



STATE OF MICHIGAN

DEPARTMENT OF HEALTH AND HUMAN SERVICES

LANSING

GRETCHEN WHITMER
GOVERNOR

ELIZABETH HERTEL
DIRECTOR

September 23, 2021

Carol Austerberry, MPA, MS, RS
Division Director, Health Officer
Wayne County Dept. of Health, Human and Veterans Services
33030 Van Born Road
Wayne, MI 48184

RE: MDHHS Evaluation of Sanitary Sewer Data from Zone 1 of the Flat Rock Investigation Area

Dear Ms. Austerberry,

The Michigan Department of Health and Human Services (MDHHS) reviewed the available sewer data from Zone 1 of the investigation area in Flat Rock, Michigan. Data was collected by the U.S. Environmental Protection Agency (EPA) Environmental Response Team (ERT) and the Michigan 51st Civil Support Team (CST) with EPA oversight on September 8 through September 17, 2021, from sanitary sewer manholes throughout Zone 1. This data was collected in response to an uncontrolled release of gasoline which impacted a large area of the sanitary sewer system within the City of Flat Rock. The gasoline release has been controlled, the sanitary sewer lines have been flushed, and sampling data indicates that concentrations of site-related contaminants in the sanitary sewer within Zone 1 are all below applicable health-based screening levels (Table 1a-1c). **Based on these findings, MDHHS concludes that any remaining gasoline vapors within the sewers of Zone 1 are not expected to harm people's health because contaminant levels in the sanitary sewers are below levels that could lead to an indoor air hazard.**

Background and Environmental Data

On August 31, 2021, MDHHS received information regarding an unknown chemical release in the City of Flat Rock which had impacted air quality in local buildings. The chemical substance, which was later identified as gasoline, traveled through the sanitary sewer lines over a large area of Flat Rock. The gasoline release has since been stopped, and the sanitary sewer system has been thoroughly flushed. On September 15, 2021, EPA and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) reported that the sanitary sewer system had been cleared of gasoline and restored to normal working conditions (EPA 2021).

Two zones of public health concern were identified: Zone 1 where there was known presence of gasoline and gasoline vapors in sanitary sewers, and Zone 2 where there was known presence of gasoline and gasoline vapors in the main line of the sanitary sewer and evidence of gasoline vapors in the lateral lines that feed into that main (Figure 1). **This letter is specifically reporting on data for Zone 1.** An evaluation for the sanitary sewers in Zone 2 and the area between Zone 1 and Zone 2 was previously completed and provided to you on September 20, 2021.

From the intersection of Gibraltar Road and Gateway Boulevard on the northern boundary of Zone 1, the sanitary sewer system flows, via gravity flow, west to Olmstead Road (Figure 2). At Olmstead Road, the system makes a 90-degree turn and heads due south to the Olmstead Road pumping station (wet and dry well). From the lift station, the system travels via gravity flow westerly in a sewer along Woodruff Road to Huron River Drive. Sewer laterals that accept waste from the various subdivisions and businesses in Zone 1 connect to this main line. The sewer main line flow makes a 90 degree turn when it connects to the South Huron Valley waste-water interceptor and then travels to the wastewater treatment plant. Based on information from the EPA, the gasoline release flowed south through the sewer main line on Olmstead Road, then west along Woodruff Road to Huron River Drive and then northwest to the interceptor line near the intersection of Red Cedar Drive and Huron River Drive (Figure 2). Sewer laterals within Zone 1 along Dover Street, Torrey Avenue, and Bradbury Drive flow south to Woodruff Rd. Sewer laterals along Cambridge Street and Cahill Road flow north to Gibraltar Road. The presence of gasoline vapors that were detected in the sewer laterals were attributed to vapors moving in the opposite direction of sewer flow (Email communication 9/5/2021, J Gulch, EPA).

