

MEMORANDUM

To: Costco Wholesale Corporation

From: Eric C. Lu and Haley Ozcan
Ramboll US Consulting, Inc.

Subject: **Human Health Risk Assessment for the Operation of the Proposed Gasoline Dispensing Facility at Costco West Roseville**

INTRODUCTION

Costco is proposing a gasoline dispensing facility ("GDF" or "fuel station") with 20 dispensers (i.e., 40 fueling positions) at the Northwest corner of Baseline Rd & Fiddymont Rd, Roseville. This memorandum provides a human health risk assessment (HRA) of the stationary source activities associated with the operation of the proposed Costco GDF (the "Project"). Specifically, emissions of toxic air contaminants (TACs) associated with gasoline transfer and dispensing were estimated to evaluate if the Project would cause a significant health risk impact. A brief description of the methodology and results of the analyses are provided in the following sub-sections. We conclude that the activities associated with the proposed GDF would not cause a significant health risk impact, as shown in the results presented below.

METHODOLOGY

TAC Emission Inventory - Operational Gasoline Transfer and Dispensing

Ramboll evaluated the lifetime cancer risk, HIC, and HIA analyses resulting from Project operation, which includes TAC emissions (e.g., benzene) associated with gasoline transfer and dispensing. Emissions from gasoline transfer and dispensing mainly occur during loading, breathing, refueling, spillage, and from hose permeation. Total organic gas emission factors (pounds/thousand gallons) were obtained for enhanced vapor recovery (EVR) from Table 7 of CAPCOA and CARB's Gasoline Service Station Industrywide Risk Assessment Technical Guidance.¹ The following assumptions were used to calculate emissions from gasoline transfer and dispensing:

- Maximum hourly throughput of 6,470 gallons per hour based on annual operating hours and the maximum annual throughput.

March 15, 2023

Ramboll
5 Park Plaza
Suite 500
Irvine, CA 92614
USA

T +1 949 261 5151
F +1 949 261 6202

www.ramboll.com

¹ CARB and CAPCOA. 2022. Gasoline Service Station Industrywide Risk Assessment Technical Guidance. February. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

- Annual throughput of 36 million gallons per year.

Details of the gasoline transfer and dispensing emission calculations are presented in **Appendix A**.

Air Dispersion Modeling

Model Selection

The AMS/EPA Regulatory Model Improvement Committee (AERMIC) Model (AERMOD) (Version 22112) was used to estimate the ambient air TAC concentrations.² AERMOD has been approved for use in various regulatory applications by USEPA, CARB, and Placer County Air Pollution Control District (PCAPCD)³. AERMOD uses mathematical equations to simulate the movement and dispersion of air contaminants in the atmosphere. For each receptor location, the model generates air concentrations (or air dispersion factors as unit emissions were modeled) that result from emissions from multiple sources.

The regulatory default option, rural dispersion coefficient, and 1-hour and PERIOD averaging times were selected based the Office of Environmental Health Hazard Assessment's (OEHHA's) guidance.⁴ Dispersion model averaging times are specified based on the averaging times of ambient air quality standards and the air quality significance thresholds established by PCAPCD⁵. For the HRA, the 1-hour averaging time was used to evaluate acute (short-term) effects and the PERIOD averaging time (average concentration for the 5-year meteorological data set) was used to evaluate chronic (long-term) health effects. Emissions from refueling, spillage, and hose permeation activity were assumed to occur during operating hours, between 5:30 AM and 9:30 PM on Monday to Friday, between the hours of 6:00 AM and 8:00 PM on Saturday, between the hours of 7:00 AM and 8:00 PM on Sunday, and 365 days per year based on the anticipated operating schedules for a Costco fueling station. Emissions from loading and breathing were assumed to occur 24 hours per day, 7 days per week, and 365 days per year. Emissions were modeled using the χ/Q ("chi over cue") method such that each source group had unit emission rates (i.e., a total of 1 gram per second [g/s]) and the model estimated dispersion factors (with a unit of micrograms per cubic meter per grams per second [$\mu\text{g}/\text{m}^3$]/[g/s]).

Source Characterization

The GDF emission sources were modeled as point sources (loading and breathing emissions) and volume sources (refueling, hose permeation, and spillage). Source parameters for the GDF emission sources were developed based on CAPCOA and CARB's Gasoline Service Station Industrywide Risk Assessment Technical Guidance and the dimensions of the proposed GDF. The emission rate for each

² USEPA. 2022. User's Guide for the AMS/EPA Regulatory Model (AERMOD). April. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf. Accessed: February 2023.

³ PCAPCD. 2017. Appendix G. Preparing a Health Risk Assessment for Land Use Projects. Available at: <https://www.placerair.org/DocumentCenter/View/2044/Appendix-G-Preparing-a-Health-Risk-Assessment-for-Land-Use-Projects-PDF>. Accessed: February 2023.

⁴ California Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxic Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

⁵ PCAPCD. 2017. Appendix G. Preparing a Health Risk Assessment for Land Use Projects. Available at: <https://www.placerair.org/DocumentCenter/View/2044/Appendix-G-Preparing-a-Health-Risk-Assessment-for-Land-Use-Projects-PDF>. Accessed: February 2023.

source was modeled as 1 gram per second. Modeled emission source locations are shown in **Figure 1**. Source input parameters are included in **Appendix A**.

Meteorology

CARB provides AERMOD model-ready meteorological data sets for use in air quality and risk impact analyses in the PCAPCD. Sacramento International Airport (SMF) meteorological data set was selected to analyze the Project's impacts, based on that station's geographic proximity to the Project and best representation of the facility's meteorological conditions (such as prevailing winds), terrain, and surrounding land use. The meteorological data set is for January 1, 2014 to December 25, 2018.⁶ The meteorological station location is presented in **Figure 2**.

Receptors

The following receptors are included in the AERMOD modeling per CARB guidance:⁷

- Fine Grid 20 m x 20 m up to 200 m from modeled Project sources; and
- Coarse Grid 50 m x 50 m from 200 m to 0.25 miles from the Project; and
- Discrete receptors at the boundary of the nearest parcels; and
- Discrete sensitive receptors.

Non-residential sensitive receptor locations, including any schools, daycare facilities, hospitals, and adult/elderly care facilities, were identified within a 2000-meter radius of the modeled Project sources, based on publicly available databases.⁸ Google Earth Pro was also used to identify schools and day care centers in the Project vicinity.

The locations of all receptors are illustrated on **Figure 1**. Receptor heights were assumed to be at 1.2 meters based on CAPCOA and CARB's Gasoline Service Station Industrywide Risk Assessment Technical Guidance.⁹

⁶ Sacramento Metropolitan Air Quality Management District. AERMOD Meteorological Data Files. Available at: <https://www.airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools>. Accessed: February 2023.

⁷ CARB and CAPCOA. 2022. Gasoline Service Station Industrywide Risk Assessment Technical Guidance. February. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

⁸ California Department of Education, California School Directory. Available at: <http://www.cde.ca.gov/re/sd>. Accessed: February 2023.

California Community Care Licensing Division - licensed care facilities including adult residential facilities and daycares. Available at: <https://www.cclld.dss.ca.gov/carefacilitysearch/>. Accessed: February 2023.

⁹ CARB and CAPCOA. 2022. Gasoline Service Station Industrywide Risk Assessment Technical Guidance. February. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

Health Risk Assessment

Risk Characterization Methods

The HRA was conducted in accordance with OEHHA’s 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines.¹⁰ The 2015 OEHHA Guidelines include various updates that are protective of human health, particularly related to estimating potential risks in infants, children, and other sensitive receptors. Lifetime cancer risk, chronic hazard index (HIC), and acute hazard index (HIA) were calculated at each receptor. Details of this methodology are discussed below.

Exposure Assessment

To calculate health impacts for comparison to PCAPCD thresholds, this report assesses risk to residential, worker, and sensitive receptors. The exposure rate for the residential scenario is more conservative than those for other sensitive receptor types (i.e. school child, daycare child, and patients) as residents have the highest exposure frequency, exposure time, and exposure duration, thus for this analysis, sensitive receptors were evaluated using residential exposure assumptions.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for exposed populations were obtained using risk assessment guidelines from OEHHA.¹¹

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh} , can be calculated as follows:

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation (m ³ /kg-day)
DBR	=	Daily Breathing Rate (L/kg-day)
FAH	=	Frequency of time at Home (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
CF	=	Conversion Factor, 0.001 (m ³ /L)
AT	=	Averaging Time (days)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh} , by the chemical concentration in air, C_i . When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance.¹²

¹⁰ Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. February. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

¹¹ Ibid.

¹² Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Appendix D. February. Available at: <https://oehha.ca.gov/media/downloads/crn/2015gmappendices.pdf>. Accessed: February 2023.

Age Sensitivity Factors

As a conservative and health-protective measure, the estimated excess lifetime cancer risks for a resident will be adjusted using age sensitivity factors (ASFs) that account for an “anticipated special sensitivity to carcinogens” of infants and children as recommended in the OEHHA 2009 Technical Support Document and OEHHA 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines.^{13,14} Cancer risk estimates were weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 and older.

Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Risk Characterization

Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF_i \times ASF$$

Where:

Risk _{inh} =	Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)
C _i =	Annual average air concentration for chemical (µg/m ³)
CF =	Conversion factor (mg/µg)
IF _{inh} =	Intake factor for inhalation (m ³ /kg-day)

¹³ Cal/EPA, OEHHA. 2009. Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustment to Allow for Early Life Stage Exposures. May. Available online at: <https://oehha.ca.gov/air/crnrr/technical-support-document-cancer-potency-factors-2009>. Accessed: February 2023.

¹⁴ Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Appendix D: February. Available at: <https://oehha.ca.gov/media/downloads/crnrr/2015gmappendices.pdf>. Accessed: February 2023.

CPFi = Cancer potency factor for chemical
(mg chemical/kg body weight-day)⁻¹

ASF = Age sensitivity factor (unitless)

Estimation of Chronic Non-Cancer Hazard Indices

The potential for exposure to result in adverse chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the non-cancer chronic reference exposure level (cREL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding a HI:

$$HQ_i = C_i / cREL$$

$$HI = \sum HQ$$

Where:

HI = Hazard index

HQi = Chronic hazard quotient for chemical i

Ci = Annual average concentration of chemical i (µg/m³)

cRELi = Chronic noncancer reference exposure level for chemical i (µg/m³)

Risk Results

Using the health risk assessment options detailed in **Table 1**, based on OEHHA’s 2015 Guidance for HRAs¹⁵, the cancer risk, non-cancer chronic hazard index (HIC), and acute hazard index (HIA) for the maximally impacted residential, worker, and sensitive receptors were estimated.

Ramboll used CARB’s Hotspots Analysis and Reporting Program (HARP2) Air Dispersion and Modeling and Risk Tool¹⁶ (ADMRT) to calculate the health risks associated with emissions from Project-related sources. HARP2 has been developed by CARB for estimating health risk values and it incorporates the requirements of the latest version of the Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Risk Assessment guidelines.¹⁷ Emissions input to HARP2 are shown in **Appendix A**. Lifetime cancer risk, HIC, and HIA were calculated at each receptor. To estimate these impacts, the following runs were performed for the Project: residential cancer risk, residential non-cancer chronic risk, worker cancer risk, worker non-cancer chronic risk, and non-cancer acute risk. The results of the health risk assessment are presented in **Table 2**, which shows that the Project will be less than the PCAPCD health risk significance thresholds.

¹⁵ Ibid.

¹⁶ CARB. 2021. Hot Spots Analysis and Reporting Program (HARP). March. Available at: <https://ww2.arb.ca.gov/our-work/programs/hot-spots-analysis-reporting-program>. Accessed: February 2023.

¹⁷ Cal/EPA. 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. February. Available at: <https://oehha.ca.gov/air/cnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0>. Accessed: February 2023.

Table 1. Health Risk Assessment Options Used in HARP2 ADMRT Tool
 West Roseville Costco Fuel Station
 Placer County, California

HARP2 Risk Analyses Screen/ Option Title		Options Chosen				
		Resident Cancer Risk Run	Resident Chronic Risk Run	Worker Cancer Risk Run	Worker Chronic Risk Run	Acute Risk Run
Select Risk Scenario	Analysis Type	Cancer Risk	Chronic Risk (Non-cancer)	Cancer Risk	Chronic Risk (Non-cancer)	Acute Risk (Non-cancer)
	Receptor Type	Individual Resident		Worker		N/A
	Exposure Duration ²	30-Year	N/A	25-Year	N/A	N/A
	Intake Rate Percentile	RMP using the Derived Method	OEHHA Derived Method	OEHHA Derived Method		N/A
Select Pathways to Evaluate ⁷	Tab "Pathways to Evaluate"	Select "User Defined" pathways and choose: inhalation, soil ingestion, dermal, and mother's milk, based on OEHHA guidance. ⁷		Select "Worker Pathways"		Default Inhalation Only Pathway
		Select deposition rate of 0.02 m/s ^[3]		Select deposition rate of 0.02 m/s ^[3]		
	Tab "Inh"	Check box "Apply the default fraction of time spent at home (FAH) to ages greater than or equal to 16 years" ⁴		Check box "Use Adjustment Factors" with WAF = 1.57 ^[5]		Use Defaults (No Change)
	Tab "Soil"	Use Defaults (No Change)		Use Defaults (No Change)		N/A
	Tab "Derm"	Select "Mixed" Climate ⁶		Select "Mixed" Climate ⁶		N/A
	Tab "MMilk"	Use Defaults (No Change)		N/A	N/A	N/A

Notes:

¹ HARP2 options based on PCAPCD default assumptions for HRAs and OEHHA guidance. Available at: <https://www.placerair.org/DocumentCenter/View/2044/Appendix-G-Preparing-a-Health-Risk-Assessment-for-Land-Use-Projects-PDF>. Accessed: February 2023.

² Based on OEHHA guidance, see Table 8.5 in Air Toxics Hot Spots Program Risk Assessment. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

³ Based on OEHHA guidance in Air Toxics Hot Spots Program Risk Assessment, controlled emissions are 0.02 m/s. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

⁴ Based on OEHHA guidance, see Table 8.4 in Air Toxics Hot Spots Program Risk Assessment. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

⁵ Annual concentration adjustment factor for worker is set based on a schedule of 5:30 AM to 9:30 PM Monday-Friday, 6:00 AM to 8:00 PM on Saturdays, and 6:00 AM to 8:00 PM on Sundays.

⁶ Based on OEHHA guidance on types of climates in Air Toxics Hot Spots Program Risk Assessment. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

⁷ Based on OEHHA guidance on mandatory exposure pathways to evaluate in Air Toxics Hot Spots Program Risk Assessment. Available at: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. Accessed: February 2023.

