

# Rumpke Sanitary Landfill Odor Complaint Summary/Analysis 2023

**Hamilton County Public Health  
Department of Environmental Health Services  
Waste Management Division**



**HAMILTON COUNTY  
PUBLIC HEALTH**

PREVENT. PROMOTE. PROTECT.

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## **Table of Contents**

Introduction.....	2
Results.....	3
Summary.....	6

## **Appendices**

### Appendix A – Figures

A1 – Rumpke Odor Data 2023 through 2013

A2 – Rumpke Odor Data 2012 through 2007

### Appendix B – Maps

B1 – Odor Surveillance Loop

B2 – 2023 Complaint Locations – with color indicating confirmed/unconfirmed

B3 – 2023 Confirmed Odor Locations - with color indicating type of odor

## Introduction

The following report summarizes odor complaints received and odor surveillance activities conducted during 2023 related to Rumpke Sanitary Landfill, located at 10795 Hughes Road in Colerain Township.

Beginning in 2007, Hamilton County Public Health (HCPH) collaborated with Southwest Ohio Air Quality Agency (Air Quality) to respond to citizen odor complaints 24/7. In 2013, HCPH began using mobile devices to capture complaint investigation data. Utilizing the GPS-enabled mobile devices, geospatial data can be collected concurrent with qualitative observations, improving the accuracy for odor complaint and surveillance mapping. Every complaint continues to be investigated, and HCPH compiles complaint data into periodic reports to summarize and analyze the complex issue of odors and odor complaints at the Rumpke Sanitary Landfill facility and surrounding area.

In addition to complaint response, HCPH conducts odor surveillance monitoring of the facility in accordance with Ohio Environmental Protection Agency (OEPA) Internal Operating Procedure and Odor Scale (Figure 1). A surveillance loop has been established which includes major roadways surrounding the facility through residential areas (see Map B1 in Appendix B). An assessment of odor is made at all points along this loop, however only incidences of landfill-related odor and complaint locations are recorded. Periodic joint inspections with OEPA are conducted to “calibrate” assessment of odor and ensure consistency in applying the odor scale from Figure 1. The assumption can be made that if the surveillance loop was performed, no landfill-related odors were noted at any points along that route except where noted. Each record in the dataset is either a complaint location, a location where landfill-related odor was noted by the investigator, or a record that no odor was noted along the surveillance route.

