FACT SHEET

Community Sampling in Tonawanda, New York

December 2018

Addressing Air Quality Concerns

In response to community concerns about black smoke released from the Tonawanda Coke Corporation facility this spring and summer the New York State Department of Environmental Conservation (DEC) provided air sampling equipment to Tonawanda community residents engaged with DEC since the Tonawanda Community Air Quality Study.[1]

DEC has been closely reviewing the concentrations of pollutants detected at monitoring stations in the Tonawanda community. DEC continues to operate two monitors installed in 2007 for the Tonawanda Community Air Quality Study, which evaluated air quality in Tonawanda and emissions from Tonawanda Coke. One monitor, located on Grand Island Boulevard, is 1,500 feet northeast of the facility and near Interstates 190 and 290 and other industrial facilities. The second monitor is located in a residential neighborhood on Brookside Terrace West, 8,000 feet northeast of the facility. The study documented high levels of benzene released from Tonawanda Coke's operation, and as a result DEC required the facility to make repairs and operational modifications to address the releases of this pollutant. Benzene can be an indicator of certain improper operations at the facility.

The Sampling and Results

Two six-liter SUMMA canisters were provided to the community residents in August 2018. The air samples were collected for one hour and analyzed by DEC's laboratory using the U.S. Environmental Protection Agency's (USEPA) TO-15 method for air analysis of volatile organic compounds (VOCs). The method identifies a suite of 44 VOCs.

One sample was collected on August 3, at 3:47 a.m. on the bike path along River Road, northwest of the facility. The winds were from the south-southeast at three to six miles per hour during sampling. This placed the sampler downwind of Tonawanda Coke. Also during sampling, a strong surface-based inversion was present.[2] The second sample was collected on August 30, at 10:10 p.m. in a residential neighborhood on Grand Island. The winds were from the northeast at seven to 10 miles per hour during sampling, which placed the sample collection location downwind of the facility.

Thirty-seven chemicals were found in one or both samples. As shown in Table 1, the results were below respective health-based comparison values. Also noted in Table 1,

[1] To learn more about the Study, visit: http://www.dec.ny.gov/chemical/59464.html

[2] During an inversion, a shallow layer of cool air at the surface underlies warmer air aloft. This causes trapping of local emissions and can result in a rise in concentrations of pollutants released from localized, dispersed sources.

the concentrations for most of the chemicals were higher in the August 30 sample, as compared to the August 3 sample. Although a strong inversion was present during the first sample, other factors such as facility operations during the second sample may have contributed to the higher concentrations.

Because benzene is a chemical of concern and frequently detected in other locations of the State, the results were compared to DEC's 2017 Air Toxic Network. As illustrated in Figure 1, the benzene results from the two community samples are within the range found at the suburban location monitor, which is 8,000 feet northeast of Tonawanda Coke in the residential neighborhood of Brookside Terrace West. Although not shown here, the results from the remaining 36 chemicals were also compared with concentrations found in DEC's 2017 Air Toxic Network. This comparison showed that the concentrations for all 36 chemicals were within the range found at the suburban location monitor on Brookside Terrace West.

These results were compared to benzene concentrations monitored during DEC's Tonawanda Community Study (July 2007 – July 2008). DEC installed a monitor on Grand Island Boulevard for the study, not far from the location of the community sample collected on River Road. As shown in Figure 2, the one-hour sample, although collected during a period of concern, produced results much lower than concentrations measured during the 2007 study. The facility worked to reduce benzene concentrations after DEC's study and the area measurements for benzene had been reduced by 92 percent prior to the shutdown of the Tonawanda Coke Facility.

DEC also installed a monitor for the study at Beaver Island State Park not far from the sample collected on Bronson Road. The concentration of the one-hour sample collected on August 30, and as shown in Figure 3, was much lower than measurements in the study.