Abbreviations:

ADMRT - Air Dispersion Modeling and Risk Tool
 EIR - environmental impact report
 HARP - Hotspots Analysis and Reporting Program
 HRA - health risk assessment
 m - mile

N/A - not applicable
 OEHHA - Office of Environmental Health Hazard Assessment
 RMP - Risk Management Policy
 s - second
 PCAPCD - Placer County Air Pollution Control District

Table 2. Health Risk Assessment Results
 West Roseville Costco Fuel Station
 Placer County, California

Receptor Type	Maximum Estimated Cancer Risk (in a million)	Maximum Estimated Chronic Hazard Index	Maximum Estimated Acute Hazard Index
Resident	3.2	0.01	0.36
Sensitive	0.3	0.00	0.04
Off-site Worker	1.0	0.03	0.61
PCAPCD Threshold ¹	10	1	1

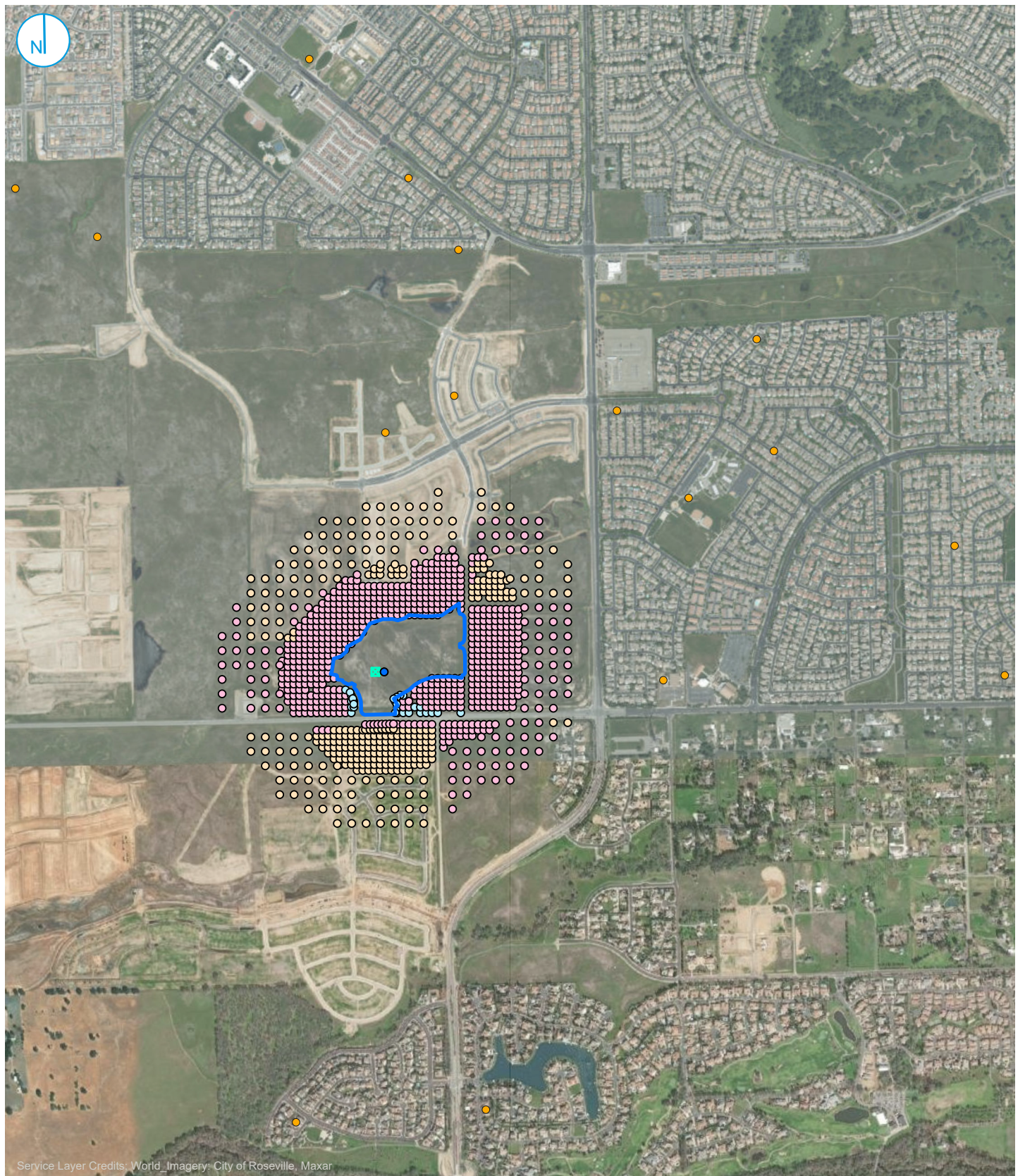
Notes:

¹ PCAPCD Air Quality Significance Thresholds. Available at: <https://www.placerair.org/DocumentCenter/View/2044/Appendix-G-Preparing-a-Health-Risk-Assessment-for-Land-Use-Projects-PDF>. Accessed: February 2023.

Abbreviations:

ADMRT - Air Dispersion Modeling and Risk Tool
 HARP - Hotspots Analysis and Reporting Program
 PCAPCD - Placer County Air Pollution Control District

FIGURES



Service Layer Credits: World Imagery: City of Roseville, Maxar

Receptor Type

- Off-site Worker
- Parking Lot/Sidewalk
- Resident
- Sensitive Receptors

- ▭ Site Boundary
- GDF Loading and Breathing
- GDF Refueling and Spillage

MODELED RECEPTOR AND SOURCE LOCATIONS

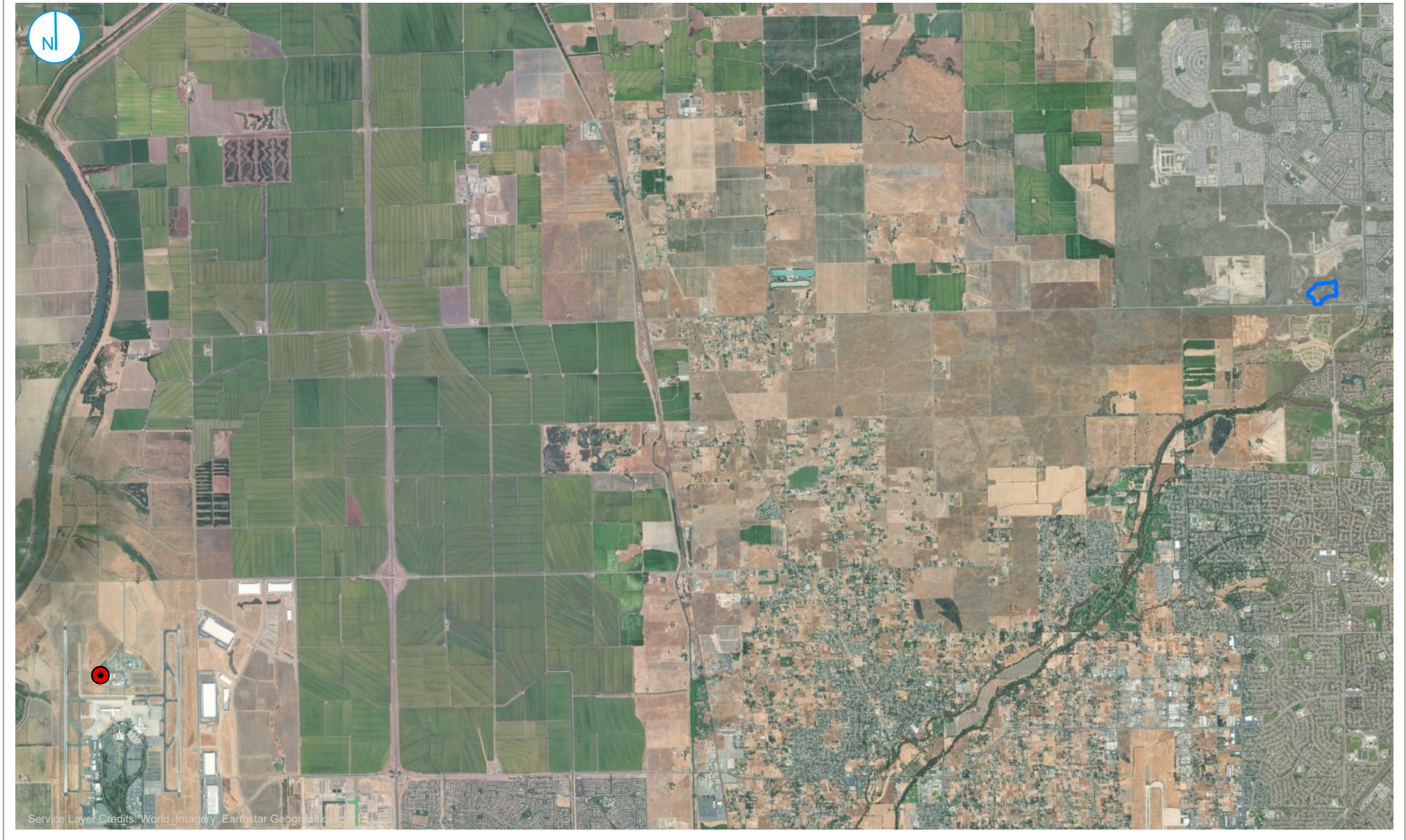
FIGURE 01





Costco Commercial Center
Roseville, CA

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY





-  Meteorological Station
-  Site Boundary

METEOROLOGICAL STATION LOCATION

FIGURE 02

0 10,000 20,000 Feet

Costco Commercial Center
Roseville, CA

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY



**APPENDIX A
EMISSION CALCULATIONS, AERMOD INPUTS, HARP2 RESULTS**

Table A-1. Gasoline Transfer and Dispensing Emissions for Acute Impacts
 West Roseville Costco Fuel Station
 Placer County, California

		Source Group ID					
		LOADING	BREATH	REFILL			SPILL
		Loading	Breathing	Refueling	Hose Permeation	Total	Spillage
VOC Emission Factor (lb/1,000 gallons) ¹		0.15	0.024	0.089	0.009	--	0.24
Weight Percent ²	Benzene	0.549%	0.549%	0.549%	0.549%	--	0.702%
	Toluene	1.350%	1.350%	1.350%	1.350%	--	5.800%
	Xylenes	0.5090%	0.5090%	0.5090%	0.5090%	--	6.910%
Emissions (lb/hr)	Benzene	5.33E-03	8.53E-04	3.16E-03	3.20E-04	3.48E-03	1.09E-02
	Toluene	1.31E-02	2.10E-03	7.76E-03	7.86E-04	8.55E-03	9.01E-02
	Xylenes	4.94E-03	7.90E-04	2.93E-03	2.96E-04	3.22E-03	1.07E-01
Emissions (lb/year)	Benzene	2.96E+01	4.74E+00	1.76E+01	1.78E+00	1.93E+01	6.07E+01
	Toluene	7.29E+01	1.17E+01	4.32E+01	4.37E+00	4.75E+01	5.01E+02
	Xylenes	2.75E+01	4.40E+00	1.63E+01	1.65E+00	1.79E+01	5.97E+02

Throughput:

Maximum Hourly 6,470 gallons/hr

Constants:

Fueling EF (Non-ORVR Vehicles, EVR)¹ 0.42 lb/1,000 gallons
 Fueling EF(ORVR Vehicles, EVR)¹ 0.021 lb/1,000 gallons
 Percent OVR Vehicles⁴ 83%

Notes:

¹ Emission factors obtained from Table 7 (EVR column) of CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

² Weight percents obtained from Table 12 of CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

³ Maximum hourly throughput is based on an annual throughput of 36 million gallons/year and annual operating hours for the facility.

⁴ ORVR percentage for 2018 vehicles. Obtained from CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance on page 9 of the document. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

Abbreviations:

CARB - California Air Resources Board
 EF - emission factor
 hr - hour
 lb - pounds
 VOC - volatile organic compounds
 ORVR - On-Board Refueling Vapor Recovery
 EVR - enhanced vapor recovery

Table A-2. Gasoline Transfer and Dispensing Emissions for Chronic Impacts
 West Roseville Costco Fuel Station
 Placer County, California

		Source Group ID					Spillage
		LOADING	BREATH	REFILL		Total	
		Loading	Breathing	Refueling	Hose Permeation		
VOC Emission Factor (lb/1,000 gallons) ¹		0.15	0.024	0.089	0.009	--	0.24
Weight Percent ³	Benzene	0.457%	0.457%	0.457%	0.457%	--	0.707%
	Ethyl Benzene	0.107%	0.107%	0.107%	0.107%	--	1.290%
	n-Hexane	1.820%	1.820%	1.820%	1.820%	--	1.860%
	Naphthalene	0.0004%	0.0004%	0.0004%	0.0004%	--	0.174%
	Propylene (propene) ²	0.0036%	0.0036%	0.0036%	0.0036%	--	0.0001%
	Toluene	1.1100%	1.1100%	1.1100%	1.1100%	--	5.630%
Emissions (lb/year)	Xylenes	0.4090%	0.4090%	0.4090%	0.4090%	--	6.590%
	Benzene	2.47E+01	3.95E+00	1.46E+01	1.48E+00	1.61E+01	6.11E+01
	Ethyl Benzene	5.78E+00	9.24E-01	3.42E+00	3.47E-01	3.77E+00	1.11E+02
	n-Hexane	9.83E+01	1.57E+01	5.82E+01	5.90E+00	6.41E+01	1.61E+02
	Naphthalene	2.40E-02	3.84E-03	1.42E-02	1.44E-03	1.57E-02	1.50E+01
	Propylene (propene)	1.94E-01	3.11E-02	1.15E-01	1.16E-02	1.27E-01	1.05E-02
Toluene	5.99E+01	9.59E+00	3.55E+01	3.60E+00	3.91E+01	4.86E+02	
Xylenes	2.21E+01	3.53E+00	1.31E+01	1.33E+00	1.44E+01	5.69E+02	

Throughput:

Annual 36.0 million gallons/year

Constants:

Fueling EF (Non-ORVR Vehicles, EVR)¹ 0.42 lb/1,000 gallons
 Fueling EF(ORVR Vehicles, EVR)¹ 0.021 lb/1,000 gallons
 Percent ORVR Vehicles⁴ 83%

Notes:

¹ Emission factors obtained from Table 7 (EVR column) of CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

² Propylene is only present in winter gasoline.

³ Weight percents obtained from Table 11 of CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

⁴ ORVR percentage for 2018 vehicles. Obtained from CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance on page 9 of the document. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

Abbreviations:

CARB - California Air Resources Board VOC - volatile organic compounds
 EF - emission factor ORVR - On-Board Refueling Vapor Recovery
 hr - hour EVR - enhanced vapor recovery
 lb - pounds

Table A-3. Modeled Source Parameters - Point Sources
 West Roseville Costco Fuel Station
 Placer County, California

Model ID	Description	Stack Height ¹ (m)	Stack Temperature ¹ (K)	Exit Velocity ¹ (m/s)	Stack Diameter ¹ (m)	Emission Rate (g/s)
LOADING	GDF loading emissions	3.66	291.00	0.001	0.051	1
BREATH	GDF breathing emissions	3.66	289.00	0.001	0.051	1

Notes:

¹ Stack parameters are based on CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

Abbreviations:

- GDF - gasoline dispensing facility
- K - Kelvin
- m - meters
- s - second

Table A-4. Modeled Source Parameters - Volume Sources
 West Roseville Costco Fuel Station
 Placer County, California

Model ID	Description	Release Height ¹ (m)	Initial Lateral Dimension, Sigma Y ² (m)	Initial Vertical Dimension, Sigma Z ¹ (m)	Emission Rate (g/s)
REFILL	Refueling and Hose Permeation	1.50	6.40	1.86	1
SPILL	Spillage	1.00	6.40	1.86	1

Notes:

¹ Release height and Sigma Z are based on CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf. Accessed: February 2023.

² Initial lateral dimension is based on the dimensions of the gas station canopy.

