

# Appendix HRA

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Health Risk Assessment



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Project No: 19-07539

Kenneth Rosales  
Planning, Building & Code Enforcement  
City of San Jose  
200 East Santa Clara Street, San Jose, California 95113  
Via email: [kenneth.rosales@sanjoseca.gov](mailto:kenneth.rosales@sanjoseca.gov)

**Subject: STACK Data Center Project, Appendix HRA**

Dear Mr. Rosales:

Rincon Consultants, Inc. (Rincon) completed the primary air quality analysis for the STACK Data Center Project to support the Initial Study Mitigated Negative Declaration (IS/MND). As part of this analysis, Rincon completed a construction Health Risk Assessment (HRA) which evaluates the potential health risk to off-site receptors due to construction of the proposed project, while the results of the operational HRA prepared by ProActive Consulting Group (ProActive) were also incorporated and evaluate potential health risk to existing residents and workers nearby due to the operation of the data center, and specifically, the operation of diesel generators associated with the project. A brief description of the technical analysis is included below for the HRA is provided below, with additional information provided in the *Air Quality* section of the IS/MND. In addition to the brief written descriptions below, this appendix also provides a summary of all calculation sheets used in the analysis.

The HRA quantifies health risk associated with emissions of toxic air contaminants (TACs). While diesel particulate matter is a TAC, fugitive dust/fugitive particulate matter is not a TAC, pursuant to the California Air Resources Board's "Hot Spots" List of Substances and CARB's Identified Toxic Air Contaminants. Furthermore, fugitive dust/fugitive particulate matter has no health risk value in CARB's Hotspots Analysis and Reporting Program (HARP 2) model. Therefore, fugitive PM<sub>10</sub> is not included in the analysis. Like fugitive PM<sub>10</sub>, fugitive PM<sub>2.5</sub> is also not a TAC. However, because BAAQMD has a PM<sub>2.5</sub> concentration significance threshold, this analysis includes both onsite exhaust and fugitive PM<sub>2.5</sub> emissions to accurately compare overall PM<sub>2.5</sub> emissions from the construction site to BAAQMD's PM<sub>2.5</sub> concentration threshold.

## Health Risk Assessment

### Construction Health Risk Assessment Methodology

The construction HRA conducted the following methodology outlined in BAAQMD's *Recommended Methods for Screening and Modeling Local Risks and Hazards* (2012). BAAQMD's methods include recommended exposure periods appropriate to evaluate short-term emission increases, guidance on the modeling of sensitive receptor locations using receptor grids, and inclusion of additional sources of toxic air contaminants (TACs) for analysis of cumulative health risks, which were incorporated into the construction HRA. The construction HRA evaluated potential cancer and non-cancer health impacts associated with emissions diesel particulate matter (DPM) during project construction.



## Air Dispersion and Health Risk Models

DPM and PM<sub>2.5</sub> dispersion was modeled using the U.S. Environmental Protection Agency (USEPA) air dispersion model, the AMS/EPA Regulatory Model (AERMOD), version 19121 utilizing local meteorological data from the Norman Y. Mineta San José International Airport, approximately 3.2 miles southwest of the project site. The specific meteorological data was pre-processed with AERMET, version 14134, and is identified by BAAQMD as appropriate meteorological data to use with AERMOD while conducting an HRA for the City of San José. Average annual and maximum daily on-site PM<sub>10</sub> and PM<sub>2.5</sub> emissions estimated by the California Emissions Estimator Model (CalEEMod) were used as inputs into AERMOD to determine the concentration level in micrograms/cubic meter at off-site sensitive receptors. DPM concentration was assumed to equal the PM<sub>10</sub> exhaust emissions. Only on-site exhaust emissions were considered in this analysis as implementation of the project is not anticipated to result in a substantial amount of TACs emitted off-site due to a large amount of diesel trucks queuing outside the entrance or hauling materials (BAAQMD 2017c). DPM and PM<sub>10</sub> emissions calculations based on the CalEEMod outputs for project construction with and without mitigation are included in Appendix HRA. AERMOD's variable emissions function was used to model a standard Monday through Friday construction schedule. Cancer and non-cancer health impacts were subsequently estimated using the CARB Hot Spots Analysis and Reporting Program Version 2 (HARP 2) and results were compared to BAAQMD thresholds to assess potential impacts.

## Sensitive Receptor Locations and Maximum Exposed Individual

To provide a conservative analysis, air dispersion modeling considered receptors located at the property line of the nearest residences to the north of the project site. Receptors were also sited at the front of residential structures on the first floor (ground level), second floor (ground level plus 9.8 feet), and third floor (ground level plus 19.7 feet). Additionally, a grid of receptor points was applied over the residential neighborhood to the north of the project site and the entire project site vicinity to verify that the individual receptors were in line with the risk profile for the area and the Maximum Exposed Individual (MEI), consistent with the recommendations in BAAQMD's methods (BAAQMD 2012). The results of the air dispersion and health risk modeling indicated the MEI was located at the property line of a multi-family residence/townhome located near the intersection of Journey Street and Trade Zone Boulevard, approximately 100 feet north of the project site's northern border, was accurately captured in the analysis. Unmitigated cancer risk at this point was modeled at 39.4 in one million, exceeding BAAQMD's threshold of 10 in one million. Unmitigated chronic hazard index (0.02) and PM<sub>2.5</sub> concentration (0.19 µg/m<sup>3</sup>) at this point were both below BAAQMD thresholds.

