

**ROBERTSON'S READY MIX AB2588
REVIEW OF REVISED SUBMITTAL HRA AND
DISTRICT MODIFIED HEALTH RISK ASSESSMENT (HRA)**

April 27, 2022

Emissions Inventory Facility ID: 556

Toxics Emissions Inventory Year: 2017

Review Conducted by: Andrew Bernabe, SDAPCD.

A Health Risk Assessment (HRA) was performed for the Robertson's Ready Mix facility, 2266 Willow Glen Drive, El Cajon, California by SESPE Consulting dated April 12, 2021 and subsequently revised and resubmitted on December 13, 2021, and entitled AB2588 Health Risk Assessment Hot Spots for Robertson's Ready Mix (Revised Submittal HRA).

The following constitute a review of the results of a District's Final Modified HRA. The District revised the modelling along with the HRA addressing the comments in this review.

SUMMARY OF FINAL DISTRICT MODIFIED HEALTH RISK ASSESSMENT RESULTS

Potential Impacts

Cancer at Point of Maximum Impact (PMI)	37.41 in one million
Cancer at Maximum Exposed Individual Resident (MEIR)	8.59 in one million
Cancer at Maximum Exposed Individual Worker (MEIW)	2.03 in one million
Chronic Noncancer Health Hazard Index (HHI) at PMI	2.86
Chronic Noncancer Health Hazard Index at MEIR	0.72
Chronic Noncancer Health Hazard Index at MEIW	1.18
8-Hour Noncancer Health Hazard Index at MEIW	0.31
Acute Noncancer Health Hazard Index at PMI	1.75
Acute Noncancer Health Hazard Index at MEIR	1.74
Acute Noncancer Health Hazard Index at MEIW	1.50
Sub-Chronic Lead Exposure Risk at Maximum Offsite Concentration (MOC)	<0.12 µg/m ³
Population Excess Cancer Burden	0.004

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Locations of Receptors at Maximum Exposure Points

Cancer Risk	Risk (1 in 1 million)	x (m)	y (m)
Point of Maximum Impact	37.41	510075.28	3625305.23
Maximum Exposed Individual Resident	8.59	510155.00	3624870.00
Maximum Exposed Individual Worker	2.03	510030.09	3625344.88

Non-Cancer Chronic Health Hazard Index (HHI)	HHI	x (m)	y (m)
Point of Maximum Impact	2.86	510075.28	3625305.23
Maximum Exposed Individual Resident	0.72	510155.00	3624870.00
Maximum Exposed Individual Worker	1.18	510005.00	3625344.88
Maximum Exposed Individual Worker (8-Hour)	0.31	510030.09	3625344.88

Acute Health Hazard Index	HHI	x (m)	y (m)
Point of Maximum Impact	1.75	509760.17	3625321.40
Maximum Exposed Individual Resident	1.74	509755.00	3625344.00
Maximum Exposed Individual Worker	1.50	510047.45	3625304.92

The geographic coordinate system for the locations is the Universal Transverse Mercator, Zone 11.

Summary of Health Impacts by Pollutant

The chronic Health Hazard Index (HHI) at the MEIW is due to arsenic (48.9%), silica (48%), and nickel (2.8%) on the respiratory system.

The acute HHI is due to the impact of nickel (100%) on the immune system.

Summary of Conclusions

The chronic and acute risks at worker receptors and the acute risk at residential receptors exceed the public notification level specified in District Rule 1210. In addition, the worker chronic and acute health hazard and the residential acute health hazard indices exceed 1.0 and require risk reduction measures as specified in District Rule 1210. The maximum exposed individual residential cancer risk and the maximum exposed individual worker cancer risk were calculated to be 8.59 and 2.03, respectively, which are below notification and risk reduction thresholds. Population excess cancer burden was calculated to be 0.004, which is below notification and risk reduction thresholds. The sub-chronic lead exposure risk is less than the High Exposure Scenario approval level of 0.12 ug/m³ in the Air Resources Board (ARB) Risk Management Guidelines for Lead, 2001.

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Summary of Impacts by Source