Mitigation actions were taken to address the uncontrolled release of gasoline to the sanitary sewer (EPA 2021). Between September 8 and September 15, 2021, EPA ERT performed environmental sampling of sewers lines using the [Trace Atmospheric Gas Analyzer \(TAGA\)](#). Samples were collected at manholes that provide direct access to sewer air. Sample collection locations were in the main line as well as lateral sewer lines throughout Zone 1 (Figure 3). Measurements of chemical levels in the sanitary sewer during that time were performed either by direct measurement using a sampling hose and analysis with the MS/MS equipment on the TAGA mobile laboratory or by collection of samples in Tedlar bags and then analyzed with the GC/MS instrument on the TAGA (Unified Command 2021). The TAGA analysis equipment was calibrated after each direct sample. Between September 14 and September 17, 2021, CST provided additional sewer line sampling support by collecting sewer air samples in Tedlar bags that were then analyzed with a [HAPSITE ER](#). Each sample collected was identified with the sanitary sewer manhole identification and geographic identifying data through a geographic information system (GIS). MDHHS received the data directly from EPA via data reports and a GIS dashboard platform. The GIS dashboard provides a visual map of sample locations and data results. Details about the sampling and analysis are provided in a [fact sheet](#) on the [EPA Response website](#) for the Flat Rock emergency response (ER) (EPA 2021).

MDHHS, with the assistance of the Agency for Toxic Substances and Disease Registry (ATSDR), determined an appropriate sewer-to-indoor air attenuation factor (AF) of 0.03 to be used to calculate screening levels for sewer clearance. The sewer data received from EPA ERT and CST was evaluated against the appropriate sewer screening values for hexane, benzene, cyclohexane, heptane, toluene, ethylbenzene, and xylenes, identified in the Sewer Screening Levels Technical document dated September 16, 2021 (Tables 1a-c). The EPA ERT data MDHHS reviewed is available on the Flat Rock ER website located at [Flat Rock ER \(arcgis.com\)](https://arcgis.com). The data collected by the CST is not available on the website, but is available from the EPA R5 Flat Rock External Partners TEAMS site. There was a single result that was above the ethylene benzene-xylene screening level at a manhole along Woodruff Road, located just west to the intersection with Cahill Rd (SS04001) on September 8th. However, resampling at that location on September 14th showed a result that was below the sewer screening levels. The sample results for all other locations were below the sewer screening levels, indicating that the vapors identified in the sewer are below levels that could cause an indoor air hazard (Tables 1a-c).

Some homes in Flat Rock have had or will have additional indoor air testing. This testing is occurring to verify if chemicals identified or possibly present in indoor air (as noted during odor complaints or screenings of adjacent locations) are now below health-based screening levels. MDHHS will review the data analyzed by EPA, CST, or Ford's contractor (GHD) for the individual locations identified as of September 4, 2021 and provide individual letters for the homes to the Wayne County Department of Health, Human and Veterans Services.

Conclusion

MDHHS concludes that any remaining gasoline vapors within Zone 1 are not expected to harm people's health because the source of the contamination has been mitigated, the sewers have been flushed, and vapor levels in the sewer lines are below levels that could lead to an indoor air hazard. This is supported by the sewer data collected by EPA and CST September 8 through September 17, 2021, and by EPA and EGLE's determination that the sanitary sewer system has been cleared of the uncontrolled release of gasoline and restored to normal working conditions.

Recommendations

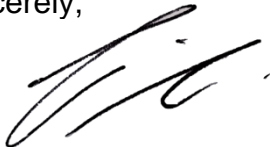
- MDHHS recommends that the Wayne County Department of Health, Human and Veterans Services communicate the conclusion of this evaluation to residents and property owners within Zone 1.
- MDHHS recommends that residents with concerns regarding their home's connections to the sanitary sewer contact a licensed plumber or the City of Flat Rock Public Works.
- MDHHS recommends that people store gasoline, solvents, and related products outside of occupied spaces to minimize exposure to volatile organic chemicals (VOCs) from these sources.

Public Health Action Plan

- MDHHS will email this document and the above recommendations to the Wayne County Department of Health, Human and Veterans Services and request they communicate this information to the residents of Flat Rock, Michigan.
- MDHHS will review data collected from individual homes and buildings, collected as described in the Reoccupation Plan (Unified Command 2021), in Zone 1 and will provide individual letters to Wayne County Department of Health, Human and Veterans Services for each location (as mentioned above). It is important to note that some homes may have small traces of chemicals unrelated to this gasoline release. These chemicals are not solely found in gasoline, as many other commonly used household products contain these chemicals.

