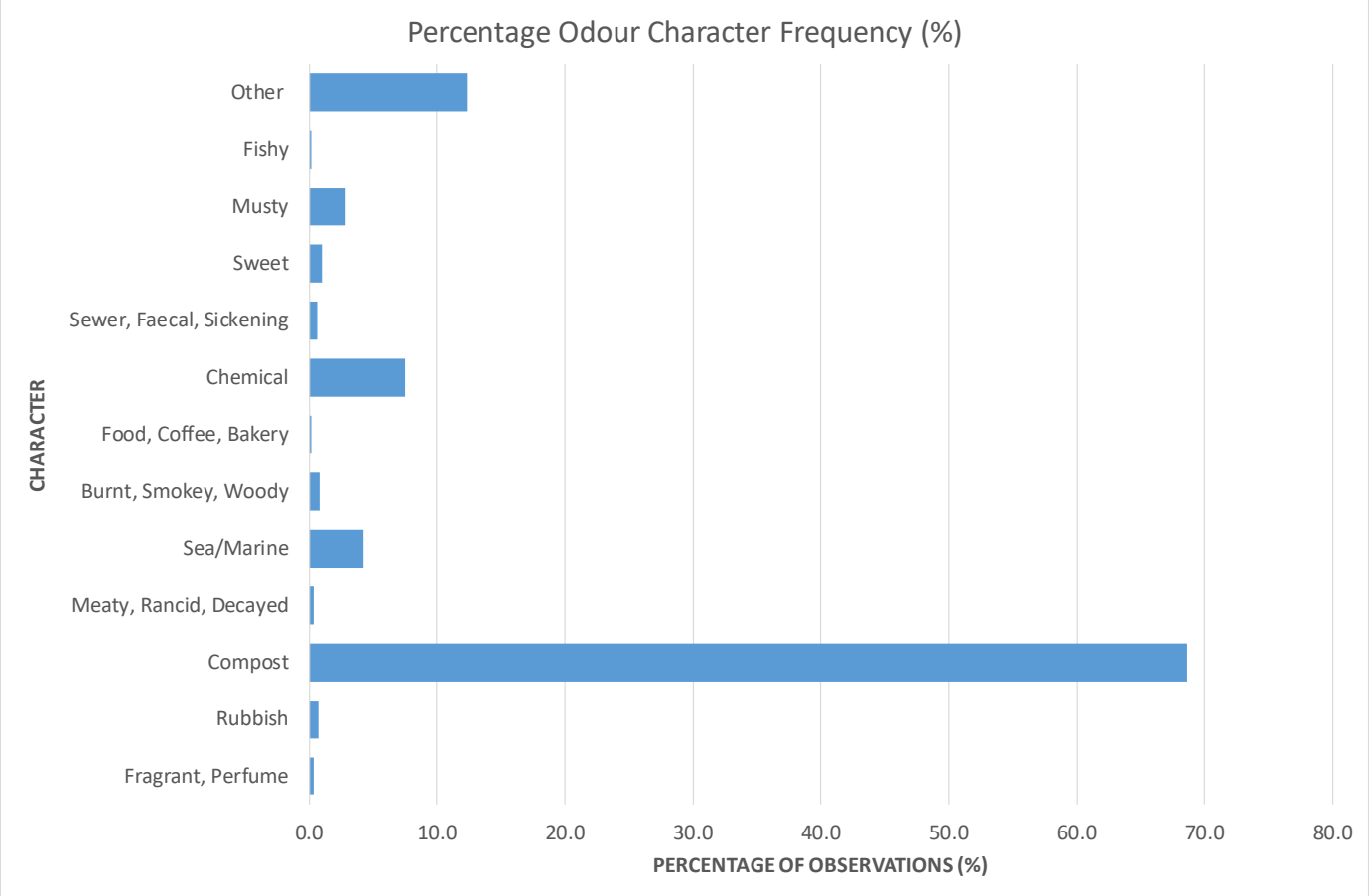


Figure 12: Percentage odour character (from 21st September to 25th September)

'Compost' was consistently the most commonly observed offensive odour during the week. The 'Other' odour category, predominantly exhaust, manure and cut grass was also frequently observed. A 'Chemical' odour (described as volatile organics by the assessor) was commonly observed along Dyers road on most days.