In conclusion, the results from the two community samples found concentrations similar to measurements in DEC's current network monitor at suburban and other monitored locations in the State. Overall, this screening assessment did not find any chemical concentrations that would be of concern for short-term exposures.

For More Information

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Table 1. Chemicals Identified

Chemical	Downwind River Road along Bike Path 8/3/2018 3:47 AM (ppb)	Downwind Bronson Road, Grand Island 8/30/2018 10:10 PM (ppb)	Short-Term (1-hour) Health-Based Air Concentration Values (ppb)
1,1,1-Trichloroethane	nd	0.011	1,600
1,1-Dichloroethylene	nd	0.0082	- -
1,2,4-Trichlorobenzene	0.0061	0.015	500
1,2,4-Trimethylbenzene	0.026	0.017	- -
1,2-Dibromoethane	nd	0.0088	- -
1,2-Dichlorobenzene	nd	0.0087	5,000
1,2-Dichloroethane	0.014	0.019	- -
1,2-Dichloropropane	nd	0.013	- -
1,3,5-Trimethylbenzene	0.0081	0.0095	- -
1,3-Butadiene	nd	0.019	- -
1,3-Dichlorobenzene	nd	0.0078	- -
1,4-Dichlorobenzene	0.0044	0.0095	- -
aChlorotoluene	nd	0.013	46
Acrolein	0.072	0.14	1.1
Benzene	0.12	0.21	400
Bromomethane	0.011	0.016	1,000
Carbon disulfide	0.091	0.035	2,000
Carbon tetrachloride	0.084	0.092	300
Chloroethane	0.013	0.014	- -
Chloroform	0.024	0.030	31
Chloromethane	0.50	0.44	11,000
cis-1,3-Dichloropropylene	nd	0.0085	- -
Dichlorodifluoromethane	0.47	0.47	- -
Dichloromethane	0.064	0.070	4,000
Dichlorotetrafluoroethane	0.014	0.022	- -
Ethylbenzene	0.033	0.058	12,000
m, p-Xylene	0.099	0.17	5,100
o-Xylene	0.037	0.068	5,100
Styrene	0.011	0.018	4,000
Tetrachloroethylene	0.047	0.014	44
Toluene	0.31	0.68	9,800
trans-1,2-Dichloroethylene	nd	0.011	- -

Chemical	Downwind River Road along Bike Path 8/3/2018 3:47 AM (ppb)	Downwind Bronson Road, Grand Island 8/30/2018 10:10 PM (ppb)	Short-Term (1-hour) Health-Based Air Concentration Values (ppb)
trans-1,3-Dichloropropylene	nd	0.0089	- -
Trichloroethylene	0.0024	0.0085	4
Trichlorofluoromethane	0.23	0.21	1,600
Trichlorotrifluoroethane	0.066	0.070	130,000
Vinyl Chloride	nd	0.0093	71,000

"- -" Indicates no short-term health-based air concentration value has been derived for this chemical. Short-term exposures to these chemicals are generally, not toxic at common ambient levels such as those found in this assessment.
nd – not detected

