

The mission of the Southwest Ohio Air Quality Agency (“Agency”) is to achieve and maintain air quality standards by working with businesses, communities, environmental partners, and citizens to ensure clean air for present and future generations. This report is written by the Southwest Ohio Air Quality Agency to summarize the findings of an air quality study conducted in Newtown, Ohio over a 2-year period. The report discusses Air Monitoring, Complaints and Compliance Evaluations, and Conclusions.

### Background

In response to citizen complaints and concerns communicated by representatives from the Village of Newtown, the Agency conducted specialized monitoring in the Village of Newtown and Anderson Township on the east side of Cincinnati, Ohio. The original objectives of the project were to 1) detect and quantify ambient levels of organic compounds and air toxic compounds and 2) collect data on odors present in Newtown and nearby Anderson Township. All air monitoring results were forwarded to the Ohio EPA, Division of Air Pollution Control for its review and analysis.

### Air Monitoring

The Southwest Ohio Air Quality Agency collected air toxics samples, real time volatile organic compound (“VOC”) concentrations, and fine particulate concentrations. Below is a description of each type of air monitoring:

- Air toxics samples were collected using 6L canisters. Canister samples were collected when the wind direction was blowing to the direction of the sampling device and asphalt odors were present. The canisters were analyzed at ALS Laboratory using US EPA Method TO-15. The 24-hour canister results can be found on the Agency website at <https://www.southwestohioair.org/234/Newtown>.
- VOC data was collected with a ppbRae 3000. The ppbRAE 3000 is a device for parts-per-billion VOC detection using a photoionization detector. See loop monitoring below for a discussion on this data. The results can be found on the Agency website at <https://www.southwestohioair.org/234/Newtown>.
- A PurpleAir sensor was used to collect real-time air quality data and share it on a map accessible to everyone with internet access. The sensors measure particulate matter, temperature, humidity, and pressure. This sensor was not a part of the original sampling plan but was added during the study to infer mass concentrations of PM1.0, PM2.5, and PM10. The sensor was located at 7036 Main Street in Newtown and was in operation from November 8, 2021, until August 26, 2022. Particulate data from our Agency regulatory monitor can be found at: <https://www.southwestohioair.org/199/Air-Quality-Concentrations>.

### Loop Monitoring

Over 2000 individual air quality observations were recorded from 9/23/20 to 9/21/22. The observations were conducted by Agency staff once a week in varying weather conditions and

distances from the asphalt plants. The data recorded during each observation included total VOC, odor intensity, odor description, and source of the odor. Odor intensity was assigned using the below odor intensity scale. The source of odor was determined by field staff whenever possible.

