

# Air Monitoring Study Results; All American Asphalt

Presented by  
Pete Carmichael, Director of Community Development

City Council  
September 14, 2021

CITY OF IRVINE

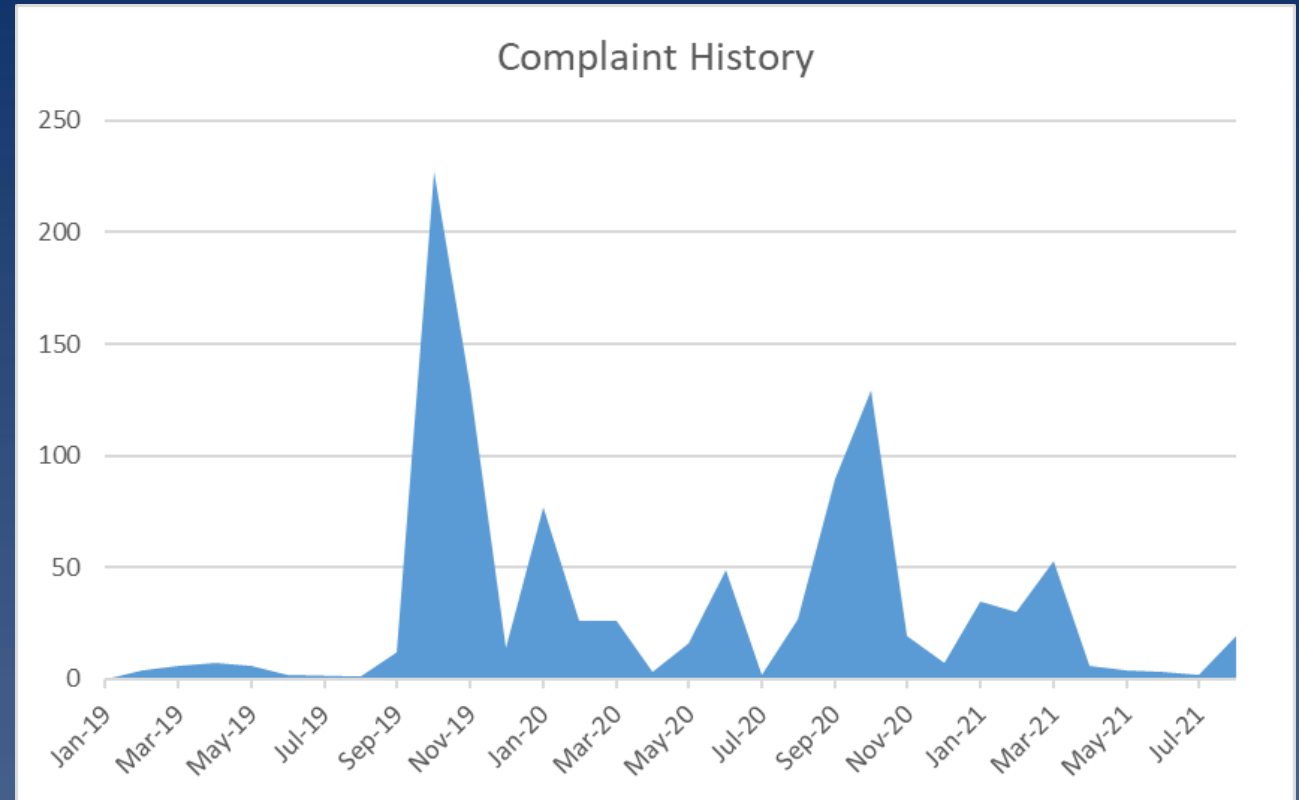


# Background – Facility History

- 1992 - Land use approval through County
- 1993 - Regulatory approval through AQMD
- 1994 - AAA Facility begins operation
- 2005 - Orchard Hills EIR
  - AAA facility included in the EIR project description
  - Confirmed the facility in compliance with permits
  - Study determined release of hazardous materials unlikely to affect proposed development
- 2005 - AAA and surrounding open space annexed into City of Irvine
- 2016 - Irvine Company first issues seller disclosures about AAA
- 2019 - Odor complaints spike

