



Community Meeting

Review of Independent Health Risk Evaluation of the Community Air Quality Impacts from Chiquita Canyon Landfill



Meeting Goals

- Review the results of the independent air sampling and testing conducted by Roux Associates
- Review Roux Associates' analysis of all available air sampling results
- Discussion of Roux Associates' evaluation of potential health risks
- Q + A Session



Why did the County ask Roux to conduct an independent health risk evaluation?

- Elevated temperatures within Chiquita Canyon Landfill have increased landfill gas emissions
- These emissions have caused a significant number of odor complaints within the community
- The County and the community are concerned about the potential health effects of odors from and exposure to the landfill gas emissions



Health Risk Evaluation of the Community Air Quality Impacts from Chiquita Canyon Landfill

Adam H. Love, Ph.D.

Managing Director of Risk Management and Litigation Services

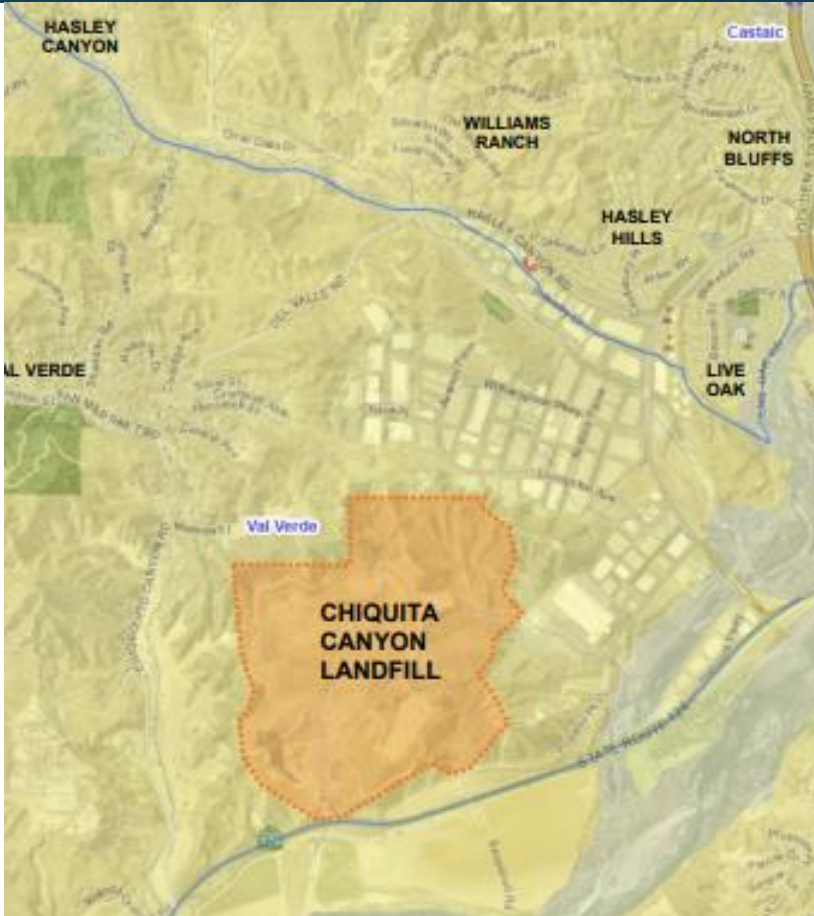
Catherine Boston, MPH, DABT

National Director of Human Health Risk Services

Qualifications

- Roux's main business is assessing levels of contamination at sites across the United States.
- Dr. Love has 25+ years of experience assessing fate and transport of contaminants – including numerous air sites.
 - Environmental forensics expert (source, timing, relative contribution of contaminants)
- Ms. Boston is a board-certified toxicologist with 15 years of experience – including numerous impacted air exposure assessments.

How Was This Health Risk Assessment Conducted?

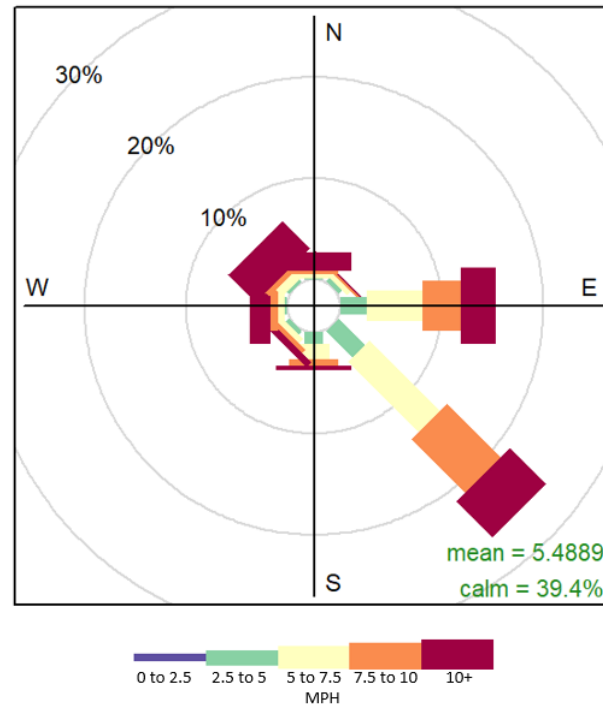


- October 31 to December 16, 2023, Roux conducted independent air sampling in
 - Castaic
 - Hasley Hills
 - Live Oak
 - Val Verde

- Ambient air was sampled for Volatile Organic Compounds (VOCs) and sulfur compounds, including DMS and H₂S.
- Roux evaluated:
 - Its own independently collected air sampling results
 - Air sampling data from Chiquita contractor (SCS Engineers) collected over the same period.
- Roux compared the sampling results to established federal and state thresholds, including the health-protective threshold for ambient indoor air.
- Using these results, Roux evaluated the potential for both short-term health impacts and long-term health risks.