Abbreviations:

CARB - California Air Resources Board

g - grams

m - meters

s- second

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
1	641797.49	4290308.73	Resident	0.84	3.31E-03	0.15
2	641817.49	4290308.73	Resident	0.87	3.41E-03	0.18
3	641837.49	4290308.73	Resident	0.90	3.53E-03	0.18
4	641857.49	4290308.73	Resident	0.92	3.63E-03	0.18
5	641877.49	4290308.73	Resident	0.95	3.74E-03	0.17
6	641897.49	4290308.73	Resident	0.99	3.91E-03	0.17
7	641917.49	4290308.73	Resident	1.05	4.12E-03	0.16
8	641937.49	4290308.73	Resident	1.12	4.37E-03	0.18
9	641957.49	4290308.73	Resident	1.19	4.64E-03	0.15
10	641977.49	4290308.73	Resident	1.25	4.88E-03	0.15
11	641737.49	4290328.73	Resident	0.83	3.24E-03	0.18
12	641757.49	4290328.73	Resident	0.88	3.42E-03	0.18
13	641777.49	4290328.73	Resident	0.91	3.56E-03	0.16
14	641797.49	4290328.73	Resident	0.93	3.65E-03	0.16
15	641817.49	4290328.73	Resident	0.96	3.76E-03	0.19
16	641837.49	4290328.73	Resident	0.99	3.90E-03	0.19
17	641857.49	4290328.73	Resident	1.02	4.01E-03	0.19
18	641877.49	4290328.73	Resident	1.06	4.15E-03	0.19
19	641897.49	4290328.73	Resident	1.11	4.36E-03	0.19
20	641917.49	4290328.73	Resident	1.18	4.62E-03	0.18
21	641937.49	4290328.73	Resident	1.26	4.92E-03	0.19
22	641957.49	4290328.73	Resident	1.34	5.23E-03	0.17
23	641977.49	4290328.73	Resident	1.41	5.50E-03	0.18
24	641997.49	4290328.73	Resident	1.44	5.64E-03	0.16
25	642017.49	4290328.73	Resident	1.44	5.63E-03	0.14
26	642037.49	4290328.73	Resident	1.41	5.52E-03	0.15
27	641717.49	4290348.73	Resident	0.86	3.34E-03	0.21
28	641737.49	4290348.73	Resident	0.90	3.53E-03	0.20
29	641757.49	4290348.73	Resident	0.96	3.74E-03	0.18
30	641777.49	4290348.73	Resident	1.00	3.92E-03	0.19
31	641797.49	4290348.73	Resident	1.03	4.04E-03	0.18
32	641817.49	4290348.73	Resident	1.06	4.17E-03	0.21
33	641837.49	4290348.73	Resident	1.10	4.33E-03	0.21
34	641857.49	4290348.73	Resident	1.14	4.47E-03	0.21
35	641877.49	4290348.73	Resident	1.18	4.64E-03	0.20
36	641897.49	4290348.73	Resident	1.25	4.89E-03	0.20
37	641917.49	4290348.73	Resident	1.33	5.21E-03	0.19
38	641937.49	4290348.73	Resident	1.43	5.57E-03	0.20
39	641957.49	4290348.73	Resident	1.52	5.94E-03	0.17
40	641977.49	4290348.73	Resident	1.59	6.22E-03	0.19
41	641997.49	4290348.73	Resident	1.62	6.32E-03	0.16
42	642017.49	4290348.73	Resident	1.60	6.26E-03	0.16
43	642037.49	4290348.73	Resident	1.54	6.07E-03	0.16
44	642057.49	4290348.73	Resident	1.47	5.80E-03	0.14
45	641697.49	4290368.73	Resident	0.87	3.40E-03	0.19
46	641717.49	4290368.73	Resident	0.93	3.64E-03	0.21
47	641737.49	4290368.73	Resident	0.99	3.86E-03	0.23
48	641757.49	4290368.73	Resident	1.05	4.10E-03	0.21
49	641777.49	4290368.73	Resident	1.11	4.34E-03	0.21
50	641797.49	4290368.73	Resident	1.15	4.50E-03	0.19
51	641817.49	4290368.73	Resident	1.19	4.66E-03	0.22
52	641837.49	4290368.73	Resident	1.24	4.85E-03	0.23
53	641857.49	4290368.73	Resident	1.28	5.02E-03	0.23
54	641877.49	4290368.73	Resident	1.33	5.23E-03	0.22
55	641897.49	4290368.73	Resident	1.41	5.54E-03	0.22
56	641917.49	4290368.73	Resident	1.52	5.93E-03	0.21
57	641937.49	4290368.73	Resident	1.63	6.38E-03	0.20
58	641957.49	4290368.73	Resident	1.74	6.79E-03	0.20
59	641977.49	4290368.73	Resident	1.81	7.05E-03	0.20
60	641997.49	4290368.73	Resident	1.81	7.10E-03	0.17
61	642017.49	4290368.73	Resident	1.77	6.96E-03	0.18
62	642037.49	4290368.73	Resident	1.69	6.67E-03	0.16
63	642057.49	4290368.73	Resident	1.60	6.30E-03	0.16
64	641677.49	4290388.73	Resident	0.87	3.40E-03	0.21
65	641697.49	4290388.73	Resident	0.94	3.68E-03	0.21
66	641717.49	4290388.73	Resident	1.02	3.97E-03	0.22
67	641737.49	4290388.73	Resident	1.09	4.24E-03	0.25
68	641757.49	4290388.73	Resident	1.16	4.52E-03	0.23
69	641777.49	4290388.73	Resident	1.24	4.82E-03	0.23
70	641797.49	4290388.73	Resident	1.29	5.05E-03	0.20
71	641817.49	4290388.73	Resident	1.34	5.24E-03	0.23

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
72	641837.49	4290388.73	Resident	1.40	5.47E-03	0.25
73	641857.49	4290388.73	Resident	1.45	5.69E-03	0.25
74	641877.49	4290388.73	Resident	1.52	5.96E-03	0.23
75	641897.49	4290388.73	Resident	1.62	6.35E-03	0.24
76	641917.49	4290388.73	Resident	1.75	6.83E-03	0.24
77	641937.49	4290388.73	Resident	1.89	7.37E-03	0.21
78	641957.49	4290388.73	Resident	2.01	7.83E-03	0.23
79	641977.49	4290388.73	Resident	2.06	8.04E-03	0.20
80	641997.49	4290388.73	Resident	2.04	8.00E-03	0.19
81	642017.49	4290388.73	Resident	1.97	7.74E-03	0.19
82	642037.49	4290388.73	Resident	1.86	7.32E-03	0.17
83	642057.49	4290388.73	Resident	1.73	6.83E-03	0.18
84	642097.49	4290388.73	Off-site Worker	0.19	5.66E-03	0.16
85	641657.49	4290408.73	Resident	0.87	3.40E-03	0.19
86	641677.49	4290408.73	Resident	0.94	3.67E-03	0.22
87	641697.49	4290408.73	Resident	1.02	3.98E-03	0.22
88	641717.49	4290408.73	Resident	1.11	4.33E-03	0.23
89	641737.49	4290408.73	Resident	1.20	4.69E-03	0.26
90	641757.49	4290408.73	Resident	1.29	5.02E-03	0.27
91	641777.49	4290408.73	Resident	1.38	5.38E-03	0.24
92	641797.49	4290408.73	Resident	1.46	5.69E-03	0.23
93	641817.49	4290408.73	Resident	1.52	5.94E-03	0.25
94	641837.49	4290408.73	Resident	1.59	6.22E-03	0.28
95	641857.49	4290408.73	Resident	1.66	6.52E-03	0.27
96	641877.49	4290408.73	Resident	1.75	6.87E-03	0.26
97	641897.49	4290408.73	Resident	1.89	7.37E-03	0.26
98	641917.49	4290408.73	Resident	2.05	7.98E-03	0.27
99	641937.49	4290408.73	Resident	2.22	8.63E-03	0.23
100	641957.49	4290408.73	Resident	2.33	9.09E-03	0.25
101	641977.49	4290408.73	Resident	2.36	9.22E-03	0.20
102	641997.49	4290408.73	Resident	2.30	9.03E-03	0.22
103	642017.49	4290408.73	Resident	2.18	8.60E-03	0.18
104	642037.49	4290408.73	Resident	2.03	8.02E-03	0.20
105	642057.49	4290408.73	Resident	1.85	7.34E-03	0.19
106	642097.49	4290408.73	Off-site Worker	0.19	5.85E-03	0.16
107	642117.49	4290408.73	Off-site Worker	0.17	5.17E-03	0.14
108	641657.49	4290428.73	Resident	0.94	3.66E-03	0.20
109	641677.49	4290428.73	Resident	1.02	3.97E-03	0.21
110	641697.49	4290428.73	Resident	1.11	4.32E-03	0.25
111	641717.49	4290428.73	Resident	1.21	4.73E-03	0.26
112	641737.49	4290428.73	Resident	1.33	5.19E-03	0.27
113	641757.49	4290428.73	Resident	1.44	5.62E-03	0.31
114	641777.49	4290428.73	Resident	1.56	6.06E-03	0.28
115	641797.49	4290428.73	Resident	1.67	6.48E-03	0.28
116	641817.49	4290428.73	Resident	1.75	6.82E-03	0.26
117	641837.49	4290428.73	Resident	1.84	7.18E-03	0.31
118	641857.49	4290428.73	Resident	1.94	7.57E-03	0.31
119	641877.49	4290428.73	Resident	2.06	8.05E-03	0.28
120	641897.49	4290428.73	Resident	2.23	8.71E-03	0.28
121	641917.49	4290428.73	Resident	2.44	9.51E-03	0.29
122	641937.49	4290428.73	Resident	2.64	1.03E-02	0.27
123	641957.49	4290428.73	Resident	2.74	1.07E-02	0.25
124	641977.49	4290428.73	Resident	2.72	1.06E-02	0.24
125	641997.49	4290428.73	Resident	2.60	1.02E-02	0.22
126	642017.49	4290428.73	Resident	2.42	9.54E-03	0.22
127	642037.49	4290428.73	Resident	2.20	8.72E-03	0.21
128	642057.49	4290428.73	Resident	1.96	7.80E-03	0.20
129	642097.49	4290428.73	Off-site Worker	0.20	6.01E-03	0.16
130	642117.49	4290428.73	Off-site Worker	0.17	5.28E-03	0.17
131	642137.49	4290428.73	Off-site Worker	0.15	4.67E-03	0.15
132	642157.49	4290428.73	Off-site Worker	0.14	4.16E-03	0.14
133	642177.49	4290428.73	Off-site Worker	0.12	3.72E-03	0.13
134	642197.49	4290428.73	Off-site Worker	0.11	3.32E-03	0.12
135	641657.49	4290448.73	Off-site Worker	0.13	3.91E-03	0.24
136	641677.49	4290448.73	Off-site Worker	0.14	4.29E-03	0.23
137	641697.49	4290448.73	Off-site Worker	0.16	4.71E-03	0.24
138	641717.49	4290448.73	Resident	1.33	5.18E-03	0.29
139	641737.49	4290448.73	Resident	1.47	5.74E-03	0.28
140	641757.49	4290448.73	Resident	1.62	6.31E-03	0.32
141	641777.49	4290448.73	Resident	1.77	6.87E-03	0.33
142	641797.49	4290448.73	Resident	1.92	7.46E-03	0.32

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
143	641817.49	4290448.73	Resident	2.04	7.94E-03	0.30
144	641837.49	4290448.73	Resident	2.16	8.41E-03	0.35
145	641857.49	4290448.73	Resident	2.29	8.93E-03	0.35
146	641877.49	4290448.73	Resident	2.46	9.59E-03	0.32
147	641897.49	4290448.73	Resident	2.69	1.05E-02	0.32
148	641917.49	4290448.73	Resident	2.96	1.15E-02	0.31
149	641937.49	4290448.73	Resident	3.18	1.24E-02	0.32
150	641957.49	4290448.73	Resident	3.24	1.26E-02	0.26
151	641977.49	4290448.73	Resident	3.14	1.23E-02	0.27
152	641997.49	4290448.73	Resident	2.93	1.16E-02	0.25
153	642017.49	4290448.73	Resident	2.66	1.05E-02	0.24
154	642037.49	4290448.73	Resident	2.35	9.36E-03	0.23
155	642057.49	4290448.73	Resident	2.04	8.17E-03	0.20
156	642097.49	4290448.73	Off-site Worker	0.20	6.16E-03	0.19
157	642117.49	4290448.73	Off-site Worker	0.18	5.39E-03	0.17
158	642137.49	4290448.73	Off-site Worker	0.15	4.75E-03	0.16
159	642157.49	4290448.73	Off-site Worker	0.14	4.19E-03	0.14
160	642177.49	4290448.73	Off-site Worker	0.12	3.69E-03	0.13
161	642197.49	4290448.73	Off-site Worker	0.11	3.26E-03	0.14
162	642217.49	4290448.73	Off-site Worker	0.09	2.88E-03	0.13
163	642237.49	4290448.73	Off-site Worker	0.08	2.56E-03	0.12
164	642257.49	4290448.73	Off-site Worker	0.07	2.29E-03	0.10
165	641917.49	4290468.73	Off-site Worker	0.48	1.42E-02	0.33
166	641937.49	4290468.73	Off-site Worker	0.51	1.51E-02	0.35
167	641957.49	4290468.73	Off-site Worker	0.50	1.51E-02	0.31
168	641977.49	4290468.73	Off-site Worker	0.47	1.43E-02	0.27
169	641997.49	4290468.73	Off-site Worker	0.43	1.30E-02	0.28
170	642017.49	4290468.73	Off-site Worker	0.38	1.15E-02	0.27
171	642037.49	4290468.73	Off-site Worker	0.32	9.90E-03	0.23
172	642057.49	4290468.73	Off-site Worker	0.28	8.47E-03	0.22
173	642097.49	4290468.73	Off-site Worker	0.20	6.29E-03	0.19
174	642117.49	4290468.73	Off-site Worker	0.18	5.46E-03	0.17
175	642137.49	4290468.73	Off-site Worker	0.15	4.75E-03	0.15
176	642157.49	4290468.73	Off-site Worker	0.13	4.13E-03	0.16
177	642177.49	4290468.73	Off-site Worker	0.12	3.60E-03	0.16
178	642197.49	4290468.73	Off-site Worker	0.10	3.16E-03	0.14
179	642217.49	4290468.73	Off-site Worker	0.09	2.79E-03	0.12
180	642237.49	4290468.73	Off-site Worker	0.08	2.48E-03	0.10
181	642257.49	4290468.73	Off-site Worker	0.07	2.23E-03	0.09
182	642277.49	4290468.73	Off-site Worker	0.07	2.01E-03	0.09
183	641577.49	4290508.73	Off-site Worker	0.09	2.76E-03	0.16
184	641597.49	4290508.73	Off-site Worker	0.10	3.08E-03	0.19
185	641617.49	4290508.73	Off-site Worker	0.12	3.47E-03	0.22
186	641637.49	4290508.73	Off-site Worker	0.13	3.94E-03	0.24
187	641657.49	4290508.73	Off-site Worker	0.15	4.52E-03	0.25
188	641677.49	4290508.73	Off-site Worker	0.18	5.23E-03	0.29
189	641697.49	4290508.73	Off-site Worker	0.20	6.06E-03	0.34
190	641717.49	4290508.73	Off-site Worker	0.24	6.99E-03	0.38
191	641737.49	4290508.73	Off-site Worker	0.27	8.01E-03	0.37
192	641757.49	4290508.73	Off-site Worker	0.31	9.19E-03	0.44
193	641777.49	4290508.73	Parking Lot/Sidewalk	--	--	--
194	641937.49	4290508.73	Parking Lot/Sidewalk	--	--	--
195	641957.49	4290508.73	Parking Lot/Sidewalk	--	--	--
196	641977.49	4290508.73	Parking Lot/Sidewalk	--	--	--
197	642017.49	4290508.73	Parking Lot/Sidewalk	--	--	--
198	642037.49	4290508.73	Parking Lot/Sidewalk	--	--	--
199	642057.49	4290508.73	Parking Lot/Sidewalk	--	--	--
200	642077.49	4290508.73	Parking Lot/Sidewalk	--	--	--
201	642157.49	4290508.73	Parking Lot/Sidewalk	--	--	--
202	641577.49	4290528.73	Off-site Worker	0.10	2.88E-03	0.17
203	641597.49	4290528.73	Off-site Worker	0.11	3.19E-03	0.18
204	641617.49	4290528.73	Off-site Worker	0.12	3.57E-03	0.19
205	641637.49	4290528.73	Off-site Worker	0.14	4.06E-03	0.24
206	641657.49	4290528.73	Off-site Worker	0.16	4.67E-03	0.28
207	641677.49	4290528.73	Off-site Worker	0.18	5.45E-03	0.30
208	641697.49	4290528.73	Off-site Worker	0.22	6.43E-03	0.32
209	641717.49	4290528.73	Off-site Worker	0.26	7.63E-03	0.40
210	641737.49	4290528.73	Off-site Worker	0.30	9.01E-03	0.45
211	641757.49	4290528.73	Off-site Worker	0.36	1.06E-02	0.45
212	641777.49	4290528.73	Parking Lot/Sidewalk	--	--	--
213	641937.49	4290528.73	Parking Lot/Sidewalk	--	--	--