## Cumulative Analysis

Consistent with BAAQMD methods (BAAQMD 2012), the cumulative analysis analyzed health risk associated with project construction, as well as permitted stationary sources and roadways with more than 10,000 average daily trips (ADT) within 1,000 feet of the MEI. Existing potential sources within 0.2 mile of the MEI include Montague Expressway, Trade Zone Boulevard, Lundy Avenue, and six permitted stationary sources.

### *Roadway Sources*

Trade Zone Boulevard is considered a significant source of mobile TAC emissions due to the high level of daily traffic (i.e., greater than 10,000 average daily trips [ADT]). Trade Zone Boulevard west of Lundy



Avenue is estimated to have an average daily volume of approximately 20,610 ADT, according to the most recent traffic count provided by the City (City of San José 2019). Lundy Avenue south of Trade Zone Boulevard is estimated to have an average daily traffic volume of approximately 12,799 ADT, according to the most recent traffic count provided by the City (City of San José 2019). Using BAAQMD's *Roadway Screening Analysis Calculator*<sup>2</sup> for Santa Clara County for an east-west directional roadway, cancer risk and PM<sub>2.5</sub> concentration was estimated at approximately 45 feet north of Trade Zone Boulevard for the construction MEI. Cancer risk and PM<sub>2.5</sub> concentration associated with Lundy Avenue was determined based on a north-south roadway at a distance of 710 feet. *Roadway Screening Analysis Calculator Results* are included in Appendix HRA.

Montague Expressway is located within approximately 0.2 mile of the MEI and 0.17 mile of the project site. Therefore, it is conservatively included in this analysis. According to the City of Milpitas' General Plan Update Existing Conditions Report, the Montague Expressway has an average daily traffic volume of approximately 37,569 vehicles in the project vicinity (City of Milpitas 2018). Cancer risk and PM<sub>2.5</sub> concentrations were obtained from a raster data file of health risks associated with major roadways provided by BAAQMD (BAAQMD 2019a).

### Stationary Sources

BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*<sup>1</sup> was used to identify permitted stationary sources within 1,000 feet of the MEI and to estimate the health risk and PM<sub>2.5</sub> impacts based on distance. Emissions data for stationary sources within 1,000 feet of the construction MEI was provided by BAAQMD and the *BAAQMD Risk and Hazards Emissions Screening Calculator (Beta Version)* was used to calculate cancer risk, chronic hazard index, and PM<sub>2.5</sub> concentrations (BAAQMD 2019b). To provide a conservative analysis, health risk and PM<sub>2.5</sub> concentrations at identified emergency standby diesel generators in the vicinity of the construction MEI were not adjusted based on distance using BAAQMD's multiplier tool. Two stationary sources resulted in no cancer or non-cancer health risks or PM<sub>2.5</sub> emissions. Advanced Custom Shutters, Inc. (Plant Number 22470) only reported emissions of 2-heptanone, which is not included as a TAC for analysis in the Risk and Hazards Emissions Screening Calculator. Marketshare, Inc. (Plant Number 2602) reported all emissions as 0.0 pounds per day. Therefore, these sources resulted in no health risks or PM<sub>2.5</sub> concentrations at the construction MEI and were excluded from further analysis.

The stationary sources generating the highest health risks at the MEI are those located on the project site, including stationary and emergency standby diesel generators. This analysis conservatively assumes such sources could be operational during project construction and, therefore, they are incorporated into the cumulative health risk assessment. *Risk and Hazards Emissions Screening Calculator (Beta Version)* results are included in Appendix HRA. As presented in Table 9 of the Draft IS-MND, cumulative cancer risk (61.2 in one million), chronic hazard index (0.03), and PM<sub>2.5</sub> concentration (0.45 µg/m<sup>3</sup>) at the construction MEI do not exceed BAAQMD's cumulative health risk criteria.

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<sup>1</sup> BAAQMD screening and analysis tools recommended for use in the BAAQMD CEQA Guidelines can be accessed here: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>



## Mitigation

Because project construction would exceed BAAQMD's project-level cancer risk threshold at the MEI, mitigation is required to reduce cancer risk associated with emissions of DPM during construction activities. Consistent with the City of San Jose's standard permit language, Mitigation Measure AQ-2 in the Draft IS-MND requires preparation of a construction management plan demonstrating a minimum 85 percent reduction in DPM emissions during project construction. Such emissions reductions could be accomplished through the use of Tier 4 engines, Level 3 Diesel Particulate Filters (DPFs), or other control technology.

To determine health risk at the MEI with implementation of Mitigation Measure AQ-2, CalEEMod was run with Level 3 DPFs applied to all diesel-fueled construction equipment. The mitigated construction CalEEMod outputs are included in Appendix HRA. AERMOD and HARP2 were rerun based on the mitigated emissions. As summarized in Table 10 of the Draft IS-MND, mitigated cancer risk at the MEI would be approximately 5.9 in one million, below BAAQMD's project-level cancer risk threshold. Chronic hazard index and PM<sub>2.5</sub> concentration at the MEI would also be reduced and would remain under BAAQMD's project-level health risk thresholds.

## Model Outputs

Appendix HRA contains the following construction HRA materials: unmitigated and mitigated DPM emissions calculations based on the project's CalEEMod run; annual, summer, and winter emissions outputs from CalEEMod for project construction using Level 3 DPFs consistent with Mitigation Measure AQ-2; cancer and non-cancer chronic health risk values for all modeled sensitive receptors and grid receptor locations obtained from HARP2 for both unmitigated and mitigated construction conditions; BAAQMD Risk and Hazards Emissions Screening Calculator (Beta Version) results for permitted stationary sources within 1,000 feet of the construction MEI; and *Roadway Screening Analysis Calculator Results* for Trade Zone Boulevard and Lundy Avenue.