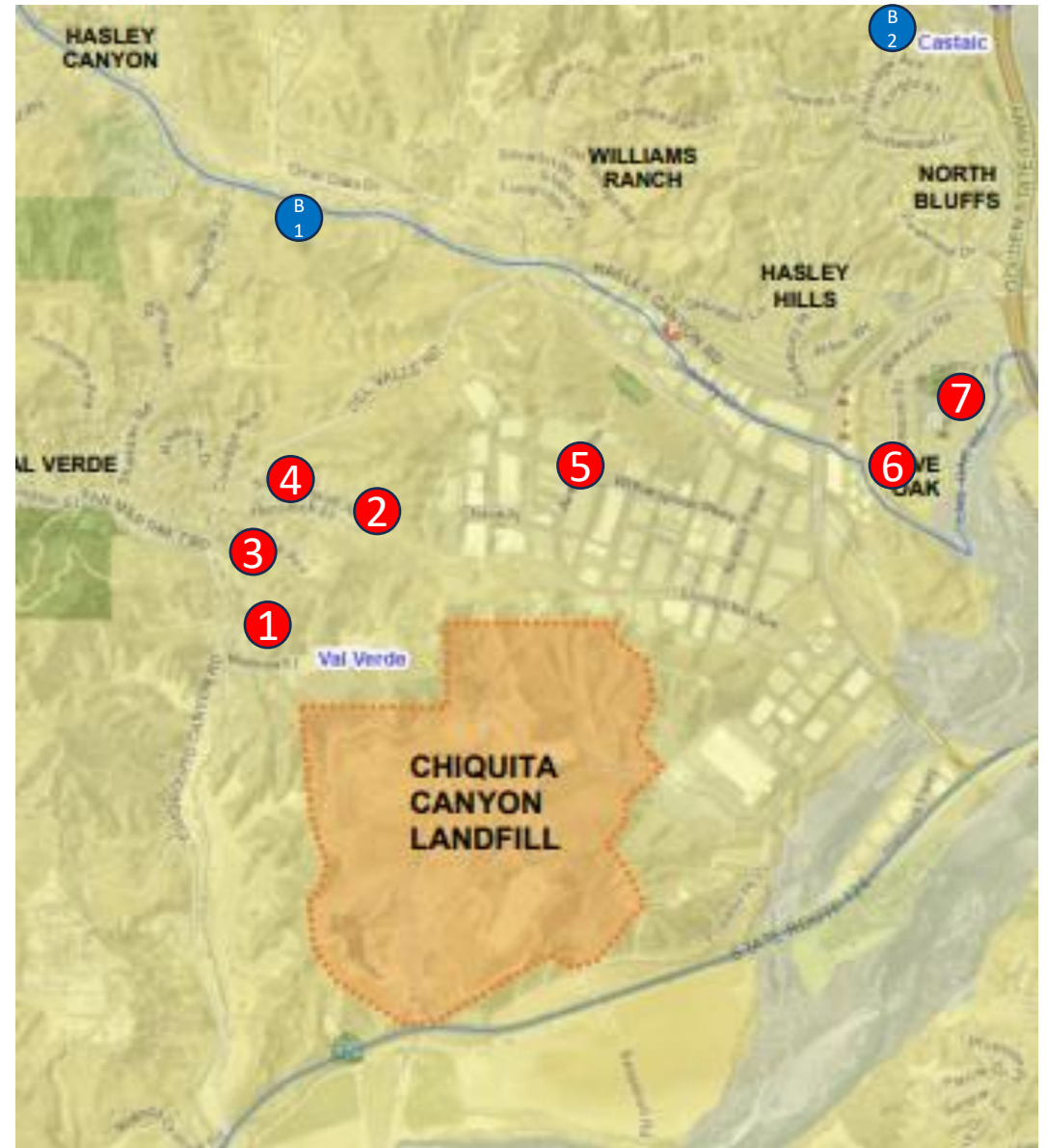
Where Did We Sample?

Whiteman Airport Wind Data (1/1/23-10/30/23)



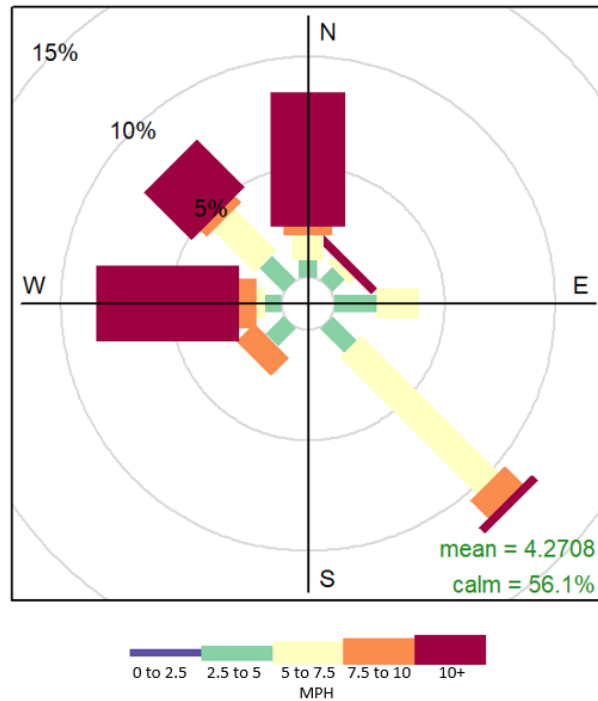
Frequency of counts by wind direction (%)

- Sampling locations selected based on:
 - Regional wind patterns
 - Locations of other landfill air monitors
 - Community reports of odor



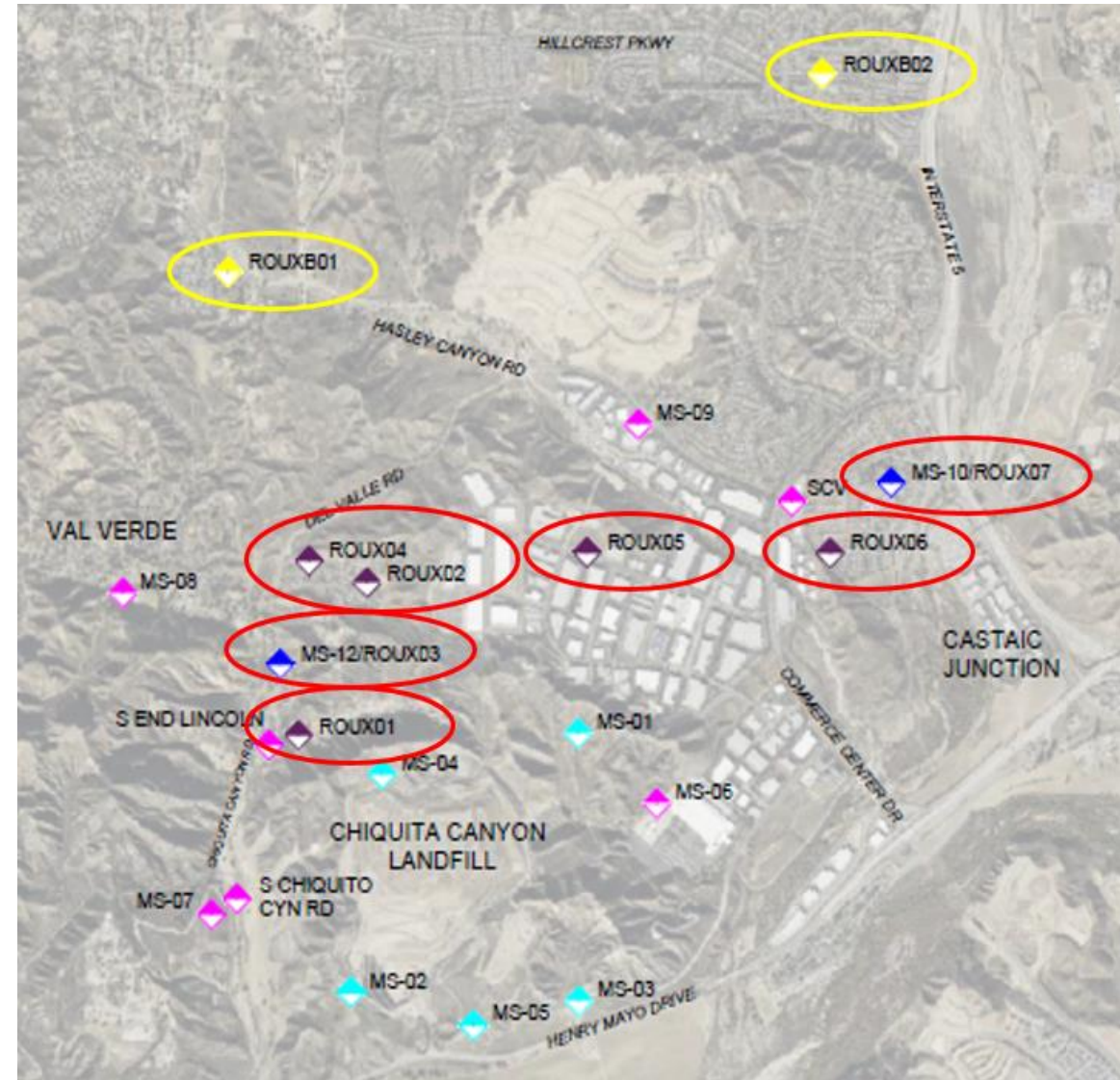
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Frequency of counts by wind direction (%)