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
214	641957.49	4290528.73	Off-site Worker	0.84	2.56E-02	0.47
215	641977.49	4290528.73	Off-site Worker	0.69	2.11E-02	0.40
216	641997.49	4290528.73	Parking Lot/Sidewalk	--	--	--
217	642017.49	4290528.73	Parking Lot/Sidewalk	--	--	--
218	642037.49	4290528.73	Off-site Worker	0.35	1.09E-02	0.29
219	642057.49	4290528.73	Off-site Worker	0.29	8.86E-03	0.27
220	642077.49	4290528.73	Off-site Worker	0.23	7.25E-03	0.26
221	642097.49	4290528.73	Off-site Worker	0.19	5.99E-03	0.22
222	642117.49	4290528.73	Off-site Worker	0.16	5.03E-03	0.17
223	642137.49	4290528.73	Off-site Worker	0.14	4.29E-03	0.15
224	642157.49	4290528.73	Off-site Worker	0.12	3.70E-03	0.14
225	642197.49	4290528.73	Off-site Worker	0.09	2.86E-03	0.13
226	642217.49	4290528.73	Off-site Worker	0.08	2.54E-03	0.12
227	642237.49	4290528.73	Off-site Worker	0.07	2.28E-03	0.11
228	642257.49	4290528.73	Off-site Worker	0.07	2.05E-03	0.10
229	642277.49	4290528.73	Off-site Worker	0.06	1.86E-03	0.09
230	642297.49	4290528.73	Off-site Worker	0.06	1.69E-03	0.09
231	642317.49	4290528.73	Off-site Worker	0.05	1.55E-03	0.08
232	642337.49	4290528.73	Off-site Worker	0.05	1.42E-03	0.08
233	641557.49	4290548.73	Off-site Worker	0.09	2.79E-03	0.17
234	641577.49	4290548.73	Off-site Worker	0.10	3.07E-03	0.19
235	641597.49	4290548.73	Off-site Worker	0.11	3.39E-03	0.20
236	641617.49	4290548.73	Off-site Worker	0.13	3.78E-03	0.21
237	641637.49	4290548.73	Off-site Worker	0.14	4.25E-03	0.22
238	641657.49	4290548.73	Off-site Worker	0.16	4.86E-03	0.25
239	641677.49	4290548.73	Off-site Worker	0.19	5.66E-03	0.32
240	641697.49	4290548.73	Off-site Worker	0.23	6.73E-03	0.36
241	641717.49	4290548.73	Off-site Worker	0.27	8.14E-03	0.37
242	641737.49	4290548.73	Off-site Worker	0.34	9.96E-03	0.49
243	641757.49	4290548.73	Off-site Worker	0.41	1.22E-02	0.56
244	641777.49	4290548.73	Parking Lot/Sidewalk	--	--	--
245	641937.49	4290548.73	Parking Lot/Sidewalk	--	--	--
246	641957.49	4290548.73	Off-site Worker	0.97	2.97E-02	0.50
247	641977.49	4290548.73	Off-site Worker	0.74	2.30E-02	0.46
248	642017.49	4290548.73	Off-site Worker	0.44	1.37E-02	0.34
249	642037.49	4290548.73	Off-site Worker	0.35	1.07E-02	0.33
250	642057.49	4290548.73	Off-site Worker	0.28	8.54E-03	0.28
251	642077.49	4290548.73	Off-site Worker	0.22	6.92E-03	0.22
252	642097.49	4290548.73	Off-site Worker	0.19	5.73E-03	0.19
253	642117.49	4290548.73	Off-site Worker	0.16	4.82E-03	0.18
254	642137.49	4290548.73	Off-site Worker	0.13	4.13E-03	0.17
255	642157.49	4290548.73	Off-site Worker	0.12	3.57E-03	0.16
256	642197.49	4290548.73	Off-site Worker	0.09	2.76E-03	0.12
257	642217.49	4290548.73	Off-site Worker	0.08	2.46E-03	0.12
258	642237.49	4290548.73	Off-site Worker	0.07	2.20E-03	0.11
259	642257.49	4290548.73	Off-site Worker	0.06	1.98E-03	0.10
260	642277.49	4290548.73	Off-site Worker	0.06	1.80E-03	0.09
261	642297.49	4290548.73	Off-site Worker	0.05	1.64E-03	0.09
262	642317.49	4290548.73	Off-site Worker	0.05	1.50E-03	0.08
263	642337.49	4290548.73	Off-site Worker	0.05	1.38E-03	0.08
264	641557.49	4290568.73	Off-site Worker	0.10	2.95E-03	0.17
265	641577.49	4290568.73	Off-site Worker	0.11	3.26E-03	0.18
266	641597.49	4290568.73	Off-site Worker	0.12	3.63E-03	0.21
267	641617.49	4290568.73	Off-site Worker	0.14	4.06E-03	0.23
268	641637.49	4290568.73	Off-site Worker	0.15	4.57E-03	0.26
269	641657.49	4290568.73	Off-site Worker	0.17	5.20E-03	0.28
270	641677.49	4290568.73	Off-site Worker	0.20	6.00E-03	0.30
271	641697.49	4290568.73	Off-site Worker	0.24	7.07E-03	0.33
272	641717.49	4290568.73	Off-site Worker	0.29	8.56E-03	0.43
273	641737.49	4290568.73	Off-site Worker	0.36	1.07E-02	0.49
274	641757.49	4290568.73	Off-site Worker	0.46	1.36E-02	0.61
275	641777.49	4290568.73	Parking Lot/Sidewalk	--	--	--
276	641957.49	4290568.73	Parking Lot/Sidewalk	--	--	--
277	641997.49	4290568.73	Off-site Worker	0.57	1.78E-02	0.45
278	642017.49	4290568.73	Off-site Worker	0.43	1.33E-02	0.38
279	642037.49	4290568.73	Off-site Worker	0.33	1.02E-02	0.29
280	642057.49	4290568.73	Off-site Worker	0.26	8.10E-03	0.25
281	642077.49	4290568.73	Off-site Worker	0.21	6.58E-03	0.24
282	642097.49	4290568.73	Off-site Worker	0.18	5.47E-03	0.22
283	642117.49	4290568.73	Off-site Worker	0.15	4.62E-03	0.19
284	642137.49	4290568.73	Off-site Worker	0.13	3.96E-03	0.16

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
285	642157.49	4290568.73	Off-site Worker	0.11	3.43E-03	0.15
286	642197.49	4290568.73	Off-site Worker	0.09	2.66E-03	0.12
287	642217.49	4290568.73	Off-site Worker	0.08	2.36E-03	0.11
288	642237.49	4290568.73	Off-site Worker	0.07	2.12E-03	0.10
289	642257.49	4290568.73	Off-site Worker	0.06	1.91E-03	0.10
290	642277.49	4290568.73	Off-site Worker	0.06	1.73E-03	0.10
291	642297.49	4290568.73	Off-site Worker	0.05	1.58E-03	0.09
292	642317.49	4290568.73	Off-site Worker	0.05	1.45E-03	0.09
293	642337.49	4290568.73	Off-site Worker	0.04	1.33E-03	0.08
294	642357.49	4290568.73	Off-site Worker	0.04	1.23E-03	0.08
295	641537.49	4290588.73	Off-site Worker	0.09	2.75E-03	0.17
296	641557.49	4290588.73	Off-site Worker	0.10	3.05E-03	0.19
297	641577.49	4290588.73	Off-site Worker	0.11	3.40E-03	0.21
298	641597.49	4290588.73	Off-site Worker	0.13	3.81E-03	0.23
299	641617.49	4290588.73	Off-site Worker	0.14	4.31E-03	0.25
300	641657.49	4290588.73	Off-site Worker	0.19	5.63E-03	0.29
301	641677.49	4290588.73	Off-site Worker	0.22	6.54E-03	0.33
302	641697.49	4290588.73	Off-site Worker	0.26	7.69E-03	0.37
303	641717.49	4290588.73	Off-site Worker	0.31	9.22E-03	0.41
304	641737.49	4290588.73	Off-site Worker	0.39	1.14E-02	0.48
305	641757.49	4290588.73	Parking Lot/Sidewalk	--	--	--
306	641997.49	4290588.73	Off-site Worker	0.54	1.69E-02	0.40
307	642017.49	4290588.73	Off-site Worker	0.40	1.25E-02	0.37
308	642037.49	4290588.73	Off-site Worker	0.31	9.60E-03	0.32
309	642057.49	4290588.73	Off-site Worker	0.25	7.63E-03	0.27
310	642077.49	4290588.73	Off-site Worker	0.20	6.23E-03	0.23
311	642097.49	4290588.73	Off-site Worker	0.17	5.18E-03	0.20
312	642117.49	4290588.73	Off-site Worker	0.14	4.38E-03	0.18
313	642137.49	4290588.73	Off-site Worker	0.12	3.76E-03	0.16
314	642157.49	4290588.73	Off-site Worker	0.11	3.26E-03	0.15
315	642197.49	4290588.73	Off-site Worker	0.08	2.54E-03	0.13
316	642217.49	4290588.73	Off-site Worker	0.07	2.26E-03	0.12
317	642237.49	4290588.73	Off-site Worker	0.07	2.03E-03	0.11
318	642257.49	4290588.73	Off-site Worker	0.06	1.84E-03	0.11
319	642277.49	4290588.73	Off-site Worker	0.05	1.67E-03	0.10
320	642297.49	4290588.73	Off-site Worker	0.05	1.53E-03	0.09
321	642317.49	4290588.73	Off-site Worker	0.05	1.40E-03	0.09
322	642337.49	4290588.73	Off-site Worker	0.04	1.29E-03	0.08
323	642357.49	4290588.73	Off-site Worker	0.04	1.19E-03	0.08
324	641537.49	4290608.73	Off-site Worker	0.09	2.76E-03	0.17
325	641557.49	4290608.73	Off-site Worker	0.10	3.08E-03	0.19
326	641577.49	4290608.73	Off-site Worker	0.12	3.45E-03	0.20
327	641597.49	4290608.73	Off-site Worker	0.13	3.90E-03	0.22
328	641617.49	4290608.73	Off-site Worker	0.15	4.44E-03	0.24
329	641637.49	4290608.73	Off-site Worker	0.17	5.11E-03	0.28
330	641657.49	4290608.73	Off-site Worker	0.20	5.95E-03	0.32
331	641677.49	4290608.73	Off-site Worker	0.24	7.01E-03	0.36
332	642017.49	4290608.73	Off-site Worker	0.37	1.15E-02	0.35
333	642037.49	4290608.73	Off-site Worker	0.29	8.91E-03	0.30
334	642057.49	4290608.73	Off-site Worker	0.23	7.11E-03	0.26
335	642077.49	4290608.73	Off-site Worker	0.19	5.82E-03	0.24
336	642097.49	4290608.73	Off-site Worker	0.16	4.86E-03	0.21
337	642117.49	4290608.73	Off-site Worker	0.13	4.13E-03	0.19
338	642137.49	4290608.73	Off-site Worker	0.12	3.55E-03	0.18
339	642157.49	4290608.73	Off-site Worker	0.10	3.09E-03	0.16
340	642197.49	4290608.73	Off-site Worker	0.08	2.42E-03	0.13
341	642217.49	4290608.73	Off-site Worker	0.07	2.16E-03	0.12
342	642237.49	4290608.73	Off-site Worker	0.06	1.95E-03	0.11
343	642257.49	4290608.73	Off-site Worker	0.06	1.76E-03	0.10
344	642277.49	4290608.73	Off-site Worker	0.05	1.61E-03	0.09
345	642297.49	4290608.73	Off-site Worker	0.05	1.47E-03	0.08
346	642317.49	4290608.73	Off-site Worker	0.04	1.35E-03	0.08
347	642337.49	4290608.73	Off-site Worker	0.04	1.24E-03	0.07
348	642357.49	4290608.73	Off-site Worker	0.04	1.15E-03	0.07
349	641537.49	4290628.73	Off-site Worker	0.09	2.77E-03	0.17
350	641557.49	4290628.73	Off-site Worker	0.10	3.09E-03	0.19
351	641577.49	4290628.73	Off-site Worker	0.12	3.47E-03	0.21
352	641597.49	4290628.73	Off-site Worker	0.13	3.93E-03	0.23
353	641617.49	4290628.73	Off-site Worker	0.15	4.49E-03	0.25
354	641637.49	4290628.73	Off-site Worker	0.17	5.19E-03	0.27
355	641657.49	4290628.73	Off-site Worker	0.20	6.08E-03	0.30

