

**REVIEW OF MINNESOTA METHANE LLC
AB2588 HEALTH RISK ASSESSMENT (HRA)**

March 22, 2022

Emissions Inventory Facility ID: 96387

Toxics Emissions Inventory Year: 2018

Review Conducted by: Stephen Amberg, SDAPCD

A Health Risk Assessment (HRA) was performed for Minnesota Methane San Diego LLC (Minnesota Methane), 5244 Convoy St., San Diego, CA 92111, by Golder Associates USA Inc. for emissions in calendar year 2018 and submitted to the District for review on July 2, 2021 (Submittal HRA). The District provided District's comments on the HRA along with comments provided from the Office of Environmental Health Hazard Assessment (OEHHA) to Minnesota Methane on December 9, 2021. Minnesota Methane submitted a revised HRA (Revised HRA) to the District on February 7, 2022. Subsequently, the District completed a modified health risk assessment (District Modified HRA) on March 22, 2022.

The following are the District's comments on the Revised HRA and, in addition, the results of the District Modified HRA.

Approved HRA Results

Maximum Individual Excess Cancer Risk (PMI)	1278.2 in a million
Maximum Residential Excess Cancer Risk	4.81 in a million
Maximum Occupational Excess Cancer Risk	9.56 in a million
Maximum Chronic Non-Cancer Health Hazard Index (PMI)	25.17
Maximum Residential Chronic Non-Cancer Health Hazard Index	0.09
Maximum Occupational Chronic Non-Cancer Health Hazard Index	1.82
Maximum 8-Hour Occupational Non-Cancer Health Hazard Index	1.06
Maximum Acute Health Hazard Index (PMI)	20.86
Maximum Residential Acute Health Hazard Index	0.85
Maximum Occupational Acute Health Hazard Index	20.86
Population Excess Cancer Burden	0.095
Sub-Chronic Lead Exposure Risk	<0.12 ug/m ³

The 30-day lead concentration at the Maximum Offsite Concentration (MOC), using EPA's AERMOD model, is estimated to be 0.00027 µg/m³, which is below the High Exposure Scenario approval level of 0.12 µg/m³ in the ARB Risk Management Guidelines for Lead, 2001. Lead emissions were estimated based on annual emissions being emitted in a 30-day period.

Summary of Health Impacts by Pollutant and Source

The worker non-cancer chronic HHI is due to the landfill gas-fired engines (100%). The main pollutants contributing to this risk are Formaldehyde (57%), Arsenic (31%), and HCL (11%).

The worker 8-hour non-cancer chronic HHI is due to the landfill gas-fired engines (100%). The main pollutants contributing to this risk are Formaldehyde (98%).

The Acute HHI at the MEIW is due to the landfill gas-fired engines (100%). The main pollutants contributing to this risk are Formaldehyde (99%).

The District Modified HRA concludes that the worker non-cancer chronic HHI, the worker 8-hour non-cancer chronic HHI, and the acute health hazard index do exceed the public notification levels specified in District Rule 1210.

Summary of Changes in District Modified HRA

Air Dispersion Modeling

1. No changes

Risk Assessment Calculations

1. An annual worker non-cancer chronic HHI was added to the HRA as is it required in addition to the worker 8-hour non-cancer chronic HHI.
2. The MEIW for Acute HHI was changed to the location at a worksite with the highest HHI

Locations of Receptors at Maximum Exposure Points

Receptor - Cancer Risk	Risk (1 in 1 million)	x (m)	y (m)
Point of Maximum Impact Cancer Risk (PMI)	1278.20	484812.99	3634098.38
Maximum Exposed Individual Resident Cancer Risk (MEIR)	4.81	484196.68	3633496.25
Maximum Exposed Individual Worker Cancer Risk (MEIW)	9.56	484876.09	3633975.23

Receptor - Non-Cancer Chronic Health Hazard Index	Health Hazard Index	x (m)	y (m)
Maximum Non-Cancer Chronic Health Hazard Index (PMI)	25.17	484812.99	3634098.38
Maximum Residential Non-Cancer Chronic Health Hazard Index (MEIR)	0.09	484156.68	3633496.25
Maximum Worker Non-Cancer Chronic Health Hazard Index (MEIW)	1.82	484737.24	3634081.23
Maximum Worker 8-Hour Non-Cancer Chronic Health Hazard Index (MEIW)	1.06	484737.24	3634081.23

Receptor - Acute Health Hazard Index	Health Hazard Index	x (m)	y (m)
Maximum Acute Health Hazard Index (PMI)	20.86	484795.53	3634132.66
Maximum Residential Acute Health Hazard Index (MEIR)	0.85	484226.68	3633386.25
Maximum Worker Acute Health Hazard Index (MEIW)	20.86	484795.53	3634132.66

The geographic coordinate system for the locations is the North American Datum of 1983.

Contours for Selected Risk and Health Hazard Index Calculations

Isopleths at notification thresholds for selected risk calculations are on the following pages.

1. Worker non-cancer chronic health hazard index
2. Non-cancer acute health hazard index