# Background – Community Concerns

- Complaints regarding asphalt odors initially spiked in Fall 2019
  - Odor complaint data provided by AQMD
- Concerns raised regarding potentially harmful emissions
- City, Community, AQMD gather data on local emissions



# Background – City actions taken

- Commissioned independent air monitoring: November, 2020
- Audit of permits and regulatory compliance
  - Audit indicates facility in compliance with permits
- Initiated public nuisance litigation against AAA on behalf of residents
- Requested AQMD conduct public meeting to hear local concerns
  - Community meetings held December 10, 2020 and March 3, 2021
- Requested AQMD conduct local air monitoring campaign
  - AQMD local air monitoring conducted December, 2020 – May, 2021

# Air Monitoring

- Jun Wu Research Group: Department of Environmental and Occupational Health, Program in Public Health, University of California, Irvine
- Rowland/Blake Research Group: Chemistry Department, University of California, Irvine
- Yorke Engineering: A firm specializing in air quality and environmental compliance and engineering
  - Commissioned by the City of Irvine
- South Coast AQMD: State-designated regulatory authority for fixed-source industrial emissions
- **Air Monitoring data summaries in following slides provided by the scientists**

# Air Monitoring Results – Jun Wu Research Group, UCI

- Low-cost sensors used for continuously measuring ambient Total Volatile Organic Compounds (VOCs) starting in November, 2020 in North Irvine at locations with varying distances to the American Asphalt company
  - Measures total VOCs and fine particulate matter (PM2.5) and helps identify patterns across time and location
  - Based on testing by AQMD, the sensors overestimate VOCs and correlated weakly with a reference instrument
  - Caution should be used in interpretation of data
- In general, the sensor outputs showed higher variations in total VOCs than PM2.5 across time and locations, indicating potential local VOC sources
- Unfortunately, these sensor data cannot be used to characterize or quantify specific sources due to the limitations of sensors

# Air Monitoring Results – Rowland / Blake Research Group, UCI

Barbara Barletta ([bbarlett@uci.edu](mailto:bbarlett@uci.edu)); Rowland/Blake Research Group; Chemistry Department; University of California, Irvine

## **Total Number of Samples collected: 7**

- Dec 16, 2020 - Eastwood (Irvine): “Chemical Odor” event
- Dec 18, 2020 - Eastwood (Irvine): “Background” (no event)
- Jan 9, 2021 - Eastwood (Irvine): “Asphalt Odor” event;
- Jan 21, 23, 26, 27, 2021 - Orchard Hills (Irvine): high TVOC from AtmoTube reading.

