October 31, 2023

Subject: Health risk screening of the monthly continuous air monitoring and discrete air sampling data for August and September 2023

CTEH has been hired by Chiquita Canyon Landfill to evaluate air quality and public health risks in communities near the Landfill. Air quality evaluations include continuous air monitoring and discrete air sampling strategies conducted by a separate consultant, SCS Engineers. SCS Engineers has provided the September 2023 data to the Los Angeles County Department of Public Health and made the data publicly available at https://chiquitacanyon.com/wp-content/uploads/2023/10/Final-September-2023-CAMP-Air-and-Odor-Sampling-Report_10-20-23.pdf. The following summarizes our findings from real-time air monitoring and analytical air sampling conducted in September 2023 and provides an aggregate analysis of the August and September 2023 data.

Based on our review of the continuous air monitoring and discrete air sampling data from August through September 2023, no adverse health effects are anticipated across the community. Average H_2S levels at MS-08 in Val Verde were slightly above the intermediate Minimal Risk Level (MRL)[1]. However, a margin of safety analysis indicates ambient air concentrations at MS-08 are more than twenty times below the Agency for Toxic Substances and Disease Registry (ATSDR) exposure level at which no harmful effects are anticipated in humans.

Continuous air monitoring readings and discrete air sampling results were compared against the health-protective National Ambient Air Quality Standards (NAAQS) and Residential Air Regional Screening Levels developed by the U.S. Environmental Protection Agency, Minimal Risk Levels (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), Reference Exposure Levels developed by the California Office of Environmental Health Hazard Assessment, and other short- and intermediate-duration health-based air quality standards or guidance values, where available. Evaluations of long-term exposures (greater than one year) are ongoing.

Analytical Air Sampling: 24-hour and grab air samples were collected on a weekly basis at 10 locations throughout the community (Figure 1), resulting in a total of 86 discrete air samples collected between August and September 2023. Air samples were collected and analyzed by an accredited laboratory for 90 individual analytes, including 21 total reduced sulfur (TRS) compounds, and 69 volatile organic compounds (VOCs). Out of more than 6,500 air sampling results, none were detected above short- or intermediate-term health protective screening levels. Evaluations of long-term exposures (greater than one year) are ongoing.

Continuous Air Monitoring: The continuous air monitoring readings are compiled from 7 fixed stations throughout the community, labeled as MS-06 to MS-12 (Figure 1). Each fixed air monitoring station is set to continuously evaluate hydrogen sulfide (H_2S) and particulate matter ($PM_{2.5}$ and PM_{10}) over 24-hour periods to assess real-time detections. Real-time monitoring at the 7 fixed stations produced 5,008 hourly readings for each of the following constitutents:H_2S, $PM_{2.5}$, and PM_{10}, for a total of 15,024 readings. Between the months of August and September 2023, a

[1] The intermediate Minimal Risk Level (MRL) is a health protective screening level protective of the general population (including sensitive individuals) of continuous exposures over 365 days, intended to serve as a screening tool to help public health professionals decide where further review may be needed.

total of 30,637 real-time readings were collected for H_2S and particulate matter. SCS began collecting real-time air monitoring data for benzene, toluene, ethylbenzene, and xylene (BTEX) in September 2023. Data analysis for BTEX is in progress and will be reported in subsequent monthly summaries.

- No 24-hour average measurement for PM_{10}, or $PM_{2.5}$ exceeded the NAAQS health-based standards.

H_2S Evaluation Against ATSDR Intermediate MRL: CTEH further evaluated the H_2S data against the ATSDR intermediate MRL of 0.02 ppm. For August and September 2023, the average H_2S readings were below the ATSDR MRL at all locations except MS-08, which had an average reading of 0.0205 ppm. A margin of safety analysis indicates ambient air concentrations are significantly (more than 20 times) below the exposure level at which no harmful health effects are anticipated in humans[2]. While these levels of H_2S do not represent a human health risk for the community near MS-08, additional monitoring or sampling may be warranted to better characterize air quality.

H_2S Screening Against CAAQS: CTEH conducted an evaluation of the H_2S data against the California Ambient Air Quality Standard (CAAQS) of 0.03 parts per million over a 1-hour average, which is a standard based on the concentration at which a human may be able to smell an odor, not a level at which adverse health effects would be anticipated. To evaluate data collected throughout the months of August and September 2023, H_2S data were reviewed by location to assess the potential variability in odor impacts across nearby communities, as summarized in Table 1. Please note that while there were exceedances of the CAAQS at various locations, the ATSDR Intermediate MRL was only exceeded at MS-08. This is because the CAAQS is based on a 1-hour average, while the ATSDR Intermediate MRL averages data over a longer period of time, up to one year.

Table 1. Percentage of H_2S CAAQS Exceedances by Location

Location	Percentage of Readings that Exceeded the CAAQS (0.03 ppm over a 1-hour average)	
	August 2023	September 2023
MS-06 (US Postal Service – Castaic)	8%	4%
MS-07 (Fire Department – Del Valle)	0%	0%
MS-08 (Val Verde NW)	20%	12%
MS-09 (Castaic)	0%	0%
MS-10 (Hasley Canyon Park)	0%	0%
MS-11 (West Ranch High School)	3%	0%
MS-12 (Val Verde SE)	10%	3%
Exceedances by Month (Average)	6%	3%

[2] Human Equivalent Concentration at which No Observable Adverse Effects are anticipated ($NOAEL_{HEC}$).

Given the observed exceedances of the CAAQS across four of the seven fixed air monitoring locations across the community, it is likely that odors were perceived near the vicinity of the Chiquita Canyon Landfill, particularly across the Val Verde community.

Cordially,

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Enclosure: Appendix A. SCS Community Air Sampling Locations in Proximity to Chiquita Canyon Landfill

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