## Operational Health Risk Assessment Methodology

The analysis of health impacts of TACs from operational activities in the Draft IS-MND is based on an operational HRA prepared by ProActive Consulting Group (ProActive) for the 20 emergency generators proposed on the site. The operational HRA memorandum is included in Appendix HRA. A brief synopsis of the operational HRA methodology and modeling protocols is provided below.

## Air Dispersion and Health Risk Modeling

The operational HRA was conducted using the latest version (19121) of CARB's HARP 2 and meteorological data from the Norman Y. Mineta San José International Airport, the same data used in the construction HRA. Each 3-megawatt (MW) diesel generator was modeled as a single point source of emissions with the exhaust outlet of the generator at approximately 16 feet above ground level. Emissions were modeled as variable by hour of day assuming testing and operation would generally occur between 10 a.m. and 5 p.m. Ten generators were modeled adjacent to the northern edge of the proposed building and ten generators were modeled adjacent to the southern end of the proposed building. Because the proposed standby diesel generators are point sources located within a commercial area alongside the proposed building, building downwash effects analysis was performed using BPiP-



PRIME and AERMAP to account for the building’s potential to influence air flow. Any effects of building downwash were then incorporated into AERMOD dispersion runs.

Diesel generator emission estimates were based on manufacturer specifications, exhaust emission data for USEPA Tier 2 emissions standards, and the estimated frequency and duration of operation of the generators. To evaluate ground level concentration of PM<sub>2.5</sub>, it was conservatively assumed that PM<sub>2.5</sub> emissions were equivalent to the generator DPM emissions. ProActive modeled health risk for two operational scenarios where generators are assumed to operate either for 50 hours per year or for 40 hours per year. Only the most conservative analysis, 50 hours of operation, is discussed in the Draft IS-MND to provide an estimate of emissions under the greatest operating scenario.

Based on the manufacturer exhaust emissions rate certification, uncontrolled hourly DPM emissions would be 0.80 pounds per hour (lbs/hr). Initial evaluation by ProActive indicated that the generators would generate a cancer risk greater than 1.0 in one million; therefore, pursuant to BAAQMD Regulation 2 Rule 5, the implementation of Best Available Control Technology for Toxics (TBACT) would be required to reduce DPM emissions. With implementation of a diesel particulate filter (DPF) with 85 percent efficiency, the hourly DPM emission rate would be 0.12 lbs/hr resulting in 5.9 lbs/year when operating for 50 hours a year. Cancer and chronic health impacts were estimated based on a 70-year exposure period per the 2017 BAAQMD CEQA Guidelines using HARP 2 and results were compared to BAAQMD thresholds to assess potential impacts. There is no acute reference exposure level (REL) for diesel exhaust to calculate acute health risk. Further except for unusual circumstances of high exposure, Office of Environmental Health Hazard Assessment (OEHHA) does not recommend acute analysis for DPM.

### Maximum Exposed Individual

For new sources, BAAQMD’s *Recommended Methods for Screening and Modeling Local Risks and Hazards* (2012) recommends comparing the risk at the MEI to the single source significance thresholds and using the MEI location for cumulative impact analysis. The air dispersion and risk analysis identified the MEI to be located at the property line of 2180 Fortune Drive, approximately 300 feet southeast of the project site’s southeast corner. As identified by ProActive this site would also be the location of the maximum exposed individual worker. The exposure at the MEI is a conservative representation of the worker exposure as it is based on a 70-year exposure period whereas per OEHHA guidance workers are assumed a 25-year exposure for only eight hours a day. ProActive also identified the maximum exposed individual resident (MEIR) to be located at 2029 Flickinger Way, approximately 0.4 miles west of the project site. However, exposure at the MEIR is not included in this analysis as BAAQMD’s guidance recommends comparing the health risk at the MEI to applicable thresholds as it provides a more conservative evaluation. Table 1 summarizes the results associated with operation of the generators equipped with a DPF for 50 years at the MEI.

**Table 1 Health Risks Associated with Operation of Generators for 50 hours per year**

Scenario	Excess Cancer Risk (per million)	Chronic Health Risk <sup>1</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup> annual average
Maximum Exposed Individual	7.62	0.0015	0.007
BAAQMD Significance Threshold	>10	>1	>0.3
Threshold Exceeded?	No	No	No



<sup>1</sup> Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

For summary of ProActive model outputs, see Appendix HRA.

As shown in Table 1, operation of the diesel generators equipped with a DPF for 50 hours per year would not result in an exceedance of BAAQMD single source significance thresholds for excess cancer risk, chronic risk and ground level PM<sub>2.5</sub> concentrations.

### Cumulative Analysis

The cumulative impact of the operation of the generators was further assessed by evaluating all current and proposed substantial sources of TACs within 1,000 feet of the MEI. Within 1,000 feet of the MEI three stationary sources were identified using the BAAQMD’s *Stationary Source Risk & Hazard Analysis Tool*<sup>2</sup>. However, Flextronics International (Plant Number 12011) is no longer operational and Oncord Mfg (Plant Number 19585) had no reported emissions data. Therefore, these sources resulted in no health risks or PM<sub>2.5</sub> concentrations at the MEI and were excluded from further analysis. The cumulative analysis at the MEI included the stationary source located at Microchip Technology, Inc. (Plant Number 24489), approximately 450 feet to the southeast of the MEI, and Lundy Avenue approximately 60 feet west of the MEI<sup>3</sup>. Cumulative impacts from project operation at the MEI are reported in Table 2.