These conclusions and recommendations are based on sewer data received by MDHHS through September 20, 2021. If you have any questions or concerns, please contact MDHHS at 1-800-648-6942.

Sincerely,



Marcus Wasilevich, Ph.D.
Toxicology and Assessment Section Manager
Division of Environmental Health
Michigan Department of Health & Human Services

CC:

Mark Johnson, ATSDR
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Joneigh Khaldun, MDHHS
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Tadarial Sturdivant, WCDHSEM
Sam Jaafar, WCDHSEM
Joseph DeGrazia, EGLE

References

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EPA (US Environmental Protection Agency) Flat Rock ER Response website. (2021). Available at https://response.epa.gov/site/site_profile.aspx?site_id=15330. Accessed on September 21, 2021.

Email communication 9/5/2021, J Gulch, EPA.

Michigan Department Environment, Great Lakes, and Energy (EGLE). 2020. Volatilization to Indoor Air Recommendations for Interim Action Screening Levels and Time-Sensitive Interim Action Screening Levels. Available at: https://www.michigan.gov/documents/egle/egle-aqd-aqe-viap_tox_recommend_report_710496_7.pdf

Michigan Department of Health and Human Services, Division of Environmental Health (MDHHS DEH). (2021) Sewer screening levels; calculated by using health-based indoor air screening levels and a default attenuation factor of 0.03 for Flat Rock, Michigan.

Michigan Department of Health and Human Services, Division of Environmental Health (MDHHS DEH). (2021) MDHHS Evaluation of Sewer Data from Zone 2, and a neighborhood north of Woodruff Road, of the Flat Rock Investigation Area.

Unified Command Flat Rock ER 2021. Flat Rock ER Re-Occupation Plan. Finalized on September 12, 2021. Available at: <https://response.epa.gov/sites/15330/files/Flat%20Rock%20Emergency%20Response%20-%20Re-Occupancy%20Plan.pdf>.

Figure 1. Zone 1 of the Flat Rock, Michigan investigation area.



Figure 2: Map of the suspected spilled material path (solid red line) through Zone 1 (dotted red line). (Taken from the US EPA Flat Rock Air Sampling Interactive Map on September 18, 2021, available at <https://epa.maps.arcgis.com/apps/dashboards/419e31aa64074c3e9c6a77ae0919fb87>)