Table A-5. Health Risk Assessment Results for All ReceptorsWest Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
356	641677.49	4290628.73	Off-site Worker	0.24	7.25E-03	0.35
357	641697.49	4290628.73	Off-site Worker	0.30	8.78E-03	0.41
358	641717.49	4290628.73	Off-site Worker	0.37	1.09E-02	0.47
359	642057.49	4290628.73	Off-site Worker	0.21	6.56E-03	0.27
360	642077.49	4290628.73	Off-site Worker	0.18	5.41E-03	0.23
361	642097.49	4290628.73	Off-site Worker	0.15	4.54E-03	0.20
362	642117.49	4290628.73	Off-site Worker	0.13	3.87E-03	0.17
363	642137.49	4290628.73	Off-site Worker	0.11	3.35E-03	0.15
364	642157.49	4290628.73	Off-site Worker	0.10	2.92E-03	0.14
365	642197.49	4290628.73	Off-site Worker	0.08	2.30E-03	0.12
366	642217.49	4290628.73	Off-site Worker	0.07	2.06E-03	0.11
367	642237.49	4290628.73	Off-site Worker	0.06	1.86E-03	0.10
368	642257.49	4290628.73	Off-site Worker	0.06	1.69E-03	0.10
369	642277.49	4290628.73	Off-site Worker	0.05	1.54E-03	0.09
370	642297.49	4290628.73	Off-site Worker	0.05	1.41E-03	0.08
371	642317.49	4290628.73	Off-site Worker	0.04	1.30E-03	0.08
372	642337.49	4290628.73	Off-site Worker	0.04	1.20E-03	0.07
373	642357.49	4290628.73	Off-site Worker	0.04	1.11E-03	0.07
374	641537.49	4290648.73	Off-site Worker	0.09	2.80E-03	0.16
375	641557.49	4290648.73	Off-site Worker	0.10	3.12E-03	0.18
376	641577.49	4290648.73	Off-site Worker	0.12	3.50E-03	0.20
377	641597.49	4290648.73	Off-site Worker	0.13	3.96E-03	0.21
378	641617.49	4290648.73	Off-site Worker	0.15	4.53E-03	0.24
379	641637.49	4290648.73	Off-site Worker	0.18	5.24E-03	0.27
380	641657.49	4290648.73	Off-site Worker	0.21	6.16E-03	0.30
381	641677.49	4290648.73	Off-site Worker	0.25	7.37E-03	0.34
382	641697.49	4290648.73	Off-site Worker	0.30	8.98E-03	0.40
383	641797.49	4290648.73	On-site Worker	--	--	--
384	642197.49	4290648.73	Off-site Worker	0.07	2.20E-03	0.12
385	642217.49	4290648.73	Off-site Worker	0.06	1.97E-03	0.11
386	642237.49	4290648.73	Off-site Worker	0.06	1.78E-03	0.11
387	642257.49	4290648.73	Off-site Worker	0.05	1.62E-03	0.10
388	642277.49	4290648.73	Off-site Worker	0.05	1.48E-03	0.09
389	642297.49	4290648.73	Off-site Worker	0.04	1.35E-03	0.09
390	642317.49	4290648.73	Off-site Worker	0.04	1.25E-03	0.08
391	642337.49	4290648.73	Off-site Worker	0.04	1.15E-03	0.08
392	642357.49	4290648.73	Off-site Worker	0.03	1.07E-03	0.07
393	641537.49	4290668.73	Off-site Worker	0.09	2.84E-03	0.16
394	641557.49	4290668.73	Off-site Worker	0.11	3.17E-03	0.18
395	641577.49	4290668.73	Off-site Worker	0.12	3.56E-03	0.19
396	641597.49	4290668.73	Off-site Worker	0.13	4.03E-03	0.21
397	641617.49	4290668.73	Off-site Worker	0.15	4.61E-03	0.23
398	641637.49	4290668.73	Off-site Worker	0.18	5.35E-03	0.26
399	641657.49	4290668.73	Off-site Worker	0.21	6.30E-03	0.30
400	641677.49	4290668.73	Off-site Worker	0.25	7.55E-03	0.34
401	641697.49	4290668.73	Off-site Worker	0.31	9.25E-03	0.40
402	642197.49	4290668.73	Off-site Worker	0.07	2.14E-03	0.15
403	642217.49	4290668.73	Off-site Worker	0.06	1.92E-03	0.14
404	642237.49	4290668.73	Off-site Worker	0.06	1.74E-03	0.13
405	642257.49	4290668.73	Off-site Worker	0.05	1.58E-03	0.12
406	642277.49	4290668.73	Off-site Worker	0.05	1.44E-03	0.11
407	642297.49	4290668.73	Off-site Worker	0.04	1.32E-03	0.10
408	642317.49	4290668.73	Off-site Worker	0.04	1.22E-03	0.10
409	642337.49	4290668.73	Off-site Worker	0.04	1.13E-03	0.09
410	642357.49	4290668.73	Off-site Worker	0.03	1.04E-03	0.08
411	641537.49	4290688.73	Off-site Worker	0.10	2.91E-03	0.16
412	641557.49	4290688.73	Off-site Worker	0.11	3.26E-03	0.18
413	641577.49	4290688.73	Off-site Worker	0.12	3.67E-03	0.20
414	641597.49	4290688.73	Off-site Worker	0.14	4.17E-03	0.22
415	641617.49	4290688.73	Off-site Worker	0.16	4.77E-03	0.23
416	641637.49	4290688.73	Off-site Worker	0.19	5.53E-03	0.25
417	641657.49	4290688.73	Off-site Worker	0.22	6.51E-03	0.27
418	641677.49	4290688.73	Off-site Worker	0.26	7.78E-03	0.32
419	641697.49	4290688.73	Off-site Worker	0.32	9.47E-03	0.36
420	642197.49	4290688.73	Off-site Worker	0.07	2.16E-03	0.14
421	642217.49	4290688.73	Off-site Worker	0.06	1.93E-03	0.13
422	642237.49	4290688.73	Off-site Worker	0.06	1.74E-03	0.12
423	642257.49	4290688.73	Off-site Worker	0.05	1.58E-03	0.12
424	642277.49	4290688.73	Off-site Worker	0.05	1.44E-03	0.11
425	642297.49	4290688.73	Off-site Worker	0.04	1.32E-03	0.10
426	642317.49	4290688.73	Off-site Worker	0.04	1.21E-03	0.10

Table A-5. Health Risk Assessment Results for All ReceptorsWest Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
427	642337.49	4290688.73	Off-site Worker	0.04	1.12E-03	0.09
428	642357.49	4290688.73	Off-site Worker	0.03	1.04E-03	0.09
429	641557.49	4290708.73	Off-site Worker	0.11	3.37E-03	0.16
430	641577.49	4290708.73	Off-site Worker	0.13	3.79E-03	0.18
431	641597.49	4290708.73	Off-site Worker	0.14	4.29E-03	0.20
432	641617.49	4290708.73	Off-site Worker	0.16	4.88E-03	0.22
433	641637.49	4290708.73	Off-site Worker	0.19	5.59E-03	0.25
434	641657.49	4290708.73	Off-site Worker	0.22	6.46E-03	0.28
435	641677.49	4290708.73	Off-site Worker	0.25	7.56E-03	0.32
436	641697.49	4290708.73	Off-site Worker	0.30	8.95E-03	0.36
437	641717.49	4290708.73	Off-site Worker	0.36	1.07E-02	0.40
438	641737.49	4290708.73	Off-site Worker	0.44	1.32E-02	0.48
439	642197.49	4290708.73	Off-site Worker	0.07	2.21E-03	0.15
440	642217.49	4290708.73	Off-site Worker	0.06	1.98E-03	0.14
441	642237.49	4290708.73	Off-site Worker	0.06	1.78E-03	0.13
442	642257.49	4290708.73	Off-site Worker	0.05	1.62E-03	0.12
443	642277.49	4290708.73	Off-site Worker	0.05	1.47E-03	0.11
444	642297.49	4290708.73	Off-site Worker	0.04	1.34E-03	0.10
445	642317.49	4290708.73	Off-site Worker	0.04	1.23E-03	0.09
446	642337.49	4290708.73	Off-site Worker	0.04	1.14E-03	0.09
447	642357.49	4290708.73	Off-site Worker	0.03	1.05E-03	0.08
448	641557.49	4290728.73	Off-site Worker	0.11	3.40E-03	0.17
449	641577.49	4290728.73	Off-site Worker	0.13	3.77E-03	0.18
450	641597.49	4290728.73	Off-site Worker	0.14	4.21E-03	0.20
451	641617.49	4290728.73	Off-site Worker	0.16	4.72E-03	0.22
452	641637.49	4290728.73	Off-site Worker	0.18	5.31E-03	0.24
453	641657.49	4290728.73	Off-site Worker	0.20	6.02E-03	0.27
454	641677.49	4290728.73	Off-site Worker	0.23	6.92E-03	0.29
455	641697.49	4290728.73	Off-site Worker	0.27	8.12E-03	0.34
456	641717.49	4290728.73	Off-site Worker	0.32	9.76E-03	0.39
457	641737.49	4290728.73	Off-site Worker	0.40	1.21E-02	0.41
458	641757.49	4290728.73	Off-site Worker	0.52	1.57E-02	0.41
459	642197.49	4290728.73	Off-site Worker	0.07	2.26E-03	0.14
460	642217.49	4290728.73	Off-site Worker	0.07	2.03E-03	0.13
461	642237.49	4290728.73	Off-site Worker	0.06	1.83E-03	0.13
462	642257.49	4290728.73	Off-site Worker	0.05	1.66E-03	0.12
463	642277.49	4290728.73	Off-site Worker	0.05	1.51E-03	0.11
464	642297.49	4290728.73	Off-site Worker	0.05	1.38E-03	0.10
465	642317.49	4290728.73	Off-site Worker	0.04	1.27E-03	0.10
466	642337.49	4290728.73	Off-site Worker	0.04	1.17E-03	0.09
467	642357.49	4290728.73	Off-site Worker	0.04	1.08E-03	0.09
468	641557.49	4290748.73	Off-site Worker	0.11	3.28E-03	0.17
469	641577.49	4290748.73	Off-site Worker	0.12	3.59E-03	0.18
470	641597.49	4290748.73	Off-site Worker	0.13	3.96E-03	0.19
471	641617.49	4290748.73	Off-site Worker	0.15	4.38E-03	0.20
472	641637.49	4290748.73	Off-site Worker	0.16	4.90E-03	0.22
473	641657.49	4290748.73	Off-site Worker	0.18	5.55E-03	0.26
474	641677.49	4290748.73	Off-site Worker	0.21	6.40E-03	0.29
475	641697.49	4290748.73	Off-site Worker	0.25	7.58E-03	0.30
476	641717.49	4290748.73	Off-site Worker	0.30	9.20E-03	0.31
477	641737.49	4290748.73	Off-site Worker	0.38	1.15E-02	0.33
478	641757.49	4290748.73	Off-site Worker	0.50	1.50E-02	0.40
479	641777.49	4290748.73	Off-site Worker	0.68	2.04E-02	0.50
480	642197.49	4290748.73	Off-site Worker	0.07	2.27E-03	0.14
481	642217.49	4290748.73	Off-site Worker	0.07	2.05E-03	0.13
482	642237.49	4290748.73	Off-site Worker	0.06	1.85E-03	0.12
483	642257.49	4290748.73	Off-site Worker	0.06	1.68E-03	0.11
484	642277.49	4290748.73	Off-site Worker	0.05	1.54E-03	0.11
485	642297.49	4290748.73	Off-site Worker	0.05	1.41E-03	0.10
486	642317.49	4290748.73	Off-site Worker	0.04	1.30E-03	0.10
487	642337.49	4290748.73	Off-site Worker	0.04	1.19E-03	0.09
488	642357.49	4290748.73	Off-site Worker	0.04	1.11E-03	0.09
489	641557.49	4290768.73	Resident	0.78	3.09E-03	0.16
490	641577.49	4290768.73	Resident	0.85	3.36E-03	0.17
491	641597.49	4290768.73	Off-site Worker	0.12	3.69E-03	0.18
492	641617.49	4290768.73	Off-site Worker	0.13	4.09E-03	0.20
493	641637.49	4290768.73	Off-site Worker	0.15	4.59E-03	0.23
494	641657.49	4290768.73	Off-site Worker	0.17	5.25E-03	0.23
495	641677.49	4290768.73	Off-site Worker	0.20	6.13E-03	0.24
496	641697.49	4290768.73	Off-site Worker	0.24	7.28E-03	0.23
497	641717.49	4290768.73	Off-site Worker	0.29	8.84E-03	0.27

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
498	641737.49	4290768.73	Off-site Worker	0.36	1.10E-02	0.32
499	641757.49	4290768.73	Off-site Worker	0.47	1.43E-02	0.39
500	641777.49	4290768.73	Off-site Worker	0.64	1.91E-02	0.39
501	641797.49	4290768.73	Off-site Worker	0.87	2.62E-02	0.42
502	642197.49	4290768.73	Off-site Worker	0.07	2.23E-03	0.15
503	642217.49	4290768.73	Off-site Worker	0.07	2.02E-03	0.14
504	642237.49	4290768.73	Off-site Worker	0.06	1.84E-03	0.13
505	642257.49	4290768.73	Off-site Worker	0.06	1.69E-03	0.11
506	642277.49	4290768.73	Off-site Worker	0.05	1.55E-03	0.10
507	642297.49	4290768.73	Off-site Worker	0.05	1.42E-03	0.10
508	642317.49	4290768.73	Off-site Worker	0.04	1.31E-03	0.09
509	642337.49	4290768.73	Off-site Worker	0.04	1.21E-03	0.09
510	642357.49	4290768.73	Off-site Worker	0.04	1.12E-03	0.08
511	641577.49	4290788.73	Resident	0.79	3.16E-03	0.17
512	641597.49	4290788.73	Off-site Worker	0.11	3.50E-03	0.19
513	641617.49	4290788.73	Off-site Worker	0.13	3.91E-03	0.18
514	641637.49	4290788.73	Off-site Worker	0.15	4.42E-03	0.19
515	641657.49	4290788.73	Off-site Worker	0.17	5.08E-03	0.20
516	641677.49	4290788.73	Off-site Worker	0.19	5.92E-03	0.19
517	641697.49	4290788.73	Off-site Worker	0.23	7.01E-03	0.22
518	641717.49	4290788.73	Off-site Worker	0.28	8.50E-03	0.26
519	641737.49	4290788.73	Off-site Worker	0.35	1.06E-02	0.31
520	641757.49	4290788.73	Off-site Worker	0.45	1.36E-02	0.33
521	641777.49	4290788.73	Off-site Worker	0.59	1.77E-02	0.32
522	641797.49	4290788.73	Off-site Worker	0.77	2.32E-02	0.35
523	641817.49	4290788.73	Off-site Worker	0.99	2.97E-02	0.36
524	642197.49	4290788.73	Off-site Worker	0.07	2.15E-03	0.14
525	642217.49	4290788.73	Off-site Worker	0.06	1.97E-03	0.13
526	642237.49	4290788.73	Off-site Worker	0.06	1.81E-03	0.13
527	642257.49	4290788.73	Off-site Worker	0.05	1.66E-03	0.12
528	642277.49	4290788.73	Off-site Worker	0.05	1.53E-03	0.11
529	642297.49	4290788.73	Off-site Worker	0.05	1.41E-03	0.10
530	642317.49	4290788.73	Off-site Worker	0.04	1.31E-03	0.09
531	642337.49	4290788.73	Off-site Worker	0.04	1.21E-03	0.08
532	642357.49	4290788.73	Off-site Worker	0.04	1.13E-03	0.08
533	641597.49	4290808.73	Off-site Worker	0.11	3.38E-03	0.16
534	641617.49	4290808.73	Off-site Worker	0.12	3.80E-03	0.17
535	641637.49	4290808.73	Off-site Worker	0.14	4.31E-03	0.16
536	641657.49	4290808.73	Off-site Worker	0.16	4.93E-03	0.17
537	641677.49	4290808.73	Off-site Worker	0.19	5.73E-03	0.19
538	641697.49	4290808.73	Off-site Worker	0.22	6.78E-03	0.22
539	641717.49	4290808.73	Off-site Worker	0.27	8.20E-03	0.26
540	641737.49	4290808.73	Off-site Worker	0.33	1.01E-02	0.28
541	641757.49	4290808.73	Off-site Worker	0.42	1.27E-02	0.26
542	641777.49	4290808.73	Off-site Worker	0.53	1.62E-02	0.29
543	641797.49	4290808.73	Off-site Worker	0.67	2.03E-02	0.30
544	641817.49	4290808.73	Off-site Worker	0.83	2.48E-02	0.29
545	642197.49	4290808.73	Off-site Worker	0.07	2.06E-03	0.13
546	642217.49	4290808.73	Off-site Worker	0.06	1.89E-03	0.13
547	642237.49	4290808.73	Off-site Worker	0.06	1.75E-03	0.12
548	642257.49	4290808.73	Off-site Worker	0.05	1.61E-03	0.11
549	642277.49	4290808.73	Off-site Worker	0.05	1.50E-03	0.11
550	642297.49	4290808.73	Off-site Worker	0.05	1.39E-03	0.11
551	642317.49	4290808.73	Off-site Worker	0.04	1.29E-03	0.10
552	642337.49	4290808.73	Off-site Worker	0.04	1.20E-03	0.10
553	642357.49	4290808.73	Off-site Worker	0.04	1.12E-03	0.09
554	641617.49	4290828.73	Off-site Worker	0.12	3.72E-03	0.13
555	641637.49	4290828.73	Off-site Worker	0.14	4.20E-03	0.15
556	641657.49	4290828.73	Off-site Worker	0.16	4.80E-03	0.17
557	641677.49	4290828.73	Off-site Worker	0.18	5.57E-03	0.19
558	641697.49	4290828.73	Off-site Worker	0.21	6.58E-03	0.22
559	641717.49	4290828.73	Off-site Worker	0.26	7.92E-03	0.24
560	641737.49	4290828.73	Off-site Worker	0.32	9.65E-03	0.23
561	641757.49	4290828.73	Off-site Worker	0.39	1.19E-02	0.23
562	641777.49	4290828.73	Off-site Worker	0.48	1.46E-02	0.25
563	641797.49	4290828.73	Off-site Worker	0.59	1.78E-02	0.27
564	641817.49	4290828.73	Off-site Worker	0.70	2.09E-02	0.26
565	641837.49	4290828.73	Off-site Worker	0.77	2.32E-02	0.26
566	641857.49	4290828.73	Off-site Worker	0.79	2.38E-02	0.31
567	642197.49	4290828.73	Off-site Worker	0.06	1.96E-03	0.12
568	642217.49	4290828.73	Off-site Worker	0.06	1.81E-03	0.12