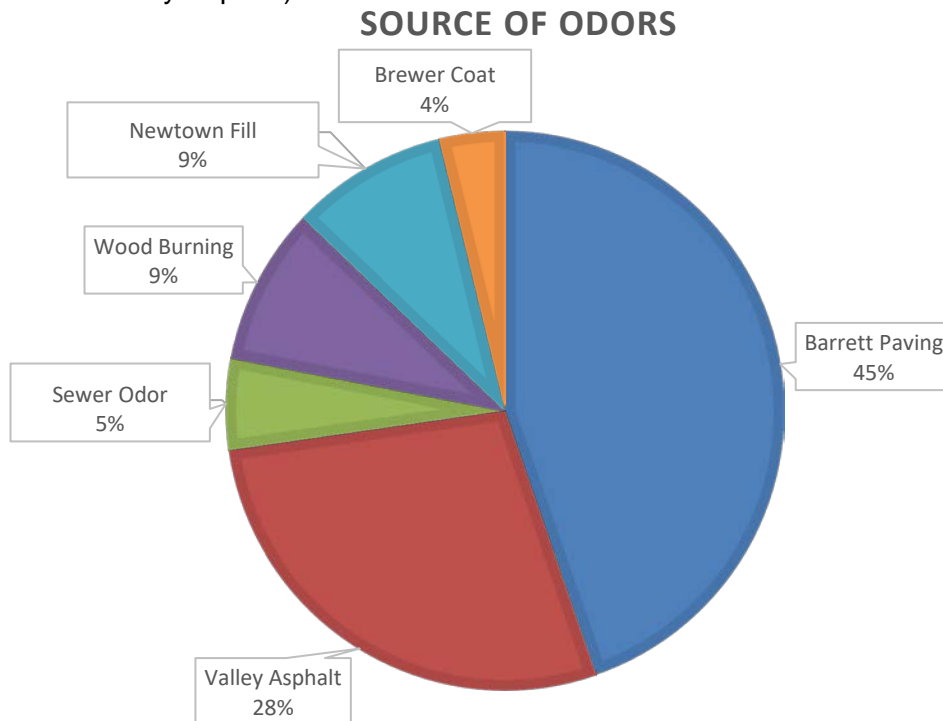
**Odor Intensity Scale Descriptors**

Level	Descriptor
0	Odor Not Detectable
1	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.
2	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.
3	Odor present in the air, which is objectionable and causes a person to attempt to avoid it completely.
4	Odor present in the air, which is so strong that it is overpowering and intolerable for any length of time.

**Loop Monitoring- Odor Evaluations**

Of the 2000+ observations, odors were detected less than 0.1% of the time. When odors were detected, the source of the odors were found to be (in order of documented sources) Barrett Paving, Valley Asphalt, wood burning odor, Newtown Fill, sewer odor, and Brewer Coat. See chart below.

The locations with the odor noted most often was at the Youthland Academy (14 occasions- source identified as Barrett Paving) and across the street from Valley Asphalt (14 occasions- source identified as Valley Asphalt).



### Loop Monitoring- Real Time VOC

The sampling plan indicated that if at any of the 20 sampling locations show a concentration of 0.500 ppm VOC or above, the Agency will take an instantaneous sample immediately. No canister samples were triggered as total VOC were consistently in the non-detect to low ppb range.

### Complaints and Compliance Evaluations

The Agency also responded to citizen complaints with a goal of identifying the source of the complaint and make compliance determinations. Air quality complaints received over the last 3 years are summarized below. Valley Asphalt and Barrett Paving were both identified as the source of complaints on 11 occasions.

Year	Total Complaints	Odor	Smoke	Fugitive Dust/Particulate	Valley	Barrett
2022	16	11	3	2	3	0
2021	23	18	1	0	7	8
2020	11	11	0	0	1	3

The Agency inspected the asphalt plants on over 10 occasions during the study. Facilities of this type are generally inspected once every five years, but more frequent compliance inspections were instituted as part of this study. One compliance issue was found and corrected during an inspection triggered by a complaint investigation.

### Conclusions

The Southwest Ohio Air Quality Agency, in cooperation with the Ohio EPA Division of Air Pollution Control, reviewed all available data generated during this study. The results of the monitoring data collected shows the measured levels of air toxic compounds are well below any risk-based screening levels. The Agency compared the particulate data from the PurpleAir sensors and found the data generally trends with regulatory monitors. It is important to note that US EPA and this Agency verified Purple Air sensors overpredict fine particle concentrations, and these sensors are not approved for use in determining compliance with national standards. The air quality data collected to date show measured levels do not pose an immediate or long-term health concern. Therefore, additional sampling is not warranted at this time.

One of the goals of the investigation was to establish whether a public nuisance as described by Ohio Administrative Code (OAC) 3745-15-07(B) is occurring. The rule prohibits a source from being operated in such a manner to emit such amounts of odor as to endanger the health, safety or welfare of the public, or cause unreasonable injury or damage to property.

The Agency recognizes the asphalt plants generate odors; however, our investigation revealed no evidence to support a finding an odor nuisance is occurring. All asphalt plants in Ohio generate odors, and in this case, the odors do not contribute to a public nuisance violation.

The Agency will continue to oversee and monitor the air quality of the community through responding to air quality complaints and doing extra facility inspections and compliance evaluations. If you have any questions about this report, please feel free to contact the Southwest Ohio Air Quality Agency at 513-946-7777.