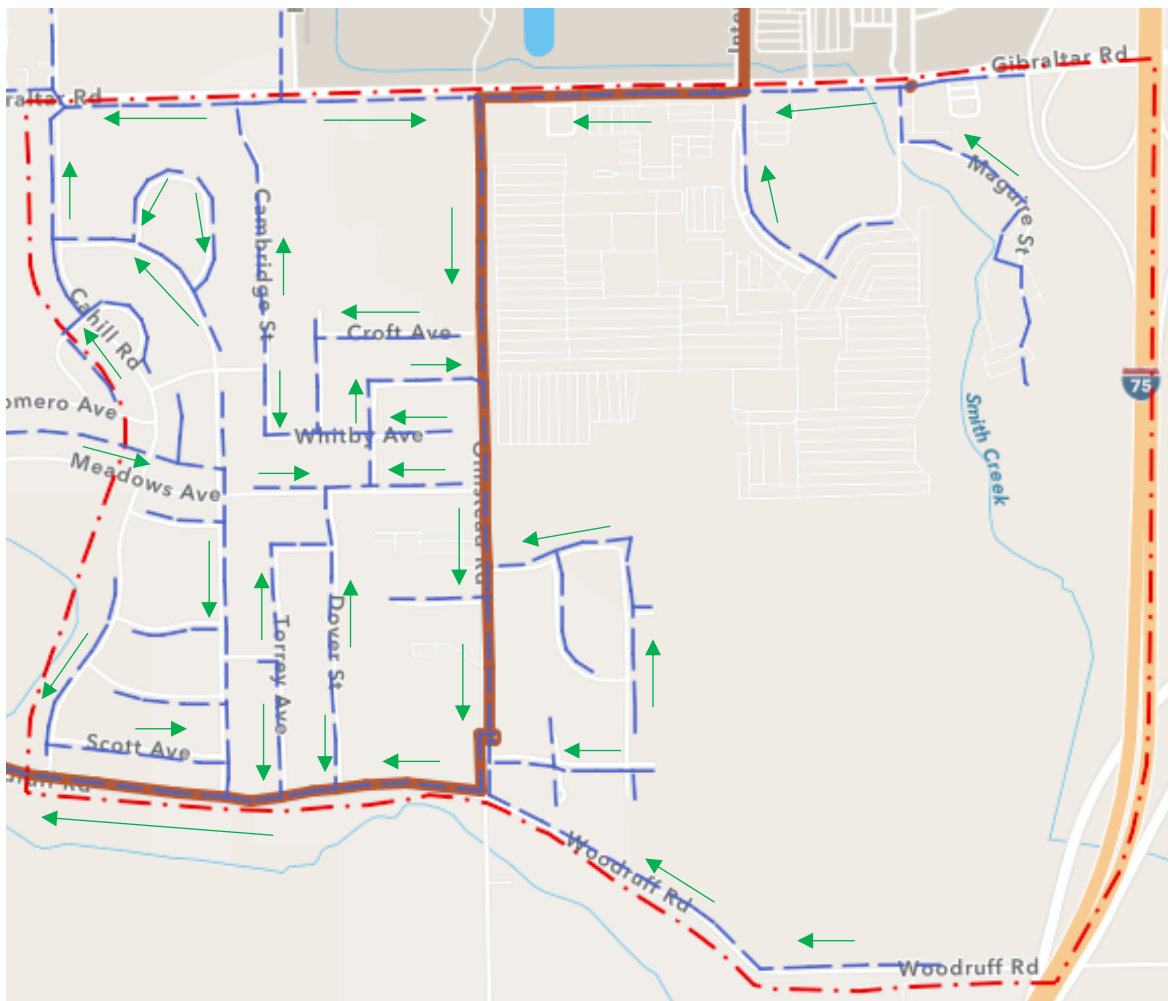
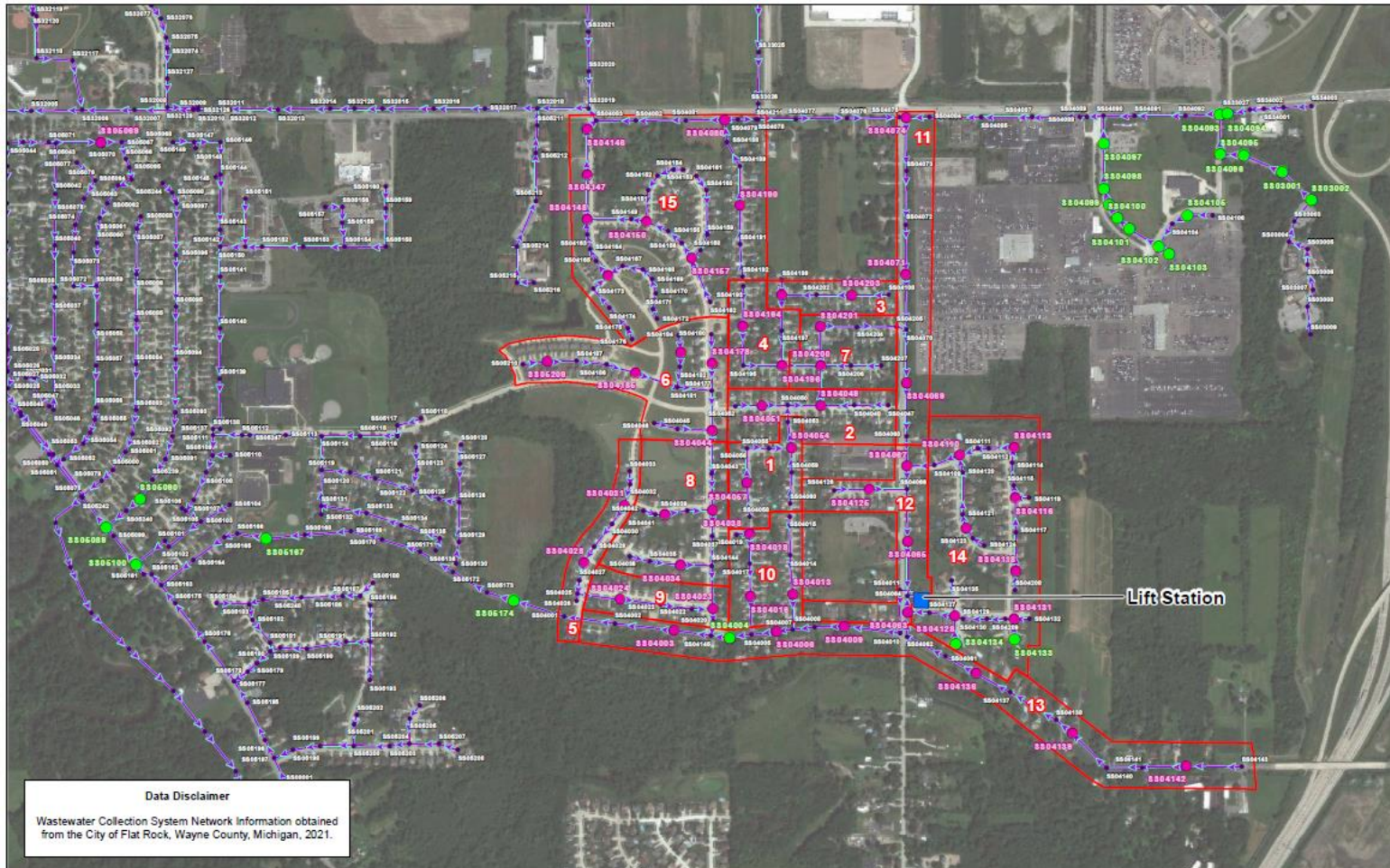