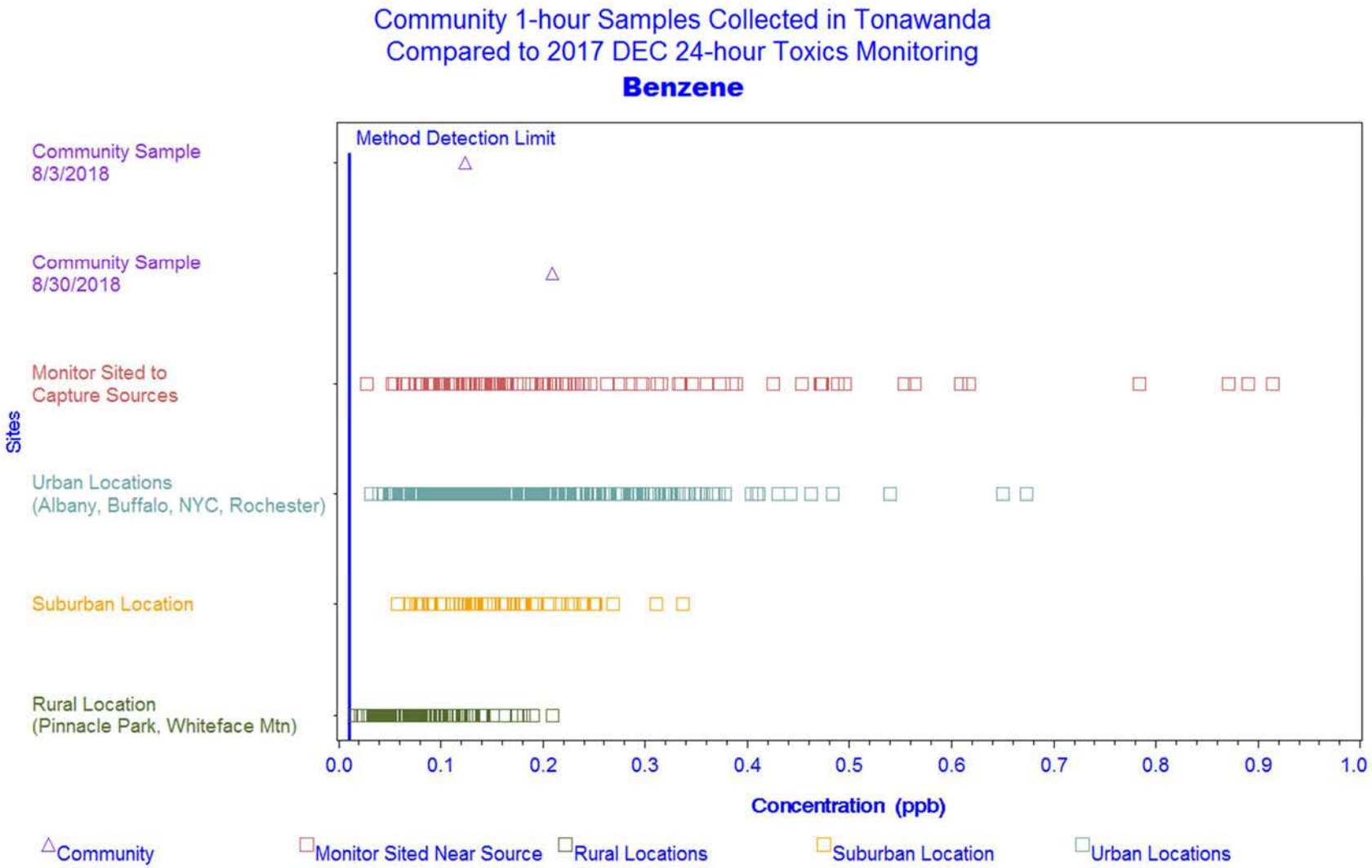

Figure 1. Benzene Comparisons

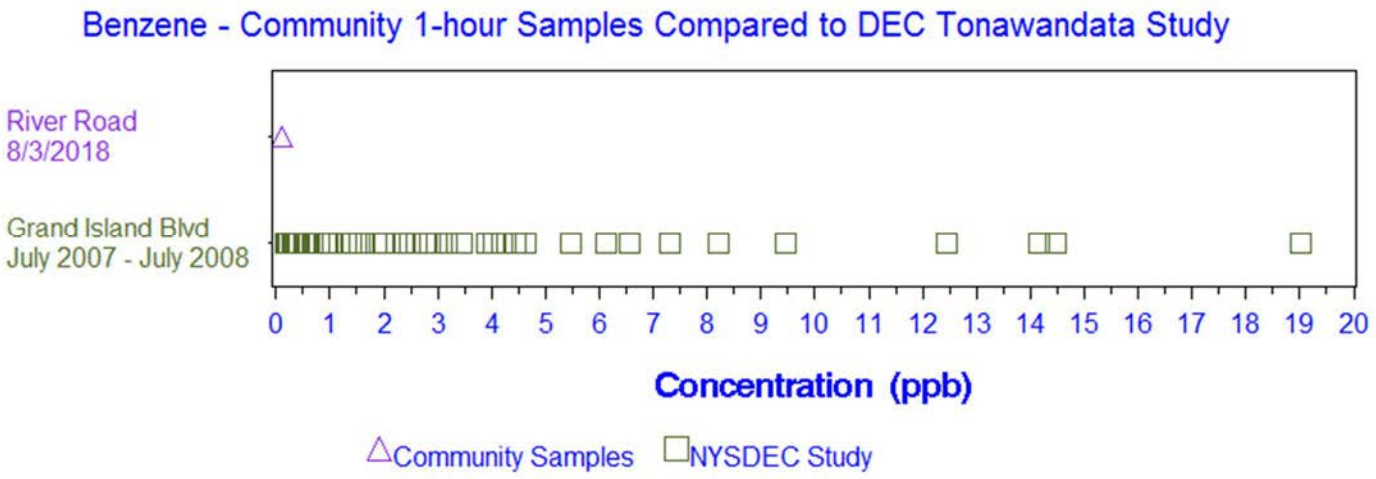

Figure 2. Comparison River Road Sample