- Sampling locations selected based on:
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How did we sample?



- 6-L Summa Canisters for Volatile Organic Chemicals

Examples:

- Benzene
- Chloroform
- Carbon Tetrachloride
- Toluene
- Ethyl Benzene
- Xylenes
- Dichloroethane



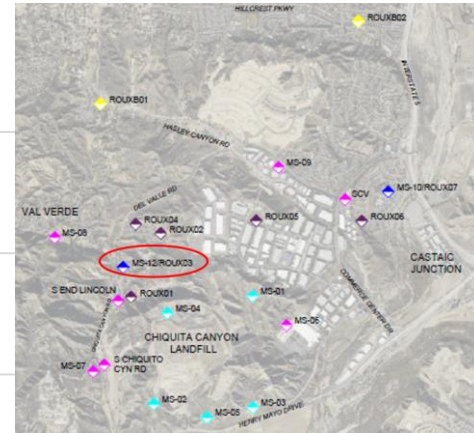
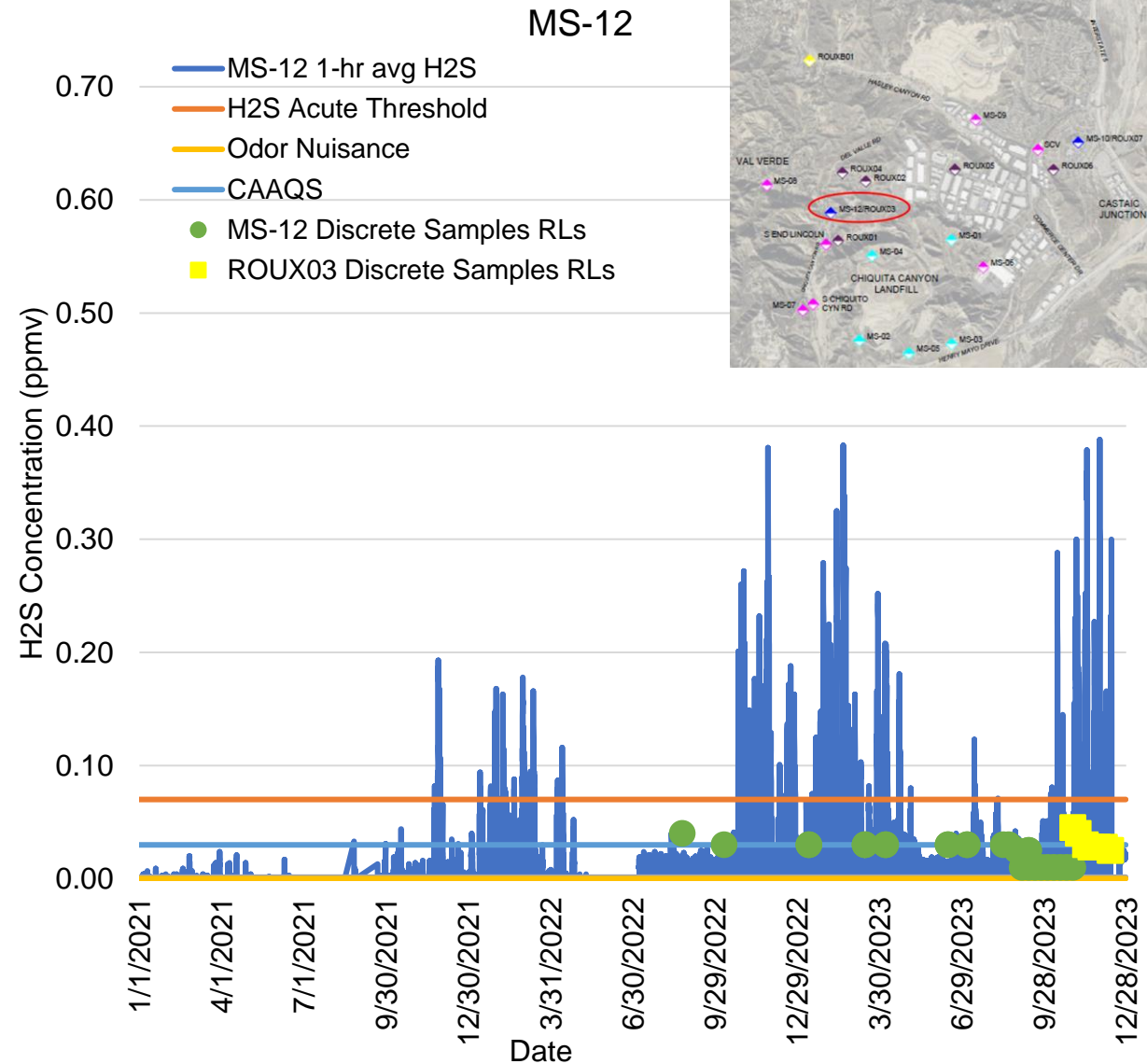
- 1-L Tedlar Bags for Sulfur Compounds

Examples:

- Hydrogen sulfide
- Dimethyl sulfide
- Carbon disulfide
- Dimethyl disulfide
- Ethyl mercaptan
- Methyl mercaptan

Sulfur Compound Results

- None detected in individual air samples from any Roux air samples
 - Detection limits below toxic screening values
 - Contractor for Chiquita had similar results
- H₂S part of Chiquita’s continuous monitoring program indicates numerous odor exceedances in the Community – see example.
- Contradictory Results



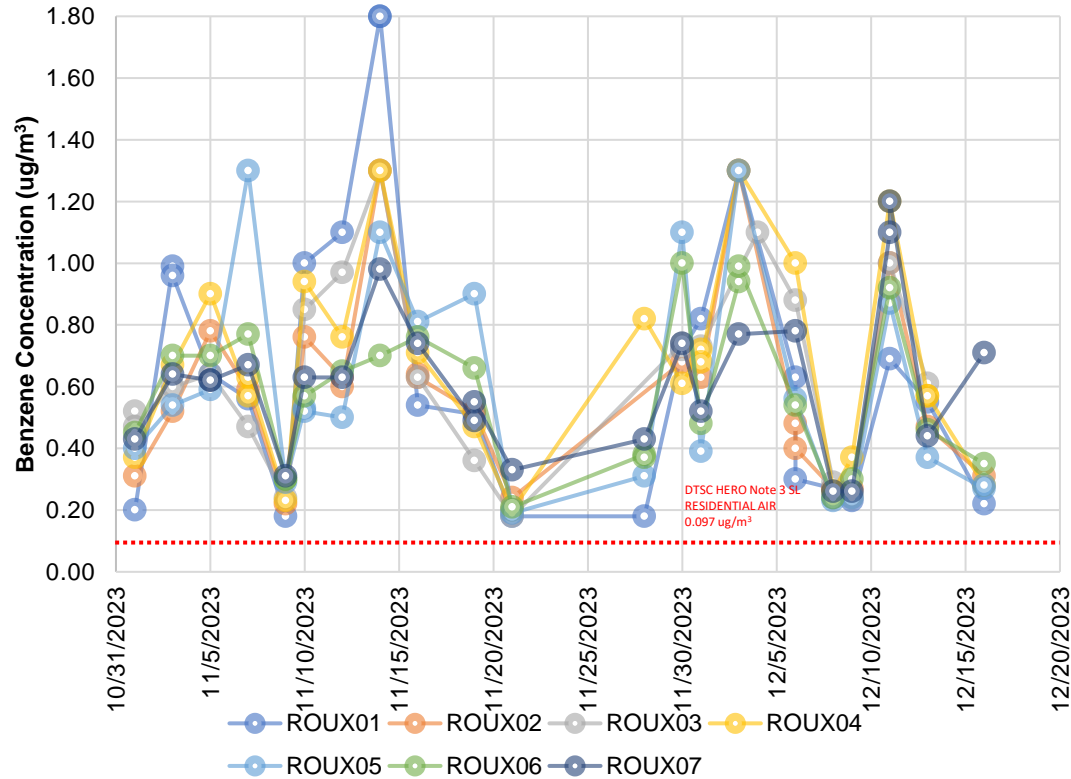
VOC Results

- Screening levels are used to provide a health-protective threshold to compare.
 - Based on worst case exposure scenarios for 70-years
- None of the VOCs detected in the community air samples exceeded any of their respective health-based acute (short-term) screening levels.
 - ATSDR (Agency for Toxic Substances and Disease Registry)
 - OEHHA (California Environmental Protection Agency's Office of Environmental Health Hazard Assessment)
- None of the VOCs detected in the community air samples exceeded any of their respective odor thresholds.
 - AIHA (American Industrial Hygiene Association)
- Two of the 15 chemicals detected, benzene and carbon tetrachloride, were reported at concentrations that exceeded their corresponding screening level for residential indoor air.
 - DTSC (Department of Toxic Substances Control)

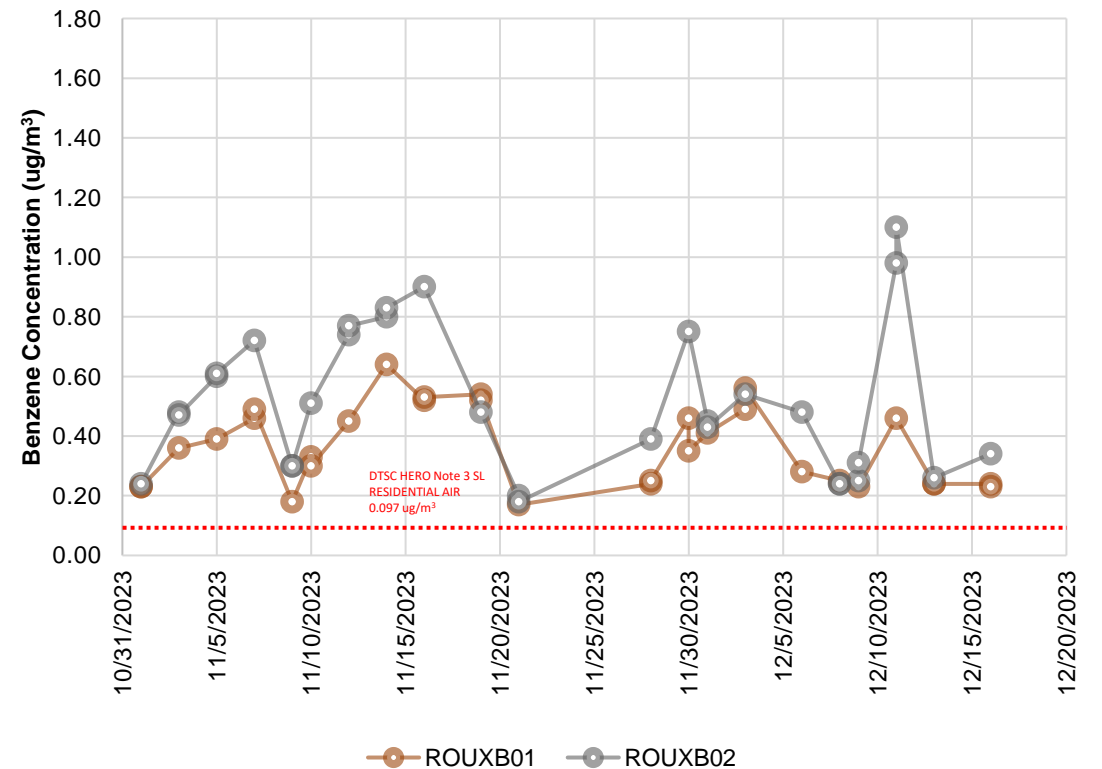
VOC Results - Benzene

- Community air samples of benzene track up and down similar to air samples at background locations