Figure 3. Zone 1 of the Flat Rock, Michigan investigation area shown with sanitary sewer and manhole locations.



<p>Legend</p> <ul style="list-style-type: none"> • Sanitary Sewer Manhole ➔ Sanitary Sewer Flow Direction ■ Sewer Gas Sampling Zones ● UC Priority Manhole ● Sewer Gas Sampling Locations ■ Lift Station 	<p>Paper Size ANSI A</p> <p>Feet</p> <p>Map Projection: Lambert Conformal Conic Horizontal Datum: North American 1983 Grid: NAD 1983 StatePlane Michigan South FIPS 2113 Feet</p>	<p style="text-align: center;">GHD</p> <p style="text-align: center;">FLAT ROCK, MICHIGAN</p> <p style="text-align: center;">SITE PLAN SEWER GAS SAMPLING</p>	<p>Project No. 12561538 Revision No. - Date 9/17/2021</p>
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 Print date: 17 Sep 2021 - 17:02
 Data source: Wastewater Collection System Network Information obtained from the City of Flat Rock, Wayne County, Michigan, 2021. Source: Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Table 1a. Summary of benzene and toluene measurements in Zone 1 sewer samples collected September 8 through September 17, 2021, collected by EPA ERT and CST.

Street Name	Number of Manholes Sampled^	Benzene				Toluene			
		# of detections	#of not-detected	# of not sampled	# of results > SL (200 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (66,667 ppbv)
Austen Ave	1	0	2	0	0	0	2	0	0
Belton Ave/Windsor Ave	1	0	1	0	0	1	0	0	0
Bradbury Dr	3	0	4	0	0	1	0	3	0
Bradbury Dr/Franklin Cir	2	0	2	0	0	0	2	0	0
Btw Cahill/Bradley	1	0	1	0	0	0	1	0	0
Cahill Rd	5	0	5	0	0	1	4	0	0
Cambridge St	2	0	2	0	0	1	1	0	0
Cherry Blossom Ln	2	2	1	0	0	3	0	0	0
Commerce Dr	3	0	3	0	0	1	0	2	0
Commerce Dr/ Maguire St	1	0	1	0	0	1	0	0	0
Cottonwood Dr	2	0	3	0	0	3	0	0	0
Country View Ln	1	0	1	0	0			1	NS
Croft Ave	1	0	1	0	0	0	1	0	0
Croft Ave/Sussex Ave	1	0	1	0	0	0	1	0	0
Dover St	2	0	2	0	0	1	1	0	0
Dover St/Port St	1	0	2	0	0	2	0	0	0
Gateway Blvd	4	0	5	0	0	0	2	3	0
Gibraltar Rd	3	0	3	0	0	2	0	1	0
Hickory Ct	1	0	1	0	0	0	1	0	0
Hickory Dr	5	3	3	0	0	6	0	0	0
Koszuta Ave	1	0	1	0	0	1	0	0	0
Linden Ct	1	1	0	0	0	1	0	0	0
Maguire St	8	6	2	0	0	8	0	0	0
Meadows Ave	3	0	3	0	0	2	0	1	0
Olmstead Rd	4	2	2	0	0	4	0	0	0
Scott Ave	2	1	2	0	0	2	1	0	0
Torrey Ave	2	2	1	0	0	3	0	0	0
Wells Ave/Cahill Rd	1	0	1	0	0	1	0	0	0
Whitby Ave/Sussex Ave	1	0	1	0	0	0	1	0	0
Whitby Ave/Windsor Ave	1	0	1	0	0	1	0	0	0
Woodruff Rd	8	3	7	0	0	7	1	2	0