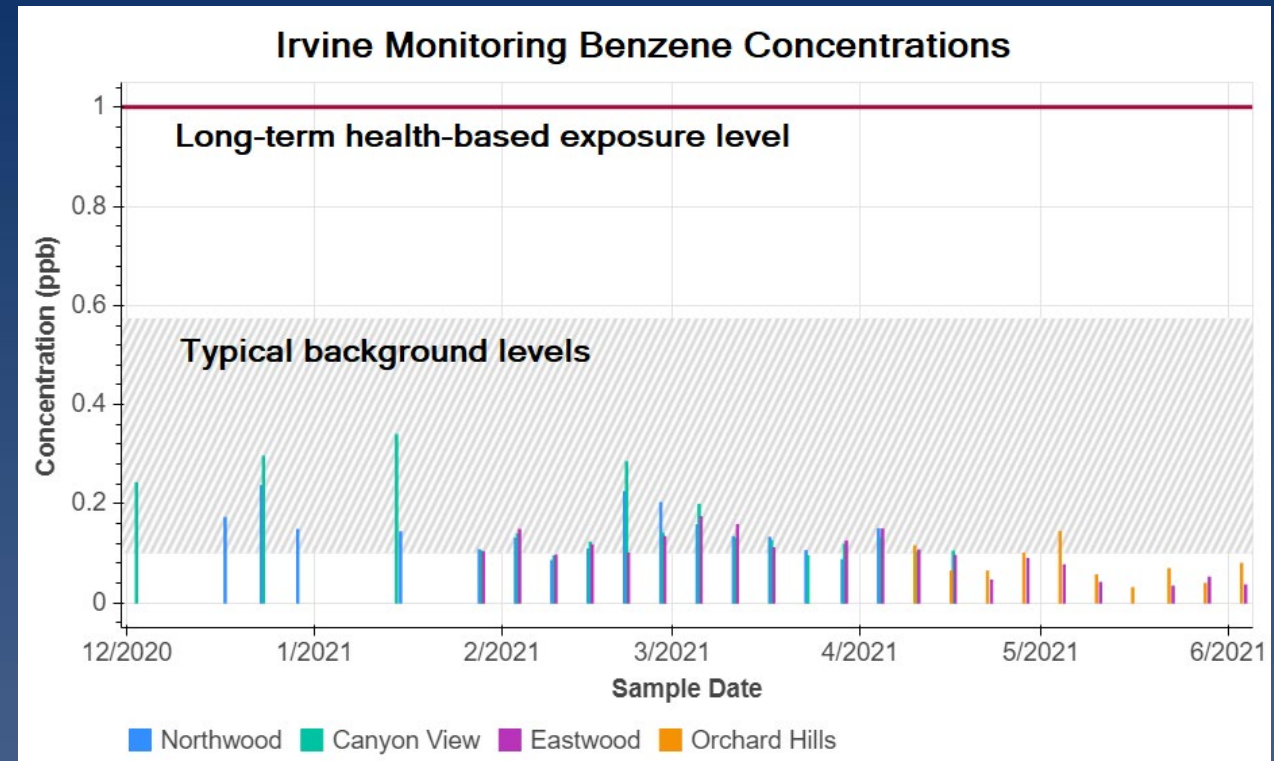
All data are available at: <https://sites.uci.edu/rowlandblakelab/all-american-asphalt-uci-whole-air-sampling>

- All samples (but one) showed VOC levels consistent with what expected from an urban area; one sample was enhanced for selected VOCs
- Based on the number of samples collected and analyzed by the Rowland/Blake laboratory at UCI, we cannot come to a conclusion about the presence (or not) of a localized VOC source affecting the local air composition.



# Air Monitoring Results – South Coast AQMD

- Sixty three 24-hour samples at four community locations over six months
- Tested for concentration of 64 individual gaseous air toxic pollutants
  - U.S. EPA Analysis Method
- Results were within background levels and below federal and state long-term health thresholds\*



- Long-term health based exposure levels obtained from the California Office of Environmental Health Hazard Assessment
- Typical background levels obtained from the South Coast AQMD Multiple Air Toxics Exposure Study V – 2018-2019
- Data available at <https://www.aqmd.gov>

\*A sample on 12/23/20 showed slightly higher background levels of methylene chloride and styrene but were below health-based levels





# Air Toxics Study – Yorke Engineering

- Air Monitoring
  - Conducted four sets of 24-hour samples taken at four locations between November, 2020 and January, 2021
    - On-site (at plant), at fence line, and two in the community
    - Five analytical test methods, totaling over 100 pollutant compounds
  - Results showed Chemical concentrations were within typical regional background levels and below health-based thresholds established by the State of California
- Air Toxics Study and Health Risk Assessment
  - Health Risk Impacts: Estimated health risks based on above monitoring indicates that health risks are within acceptable standards and consistent with the region
  - Air Toxics Prioritization Score: Air toxics emissions reported to South Coast AQMD showed potential need for the facility to conduct and prepare a refined air toxics inventory report (ATIR) under California’s Air Toxics “Hot Spots” Program (AB2588)