**Benzene Concentration vs. Sample Date
Roux Community Air Samples**



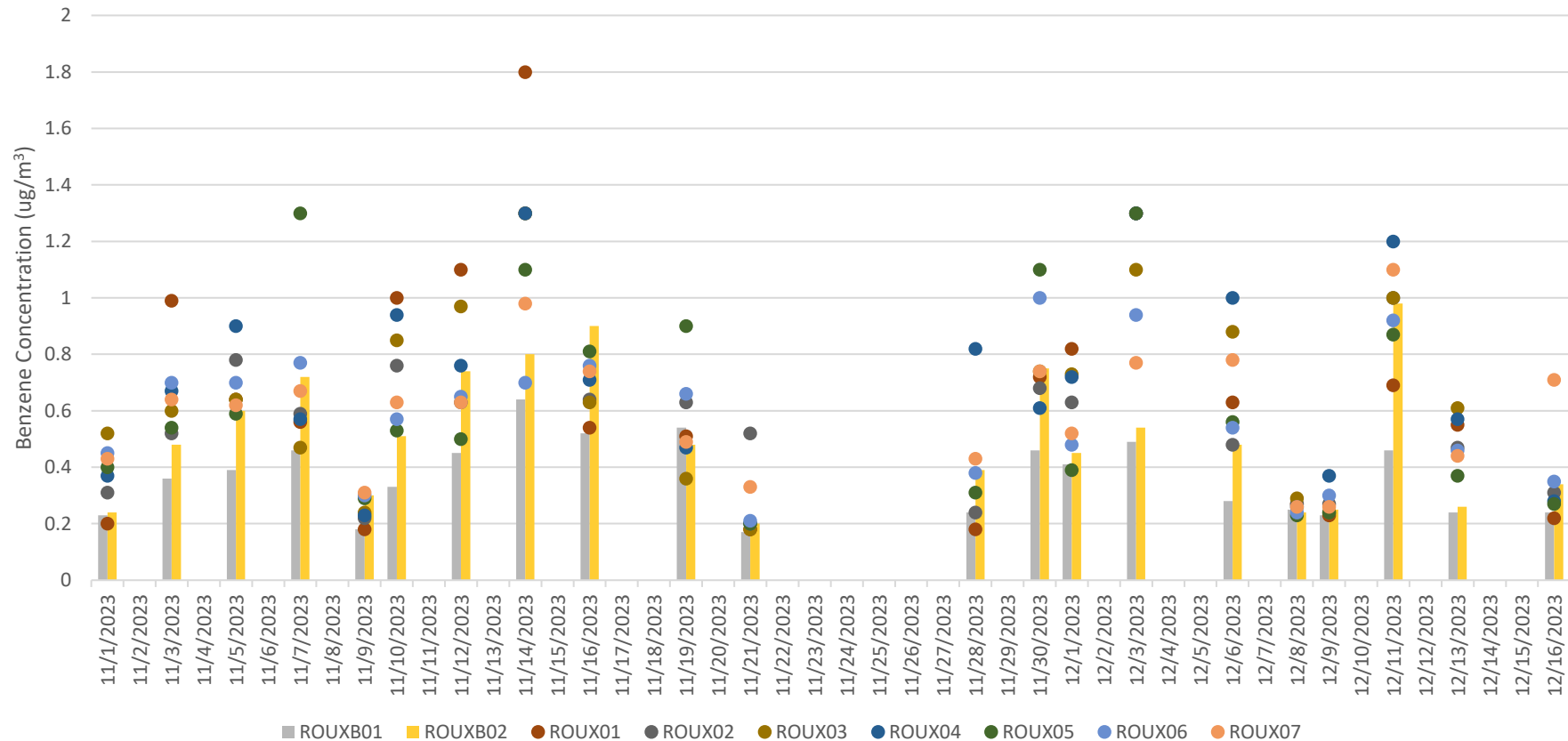
**Benzene Concentration vs. Sample Date
Roux Background Air Samples**



VOC Results - Benzene

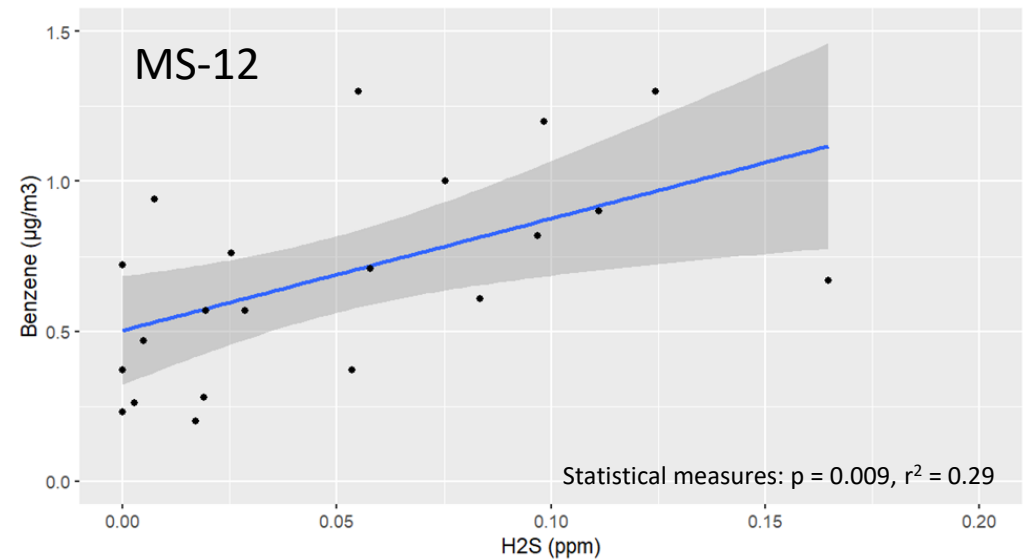
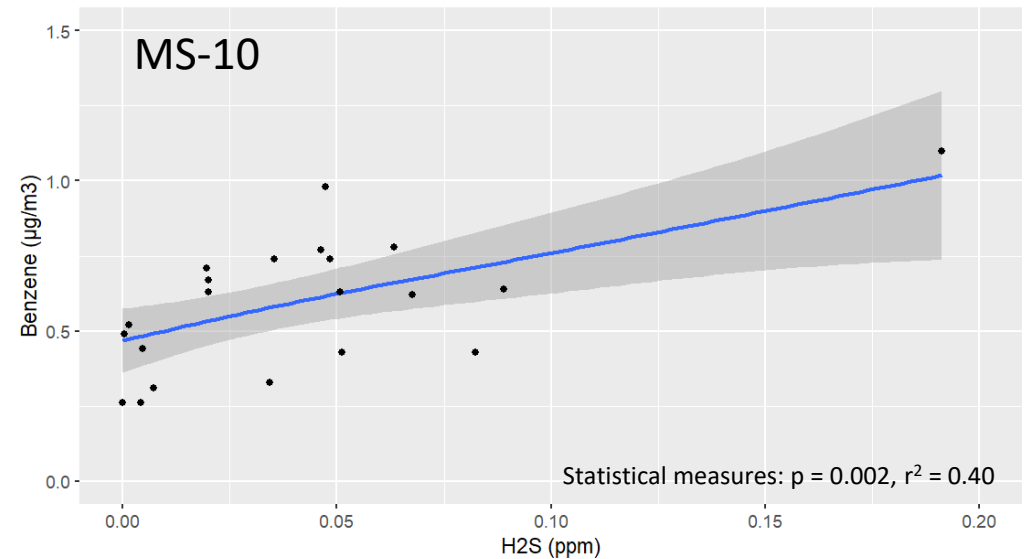
- Some days community samples (dots) appear to be incrementally above background samples (bars).