SL=Screening Level

NS=Not Sampled

^This is the number of manholes sampled for any gasoline-related chemicals. A specific manhole could have been sampled more than once.

Table 1b. Summary of ethylbenzene and xylene measurements in Zone 1 sewer samples collected September 8 through September 17, 2021, collected by EPA ERT and CST.

Street Name	Number of Manholes Sampled ^a	Ethyl Benzene				m,p-Xylene				o-Xylene				Total Xylenes				Combined Ethylbenzene/ Xylene (only when TAGA Direct instrument was used) ^{***}					
		# of detections	#of not-detected	# of not sampled	# of results > SL (767 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (5,333 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (5,333 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (5,333 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (4,000 ppbv ^b)		
Austen Ave	1	2	0	0	0			2	NS	2	0	0	0	2	0	0	0			2	NS		
Belton Ave/Windsor Ave	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Bradbury Dr	3	4	0	0	0	1	0	3	0	4	0	0	0	4	0	0	0			4	NS		
Bradbury Dr/Franklin Cir	2	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0			2	NS	
Btw Cahill/Bradley	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0			1	NS	
Cahill Rd	5	0	5	0	0	1	4	0	0	1	4	0	0	1	4	0	0			5	NS		
Cambridge St	2	1	1	0	0	0	1	1	1	0	1	1	0	0	1	1	0	0			2	NS	
Cherry Blossom Ln	2	0	3	0	0	2	1	0	0	2	1	0	0	2	1	0	0			3	NS		
Commerce Dr	3	3	0	0	0	1	0	2	0	3	0	0	0	3	0	0	0			3	NS		
Commerce Dr/ Maguire St	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0			1	NS		
Cottonwood Dr	2	0	3	0	0	1	2	0	0	1	2	0	0	1	2	0	0			3	NS		
Country View Ln	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Croft Ave	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0			1	NS		
Croft Ave/Sussex Ave	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0			1	NS		
Dover St	2	1	1	0	0	0	1	1	1	0	1	1	0	0	1	1	0	0			2	NS	
Dover St/Port St	1	2	0	0	0	1	0	1	0	2	0	0	0	2	0	0	0			2	NS		
Gateway Blvd	4	4	1	0	0	1	1	3	0	4	1	0	0	4	1	0	0			5	NS		
Gibraltar Rd	3	3	0	0	0	1	0	2	0	3	0	0	0	3	0	0	0			3	NS		
Hickory Ct	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Hickory Dr	5	1	5	0	0	3	3	0	0	3	3	0	0	3	3	0	0			6	NS		
Koszula Ave	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Linden Ct	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0			1	NS		
Maguire St	8	2	0	6	0	2	0	6	0	2	0	6	0	2	0	6	0	6	0	6	0	2	0
Meadows Ave	3	3	0	0	0			3	NS	3	0	0	0	3	0	0	0			3	NS		
Olmstead Rd	4	3	1	0	0	1	1	2	0	3	1	0	0	3	1	0	0			4	NS		
Scott Ave	2	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	0	1	0	2	0
Torrey Ave	2	2	1	0	0	1	0	2	0	3	0	0	0	3	0	0	0			3	NS		
Wells Ave/Cahill Rd	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Whitby Ave/Sussex Ave	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0			1	NS		
Whitby Ave/Windsor Ave	1	1	0	0	0			1	NS	1	0	0	0	1	0	0	0			1	NS		
Woodruff Rd	8	6	1	3	0	3	0	7	0	6	1	3	0	7	0	3	0	3	0	7	1**		

SL=Screening Level

NS=Not Sampled

^aThis is the number of manholes sampled for any gasoline-related chemicals. A specific manhole could have been sampled more than once.