**Figure 1**

Odor Scale from OEPA Internal Operating Procedure

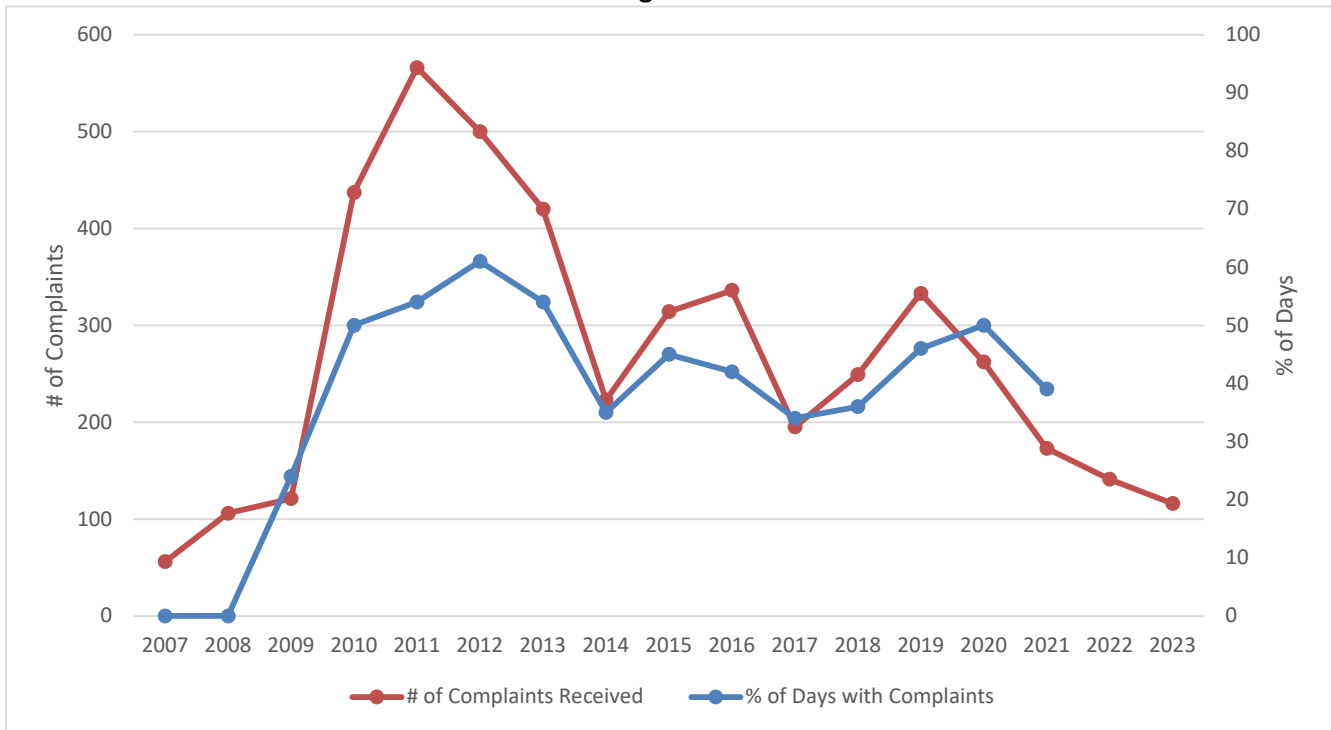
No Odor	Odor Not Detectable
Slight	Odor present in the air, which activates the sense of smell and the characteristics may or may not be distinguishable and/or definite, but not objectionable in short durations. This is characterized by occasional “whiffs” of odor, but is not persistent.
Moderate	Odor present in the air, which easily activates the sense of smell, is very distinct and clearly distinguishable, tends to be objectionable and/or irritating, and is persistent in the community.
Strong	Odor present in the air, which is objectionable and causes a person to attempt to avoid it completely.
Over-Powering	Odor present in the air, which is so strong that it is overpowering and intolerable for any length of time.

\*Increments have been added to allow description of odor between the criteria described above (No Odor to Slight, Slight to Moderate, etc.).

## Results

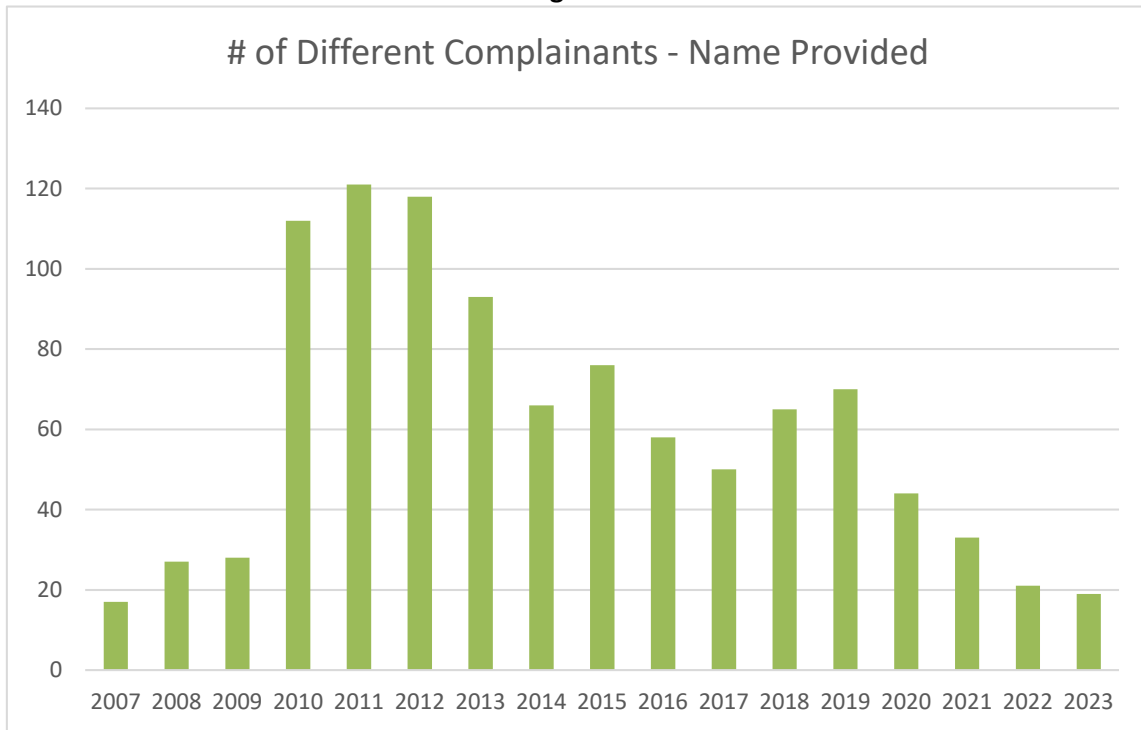
In 2023, 116 complaints were received regarding odor from Rumpke Sanitary Landfill. This is a decrease from 141 complaints received in 2022 and 173 complaints received in 2021. The locations of odor complaints received in 2023 are shown on Map B2 found in Appendix B. There has been a four-year decreasing trend after a recent high of 333 complaints were received in 2019 (Figure 2). The most complaints received in a single year is 566 complaints in 2011. Complaints were received on 96 unique days of 2023, or 26 percent of the days in the year. The number of days in which odor complaints were received has been on a 3-year decreasing trend since 2020 when complaints were received on 50 percent of the days in the year. Figure 2 shows historical complaint numbers and percentage of days with complaints. A summary table of historical Rumpke odor complaint data can be found in Figure A1 located in Appendix A.