Nov and Dec 2023 Benzene



VOC Results - Benzene

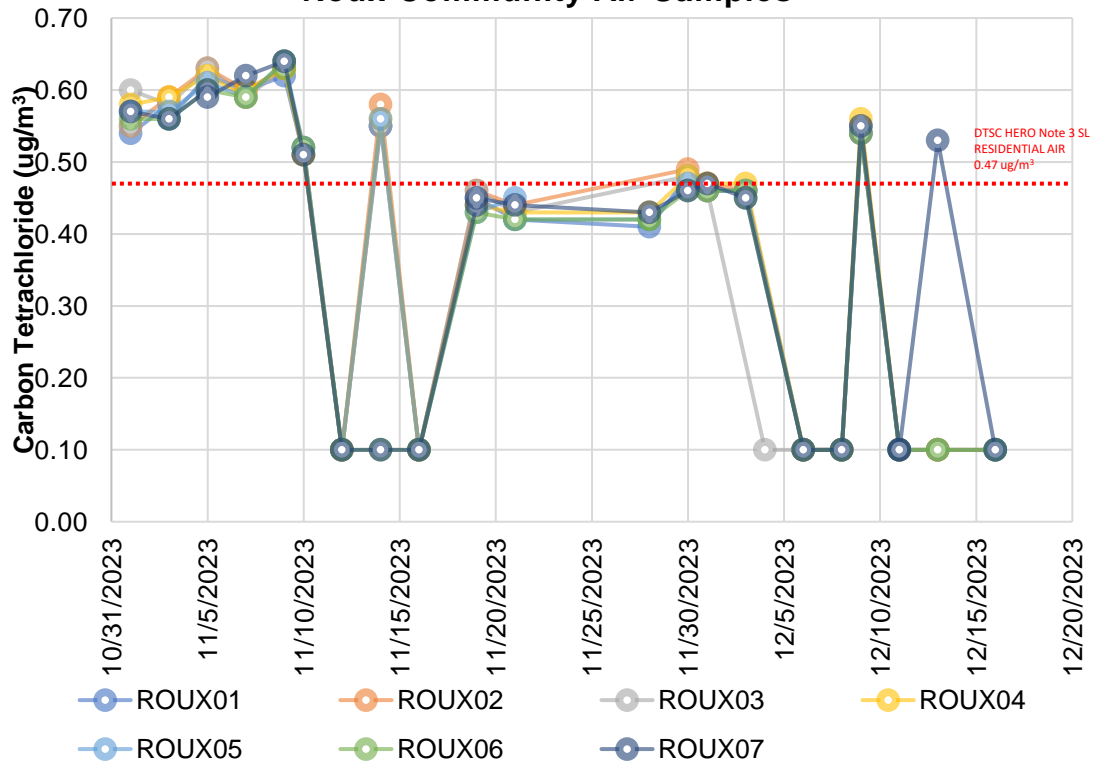
- Benzene and hydrogen sulfide (H₂S) are both potentially from landfill gas emissions.
 - Roux benzene data
 - Contractor for Chiquita continuous H₂S monitoring data
- Benzene and H₂S have a statistically significant correlation.
- Results suggest background benzene concentrations are:
 - Average: 0.5 µg/m³
 - Range: 0.3 µg/m³ - 0.7 µg/m³
- Data suggests that some days community air receives an incremental benzene contribution from landfill gas emissions.



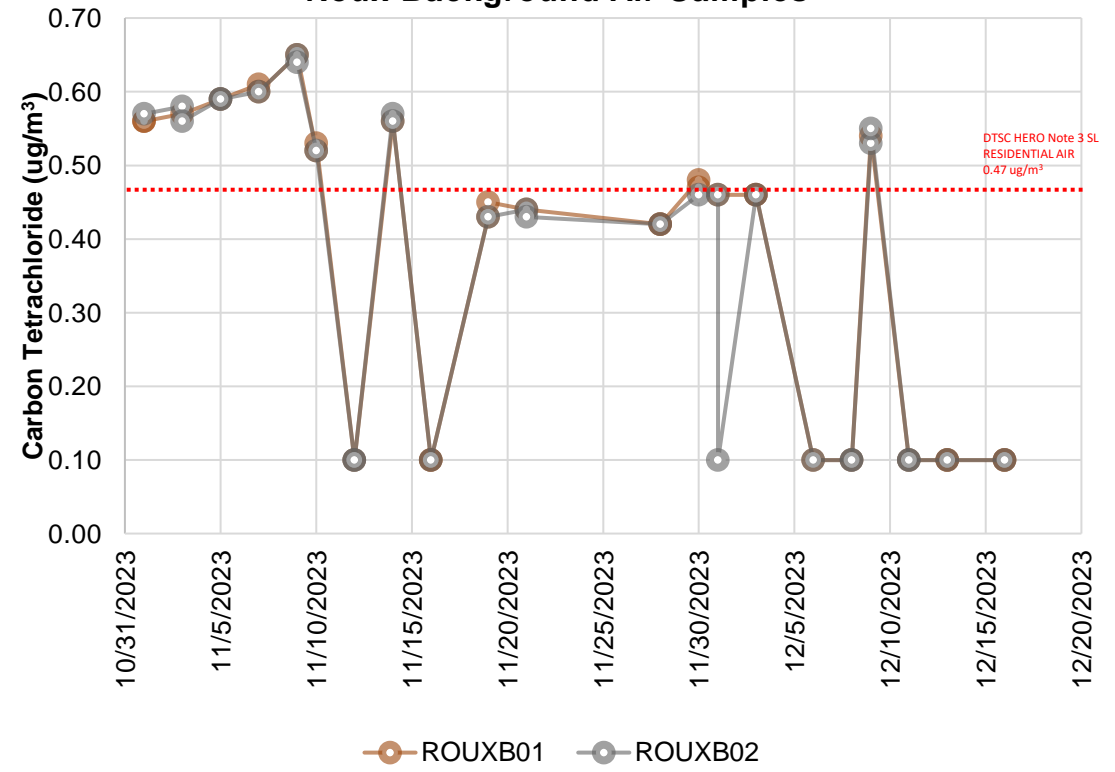
VOC Results – Carbon Tetrachloride

- Community air samples of carbon tetrachloride were comparable to air samples at background locations

