

REVIEW OF HANSON AGGREGATES PACIFIC SOUTHWEST AB2588 HEALTH RISK ASSESSMENT (HRA)

August 1, 2022

Emissions Inventory Facility ID: 9165

Toxics Emissions Inventory Year: 2019

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A Health Risk Assessment (HRA) was performed for Hanson Aggregates Pacific Southwest (Hanson), 8514 Mast Blvd, Santee, CA 92071, by Taylor Environmental Services, Inc. for emissions in calendar year 2019 and submitted to the District for review on August 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 Hanson on April 14, 2022. Hanson submitted a revised HRA (Revised HRA) to the District on June 13, 2022. Subsequently, the District completed a modified health risk assessment (District Modified HRA) on August 1, 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)	295.0 in a million
Maximum Residential Excess Cancer Risk	14.7 in a million
Maximum Occupational Excess Cancer Risk	19.7 in a million
Maximum Chronic Non-Cancer Health Hazard Index (PMI)	18.2
Maximum Residential Chronic Non-Cancer Health Hazard Index	0.9
Maximum Occupational Chronic Non-Cancer Health Hazard Index	8.0
Maximum 8-Hour Occupational Non-Cancer Health Hazard Index	3.0
Maximum Acute Health Hazard Index (PMI)	0.8
Maximum Residential Acute Health Hazard Index	0.2
Maximum Occupational Acute Health Hazard Index	0.7
Population Excess Cancer Burden	0.2

Summary of Health Impacts by Pollutant and Source

Cancer risk at the MEIR is mainly due to the unpaved haul roads (92%) and aggregate screening (6%). The main pollutant contributing to this risk is Arsenic (96%).

Cancer risk at the MEIW is mainly due to the unpaved haul roads (99%). The main pollutant contributing to this risk is Arsenic (91%), Nickel (4%), and Cadmium (3%).

The non-cancer chronic HHI at the MEIW is mainly due to the unpaved haul roads (99%). The main pollutant contributing to this risk is Arsenic (81%) and Silica (16%).

The 8hr non-cancer chronic HHI at the MEIW is mainly due to the unpaved haul roads (99%). The main pollutant contributing to this risk is Manganese (67%) and Arsenic (33%).

The District Revised HRA concludes that the residential cancer risk, the worker cancer risk, and the worker non-cancer chronic 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. The haul roads were modeled as a line volume source rather than a line source.
2. Period plotfiles were generated rather than annual plotfiles.
3. Volume sources were moved slightly to align with the 2019 satellite imagery.

Risk Assessment Calculations

1. Deposition rate for all sources was run at 0.02 m/s
2. A cancer burden evaluation was added.

Locations of Receptors at Maximum Exposure Points

Receptor - Cancer Risk	Risk (in 1 million)	x (m)	y (m)
Point of Maximum Impact Cancer Risk (PMI)	295.0	497264.60	3635700.80
Maximum Exposed Individual Resident Cancer Risk (MEIR)	14.7	498642.52	3636006.24
Maximum Exposed Individual Worker Cancer Risk (MEIW)	19.7	497239.60	3635625.80

Receptor - Non-Cancer Chronic Health Hazard Index	Health Hazard Index	x (m)	y (m)
Maximum Non-Cancer Chronic Health Hazard Index (PMI)	18.2	497264.60	3635700.80
Maximum Residential Non-Cancer Chronic Health Hazard Index (MEIR)	0.9	498642.52	3636006.24
Maximum Worker Non-Cancer Chronic Health Hazard Index (MEIW)	8.3	497239.60	3635625.80
Maximum Worker 8-Hour Non-Cancer Chronic Health Hazard Index (MEIW)	3.0	497239.60	3635625.80

Receptor - Acute Health Hazard Index	Health Hazard Index	x (m)	y (m)
Maximum Acute Health Hazard Index (PMI)	0.8	497839.60	3636125.80
Maximum Residential Acute Health Hazard Index (MEIR)	0.2	497834.90	3634206.50
Maximum Worker Acute Health Hazard Index (MEIW)	0.7	497214.60	3635450.80

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. Residential Cancer Risk
2. Worker Cancer Risk
3. Worker Chronic Non-Cancer HHI