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
569	642237.49	4290828.73	Off-site Worker	0.06	1.67E-03	0.11
570	642257.49	4290828.73	Off-site Worker	0.05	1.55E-03	0.11
571	642277.49	4290828.73	Off-site Worker	0.05	1.45E-03	0.11
572	642297.49	4290828.73	Off-site Worker	0.04	1.35E-03	0.10
573	642317.49	4290828.73	Off-site Worker	0.04	1.26E-03	0.09
574	642337.49	4290828.73	Off-site Worker	0.04	1.18E-03	0.09
575	642357.49	4290828.73	Off-site Worker	0.04	1.11E-03	0.09
576	641637.49	4290848.73	Off-site Worker	0.13	4.09E-03	0.15
577	641657.49	4290848.73	Off-site Worker	0.15	4.68E-03	0.16
578	641677.49	4290848.73	Off-site Worker	0.18	5.42E-03	0.18
579	641697.49	4290848.73	Off-site Worker	0.21	6.37E-03	0.21
580	641717.49	4290848.73	Off-site Worker	0.25	7.60E-03	0.20
581	641737.49	4290848.73	Off-site Worker	0.30	9.12E-03	0.19
582	641757.49	4290848.73	Off-site Worker	0.36	1.10E-02	0.22
583	641777.49	4290848.73	Off-site Worker	0.43	1.32E-02	0.22
584	641797.49	4290848.73	Off-site Worker	0.52	1.56E-02	0.22
585	641817.49	4290848.73	Off-site Worker	0.59	1.78E-02	0.24
586	641837.49	4290848.73	Off-site Worker	0.64	1.93E-02	0.24
587	641857.49	4290848.73	Off-site Worker	0.65	1.96E-02	0.27
588	641877.49	4290848.73	Off-site Worker	0.62	1.85E-02	0.25
589	641897.49	4290848.73	Off-site Worker	0.56	1.68E-02	0.26
590	641917.49	4290848.73	Off-site Worker	0.48	1.46E-02	0.23
591	641937.49	4290848.73	Off-site Worker	0.40	1.22E-02	0.23
592	641957.49	4290848.73	Off-site Worker	0.33	9.92E-03	0.23
593	641977.49	4290848.73	Off-site Worker	0.26	8.05E-03	0.20
594	641997.49	4290848.73	Off-site Worker	0.22	6.62E-03	0.19
595	642017.49	4290848.73	Off-site Worker	0.18	5.55E-03	0.18
596	642037.49	4290848.73	Off-site Worker	0.16	4.73E-03	0.18
597	642057.49	4290848.73	Off-site Worker	0.13	4.08E-03	0.16
598	642077.49	4290848.73	Off-site Worker	0.12	3.54E-03	0.15
599	642197.49	4290848.73	Off-site Worker	0.06	1.87E-03	0.11
600	642217.49	4290848.73	Off-site Worker	0.06	1.73E-03	0.11
601	642237.49	4290848.73	Off-site Worker	0.05	1.60E-03	0.11
602	642257.49	4290848.73	Off-site Worker	0.05	1.49E-03	0.10
603	642277.49	4290848.73	Off-site Worker	0.05	1.39E-03	0.10
604	642297.49	4290848.73	Off-site Worker	0.04	1.30E-03	0.09
605	642317.49	4290848.73	Off-site Worker	0.04	1.22E-03	0.09
606	642337.49	4290848.73	Off-site Worker	0.04	1.15E-03	0.09
607	642357.49	4290848.73	Off-site Worker	0.04	1.08E-03	0.08
608	641657.49	4290868.73	Off-site Worker	0.15	4.57E-03	0.16
609	641677.49	4290868.73	Off-site Worker	0.17	5.27E-03	0.18
610	641697.49	4290868.73	Off-site Worker	0.20	6.15E-03	0.18
611	641717.49	4290868.73	Off-site Worker	0.24	7.24E-03	0.17
612	641737.49	4290868.73	Off-site Worker	0.28	8.57E-03	0.18
613	641757.49	4290868.73	Off-site Worker	0.33	1.01E-02	0.19
614	641777.49	4290868.73	Off-site Worker	0.39	1.19E-02	0.20
615	641797.49	4290868.73	Off-site Worker	0.45	1.37E-02	0.19
616	641817.49	4290868.73	Off-site Worker	0.51	1.53E-02	0.21
617	641837.49	4290868.73	Off-site Worker	0.54	1.63E-02	0.22
618	641857.49	4290868.73	Off-site Worker	0.55	1.64E-02	0.24
619	641877.49	4290868.73	Off-site Worker	0.52	1.56E-02	0.22
620	641897.49	4290868.73	Off-site Worker	0.47	1.43E-02	0.23
621	641917.49	4290868.73	Off-site Worker	0.42	1.27E-02	0.22
622	641937.49	4290868.73	Off-site Worker	0.36	1.09E-02	0.20
623	641957.49	4290868.73	Off-site Worker	0.30	9.06E-03	0.20
624	641977.49	4290868.73	Off-site Worker	0.25	7.48E-03	0.20
625	641997.49	4290868.73	Off-site Worker	0.20	6.21E-03	0.17
626	642017.49	4290868.73	Off-site Worker	0.17	5.24E-03	0.17
627	642037.49	4290868.73	Off-site Worker	0.15	4.49E-03	0.16
628	642057.49	4290868.73	Off-site Worker	0.13	3.90E-03	0.16
629	642077.49	4290868.73	Off-site Worker	0.11	3.41E-03	0.14
630	642097.49	4290868.73	Off-site Worker	0.10	3.00E-03	0.13
631	642117.49	4290868.73	Off-site Worker	0.09	2.65E-03	0.12
632	642157.49	4290868.73	Off-site Worker	0.07	2.14E-03	0.11
633	642197.49	4290868.73	Off-site Worker	0.06	1.79E-03	0.10
634	642217.49	4290868.73	Off-site Worker	0.05	1.65E-03	0.10
635	642237.49	4290868.73	Off-site Worker	0.05	1.53E-03	0.10
636	642257.49	4290868.73	Off-site Worker	0.05	1.43E-03	0.09
637	642277.49	4290868.73	Off-site Worker	0.04	1.34E-03	0.09
638	642297.49	4290868.73	Off-site Worker	0.04	1.25E-03	0.09
639	642317.49	4290868.73	Off-site Worker	0.04	1.18E-03	0.09

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
640	642337.49	4290868.73	Off-site Worker	0.04	1.11E-03	0.08
641	642357.49	4290868.73	Off-site Worker	0.03	1.05E-03	0.08
642	641677.49	4290888.73	Off-site Worker	0.17	5.11E-03	0.16
643	641697.49	4290888.73	Off-site Worker	0.19	5.91E-03	0.15
644	641717.49	4290888.73	Off-site Worker	0.22	6.88E-03	0.15
645	641737.49	4290888.73	Off-site Worker	0.26	8.02E-03	0.17
646	641757.49	4290888.73	Off-site Worker	0.31	9.30E-03	0.17
647	641777.49	4290888.73	Off-site Worker	0.35	1.07E-02	0.18
648	641797.49	4290888.73	Off-site Worker	0.40	1.21E-02	0.17
649	641817.49	4290888.73	Off-site Worker	0.44	1.32E-02	0.19
650	641837.49	4290888.73	Off-site Worker	0.46	1.39E-02	0.20
651	641857.49	4290888.73	Off-site Worker	0.46	1.39E-02	0.21
652	641877.49	4290888.73	Off-site Worker	0.44	1.33E-02	0.20
653	641897.49	4290888.73	Off-site Worker	0.41	1.23E-02	0.20
654	641917.49	4290888.73	Off-site Worker	0.37	1.11E-02	0.20
655	641937.49	4290888.73	Off-site Worker	0.32	9.69E-03	0.18
656	641957.49	4290888.73	Off-site Worker	0.27	8.26E-03	0.18
657	641977.49	4290888.73	Off-site Worker	0.23	6.94E-03	0.18
658	641997.49	4290888.73	Off-site Worker	0.19	5.83E-03	0.16
659	642017.49	4290888.73	Off-site Worker	0.16	4.94E-03	0.15
660	642037.49	4290888.73	Off-site Worker	0.14	4.25E-03	0.15
661	642057.49	4290888.73	Off-site Worker	0.12	3.71E-03	0.14
662	642077.49	4290888.73	Off-site Worker	0.11	3.26E-03	0.14
663	642097.49	4290888.73	Off-site Worker	0.10	2.89E-03	0.12
664	642117.49	4290888.73	Off-site Worker	0.08	2.57E-03	0.11
665	642137.49	4290888.73	Off-site Worker	0.08	2.30E-03	0.11
666	642157.49	4290888.73	Off-site Worker	0.07	2.07E-03	0.10
667	641697.49	4290908.73	Off-site Worker	0.18	5.66E-03	0.13
668	641717.49	4290908.73	Off-site Worker	0.21	6.51E-03	0.14
669	641737.49	4290908.73	Off-site Worker	0.24	7.48E-03	0.16
670	641757.49	4290908.73	Off-site Worker	0.28	8.54E-03	0.15
671	641777.49	4290908.73	Off-site Worker	0.32	9.65E-03	0.16
672	641797.49	4290908.73	Off-site Worker	0.35	1.07E-02	0.15
673	641817.49	4290908.73	Off-site Worker	0.38	1.16E-02	0.17
674	641837.49	4290908.73	Off-site Worker	0.40	1.20E-02	0.18
675	641857.49	4290908.73	Off-site Worker	0.40	1.20E-02	0.19
676	641877.49	4290908.73	Off-site Worker	0.38	1.15E-02	0.18
677	641897.49	4290908.73	Off-site Worker	0.35	1.07E-02	0.18
678	641917.49	4290908.73	Off-site Worker	0.32	9.74E-03	0.18
679	641937.49	4290908.73	Off-site Worker	0.29	8.67E-03	0.16
680	641957.49	4290908.73	Off-site Worker	0.25	7.53E-03	0.16
681	641977.49	4290908.73	Off-site Worker	0.21	6.44E-03	0.15
682	641997.49	4290908.73	Off-site Worker	0.18	5.47E-03	0.16
683	642017.49	4290908.73	Off-site Worker	0.15	4.67E-03	0.14
684	642037.49	4290908.73	Off-site Worker	0.13	4.03E-03	0.13
685	642057.49	4290908.73	Off-site Worker	0.12	3.52E-03	0.13
686	642077.49	4290908.73	Off-site Worker	0.10	3.11E-03	0.12
687	642097.49	4290908.73	Off-site Worker	0.09	2.77E-03	0.13
688	642117.49	4290908.73	Off-site Worker	0.08	2.48E-03	0.11
689	642137.49	4290908.73	Off-site Worker	0.07	2.23E-03	0.10
690	642157.49	4290908.73	Off-site Worker	0.07	2.01E-03	0.10
691	642197.49	4290908.73	Resident	0.42	1.67E-03	0.09
692	642217.49	4290908.73	Resident	0.39	1.53E-03	0.09
693	642257.49	4290908.73	Resident	0.33	1.32E-03	0.08
694	642277.49	4290908.73	Resident	0.31	1.24E-03	0.08
695	642297.49	4290908.73	Resident	0.29	1.16E-03	0.08
696	642317.49	4290908.73	Resident	0.28	1.09E-03	0.07
697	642337.49	4290908.73	Resident	0.26	1.03E-03	0.07
698	641717.49	4290928.73	Off-site Worker	0.20	6.14E-03	0.14
699	641737.49	4290928.73	Off-site Worker	0.23	6.96E-03	0.14
700	641757.49	4290928.73	Off-site Worker	0.26	7.84E-03	0.15
701	641777.49	4290928.73	Off-site Worker	0.29	8.73E-03	0.13
702	641797.49	4290928.73	Off-site Worker	0.32	9.55E-03	0.15
703	641817.49	4290928.73	Off-site Worker	0.34	1.02E-02	0.15
704	641837.49	4290928.73	Off-site Worker	0.35	1.05E-02	0.16
705	641857.49	4290928.73	Off-site Worker	0.35	1.05E-02	0.17
706	641877.49	4290928.73	Off-site Worker	0.33	1.00E-02	0.17
707	641897.49	4290928.73	Off-site Worker	0.31	9.38E-03	0.16
708	641917.49	4290928.73	Off-site Worker	0.29	8.64E-03	0.16
709	641937.49	4290928.73	Off-site Worker	0.26	7.80E-03	0.15
710	641957.49	4290928.73	Off-site Worker	0.23	6.88E-03	0.14