Carbon Tetrachloride Concentration vs. Sample Date
Roux Community Air Samples



Carbon Tetrachloride Concentration vs. Sample Date
Roux Background Air Samples



Health Risk Findings

Assessment of:

Toxic Exposure

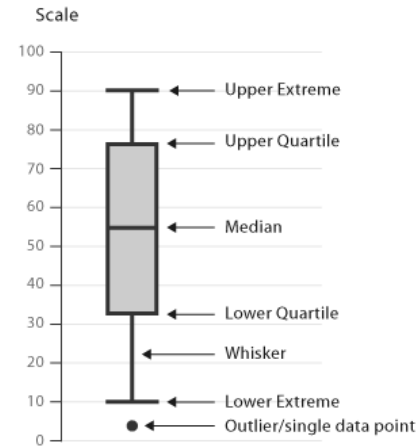
- Exposures that leads to increased chance of disease

Odor Exposure

- Exposure leads to unpleasant smells and potentially short-term health effects that are not permanent

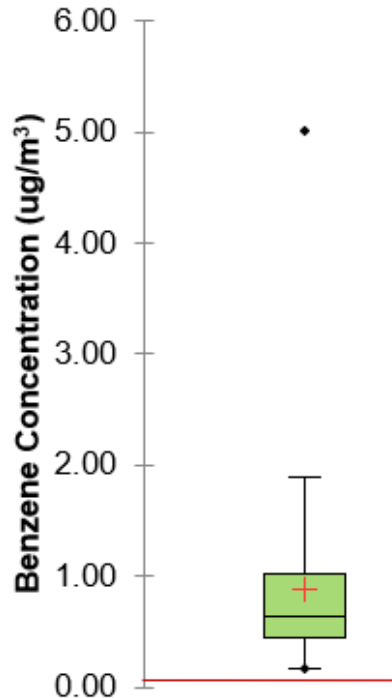
- Odor impacts from sulfur compounds can have short-term health effects but are not permanent and do not lead to long-term disease
- There is no elevated short-term or long-term non-cancer risk of disease/hazard from ambient air
- VOCs at the levels observed in ambient air do not have any associated odor - but do have an increased cancer-risk similar to virtually anywhere in LA County.
 - Small incremental VOCs contribution may be attributable to Chiquita

VOC Results - Benzene



- Community air samples of benzene were similar to air samples at other locations in the LA air basin