**Table 2 Cumulative Health Risks Associated with Operation of Generators**

Source	Excess Cancer Risk (per million)	Chronic Health Risk <sup>1</sup>	PM <sub>2.5</sub> µg/m <sup>3</sup> annual average
Project Operation (50 hours)	7.6	0.0015	0.007
Lundy Avenue <sup>2</sup>	7.4	--	0.17
Microchip Technology, Inc. (Plant 24489) <sup>4</sup>	3.5	3.0	0.0
<b>Cumulative Total</b>	<b>18.5</b>	<b>3.0</b>	<b>0.18</b>
BAAQMD Significance Threshold	>100	>10	>0.8
Threshold Exceeded?	No	No	No

<sup>1</sup> Noncancer health impacts are determined by dividing the airborne concentration at the receptor by the appropriate Reference Exposure Level (REL) for that substance. A REL is defined as the concentration at which no adverse noncancer health effects are anticipated. Because noncancer health impacts are assessed as the ratio of airborne concentration versus the REL, the resulting hazard index is unitless.

<sup>2</sup>Calculated using the BAAQMD’s Roadway Screening Analysis Calculator at a distance of 60 feet for Lundy Avenue.

For model outputs and stationary and roadway source screening calculations, see Appendix HRA.

<sup>2</sup> BAAQMD screening and analysis tools recommended for use in the BAAQMD CEQA Guidelines can be accessed here: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>

<sup>3</sup> The construction HRA and operational HRA identify different MEIs. This is to be expected, as the analyses assess different emissions sources under different exposure durations. Because cumulative analysis incorporates stationary sources within 1,000 feet of the MEI, different stationary sources are assessed for the construction HRA cumulative analysis and operational HRA cumulative analysis.



As shown in Table 2, cumulative sources of TACs would not result in an exceedance of annual  $PM_{2.5}$  concentrations, chronic or cancer health risks above cumulative significance thresholds at the MEI with operation of the diesel generators equipped with a DPF for 50 hours per year. Therefore, cumulative operational impacts would be less than significant.



# Mitigated and Unmitigated Construction Emissions

\*averaged unmitigated annual construction by phase for annual emissions; used Winter construction max day emissions for max day emissions and assumed construction day = 8 hrs; PM10 exhaust emissions only used and PM2.5 total emissions used (BAAQMD worded to sound like exhaust and fugitive dust were a concern)  
 \*onsite PM10 emissions only

**On-site Unmitigated Construction Emissions**

Start: 1/1/2020 End: 5/31/2021 Years: 1.416666667

Demolition (1/1/2020-1/28/2020)

		2020	
Total Tons		lbs/day	lbs/hr
PM10 (DPM)	0.0166	8%	1.6587 0.207338
PM2.5 (Exhaust + Fugitive dust)	0.0202	6%	2.0191 0.252388

Site-Preparation (1/29/2020-2/18/2020)

		2020	
Total tons		lbs/day	lbs/hr
PM10 (DPM)	0.0165	8%	2.1974 0.274675
PM2.5 (Exhaust + Fugitive dust)	0.0896	28%	11.9523 1.494038

Grading (2/19/2020-3/24/2020)

		2020	
Total Tons		lbs/day	lbs/hr
PM10 (DPM)	0.0159	8%	1.2734 0.159175
PM2.5 (Exhaust + Fugitive dust)	0.0567	18%	4.539 0.567375

Building Construction (3/25/2020-3/30/2021)

		2020		2021	
Total Tons		lbs/day	lbs/hr	lbs/day	lbs/hr
PM10 (DPM)	0.143	69%	1.1171 0.139638	0.9586	0.119825
PM2.5 (Exhaust + Fugitive dust)	0.1345	43%	1.0503 0.131288	0.9013	0.112663

Architectural Coating (9/28/2020-5/31/2021)

		2020		2021	
Total Tons		lbs/day	lbs/hr	lbs/day	lbs/hr
PM10 (DPM)	8.86E-03	4%	0.1109 0.013863	0.0941	0.011763
PM2.5 (Exhaust + Fugitive dust)	8.86E-03	3%	0.1109 0.013863	0.0941	0.011763

Paving (3/31/2021-4/27/2021)

		2021	
Total Tons		lbs/day	lbs/hr
PM10 (DPM)	6.78E-03	3%	0.6777 0.084713
PM2.5 (Exhaust + Fugitive dust)	6.24E-03	2%	0.6235 0.077938

**Project Does Not Include Substantial Hauling - No Hauling Emissions Included**

		2020		2021	
Total Tons/	Avg lbs/year	Max lbs/day	Max lbs/h	Max lbs/day	Max lbs/hr
PM10 (DPM)	0.20764	293.1388235	2.1974	0.274675	1.0527 0.131588
PM2.5 (Exhaust + Fugitive dust)	0.31610	446.2588235	11.9523	1.494038	0.9954 0.124425

All Years Max	
Max lbs/day	Max lbs/hr
2.1974	0.274675
11.9523	1.4940375

\*averaged mitigated annual construction by phase for annual emissions; used Winter construction max day emissions for max day emissions and assumed construction day = 8 hrs; PM10 exhaust emissions only used and PM2.5 total emissions used (BAAQMD worded to sound like exhaust and fugitive dust were a concern)  
 \*onsite PM10 emissions only

**On-site Mitigated Construction Emissions**

Start: 1/1/2020 End: 5/31/2021 Years: 1.416666667

Demolition (1/1/2020-1/28/2020)

		2020			
Total Tons		lbs/day	lbs/hr		
PM10 (DPM)	2.49E-03	8%	0.2488	0.0311	
PM2.5 (Exhaust + Fugitive dust)	7.08E-03	5%	0.7085	0.088563	

Site-Preparation (1/29/2020-2/18/2020)