Figure 2



There were 19 named complainants in 2023, down from 21 a year ago and 33 in 2021 (Figure 3). A peak of 121 unique complainants occurred in 2011. Thirty-one percent of the complaints were made anonymously during 2023. This is a 7 percent increase from 2022, when 24 percent of the complaints were made anonymously, but equivalent to the percent of anonymous complaints from 2021. In 2023, 20 percent of all complaints were confirmed at the complainant's location. This is slightly higher than the percentage confirmed on a yearly basis since 2015.

Figure 3

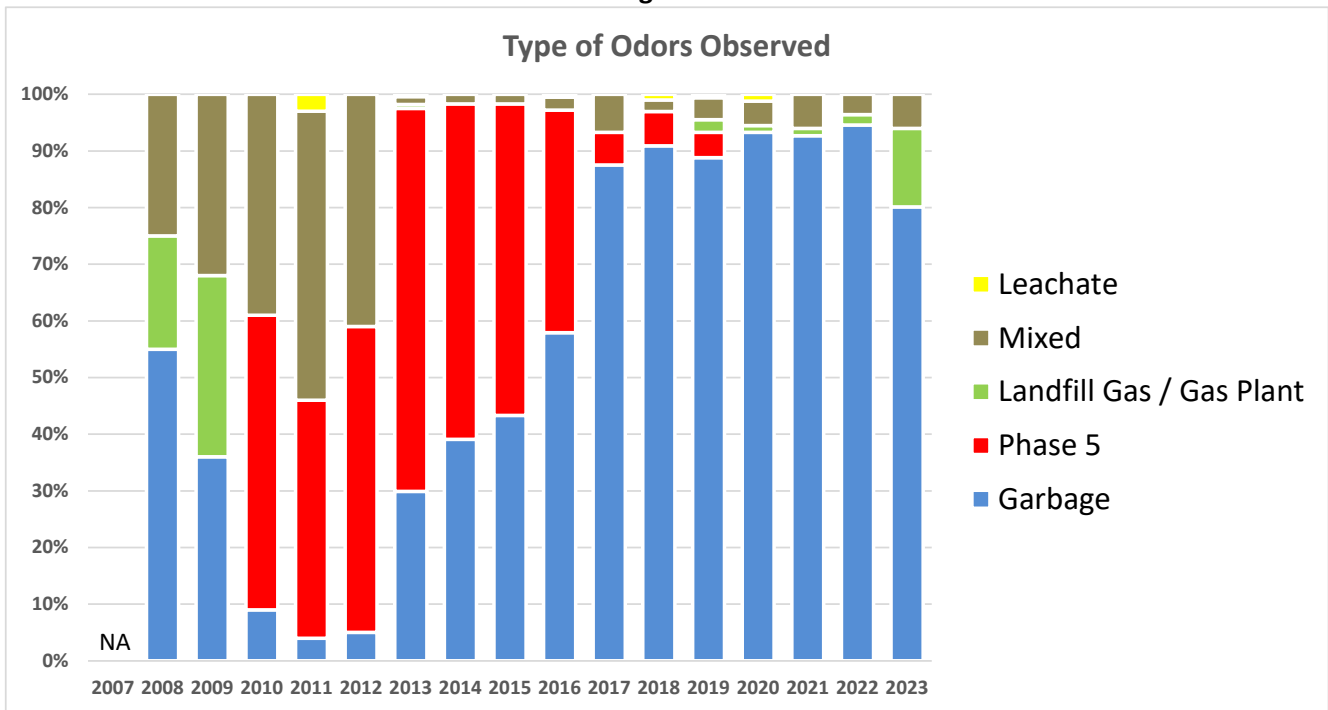


In 2023, complaints were responded to within one hour 17 percent of the time. Forty percent of the complaints were responded to within four hours and 74 percent of the complaints were responded to within 24 hours of receiving the complaint. In 2022, complaints were responded to within one hour 13 percent of the time. 33 percent of the complaints were responded to within four hours and 76 percent of the complaints were responded to within 24 hours. Response times have been fairly consistent since 2013 (see Figure A1 in Appendix A).

Odor was assessed on 52 percent (191) of the days in 2023 and 57 percent (207) of the days in 2022. For the past five years, HCPH has made observations on more than half of the days of the year. The percentage of observed days in 2023 with odor noted was 60 percent. This is a decrease compared to 2022 but similar to the percentage of days odor was noted from 2019 through 2021. Odors were noted between 61 percent and 63 percent of observed days during that three-year period.