Regional Air Quality LA Basin



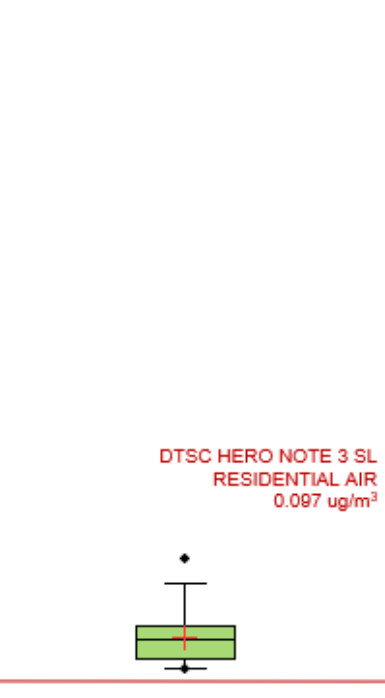
Regional Air Quality Burbank Area



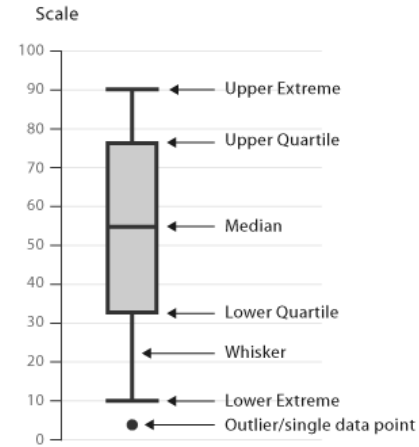
Roux Community Air



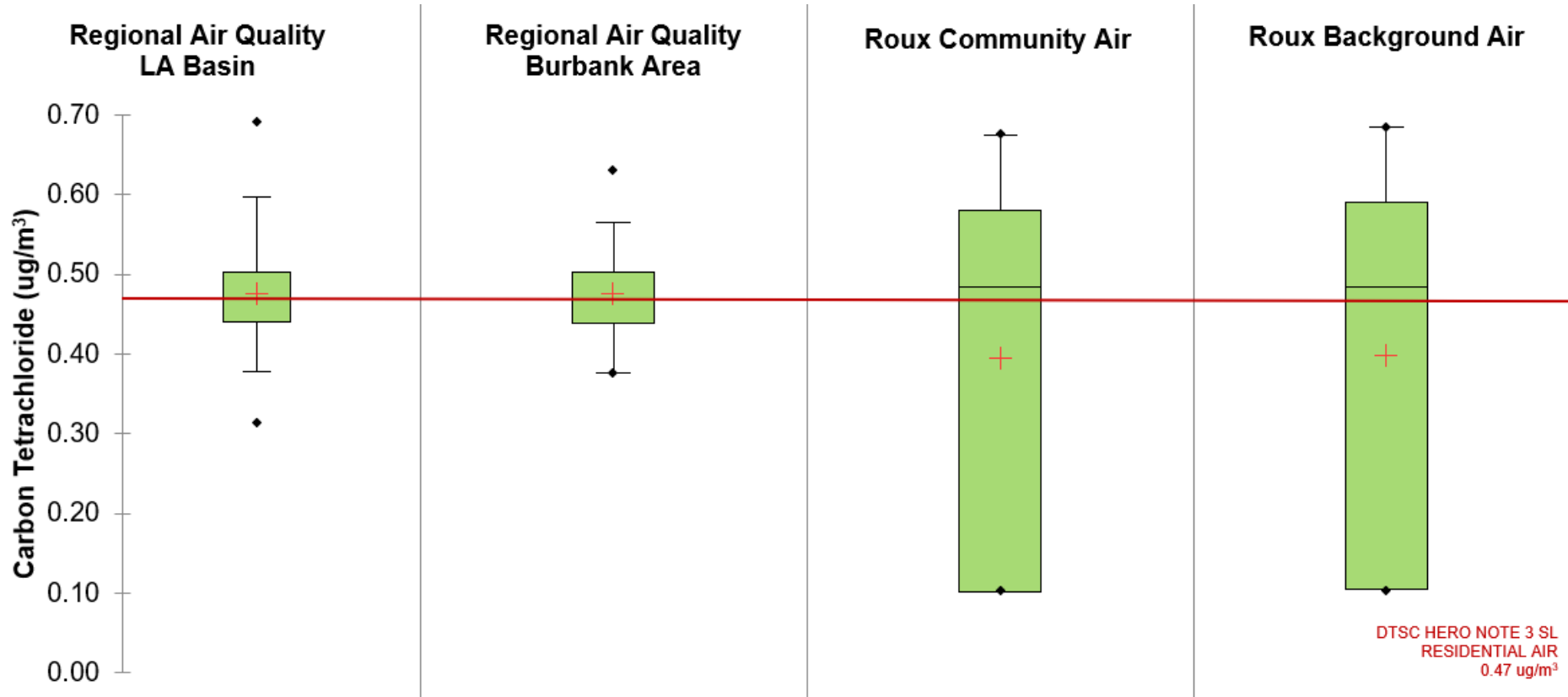
Roux Background Air



VOC Results – Carbon Tetrachloride



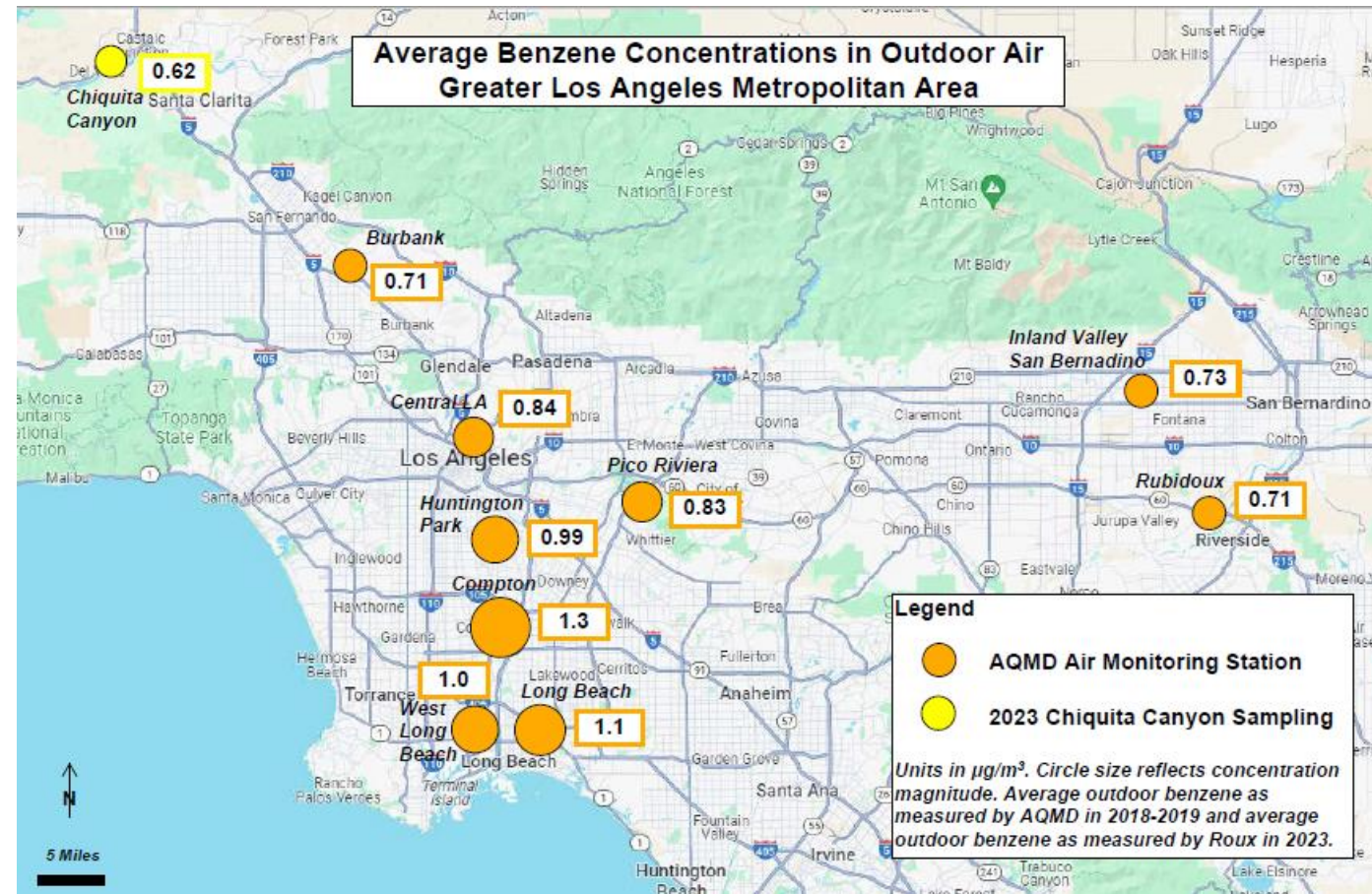
- Community air samples of carbon tetrachloride were similar to air samples at other locations in the LA air basin



Health Risk Findings

Throughout Los Angeles County, outdoor air concentrations are above indoor air screening levels

- Increased estimated cancer risk from lifetime exposure to VOCs
 - Chiquita community's risk is proportionally lower compared to most of Los Angeles County



Findings and Recommendations

- Our conclusion is that the community is exposed to significant odors.
 - Short-term health effects that are associated when odors are present are not permanent and do not lead to long-term disease.
- Chiquita appears to contribute a small incremental amount of benzene to the community air, but that the overall levels experienced by the surrounding community are not different than the rest of Los Angeles County experiences.

Recommendations:

1. Because continuous H₂S monitors appear to be the most useful measure of tracking emissions of landfill gases emissions from the Chiquita facility, the monitors should be regularly calibrated so the data can be used quantitatively with confidence.
2. Chiquita should increase its benzene sampling frequency and improve its benzene reporting limit of 1.6 µg/m³ (0.5 ppb) to better assess potential benzene emissions from landfill gas emissions.
3. Chiquita should include a network of wind direction/speed monitors throughout the sampling area to better understand and track local wind patterns.
4. Chiquita should evaluate the benefits of expanding the network in the community of continuous monitors and benzene sampling to help manage landfill gas emissions more effectively.

For Additional Information

Los Angeles County Department of Public Health

- Call (626) 430-9820, M-F 8:00 a.m. - 5:00 p.m.
- After-hours, leave a message at (626) 430-9821 and someone will get back to you.
- Email DPH-OEJCH@ph.lacounty.gov

Visit the Los Angeles County Chiquita

Canyon Landfill Website:

<http://tinyurl.com/ChiquitaCanyonLandfill>



Questions