		2020			
Total tons		lbs/day	lbs/hr		
PM10 (DPM)	2.47E-03	8%	0.3296	0.0412	
PM2.5 (Exhaust + Fugitive dust)	0.0768	51%	10.2339	1.279238	

Grading (2/19/2020-3/24/2020)

		2020			
Total Tons		lbs/day	lbs/hr		
PM10 (DPM)	2.39E-03	8%	0.191	0.023875	
PM2.5 (Exhaust + Fugitive dust)	0.0443	29%	3.5432	0.4429	

Building Construction (3/25/2020-3/30/2021)

		2020		2021	
Total Tons		lbs/day	lbs/hr	lbs/day	lbs/hr
PM10 (DPM)	0.02143	69%	0.1676	0.02095	0.1438
PM2.5 (Exhaust + Fugitive dust)	0.02016	13%	0.1576	0.0197	0.1352

Architectural Coating (9/28/2020-5/31/2021)

		2020		2021	
Total Tons		lbs/day	lbs/hr	lbs/day	lbs/hr
PM10 (DPM)	1.33E-03	4%	0.0166	0.002075	0.0141
PM2.5 (Exhaust + Fugitive dust)	1.33E-03	1%	0.0166	0.002075	0.0141

Paving (3/31/2021-4/27/2021)

		2021			
Total Tons		lbs/day	lbs/hr		
PM10 (DPM)	1.02E-03	3%	0.1017	0.012713	
PM2.5 (Exhaust + Fugitive dust)	9.40E-04	1%	0.0935	0.011688	

**Project Does Not Include Substantial Hauling - No Hauling Emissions Included**

		2020		2021	
Total Tons, Avg lbs/year		Max lbs/day	Max lbs/h	Max lbs/day	Max lbs/hr
PM10 (DPM)	3.11E-02 4.39E+01	0.3296	0.0412	0.1579	0.019738
PM2.5 (Exhaust + Fugitive dust)	0.15061 212.6258824	10.2339	1.279238	0.1493	0.018663

All Years Max	
Max lbs/day	Max lbs/hr
0.3296	0.0412
10.2339	1.2792375

# HARP 2.0 Model Output

































































































































































































































































































# BAAQMD Risk and Hazards Emissions Screening Calculator (Beta Version)



Step 1:	
Plant Name	Courtesy Auto Service
Plant No.	7611

Step 3:	
Specify Source Type	
Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Step 2:	
Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	245

Step 5:		
Read Estimates		
Total Cancer Risk	0.000	per 1,000,000
Total Chronic Hazard	0.001	
Total PM2.5 Concentration	0.000	µg/m <sup>3</sup>

Step 2: Enter Emissions Data

Chemical Name	CAS No.	Rate	Risk	Hazard	Concentration
	(Index number)	(lb/day)	(# / 1,000,000)	Index	(µg/m <sup>3</sup> )
<b>Fine Particulate Matter (PM2.5)</b>					
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	3900100	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzo-p-dioxin	55673897	0.00E+00			
1,2,3,4,7,8-Heptachlorodibenzofuran	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sulfone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2,3,4,4',5'-PeCB	65510443	0.00E+00			
2,3,4,4',5'-HxCB	52663726	0.00E+00			
2,3',4,4',5'-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HxCB	39635319	0.00E+00			
2,3,3',4,4',5'-HxCB	38380084	0.00E+00			
2,3,3',4,4',5'-PeCB	32598144	0.00E+00			
2,3,4,4',5'-PeCB	74473370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzo-furan	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5',5'-HxCB	32774166	0.00E+00			
3,3',4,4',5'-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4',5'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminazobenzene	60117	0.00E+00			
4-Nitropyrene	57839324	0.00E+00			
5-Methylchrysenes	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysenes	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenz(o,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	0.00E+00			
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m <sup>3</sup> ) <sup>-1</sup> ]	1332214	0.00E+00			
Benz(a)anthracene	56553	0.00E+00			
Benzenes	71432	0.00E+00			
Benzenes	92875	0.00E+00			
Benzofluoranthene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(f)fluoranthene	205823	0.00E+00			
Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	0.00E+00			
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542851	0.00E+00			
Calcium	7440439	0.00E+00			
Capsulactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	0.00E+00			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12, approx. 6)	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorobromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75001	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	0.00E+00			
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			