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
711	641977.49	4290928.73	Off-site Worker	0.20	5.97E-03	0.15
712	641997.49	4290928.73	Off-site Worker	0.17	5.13E-03	0.15
713	642017.49	4290928.73	Off-site Worker	0.15	4.42E-03	0.13
714	642037.49	4290928.73	Off-site Worker	0.13	3.82E-03	0.13
715	642057.49	4290928.73	Off-site Worker	0.11	3.35E-03	0.12
716	642077.49	4290928.73	Off-site Worker	0.10	2.97E-03	0.12
717	642097.49	4290928.73	Off-site Worker	0.09	2.66E-03	0.11
718	642117.49	4290928.73	Off-site Worker	0.08	2.39E-03	0.11
719	642137.49	4290928.73	Off-site Worker	0.07	2.16E-03	0.10
720	642157.49	4290928.73	Off-site Worker	0.06	1.95E-03	0.09
721	642197.49	4290928.73	Resident	0.41	1.62E-03	0.09
722	642217.49	4290928.73	Resident	0.37	1.48E-03	0.08
723	642237.49	4290928.73	Resident	0.35	1.37E-03	0.08
724	642257.49	4290928.73	Resident	0.32	1.28E-03	0.08
725	642277.49	4290928.73	Resident	0.30	1.19E-03	0.08
726	642297.49	4290928.73	Resident	0.28	1.12E-03	0.07
727	642317.49	4290928.73	Resident	0.27	1.05E-03	0.07
728	642337.49	4290928.73	Resident	0.25	9.96E-04	0.07
729	641737.49	4290948.73	Off-site Worker	0.21	6.47E-03	0.13
730	641757.49	4290948.73	Off-site Worker	0.24	7.20E-03	0.13
731	641777.49	4290948.73	Off-site Worker	0.26	7.92E-03	0.12
732	641797.49	4290948.73	Off-site Worker	0.28	8.57E-03	0.14
733	641817.49	4290948.73	Off-site Worker	0.30	9.06E-03	0.13
734	641837.49	4290948.73	Off-site Worker	0.31	9.29E-03	0.15
735	641857.49	4290948.73	Off-site Worker	0.31	9.21E-03	0.16
736	641877.49	4290948.73	Off-site Worker	0.29	8.83E-03	0.15
737	641897.49	4290948.73	Off-site Worker	0.28	8.30E-03	0.14
738	641917.49	4290948.73	Off-site Worker	0.26	7.71E-03	0.15
739	641937.49	4290948.73	Off-site Worker	0.23	7.04E-03	0.15
740	641957.49	4290948.73	Off-site Worker	0.21	6.30E-03	0.13
741	641977.49	4290948.73	Off-site Worker	0.18	5.54E-03	0.14
742	641997.49	4290948.73	Off-site Worker	0.16	4.82E-03	0.13
743	642017.49	4290948.73	Off-site Worker	0.14	4.18E-03	0.13
744	642037.49	4290948.73	Off-site Worker	0.12	3.64E-03	0.12
745	642057.49	4290948.73	Off-site Worker	0.11	3.20E-03	0.11
746	642077.49	4290948.73	Off-site Worker	0.09	2.84E-03	0.11
747	642097.49	4290948.73	Off-site Worker	0.08	2.55E-03	0.10
748	642117.49	4290948.73	Off-site Worker	0.08	2.30E-03	0.10
749	642137.49	4290948.73	Off-site Worker	0.07	2.08E-03	0.10
750	642157.49	4290948.73	Off-site Worker	0.06	1.89E-03	0.09
751	642197.49	4290948.73	Resident	0.40	1.57E-03	0.08
752	642217.49	4290948.73	Resident	0.36	1.44E-03	0.08
753	642237.49	4290948.73	Resident	0.34	1.33E-03	0.07
754	642257.49	4290948.73	Resident	0.31	1.24E-03	0.07
755	642277.49	4290948.73	Resident	0.29	1.16E-03	0.07
756	642297.49	4290948.73	Resident	0.27	1.08E-03	0.07
757	641757.49	4290968.73	Off-site Worker	0.22	6.62E-03	0.12
758	641777.49	4290968.73	Off-site Worker	0.24	7.20E-03	0.11
759	641797.49	4290968.73	Off-site Worker	0.26	7.72E-03	0.13
760	641997.49	4290968.73	Off-site Worker	0.15	4.52E-03	0.12
761	642017.49	4290968.73	Off-site Worker	0.13	3.96E-03	0.12
762	642037.49	4290968.73	Off-site Worker	0.11	3.47E-03	0.11
763	642057.49	4290968.73	Off-site Worker	0.10	3.06E-03	0.11
764	642077.49	4290968.73	Off-site Worker	0.09	2.72E-03	0.10
765	642097.49	4290968.73	Off-site Worker	0.08	2.44E-03	0.10
766	642117.49	4290968.73	Off-site Worker	0.07	2.21E-03	0.09
767	642137.49	4290968.73	Off-site Worker	0.07	2.01E-03	0.10
768	642157.49	4290968.73	Off-site Worker	0.06	1.83E-03	0.09
769	642197.49	4290968.73	Off-site Worker	0.05	1.53E-03	0.08
770	642217.49	4290968.73	Resident	0.35	1.41E-03	0.08
771	642237.49	4290968.73	Resident	0.33	1.30E-03	0.07
772	642257.49	4290968.73	Resident	0.30	1.21E-03	0.07
773	642277.49	4290968.73	Resident	0.28	1.13E-03	0.07
774	642297.49	4290968.73	Resident	0.27	1.05E-03	0.06
775	642317.49	4290968.73	Resident	0.25	9.90E-04	0.06
776	641797.49	4290988.73	Off-site Worker	0.23	6.98E-03	0.12
777	641837.49	4290988.73	Resident	1.88	7.39E-03	0.13
778	641857.49	4290988.73	Resident	1.86	7.29E-03	0.13
779	641877.49	4290988.73	Resident	1.79	7.02E-03	0.13
780	641917.49	4290988.73	Resident	1.59	6.23E-03	0.13
781	641937.49	4290988.73	Resident	1.48	5.79E-03	0.13

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
782	641957.49	4290988.73	Resident	1.35	5.30E-03	0.11
783	641997.49	4290988.73	Off-site Worker	0.14	4.25E-03	0.11
784	642017.49	4290988.73	Off-site Worker	0.12	3.75E-03	0.11
785	642037.49	4290988.73	Off-site Worker	0.11	3.31E-03	0.11
786	642057.49	4290988.73	Off-site Worker	0.10	2.92E-03	0.10
787	642077.49	4290988.73	Off-site Worker	0.09	2.60E-03	0.10
788	642097.49	4290988.73	Off-site Worker	0.08	2.34E-03	0.09
789	642117.49	4290988.73	Off-site Worker	0.07	2.12E-03	0.09
790	642137.49	4290988.73	Off-site Worker	0.06	1.94E-03	0.09
791	642157.49	4290988.73	Off-site Worker	0.06	1.77E-03	0.09
792	642197.49	4290988.73	Off-site Worker	0.05	1.50E-03	0.07
793	642257.49	4290988.73	Resident	0.30	1.18E-03	0.07
794	642277.49	4290988.73	Resident	0.28	1.10E-03	0.06
795	642297.49	4290988.73	Resident	0.26	1.03E-03	0.06
796	641857.49	4291008.73	Resident	1.67	6.55E-03	0.12
797	641877.49	4291008.73	Resident	1.61	6.32E-03	0.12
798	641917.49	4291008.73	Resident	1.44	5.65E-03	0.12
799	641937.49	4291008.73	Resident	1.35	5.28E-03	0.12
800	641957.49	4291008.73	Resident	1.24	4.88E-03	0.11
801	641997.49	4291008.73	Off-site Worker	0.13	3.99E-03	0.10
802	642017.49	4291008.73	Off-site Worker	0.12	3.55E-03	0.10
803	642037.49	4291008.73	Off-site Worker	0.10	3.15E-03	0.10
804	642057.49	4291008.73	Off-site Worker	0.09	2.80E-03	0.10
805	642077.49	4291008.73	Off-site Worker	0.08	2.50E-03	0.09
806	642097.49	4291008.73	Off-site Worker	0.07	2.25E-03	0.09
807	642117.49	4291008.73	Off-site Worker	0.07	2.04E-03	0.09
808	642137.49	4291008.73	Off-site Worker	0.06	1.87E-03	0.08
809	642157.49	4291008.73	Off-site Worker	0.06	1.71E-03	0.08
810	642197.49	4291008.73	Resident	0.37	1.46E-03	0.08
811	642217.49	4291008.73	Resident	0.34	1.35E-03	0.07
812	642237.49	4291008.73	Resident	0.31	1.25E-03	0.07
813	641997.49	4291028.73	Off-site Worker	0.12	3.75E-03	0.09
814	642037.49	4291028.73	Off-site Worker	0.10	3.01E-03	0.09
815	642057.49	4291028.73	Off-site Worker	0.09	2.69E-03	0.09
816	642077.49	4291028.73	Off-site Worker	0.08	2.41E-03	0.08
817	642097.49	4291028.73	Off-site Worker	0.07	2.17E-03	0.08
818	642117.49	4291028.73	Off-site Worker	0.06	1.97E-03	0.08
819	642137.49	4291028.73	Off-site Worker	0.06	1.80E-03	0.08
820	642197.49	4291028.73	Off-site Worker	0.05	1.42E-03	0.08
821	642217.49	4291028.73	Resident	0.33	1.31E-03	0.07
822	642237.49	4291028.73	Resident	0.31	1.22E-03	0.06
823	642257.49	4291028.73	Resident	0.29	1.13E-03	0.06
824	642077.49	4291048.73	Off-site Worker	0.08	2.32E-03	0.08
825	642097.49	4291048.73	Off-site Worker	0.07	2.10E-03	0.08
826	642117.49	4291048.73	Off-site Worker	0.06	1.90E-03	0.08
827	642137.49	4291048.73	Off-site Worker	0.06	1.73E-03	0.07
828	642197.49	4291048.73	Off-site Worker	0.05	1.37E-03	0.07
829	642217.49	4291048.73	Off-site Worker	0.04	1.28E-03	0.07
830	642237.49	4291048.73	Off-site Worker	0.04	1.19E-03	0.06
831	641728.98	4290124.75	Resident	0.39	1.55E-03	0.08
832	641778.98	4290124.75	Resident	0.41	1.60E-03	0.10
833	641828.98	4290124.75	Resident	0.43	1.68E-03	0.10
834	641878.98	4290124.75	Resident	0.44	1.73E-03	0.10
835	641928.98	4290124.75	Resident	0.47	1.86E-03	0.10
836	641978.98	4290124.75	Resident	0.52	2.04E-03	0.10
837	642028.98	4290124.75	Resident	0.57	2.25E-03	0.08
838	641628.98	4290174.75	Resident	0.39	1.53E-03	0.11
839	641678.98	4290174.75	Resident	0.43	1.67E-03	0.11
840	641728.98	4290174.75	Resident	0.46	1.82E-03	0.10
841	641778.98	4290174.75	Resident	0.48	1.88E-03	0.10
842	641878.98	4290174.75	Resident	0.53	2.08E-03	0.11
843	641928.98	4290174.75	Resident	0.57	2.25E-03	0.11
844	641978.98	4290174.75	Resident	0.64	2.49E-03	0.11
845	642028.98	4290174.75	Resident	0.70	2.74E-03	0.10
846	642128.98	4290174.75	Off-site Worker	0.09	2.77E-03	0.09
847	641528.98	4290224.75	Resident	0.35	1.39E-03	0.10
848	641578.98	4290224.75	Resident	0.39	1.54E-03	0.11
849	641628.98	4290224.75	Resident	0.45	1.74E-03	0.12
850	641678.98	4290224.75	Resident	0.50	1.94E-03	0.13
851	641728.98	4290224.75	Resident	0.55	2.16E-03	0.12
852	641778.98	4290224.75	Resident	0.58	2.27E-03	0.11

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
853	641878.98	4290224.75	Resident	0.64	2.54E-03	0.13
854	641928.98	4290224.75	Resident	0.71	2.78E-03	0.12
855	641978.98	4290224.75	Resident	0.80	3.13E-03	0.12
856	642028.98	4290224.75	Resident	0.87	3.42E-03	0.12
857	642128.98	4290224.75	Off-site Worker	0.11	3.21E-03	0.09
858	642178.98	4290224.75	Off-site Worker	0.10	2.90E-03	0.09
859	641528.98	4290274.75	Resident	0.40	1.56E-03	0.10
860	641578.98	4290274.75	Resident	0.45	1.75E-03	0.12
861	641628.98	4290274.75	Resident	0.51	2.01E-03	0.13
862	641678.98	4290274.75	Resident	0.59	2.29E-03	0.16
863	641728.98	4290274.75	Resident	0.66	2.58E-03	0.14
864	641778.98	4290274.75	Resident	0.71	2.79E-03	0.14
865	641828.98	4290274.75	Resident	0.76	2.98E-03	0.16
866	641878.98	4290274.75	Resident	0.81	3.17E-03	0.15
867	641928.98	4290274.75	Resident	0.90	3.54E-03	0.15
868	641978.98	4290274.75	Resident	1.03	4.04E-03	0.13
869	642028.98	4290274.75	Resident	1.10	4.30E-03	0.12
870	642128.98	4290274.75	Off-site Worker	0.12	3.73E-03	0.11
871	642178.98	4290274.75	Off-site Worker	0.11	3.22E-03	0.10
872	642228.98	4290274.75	Off-site Worker	0.09	2.64E-03	0.09
873	642278.98	4290274.75	Off-site Worker	0.07	2.15E-03	0.08
874	642328.98	4290274.75	Off-site Worker	0.06	1.80E-03	0.07
875	641478.98	4290324.75	Resident	0.38	1.49E-03	0.12
876	641528.98	4290324.75	Resident	0.44	1.74E-03	0.13
877	641578.98	4290324.75	Resident	0.52	2.02E-03	0.13
878	641628.98	4290324.75	Resident	0.59	2.32E-03	0.16
879	641678.98	4290324.75	Resident	0.70	2.73E-03	0.17
880	641728.98	4290324.75	Resident	0.80	3.12E-03	0.17
881	642128.98	4290324.75	Off-site Worker	0.14	4.27E-03	0.13
882	642178.98	4290324.75	Off-site Worker	0.11	3.43E-03	0.11
883	642228.98	4290324.75	Off-site Worker	0.09	2.71E-03	0.10
884	642278.98	4290324.75	Off-site Worker	0.07	2.22E-03	0.09
885	642328.98	4290324.75	Off-site Worker	0.06	1.84E-03	0.08
886	642378.98	4290324.75	Off-site Worker	0.05	1.52E-03	0.07
887	641428.98	4290374.75	Resident	0.33	1.30E-03	0.10
888	641478.98	4290374.75	Resident	0.40	1.56E-03	0.10
889	641528.98	4290374.75	Resident	0.49	1.90E-03	0.14
890	641578.98	4290374.75	Resident	0.59	2.30E-03	0.16
891	641628.98	4290374.75	Resident	0.70	2.73E-03	0.16
892	642128.98	4290374.75	Off-site Worker	0.15	4.65E-03	0.13
893	642178.98	4290374.75	Off-site Worker	0.12	3.55E-03	0.13
894	642228.98	4290374.75	Off-site Worker	0.09	2.81E-03	0.11
895	642278.98	4290374.75	Off-site Worker	0.07	2.25E-03	0.09
896	642328.98	4290374.75	Off-site Worker	0.06	1.79E-03	0.09
897	642378.98	4290374.75	Off-site Worker	0.05	1.44E-03	0.07
898	642428.98	4290374.75	Off-site Worker	0.04	1.18E-03	0.06
899	641428.98	4290424.75	Resident	0.34	1.34E-03	0.09
900	641478.98	4290424.75	Resident	0.41	1.62E-03	0.12
901	641528.98	4290424.75	Resident	0.51	2.00E-03	0.14
902	641578.98	4290424.75	Resident	0.65	2.53E-03	0.17
903	641628.98	4290424.75	Resident	0.82	3.19E-03	0.21
904	642228.98	4290424.75	Off-site Worker	0.09	2.79E-03	0.12
905	642278.98	4290424.75	Off-site Worker	0.07	2.13E-03	0.10
906	642328.98	4290424.75	Off-site Worker	0.05	1.67E-03	0.08
907	642378.98	4290424.75	Off-site Worker	0.04	1.36E-03	0.06
908	642428.98	4290424.75	Off-site Worker	0.04	1.13E-03	0.06
909	642478.98	4290424.75	Off-site Worker	0.03	9.59E-04	0.06
910	642328.98	4290474.75	Off-site Worker	0.05	1.58E-03	0.08
911	642378.98	4290474.75	Off-site Worker	0.04	1.29E-03	0.07
912	642428.98	4290474.75	Off-site Worker	0.04	1.08E-03	0.06
913	642478.98	4290474.75	Resident	0.23	8.96E-04	0.06
914	642528.98	4290474.75	Resident	0.19	7.69E-04	0.05
915	641328.98	4290524.75	Off-site Worker	0.04	1.17E-03	0.09
916	641428.98	4290524.75	Off-site Worker	0.05	1.60E-03	0.10
917	641478.98	4290524.75	Off-site Worker	0.06	1.91E-03	0.13
918	641528.98	4290524.75	Off-site Worker	0.08	2.31E-03	0.15
919	642378.98	4290524.75	Off-site Worker	0.04	1.21E-03	0.07
920	642428.98	4290524.75	Off-site Worker	0.03	1.01E-03	0.06
921	642478.98	4290524.75	Off-site Worker	0.03	8.52E-04	0.06
922	641328.98	4290574.75	Off-site Worker	0.04	1.19E-03	0.09
923	641428.98	4290574.75	Off-site Worker	0.06	1.69E-03	0.11