Figure 4 shows the majority, or more than 80 percent, of confirmed off-site odors in 2023 were again garbage related, consistent with previous years since 2017. This, however, is a slight decrease in the percentage of odors that were attributed to garbage over the previous 6 years when garbage was responsible for at least 87 percent of the observed offsite odors each year. This can be attributed to an increase in landfill gas/gas plant odors which increased to just under 14% of the odors noted off-site. There were no days in 2023 where odor described as “greater than slight” was observed. The location of confirmed odors for 2023 is shown on Map B3 in Appendix B.

Figure 4



The observation dataset for 2023 contains 299 total records (Figure 5). One hundred and sixteen records are in response to complaints while 183 were made at non-complaint locations. Of the 183 non-complaint locations, 128 were instances where landfill odors were observed along the surveillance route, while 55 were to document completion of the odor loop during which no odors were noted.

Figure 5

Complaint Location	Odor Intensity						Total	Percent
	No Odor	No Odor to Slight	Slight	Slight to Moderate	Moderate	Strong		
No	55	105	23	0	0	0	183	61%
Yes	93	20	3	0	0	0	116	39%
Grand Total	148	125	26	0	0	0	299	100%

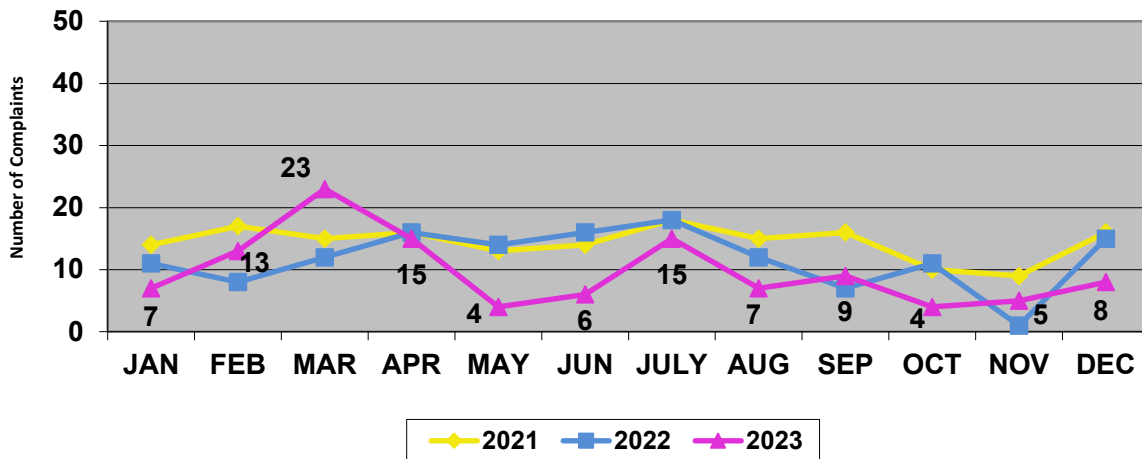
Rumpke utilizes deodorizer as part of their odor control plan. In 2023, there were not a significant number of complaints received specifically concerning the deodorizer. As depicted in Figure 6, the presence of deodorizer was noted by HCPH during 14 observations during the 2023 calendar year, or less than 5 percent of total observations. Deodorizer was generally observed with landfill odors.