# Air Monitoring Results – AQMD / City of Irvine Fact Sheet



- Fact sheet released in early August summarizes data from air monitoring by the four scientific groups
  - All content was reviewed and approved by the scientists that conducted the monitoring
- Includes links to full data, notes on additional actions taken and next steps
- Posted on AQMD and City websites as an ongoing community resource

## All American Asphalt Community Air Monitoring



**Background:** In response to concerns raised by nearby residents, a multi-pronged emissions investigation was conducted near Irvine's All American Asphalt facility to determine if emissions are impacting nearby communities.

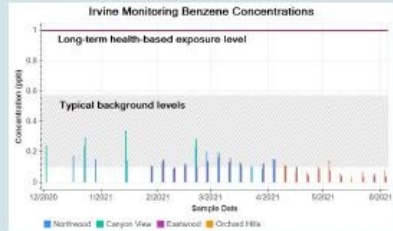
### Air Monitoring Conclusions

-  No Elevated Levels of Air Toxics Detected\*
-  Air toxic monitoring levels below long-term health-based thresholds

### Air Monitoring Efforts

#### South Coast AQMD


- Monitored for air toxics
- Collected air samples from multiple sites using U.S. EPA-approved methodologies
- Results within background levels, below long-term health levels



Additional results for air toxics monitoring can be found at: <http://www.aqmd.gov/home/news-events/community-investigations/air-sampling-initiative>

#### City of Irvine

- Took samples for over 100 individual chemical compounds. Results show most concentrations are within typical regional background levels.
- The samples were taken at four separate locations, including on-site at the plant and in the surrounding community (see map below).



Complete results can be found at <https://www.cityofirvine.org/community-development/all-american-asphalt>

#### Jun Wu Research Group, UC Irvine

- Used a low-cost sensor (Atmotube ProTM) for continuously measuring ambient Volatile Organic Compound (VOC) levels to see if there were patterns in time and at different locations in the Irvine community starting in November 2020.
- The same type of low-cost sensors were evaluated by South Coast AQMD in April 2021. Testing results show that VOC levels measured by the low-cost sensors were biased high and did not correlate with actual concentrations.
- In a letter sent to the community on August 4th, Dr. Wu cautioned that the data from the low cost sensor should not be used "to make any health risk estimates or source characterization."

#### Don Blake Research Group, UC Irvine

A number of short-term air samplers were analyzed for gaseous air toxics. The effort provided samplers to residents for collecting air samples during odor events and when VOC levels on the sensors were elevated. The data from these sampling efforts are posted here: <https://sites.uci.edu/rowlandblakelab/>.

\*A sample on 12/23/20 showed slightly higher background levels of methylene chloride and styrene but were below health-based levels

# Next Steps – Ongoing AQMD Oversight

- Source Testing
  - AQMD required source testing of the crumb rubber system and the rotary dryer
  - Supports permitting action and facility-wide emissions profiling
  - Source testing more accurate than previous emissions reporting
- AB2588 and Annual Emissions Reporting
  - Facility prepares emissions reports and submits them annually to South Coast AQMD. Errors in that reporting by the facility led AQMD to require a more detailed Air Toxics Inventory Report (ATIR)
  - Detailed ATIR anticipated to be finalized October 2021
    - If report indicates toxics above AQMD thresholds:
      - Detailed facility-wide Health Risk Assessment and potentially Risk Reduction Plan would be required
    - If report indicated toxics below AQMD thresholds:
      - Facility would continue to report detailed toxics data every four years to AQMD (and be subject to new rounds of screening)
      - Facility also will continue to report basic emissions information annually to AQMD ([www.aqmd.gov/FIND](http://www.aqmd.gov/FIND))

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