Sodium dichromate2	10588019	0.00E+00
Strontium chromate2	7789062	0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00
Chrysene	218019	0.00E+00
Copper	7440508	0.00E+00
Copper and Copper Compounds	7440508	0.00E+00
Cresol Mixtures	1339773	0.00E+00
Cupferron	132206	0.00E+00
Cyanide	57125	0.00E+00
Di(2-ethylhexyl)phthalate	117817	0.00E+00
Dibenz[ <i>a,h</i> ]acridine	226368	0.00E+00
Dibenz[ <i>a,h</i> ]anthracene	53703	0.00E+00
Dibenz[ <i>a,j</i> ]acridine	224420	0.00E+00
Dibenzo[ <i>a,e</i> ]pyrene	192654	0.00E+00
Dibenzo[ <i>a,h</i> ]pyrene	189640	0.00E+00
Dibenzo[ <i>a,i</i> ]pyrene	189559	0.00E+00
Dibenzo[ <i>b,k</i> ]pyrene	191300	0.00E+00
Diesel Exhaust Particulate	85105	0.00E+00
Diethanolamine	111422	0.00E+00
Dimethylformamide	68122	0.00E+00
Direct Black 38 (Technical Grade)	1937377	0.00E+00
Direct Blue 6 (Technical Grade)	2602462	0.00E+00
Direct Brown 95 (Technical Grade)	16071866	0.00E+00
Epichlorohydrin	106898	0.00E+00
Ethylbenzene	100414	0.00E+00
Ethylene Glycol	107211	0.00E+00
Ethylene Glycol Monobutyl Ether	141762	0.00E+00
Ethylene Glycol Monoethyl Ether	110805	0.00E+00
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00
Ethylene Glycol Monomethyl Ether	109864	0.00E+00
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00
Ethylene Oxide	75218	0.00E+00
Ethylene Thiourea	96457	0.00E+00
Fluorides	1101	0.00E+00
Formaldehyde (gas)	50000	0.00E+00
Glutaraldehyde	111308	0.00E+00
Hexachlorobenzene	148741	0.00E+00
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00
Hexachlorocyclohexane-Alpha Isomer	319846	0.00E+00
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00
Hydrazine	302012	0.00E+00
Hydrogen Chloride	7647010	0.00E+00
Hydrogen Cyanide	74908	0.00E+00
Hydrogen Fluoride	7664393	0.00E+00
Hydrogen Selenide	7783075	0.00E+00
Hydrogen Sulfide	7783064	0.00E+00
Indeno[1,2- <i>3-c</i> ]pyrene	193395	0.00E+00
Isothione	78591	0.00E+00
Isopropyl Alcohol	67630	0.00E+00
Lead Acetate	301042	0.00E+00
Lead and Lead Compounds	7439921	0.00E+00
Lead Phosphate	7446277	0.00E+00
Lead Subacetate	1335326	0.00E+00
m-CRESOL	108394	0.00E+00
m-XYLENE	108383	0.00E+00
Maleic Anhydride	108316	0.00E+00
Manganese & Manganese Compounds	7439965	0.00E+00
Mercury (Inorganic)	7439976	0.00E+00
Mercuric chloride	7487947	0.00E+00
Methanol	67561	0.00E+00
Methyl Bromide	74839	0.00E+00
Methyl Ethyl Ketone	78933	0.00E+00
Methyl isocyanate	624839	0.00E+00
Methyl Tertiary Butyl Ether	1634044	0.00E+00
Methylene Chloride (Dichloromethane)	75092	0.00E+00
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00
Michlert Ketone	90148	0.00E+00
n-Heptane	116543	0.00E+00
n-Nitroso-n-methylethylamine	1059566	0.00E+00
n-Nitrosodi-n-Butylamine	924163	0.00E+00
n-Nitrosodi-n-Propylamine	621647	0.00E+00
n-Nitrosodiethylamine	55185	0.00E+00
n-Nitrosodimethylamine	62759	0.00E+00
n-Nitrosodiphenylamine	86306	0.00E+00
n-Nitrosomorpholine	59892	0.00E+00
n-Nitrosopiperidine	100754	0.00E+00
n-Nitrosopyrrolidine	930552	0.00E+00
Naphthalene	93203	0.00E+00
Nickel and Nickel Compounds	7440020	0.00E+00
Nickel acetate	373024	0.00E+00
Nickel carbonate	3333673	0.00E+00
Nickel carbonyl	13463393	0.00E+00
Nickel hydroxide	12054487	0.00E+00
Nickelocene	1271289	0.00E+00
Nickel Oxide	1313991	0.00E+00
Nickel Refinery Dust	1146	0.00E+00
Nickel Sulfide	12035722	0.00E+00
Nitric Acid	7697932	0.00E+00
Nitrogen Dioxide	10102440	0.00E+00
o-CRESOL	95487	0.00E+00
o-XYLENE	95476	0.00E+00
Oleum	8014957	0.00E+00
Ozone	10028156	0.00E+00
p-Chloro-o-toluidine	95692	0.00E+00
p-Cresidine	120718	0.00E+00
p-CRESOL	106445	0.00E+00
p-Nitrosodiphenylamine	156105	0.00E+00
p-XYLENE	106423	0.00E+00
Pentachlorophenol	87865	0.00E+00
Perchloroethylene	127184	0.00E+00
Phenol	108952	0.00E+00
Phosgene	75445	0.00E+00
Phosphine	7803512	0.00E+00
Phosphoric Acid	7664382	0.00E+00
Phthalic Anhydride	85449	0.00E+00
Polychlorinated Biphenyls	1336363	0.00E+00
Potassium Bromate	7758012	0.00E+00
Propylene	116071	0.00E+00
Propylene Glycol Monomethyl Ether	107982	0.00E+00
Propylene oxide	75569	0.00E+00
Selenium	7782492	0.00E+00
Selenium sulfide	7446346	0.00E+00
Silica (crystalline, respirable)	7631869	0.00E+00
Sodium hydroxide	1310732	0.00E+00
Styrene	100425	0.00E+00
Sulfates	9960	0.00E+00
Sulfur Dioxide	7446095	0.00E+00
Sulfuric Acid	7664939	0.00E+00
Sulfur Trioxide	7446719	0.00E+00
Tertiary-butyl acetate	540885	0.00E+00
Tetrachloroethylene	127184	0.00E+00
Thioacetamide	62555	0.00E+00
Toluene	108883	0.00E+00
Toluene Diisocyanates	26471625	0.00E+00

0.866384618

1.53E-04

0.80769232

5.09E-03

Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00		
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00		
Trichloroethylene	79016	0.00E+00		
Triethylamine	121448	0.00E+00		
Urethane	51796	0.00E+00		
Vanadium pentoxide	1314621	0.00E+00		
Vinyl acetate	103054	0.00E+00		
Vinyl chloride	75014	0.00E+00		
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.56384618	1.53E-03	
Vanadium	7440622	0.00E+00		
<b>TOTAL UNADJUSTED Risk Values</b>		<b>0.000</b>	<b>0.007</b>	<b>0.000</b>