Chronic Risk at MEIW

SRC	REC	GRP	NETID	X	Y	RESP	
AREA2	1508	ALL		509755	3625345	1.41E+00	68%
PRO53	1508	ALL		509755	3625345	6.59E-01	32%
VOL1	1508	ALL		509755	3625345	1.69E-03	0%
VOL4	1508	ALL		509755	3625345	1.58E-03	0%
VOL3	1508	ALL		509755	3625345	1.42E-03	0%
VOL2	1508	ALL		509755	3625345	7.70E-04	0%
VOL5	1508	ALL		509755	3625345	7.02E-04	0%
PRO52	1508	ALL		509755	3625345	5.53E-04	0%
HL68	1508	ALL		509755	3625345	5.48E-04	0%
PAREA1	1508	ALL		509755	3625345	5.24E-04	0%
PRO51	1508	ALL		509755	3625345	4.04E-04	0%
VOL12	1508	ALL		509755	3625345	4.03E-04	0%
PARE1V	1508	ALL		509755	3625345	2.08E-04	0%
VOL10	1508	ALL		509755	3625345	1.72E-04	0%
VOL11	1508	ALL		509755	3625345	1.56E-04	0%
VOL9	1508	ALL		509755	3625345	4.06E-05	0%
VOL8	1508	ALL		509755	3625345	3.81E-05	0%
PAREA2	1508	ALL		509755	3625345	3.54E-05	0%
VOL13	1508	ALL		509755	3625345	2.65E-05	0%
VOL7	1508	ALL		509755	3625345	2.57E-05	0%
VOL6	1508	ALL		509755	3625345	1.37E-05	0%
PARE2V	1508	ALL		509755	3625345	1.26E-05	0%
						2.08E+00	

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Acute Risk at the MEIW:

Acute Risk by Receptor and Source								
SRC	REC	GRP	NETID	X	Y	SCENARIO	MAXHI	
AREA2	3385	ALL		510047.6	3625305	NonCancel	1.13E+00	75.2%
HL68	3385	ALL		510047.6	3625305	NonCancel	6.58E-03	0.4%
PARE1V	3385	ALL		510047.6	3625305	NonCancel	3.45E-03	0.2%
PARE2V	3385	ALL		510047.6	3625305	NonCancel	1.63E-03	0.1%
PAREA1	3385	ALL		510047.6	3625305	NonCancel	6.90E-03	0.5%
PAREA2	3385	ALL		510047.6	3625305	NonCancel	1.53E-03	0.1%
PRO51	3385	ALL		510047.6	3625305	NonCancel	8.88E-04	0.1%
PRO52	3385	ALL		510047.6	3625305	NonCancel	1.24E-03	0.1%
PRO53	3385	ALL		510047.6	3625305	NonCancel	1.28E-02	0.9%
VOL1	3385	ALL		510047.6	3625305	NonCancel	3.07E-02	2.0%
VOL10	3385	ALL		510047.6	3625305	NonCancel	5.16E-02	3.4%
VOL11	3385	ALL		510047.6	3625305	NonCancel	3.24E-02	2.2%
VOL12	3385	ALL		510047.6	3625305	NonCancel	1.63E-02	1.1%
VOL13	3385	ALL		510047.6	3625305	NonCancel	7.48E-03	0.5%
VOL2	3385	ALL		510047.6	3625305	NonCancel	3.45E-02	2.3%
VOL3	3385	ALL		510047.6	3625305	NonCancel	5.30E-02	3.5%
VOL4	3385	ALL		510047.6	3625305	NonCancel	5.72E-02	3.8%
VOL5	3385	ALL		510047.6	3625305	NonCancel	1.93E-02	1.3%
VOL6	3385	ALL		510047.6	3625305	NonCancel	4.44E-03	0.3%
VOL7	3385	ALL		510047.6	3625305	NonCancel	7.18E-03	0.5%
VOL8	3385	ALL		510047.6	3625305	NonCancel	1.21E-02	0.8%
VOL9	3385	ALL		510047.6	3625305	NonCancel	1.09E-02	0.7%
							1.50E+00	

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Chronic and Acute HHI Isopleths

Worker Chronic HHI > 1.0
(Cyan Contour)