^b Direct TAGA sample collection combines ethylbenzene and xylenes. To be protective a sewer screening level of 4000 ppbv is used based on the 120 ppbv indoor air screening level.

^{**} The sample that exceeded ethylbenzene/xylene screening level was collected on 9/8/21 at SS04001. A sample collected on 9/14/2021 from SS04001 had concentrations of ethylbenzene and xylenes below sewer screening levels.

^{***} The TAGA direct instrument was used at a limited number of locations (Maguire, Scott and Woodruff). All other samples were analyzed using the GC/MS or MS/MS and that instrumentation separate the ethylbenzene/xylene results.

Table 1c. Summary of hexane, cyclohexane, and heptane measurements in Zone 1 sewer samples collected September 8 through September 17, 2021, collected by EPA ERT and CST.

Street Name	Number of Manholes Sampled [^]	Hexane				Cyclohexane				Heptane			
		# of detections	#of not-detected	# of not sampled	# of results > SL (20,667 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (180,000 ppbv)	# of detections	#of not-detected	# of not sampled	# of results > SL (10,000 ppbv)
Austen Ave	1	2	0	0	0	0	2	0	0	0	2	0	0
Belton Ave/Windsor Ave	1	0	1	0	0	0	1	0	0	0	1	0	0
Bradbury Dr	3	2	1	1	0	0	2	2	0	0	3	1	0
Bradbury Dr/Franklin Cir	2	1	1	0	0	0	2	0	0	0	2	0	0
Btw Cahill/Bradley	1	1	0	0	0	0	1	0	0	0	1	0	0
Cahill Rd	5	4	0	1	0	0	4	1	0	0	4	1	0
Cambridge St	2	1	1	0	0	0	2	0	0	0	2	0	0
Cherry Blossom Ln	2			3	NS			3	NS			3	NS
Commerce Dr	3	2	0	1	0	0	1	2	0	0	2	1	0
Commerce Dr/ Maguire St	1	0	1	0	0	1	0	0	0	0	1	0	0
Cottonwood Dr	2			3	NS			3	NS			3	NS
Country View Ln	1	1	0	0	0	0	1	0	0	0	1	0	0
Croft Ave	1	1	0	0	0	0	1	0	0	0	1	0	0
Croft Ave/Sussex Ave	1	1	0	0	0	0	1	0	0	0	1	0	0
Dover St	2	1	0	1	0	1	0	1	0	0	1	1	0
Dover St/Port St	1	0	2	0	0	0	2	0	0	0	2	0	0
Gateway Blvd	4	2	1	2	0	2	1	2	0	1	2	2	0
Gibraltar Rd	3	3	0	0	0	2	1	0	0	2	1	0	0
Hickory Ct	1	1	0	0	0	0	1	0	0	0	1	0	0
Hickory Dr	5			6	NS			6	NS			6	NS
Koszuta Ave	1	0	1	0	0	0	1	0	0	0	1	0	0
Linden Ct	1	1	0	0	0	1	0	0	0	1	0	0	0
Maguire St	8	0	1	7	0	1	0	7	0	1	0	7	0
Meadows Ave	3	1	2	0	0	0	3	0	0	0	3	0	0
Olmstead Rd	4	3	0	1	0	2	0	2	0	2	1	1	0
Scott Ave	2	1	1	1	0	0	2	1	0	0	2	1	0
Torrey Ave	2	2	0	1	0	0	1	2	0	1	1	1	0
Wells Ave/Cahill Rd	1	1	0	0	0	0	1	0	0	0	1	0	0
Whitby Ave/Sussex Ave	1	0	1	0	0	0	1	0	0	0	1	0	0
Whitby Ave/Windsor Ave	1	0	1	0	0	0	1	0	0	0	1	0	0
Woodruff Rd	8	2	3	5	0	0	4	6	0	0	5	5	0

SL=Screening Level

NS=Not Sampled

[^]This is the number of manholes sampled for any gasoline-related chemicals. A specific manhole could have been sampled more than once.