Step 1:	
Plant Name	Olympus America
Plant No.	11193

Step 3:	
Specify Source Type	
Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Step 2:	
Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	190

Step 5:	
Read Estimates	
Total Cancer Risk	0.229 per 1,000,000
Total Chronic Hazard	0.000
Total PM2.5 Concentration	0.000 µg/m <sup>3</sup>

Step 2: Enter Emissions Data

Chemical Name	CAS No.	Rate	Risk	Hazard	Concentration
	(Relevant names)	(lb/day)	(# / 1,000,000)	(Index)	(µg/m <sup>3</sup> )
<b>Fine Particulate Matter (PM2.5)</b>					
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	3900100	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzo-p-dioxin	55673897	0.00E+00			
1,2,3,4,7,8-Heptachlorodibenzofuran	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sulfone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2,3,4,4',5'-PeCB	65510443	0.00E+00			
2,3,4,4',5'-HxCB	52663726	0.00E+00			
2,3',4,4',5'-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5'-HxCB	38380084	0.00E+00			
2,3,3',4,4',5'-PeCB	32598144	0.00E+00			
2,3,4,4',5'-PeCB	74473370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzo-furan	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminanthraquinone	117793	0.00E+00			
2-Nitrofluorene	605778	0.00E+00			
3,3',4,4',5',5'-HxCB	32774166	0.00E+00			
3,3',4,4',5'-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4',5'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95430	0.00E+00			
4-Dimethylaminazobenzene	60117	0.00E+00			
4-Nitropyrene	57839324	0.00E+00			
5-Methylchrysenes	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysenes	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenz(o,g)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	7.63E-08	1.17E-03	9.61E-06	
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m <sup>3</sup> ) <sup>-1</sup> ]	1332214	0.00E+00			
Benzo(a)anthracene	56533	0.00E+00			
Benzenes	71432	8.76E-05	1.12E-02	5.52E-05	
Benzenes	93875	0.00E+00			
Benzo(a)pyrene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(k)fluoranthene	205823	0.00E+00			
Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	4.47E-08	4.80E-04	1.21E-05	
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542851	0.00E+00			
Calcium	7440439	1.91E-07	3.66E-03	1.80E-05	
Capsulactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	0.00E+00			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12, approx. 9)	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorobromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75001	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	2.58E-03	3.73E-08		
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			

Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1339773	0.00E+00		
Cupferron	132206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz(h)acridine	226368	0.00E+00		
Dibenz(a,h)anthracene	53703	0.00E+00		
Dibenz(j)acridine	224420	0.00E+00		
Dibenz(a,e)pyrene	192654	0.00E+00		
Dibenz(a,h)pyrene	189640	0.00E+00		
Dibenz(a,i)pyrene	189559	0.00E+00		
Dibenz(b)pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	5.83E-04	8.20E-01	2.20E-04
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		
Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		
Ethylene Thiourea	96457	0.00E+00		
Fluorides	1101	0.00E+00		
Formaldehyde (gas)	50000	7.25E-06	1.95E-04	1.52E-06
Glutaraldehyde	111308	0.00E+00		
Hexachlorobenzene	118741	0.00E+00		
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00		
Hexachlorocyclohexane-Alpha Isomer	319846	0.00E+00		
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00		
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00		
Hydrazine	302012	0.00E+00		
		0.00E+00		
Hydrogen Chloride	7647010	0.00E+00		
Hydrogen Cyanide	74908	0.00E+00		
Hydrogen Fluoride	7664393	0.00E+00		
Hydrogen Selenide	7783075	0.00E+00		
Hydrogen Sulfide	7783064	0.00E+00		
Indeno(1,2,3-c-d)pyrene	193395	0.00E+00		
Isophorone	78591	0.00E+00		
Isopropyl Alcohol	67630	0.00E+00		
Lead Acetate	301042	0.00E+00		
Lead and Lead Compounds	7439921	1.62E-07	8.70E-06	
Lead Phosphate	7446277	0.00E+00		
Lead Subacetate	1335126	0.00E+00		
m-CRESOL	108394	0.00E+00		
m-XYLENE	108383	0.00E+00		
Maleic Anhydride	108316	0.00E+00		
Manganese & Manganese Compounds	7439965	2.54E-07		5.33E-06
Mercury (Inorganic)	7439976	5.39E-08		3.40E-06
Mercuric chloride	7487947	0.00E+00		
Methanol	67561	0.00E+00		
Methyl Bromide	74839	0.00E+00		
Methyl Ethyl Ketone	78933	0.00E+00		
Methyl Isocyanate	624839	0.00E+00		
Methyl Tertiary Butyl Ether	1634044	0.00E+00		
Methylene Chloride (Dichloromethane)	75092	0.00E+00		
Methylene Diphenyl Isocyanate (MDI)	101888	0.00E+00		
Michlers Ketone	90948	0.00E+00		
n-Hexane	110543	0.00E+00		
n-Nitroso-n-methylethylamine	1059596	0.00E+00		
n-Nitroso-n-Butylamine	924463	0.00E+00		
n-Nitrosodi-n-Propylamine	621647	0.00E+00		
n-Nitrosodimethylamine	55185	0.00E+00		
n-Nitrosodimethylamine	62759	0.00E+00		
n-Nitrosodiphenylamine	86306	0.00E+00		
n-Nitrosomorpholine	59892	0.00E+00		
n-Nitrosopiperidine	100754	0.00E+00		
n-Nitrosopyrrolidine	930552	0.00E+00		
Naphthalene	91203	0.00E+00		
Nickel and Nickel Compounds	7440020	3.09E-06	3.60E-03	4.17E-04
Nickel acetate	373024	0.00E+00		
Nickel carbonate	3332673	0.00E+00		
Nickel carbonyl	13461303	0.00E+00		
Nickel hydroxide	12054487	0.00E+00		
Nickelocene	1271289	0.00E+00		
Nickel Oxide	1313991	0.00E+00		
Nickel Refinery Dust	1146	0.00E+00		
Nickel Subsulfide	12035722	0.00E+00		
Nitric Acid	7697372	0.00E+00		
Nitrogen Dioxide	10102440	0.00E+00		
o-CRESOL	95487	0.00E+00		
o-XYLENE	95476	0.00E+00		
Oleum	8014957	0.00E+00		
Ozone	10028156	0.00E+00		
p-Chloro-o-toluidine	95692	0.00E+00		
p-Cresidine	120718	0.00E+00		
p-CRESOL	106445	0.00E+00		
p-Nitrosodiphenylamine	156105	0.00E+00		
p-XYLENE	106423	0.00E+00		
Pentachlorophenol	87865	0.00E+00		
Perchloroethylene	127184	0.00E+00		
Phenol	108952	0.00E+00		
Phosgene	75445	0.00E+00		
Phosphine	7803512	0.00E+00		
Phosphoric Acid	7664382	0.00E+00		
Phthalic Anhydride	85449	0.00E+00		
Polychlorinated Biphenyls	1336363	0.00E+00		
Potassium Bromate	7758012	0.00E+00		
Propylene	115071	0.00E+00		
Propylene Glycol Monomethyl Ether	107982	0.00E+00		
Propylene oxide	75569	0.00E+00		
Selenium	7782492	0.00E+00		
Selenium sulfide	7446346	0.00E+00		
Silica (crystalline, respirable)	7631869	0.00E+00		
Sodium hydroxide	1310732	0.00E+00		
Styrene	100425	0.00E+00		
Sulfates	9960	0.00E+00		
Sulfur Dioxide	7446095	2.86E-05		
Sulfuric Acid	7664939	0.00E+00		
Sulfur Trioxide	7446719	0.00E+00		
Tertiary butyl acetate	540885	0.00E+00		
Tetrachloroethylene	127184	0.00E+00		
Thioacetamide	62555	0.00E+00		
Toluene	108883	0.00E+00		