to Grand Island Blvd Results

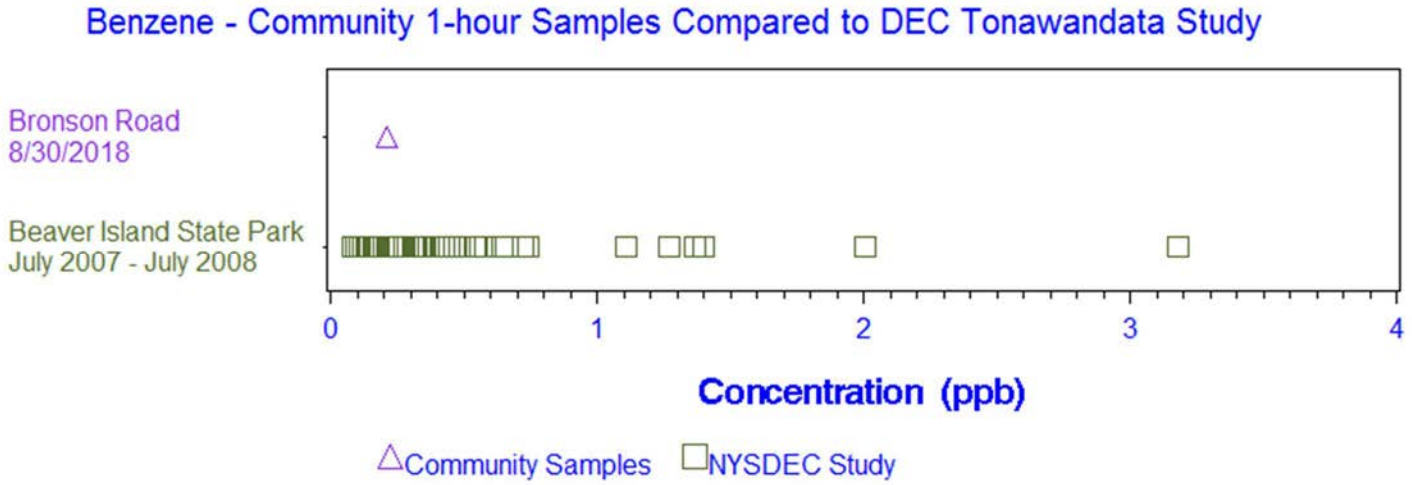

Figure 3. Comparison Bronson Road Sample to Beaver Island State Park Results