Figure 6

Deodorizer Observed	Odor Intensity						Total
	No Odor	No Odor to Slight	Slight	Slight to Moderate	Moderate	Strong	
Yes	1	12	1	0	0	0	14

Figure 7 shows the past three years of complaints plotted monthly. Only monthly complaint totals for 2023 are labeled on the chart. Monthly complaint totals were fairly consistent throughout 2023, with a low of 4 complaints received in May/October and a high of 23 complaints received in March.

Figure 7



**Summary:**

The number of complaints received, percent of days with complaints, and number of different complainants all decreased between 2022 and 2023. After increasing in 2022, the percentage of observed days with odor noted in 2023 returned to the range observed from 2019 through 2021. For the eighth year in a row, garbage odors were the dominant odor observed. However, there was a noticeable increase in landfill gas/gas plant odors noted in 2023.

The sub-surface event occurring in the north end of the landfill contributed to off-site odors beginning as early as September 2009. From 2009-2016, gas odors from the sub-surface event were the predominant observed odor. Installation of the odor control blanket and collection of gases seems to have controlled these odors.

Additional efforts and odor control technologies continue to be evaluated to improve mitigation of identified odor sources. Unannounced inspections and odor surveillance continues as the primary methods to monitor odor from the facility. Periodic joint inspections between agencies are conducted to “calibrate” assessment of odor and ensure consistency in applying the odor scale from Figure 1. The 24-Hour Odor Complaint Hotline and complaint response continues to allow for the rapid investigation of odor complaints associated with Rumpke Sanitary Landfill.

## **Appendix A - Figures**



**Figure A1 – Rumpke Odor Data 2013 – 2023**

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Complaints</b>	# of Complaints Received	420	223	314	336	195	249	333	262	173	141	116
	% of Days with Complaints	54	35	45	42	34	36	46	50	39	32	26
	# of Different Complainants - Name Provided	93	66	76	58	50	65	70	44	33	21	19
	% Anonymous Complaints	11	7	15	21	22	18	13	34	31	24	31
	% Confirmed By Responder at Complaint Location	16	21	18	13	18	8	15	11	14	14	20
<b>Responder Observations</b>	% of Days Observations Made	55	60	53	55	45	43	51	52	54	57	52
	% of Observed Days with No Odor Noted	30	35	24	14	56	51	39	37	38	29	40
	% Observed Days with Odor Noted	70	65	76	86	44	49	61	63	62	71	60
	% Observed Days w/ Intensity Greater than Slight	3	1	3.7	3.5	3.1	1.3	2.7	0	0.5	0	0
	% Observed Days with Garbage Odor noted	30	21	31	47	41	44	57	60	60	68	50
<b>Response Time</b>	% Less than one Hour	20	22	22	23	19	14	22	19	17	13	17
	% Less than four Hours	39	52	40	45	45	38	45	38	35	33	40
	% Less than 24 Hrs	75	78	78	80	79	76	73	79	80	76	74