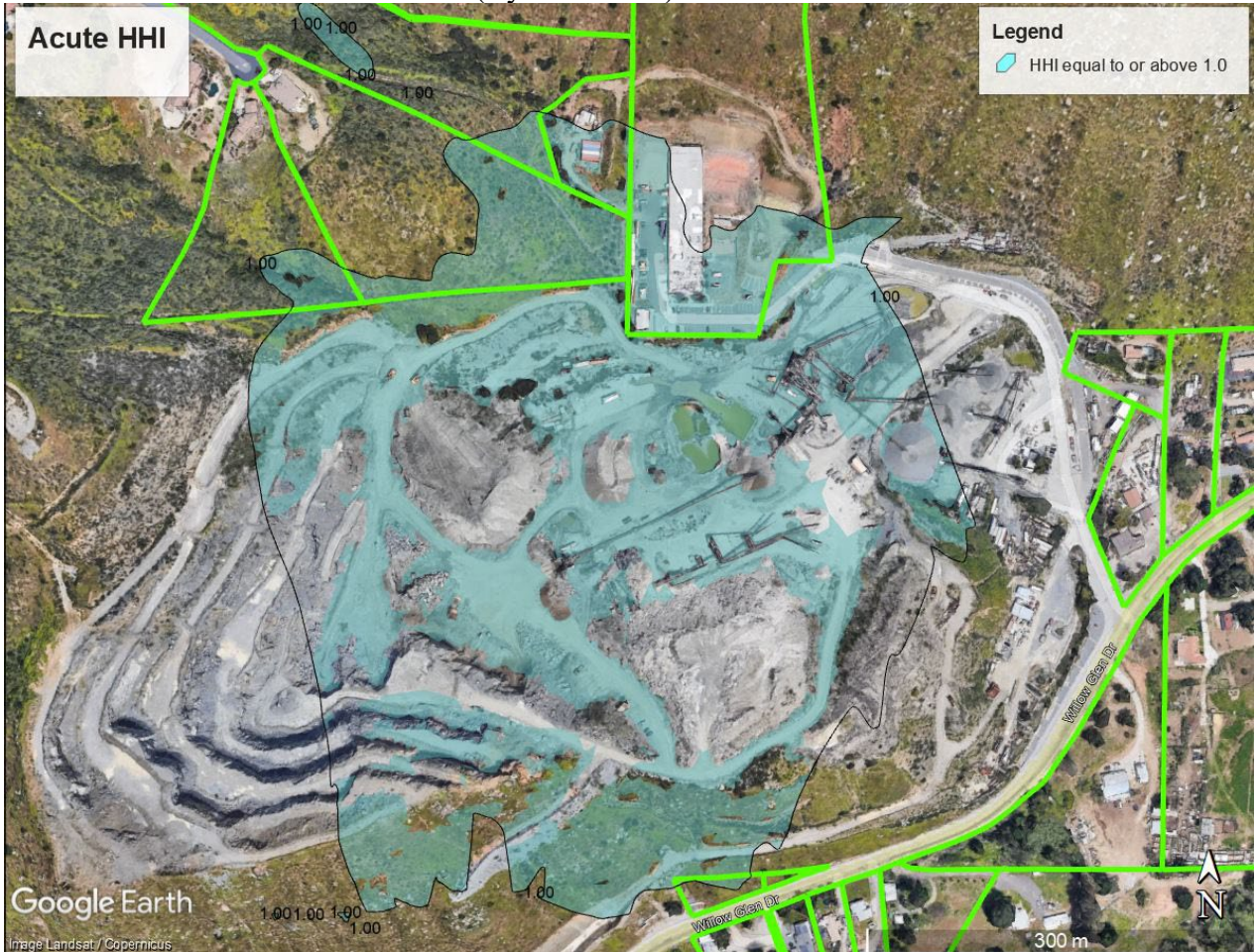
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Chronic HHI at the MEIW



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Acute HHI > 1.0
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Acute HHI at the MEIR



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District Comments on Revised Submittal HRA

Air Dispersion Modeling

The following were used in the Final District Modified HRA to reflect the latest revisions to model software and availability of meteorological data.

Model: AERMOD View (Version 19191)

Meteorological Processor: AERMET (Version 19191)

Meteorological Data: El Cajon meteorological sigma theta adjusted data for years 2010–2012.

Dispersion Coefficient: Rural

Air Dispersion Source Modeling

Stockpiles: Each stockpile was divided to account for active and inactive stockpile emissions. For the inactive stockpiles, no hour of day scalar was applied, and the emission rate for each was .333 g/s/m² to account for the contribution of only the windblown stockpile emissions. For the active stockpiles, hour of day scalars were applied to reflect the 16-hour daily operation of the facility. The applied emission rate to these active stockpile sources was 0.666 g/s/m² to reflect the contribution of only the active stockpile emissions.

Haul Roads: HL68 was modeled as approximately 0.95 miles in length for both period and hourly averages.

HARP Risk Calculation

Inhalation Rates: Residential cancer risks were calculated using Office of Environmental Health Hazard Assessment (OEHHA) Derived Method in the Revised Submittal HRA. The District uses the ARB Risk Management Policy (RMP) daily breathing rates (DBR) for inhalation-based residential cancer risk. For the 30-year exposure duration, uses the 95th percentile DBR for age groups less than two years old (3rd trimester through age 2) and the 80th DBR for age groups greater than two years old. The RMP method is referenced in the ARB/CAPCOA Risk Management Guidance Document, July, 2015.

Deposition Rates: Because each piece of equipment uses some form of water controls, the Final District Modified HRA used 0.02 meters per second.

Fraction of Time at Home: There is no school within the one in one million cancer risk isopleth, so the 3rd trimester to age 16 frequency of time at home (FAH) was appropriately applied in the Revised Submittal HRA.

Worker Chronic Risk: The P2K Range north of the site (Receptor 1517) is the highest impacted worker risk receptor. A Worker Adjustment Factor (WAF) of 4.2 was used to account for the overlap of the facility and offsite worker's schedules. The District calculated the MEIW to be 1.18.

2017 Toxics Emissions Inventory (TEI)

The District used the revised and approved 2017 TEI.

Haul Roads: 95% control was applied to the haul road emissions due to use of watering.

Stockpiles: 80% control was applied to the stockpile emissions to account for use of watering.

Pit Activity: 50% control was applied to the pit activity to account for water spray.