Table A-5. Health Risk Assessment Results for All ReceptorsWest Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
924	641478.98	4290574.75	Off-site Worker	0.07	2.08E-03	0.14
925	641528.98	4290574.75	Off-site Worker	0.09	2.59E-03	0.17
926	642378.98	4290574.75	Off-site Worker	0.04	1.13E-03	0.07
927	642428.98	4290574.75	Off-site Worker	0.03	9.46E-04	0.07
928	642478.98	4290574.75	Off-site Worker	0.03	8.07E-04	0.06
929	642528.98	4290574.75	Off-site Worker	0.02	6.98E-04	0.05
930	641328.98	4290624.75	Off-site Worker	0.04	1.20E-03	0.09
931	641428.98	4290624.75	Off-site Worker	0.06	1.69E-03	0.12
932	641478.98	4290624.75	Off-site Worker	0.07	2.09E-03	0.14
933	642378.98	4290624.75	Off-site Worker	0.03	1.03E-03	0.07
934	642428.98	4290624.75	Off-site Worker	0.03	8.72E-04	0.06
935	642478.98	4290624.75	Off-site Worker	0.02	7.48E-04	0.05
936	642528.98	4290624.75	Off-site Worker	0.02	6.49E-04	0.05
937	641328.98	4290674.75	Off-site Worker	0.04	1.23E-03	0.08
938	641378.98	4290674.75	Off-site Worker	0.05	1.46E-03	0.09
939	641428.98	4290674.75	Off-site Worker	0.06	1.75E-03	0.11
940	641478.98	4290674.75	Off-site Worker	0.07	2.15E-03	0.13
941	641528.98	4290674.75	Off-site Worker	0.09	2.74E-03	0.16
942	642378.98	4290674.75	Off-site Worker	0.03	9.63E-04	0.08
943	642428.98	4290674.75	Off-site Worker	0.03	8.15E-04	0.07
944	642478.98	4290674.75	Off-site Worker	0.02	7.00E-04	0.06
945	642528.98	4290674.75	Off-site Worker	0.02	6.09E-04	0.05
946	641328.98	4290724.75	Off-site Worker	0.04	1.29E-03	0.09
947	641378.98	4290724.75	Off-site Worker	0.05	1.54E-03	0.10
948	641428.98	4290724.75	Off-site Worker	0.06	1.87E-03	0.11
949	641478.98	4290724.75	Off-site Worker	0.08	2.31E-03	0.12
950	641528.98	4290724.75	Off-site Worker	0.10	2.94E-03	0.15
951	642378.98	4290724.75	Off-site Worker	0.03	9.91E-04	0.08
952	642428.98	4290724.75	Off-site Worker	0.03	8.32E-04	0.07
953	642478.98	4290724.75	Off-site Worker	0.02	7.10E-04	0.06
954	642528.98	4290724.75	Off-site Worker	0.02	6.15E-04	0.05
955	641328.98	4290774.75	Off-site Worker	0.05	1.37E-03	0.08
956	641378.98	4290774.75	Off-site Worker	0.05	1.61E-03	0.09
957	641428.98	4290774.75	Resident	0.48	1.89E-03	0.10
958	641478.98	4290774.75	Resident	0.57	2.25E-03	0.12
959	641528.98	4290774.75	Resident	0.68	2.70E-03	0.14
960	642378.98	4290774.75	Off-site Worker	0.03	1.04E-03	0.08
961	642428.98	4290774.75	Off-site Worker	0.03	8.79E-04	0.07
962	642478.98	4290774.75	Off-site Worker	0.02	7.51E-04	0.07
963	642528.98	4290774.75	Off-site Worker	0.02	6.48E-04	0.06
964	641378.98	4290824.75	Off-site Worker	0.05	1.47E-03	0.09
965	641428.98	4290824.75	Resident	0.42	1.67E-03	0.10
966	641478.98	4290824.75	Resident	0.49	1.95E-03	0.11
967	641528.98	4290824.75	Resident	0.59	2.35E-03	0.14
968	641578.98	4290824.75	Off-site Worker	0.10	2.99E-03	0.14
969	642378.98	4290824.75	Off-site Worker	0.03	1.04E-03	0.09
970	642428.98	4290824.75	Off-site Worker	0.03	8.89E-04	0.07
971	642478.98	4290824.75	Off-site Worker	0.03	7.68E-04	0.06
972	642528.98	4290824.75	Off-site Worker	0.02	6.70E-04	0.05
973	641378.98	4290874.75	Off-site Worker	0.04	1.30E-03	0.08
974	641428.98	4290874.75	Resident	0.37	1.50E-03	0.10
975	641478.98	4290874.75	Resident	0.45	1.80E-03	0.10
976	641528.98	4290874.75	Resident	0.56	2.23E-03	0.10
977	641578.98	4290874.75	Off-site Worker	0.09	2.83E-03	0.11
978	641628.98	4290874.75	Off-site Worker	0.12	3.75E-03	0.14
979	642378.98	4290874.75	Off-site Worker	0.03	9.76E-04	0.08
980	642428.98	4290874.75	Off-site Worker	0.03	8.54E-04	0.07
981	642478.98	4290874.75	Off-site Worker	0.02	7.51E-04	0.07
982	642528.98	4290874.75	Off-site Worker	0.02	6.64E-04	0.06
983	641428.98	4290924.75	Resident	0.36	1.44E-03	0.08
984	641478.98	4290924.75	Resident	0.43	1.74E-03	0.07
985	641528.98	4290924.75	Resident	0.53	2.12E-03	0.09
986	641578.98	4290924.75	Resident	0.66	2.68E-03	0.11
987	641628.98	4290924.75	Resident	0.88	3.53E-03	0.13
988	641678.98	4290924.75	Off-site Worker	0.16	4.83E-03	0.13
989	642378.98	4290924.75	Resident	0.23	8.98E-04	0.07
990	642428.98	4290924.75	Resident	0.20	7.94E-04	0.06
991	642478.98	4290924.75	Resident	0.18	7.08E-04	0.06
992	642528.98	4290924.75	Resident	0.16	6.34E-04	0.05
993	641428.98	4290974.75	Resident	0.35	1.40E-03	0.06
994	641478.98	4290974.75	Resident	0.41	1.66E-03	0.07

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
995	641528.98	4290974.75	Resident	0.50	2.02E-03	0.08
996	641578.98	4290974.75	Resident	0.63	2.55E-03	0.10
997	641628.98	4290974.75	Resident	0.81	3.29E-03	0.10
998	641678.98	4290974.75	Resident	1.07	4.33E-03	0.11
999	641728.98	4290974.75	Resident	1.41	5.63E-03	0.11
1000	642328.98	4290974.75	Resident	0.24	9.49E-04	0.06
1001	642378.98	4290974.75	Resident	0.21	8.28E-04	0.06
1002	642428.98	4290974.75	Resident	0.19	7.35E-04	0.05
1003	642528.98	4290974.75	Resident	0.15	5.94E-04	0.05
1004	641528.98	4291024.75	Resident	0.48	1.94E-03	0.08
1005	641578.98	4291024.75	Resident	0.59	2.40E-03	0.09
1006	641628.98	4291024.75	Resident	0.75	3.03E-03	0.08
1007	641678.98	4291024.75	Resident	0.95	3.83E-03	0.09
1008	641728.98	4291024.75	Resident	1.19	4.74E-03	0.10
1009	641778.98	4291024.75	Resident	1.42	5.63E-03	0.10
1010	641828.98	4291024.75	Resident	1.56	6.13E-03	0.11
1011	641878.98	4291024.75	Resident	1.48	5.81E-03	0.11
1012	641928.98	4291024.75	Resident	1.29	5.06E-03	0.11
1013	642428.98	4291024.75	Resident	0.17	6.87E-04	0.05
1014	642528.98	4291024.75	Resident	0.14	5.57E-04	0.04
1015	641578.98	4291074.75	Resident	0.55	2.25E-03	0.07
1016	641628.98	4291074.75	Resident	0.68	2.77E-03	0.07
1017	641678.98	4291074.75	Resident	0.84	3.37E-03	0.08
1018	641728.98	4291074.75	Resident	1.01	4.01E-03	0.07
1019	641778.98	4291074.75	Resident	1.16	4.60E-03	0.09
1020	641828.98	4291074.75	Resident	1.24	4.88E-03	0.09
1021	641878.98	4291074.75	Resident	1.18	4.63E-03	0.10
1022	641928.98	4291074.75	Resident	1.04	4.10E-03	0.09
1023	642028.98	4291074.75	Off-site Worker	0.09	2.81E-03	0.08
1024	642078.98	4291074.75	Off-site Worker	0.07	2.19E-03	0.08
1025	642128.98	4291074.75	Off-site Worker	0.06	1.73E-03	0.07
1026	642228.98	4291074.75	Off-site Worker	0.04	1.19E-03	0.06
1027	642278.98	4291074.75	Off-site Worker	0.03	1.01E-03	0.05
1028	642328.98	4291074.75	Off-site Worker	0.03	8.58E-04	0.05
1029	642378.98	4291074.75	Off-site Worker	0.02	7.42E-04	0.05
1030	642428.98	4291074.75	Resident	0.16	6.52E-04	0.05
1031	642478.98	4291074.75	Resident	0.15	5.81E-04	0.04
1032	641628.98	4291124.75	Resident	0.62	2.51E-03	0.07
1033	641678.98	4291124.75	Resident	0.74	2.96E-03	0.07
1034	641728.98	4291124.75	Resident	0.86	3.43E-03	0.07
1035	641778.98	4291124.75	Resident	0.97	3.82E-03	0.07
1036	641828.98	4291124.75	Resident	1.01	3.98E-03	0.08
1037	641878.98	4291124.75	Resident	0.96	3.78E-03	0.08
1038	641928.98	4291124.75	Resident	0.86	3.39E-03	0.08
1039	641978.98	4291124.75	Resident	0.76	2.99E-03	0.08
1040	642028.98	4291124.75	Resident	0.63	2.49E-03	0.07
1041	642128.98	4291124.75	Resident	0.40	1.60E-03	0.06
1042	642228.98	4291124.75	Off-site Worker	0.04	1.11E-03	0.06
1043	642278.98	4291124.75	Off-site Worker	0.03	9.53E-04	0.06
1044	642328.98	4291124.75	Off-site Worker	0.03	8.23E-04	0.05
1045	642378.98	4291124.75	Off-site Worker	0.02	7.15E-04	0.04
1046	642428.98	4291124.75	Off-site Worker	0.02	6.27E-04	0.04
1047	641678.98	4291174.75	Resident	0.65	2.61E-03	0.06
1048	641728.98	4291174.75	Resident	0.74	2.95E-03	0.06
1049	641778.98	4291174.75	Resident	0.82	3.22E-03	0.06
1050	641828.98	4291174.75	Resident	0.84	3.32E-03	0.07
1051	641878.98	4291174.75	Resident	0.80	3.15E-03	0.07
1052	641928.98	4291174.75	Resident	0.73	2.86E-03	0.06
1053	641978.98	4291174.75	Resident	0.65	2.56E-03	0.07
1054	642028.98	4291174.75	Resident	0.56	2.21E-03	0.06
1055	642078.98	4291174.75	Resident	0.46	1.82E-03	0.06
1056	642128.98	4291174.75	Resident	0.38	1.49E-03	0.06
1057	642228.98	4291174.75	Off-site Worker	0.03	1.03E-03	0.05
1058	642278.98	4291174.75	Off-site Worker	0.03	8.92E-04	0.05
1059	642328.98	4291174.75	Off-site Worker	0.03	7.84E-04	0.05
1060	642378.98	4291174.75	Off-site Worker	0.02	6.87E-04	0.04
1061	642428.98	4291174.75	Off-site Worker	0.02	6.05E-04	0.04
1062	641828.98	4291224.75	Resident	0.71	2.81E-03	0.06
1063	641878.98	4291224.75	Resident	0.68	2.67E-03	0.06
1064	641928.98	4291224.75	Resident	0.62	2.44E-03	0.06
1065	641978.98	4291224.75	Resident	0.56	2.22E-03	0.06

Table A-5. Health Risk Assessment Results for All Receptors

West Roseville Costco Fuel Station
Placer County, California

Receptor ID	X-Coordinate (m)	Y-Coordinate (m)	Receptor Type	Cancer Risk (in a million)	Chronic Hazard Index	Acute Hazard Index
1066	642028.98	4291224.75	Resident	0.50	1.97E-03	0.05
1067	642078.98	4291224.75	Resident	0.42	1.66E-03	0.05
1068	642228.98	4291224.75	Resident	0.24	9.68E-04	0.05
1069	642278.98	4291224.75	Resident	0.21	8.36E-04	0.04
1070	642328.98	4291224.75	Resident	0.19	7.38E-04	0.04
1071	642078.98	4291274.75	Resident	0.39	1.52E-03	0.05
1072	642228.98	4291274.75	Resident	0.23	9.18E-04	0.04
1073	641930.02	4290508.96	Parking Lot/Sidewalk	--	--	--
1074	641946.83	4290570.18	Parking Lot/Sidewalk	--	--	--
1075	641929.97	4290548.78	Parking Lot/Sidewalk	--	--	--
1076	641935.44	4290539.04	Parking Lot/Sidewalk	--	--	--
1077	641935.54	4290563.61	Parking Lot/Sidewalk	--	--	--
1078	641773.38	4290579.67	Parking Lot/Sidewalk	--	--	--
1079	641786.36	4290528.55	Parking Lot/Sidewalk	--	--	--
1080	641785.95	4290548.99	Parking Lot/Sidewalk	--	--	--
1081	641782.74	4290558.38	Parking Lot/Sidewalk	--	--	--
1082	641786.01	4290539.02	Parking Lot/Sidewalk	--	--	--
1083	641925.07	4290557.52	Parking Lot/Sidewalk	--	--	--
1084	641826.55	4290450.45	Resident	2.12	8.26E-03	0.32
1085	641842.49	4290450.67	Resident	2.23	8.68E-03	0.36
1086	641855.09	4290451.00	Resident	2.32	9.05E-03	0.35
1087	641868.61	4290451.75	Resident	2.44	9.53E-03	0.35
1088	641883.03	4290452.05	Resident	2.60	1.01E-02	0.34
1089	641896.09	4290452.20	Resident	2.77	1.08E-02	0.33
1090	641910.06	4290452.65	Resident	2.98	1.16E-02	0.34
1091	641923.87	4290453.10	Resident	3.18	1.24E-02	0.30
1092	641826.43	4290468.21	Off-site Worker	0.32	9.62E-03	0.34
1093	641842.54	4290468.57	Off-site Worker	0.34	1.02E-02	0.41
1094	641855.49	4290468.86	Off-site Worker	0.36	1.07E-02	0.40
1095	641869.27	4290469.17	Off-site Worker	0.38	1.13E-02	0.39
1096	641883.34	4290469.49	Off-site Worker	0.40	1.21E-02	0.39
1097	641896.85	4290469.80	Off-site Worker	0.44	1.30E-02	0.38
1098	641910.35	4290470.10	Off-site Worker	0.47	1.40E-02	0.36
1099	641923.87	4290470.41	Off-site Worker	0.50	1.48E-02	0.36
1100	641895.88	4291482.14	Sensitive	0.34	1.34E-03	0.04
1101	642948.75	4291255.15	Sensitive	0.06	2.36E-04	0.03
1102	642860.88	4290622.20	Sensitive	0.08	3.06E-04	0.03
1103	643185.05	4291806.48	Sensitive	0.03	1.36E-04	0.02
1104	643244.66	4291418.41	Sensitive	0.04	1.56E-04	0.02
1105	642134.80	4291610.08	Sensitive	0.20	7.90E-04	0.03
1106	641976.14	4292366.19	Sensitive	0.09	3.57E-04	0.01
1107	640611.19	4292329.91	Sensitive	0.05	1.90E-04	0.01
1108	642149.41	4292117.11	Sensitive	0.11	4.15E-04	0.02
1109	641585.73	4289086.57	Sensitive	0.06	2.53E-04	0.02
1110	643872.02	4291088.99	Sensitive	0.02	9.74E-05	0.01
1111	642244.79	4289130.47	Sensitive	0.09	3.43E-04	0.02
1112	641631.72	4292779.54	Sensitive	0.07	2.78E-04	0.01
1113	644046.13	4290639.04	Sensitive	0.02	7.79E-05	0.01
1114	640895.82	4292161.96	Sensitive	0.07	2.69E-04	0.01
1115	642699.76	4291558.17	Sensitive	0.07	2.81E-04	0.02