**Figure A2 – Rumpke Data 2007 – 2012**

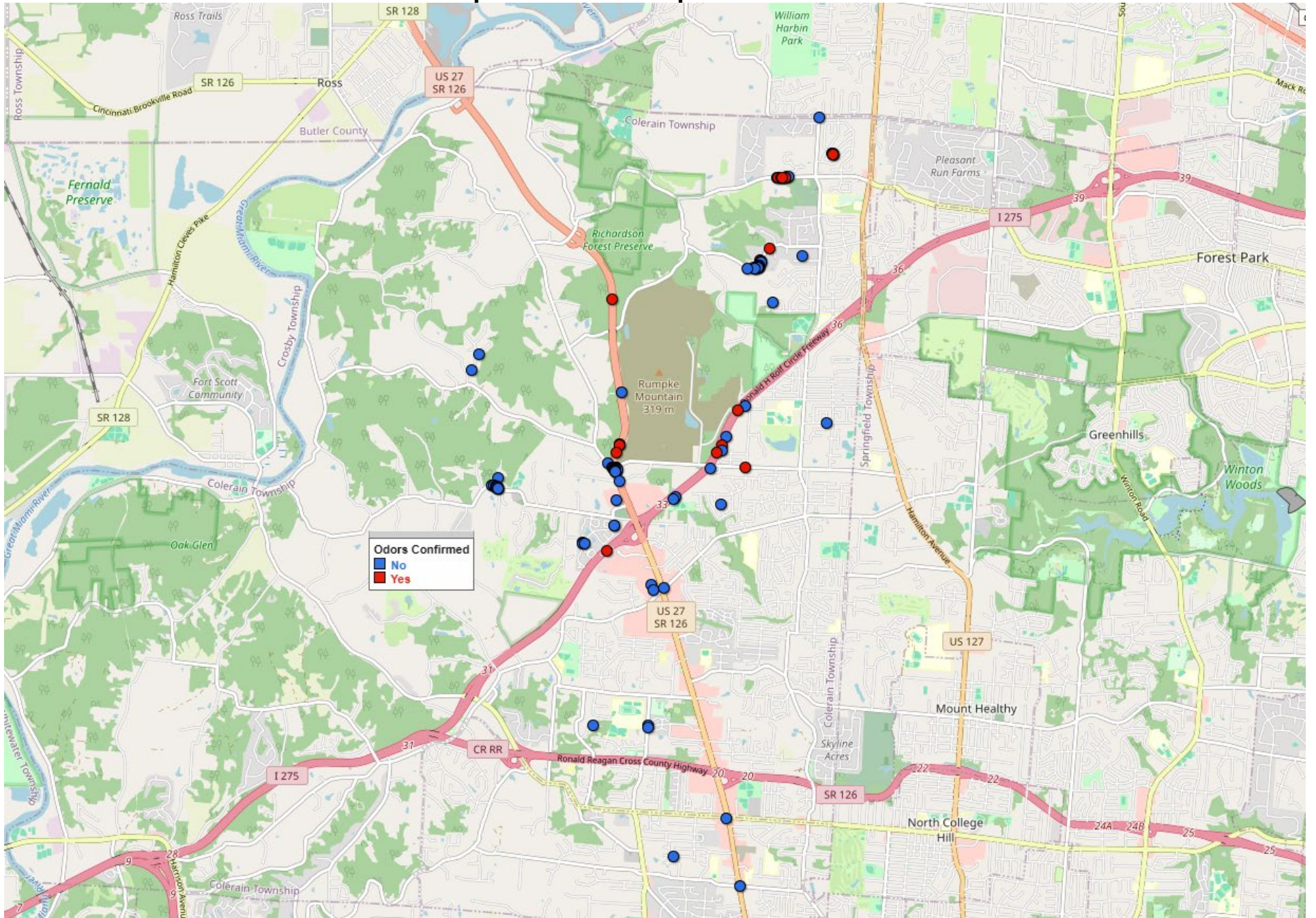
		2007	2008	2009	2010	2011	2012
<b>Complaints</b>	# of Complaints Received	56	106	121	437	566	500
	% of Days with Complaints			24	50	54	61
	# of Different Complainants - Name Provided	17	27	28	112	121	118
	% Anonymous Complaints	0	44	45	37	41	13
	% Confirmed By Responder at Complaint Location	-	24	28	33	45	27
<b>Responder Observations</b>	% of Days Observations Made	-	-	-	-	-	-
	% of Observed Days with No Odor Noted	-	-	-	-	-	-
	% Observed Days with Odor Noted	-	-	-	-	-	-
	% Observed Days w/ Intensity Greater than Slight	-	-	-	-	-	-
	% Observed Days with Garbage Odor noted	-	-	-	-	-	-
<b>Response Time</b>	% Less than one Hour	-	84	76	84	92	94
	% Less than four Hours	-	-	-	-	-	-
	% Less than 24 Hrs	-	-	-	-	-	-

## **Appendix B - Maps**

# Map B1 – Odor Surveillance Loop



# Map B2 – 2023 Complaint Locations



# Map B3 – 2023 Confirmed Odor Locations