Toluene Diisocyanates	26471625	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	93087	0.00E+00
Trichloroethylene	79016	0.00E+00
Triethylamine	121448	0.00E+00
Urethane	51796	0.00E+00
Vanadium pentoxide	1314621	0.00E+00
Vinyl acetate	108054	0.00E+00
Vinyl chloride	75014	0.00E+00
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00
Vanadium	7440622	0.00E+00

**TOTAL UNADJUSTED Risk Values 0.843 0.001 0.000**



Step 1:	
Plant Name	Plasma Ruggedized Solutions Inc
Plant No.	19133

Step 3:	
Specify Source Type	
Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Step 2:	
Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	265

Step 5:		
Read Estimates		
Total Cancer Risk	0.000	per 1,000,000
Total Chronic Hazard	0.002	
Total PM2.5 Concentration	0.000	µg/m <sup>3</sup>

Step 2: Enter Emissions Data

Chemical Name	CAS No.	Rate	Risk	Hazard	Concentration
	(Relevant number)	(lb/day)	(# / 1,000,000)	Index	(µg/m <sup>3</sup> )
<b>Fine Particulate Matter (PM2.5)</b>					
1,1,1-Trichloroethane	71556	0.00E+00	0.00E+00		
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	3900100	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzo-p-dioxin	55673897	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sulfone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2,3,4,4',5'-PeCB	65510443	0.00E+00			
2,3,4,4',5'-HxCB	52663726	0.00E+00			
2,3',4,4',5'-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5'-HxCB	38380084	0.00E+00			
2,3,3',4,4',5'-PeCB	32598144	0.00E+00			
2,3,4,4',5'-PeCB	74473370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5',5'-HxCB	32774166	0.00E+00			
3,3',4,4',5'-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4',5'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95830	0.00E+00			
4-Dimethylaminazobenzene	60117	0.00E+00			
4-Nitropyrene	57839324	0.00E+00			
5-Methylchrysenes	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysenes	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(g,k)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	0.00E+00			
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m <sup>3</sup> ) <sup>-1</sup> ]	1332214	0.00E+00			
Benz(a)anthracene	56353	0.00E+00			
Benzene	71432	0.00E+00			
Benzidine	93875	0.00E+00			
Benzofluorene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(f)fluoranthene	205823	0.00E+00			
Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	0.00E+00			
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542851	0.00E+00			
Calcium	7440439	0.00E+00			
Capsulactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	63080	0.00E+00			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12, approx. 6)	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorobromomethane	134481	0.00E+00			
Chloroethane (Ethyl Chloride)	75001	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	0.00E+00			
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			

Sodium dichromate2	10588019	0.00E+00
Strontium chromate2	7789062	0.00E+00
CHROMIUM TRIOXIDE (as chromic acid mist)	1333820	0.00E+00
Chrysene	218019	0.00E+00
Copper	7440508	0.00E+00
Copper and Copper Compounds	7440508	0.00E+00
Cresol Mixtures	1333773	0.00E+00
Cupferron	132206	0.00E+00
Cyanide	57125	0.00E+00
Di(2-ethylhexyl)phthalate	117817	0.00E+00
Dibenz(a,h)acridine	226368	0.00E+00
Dibenz(a,h)anthracene	53703	0.00E+00
Dibenz(a,j)acridine	224420	0.00E+00
Dibenz(a,e)pyrene	192654	0.00E+00
Dibenz(a,h)pyrene	189640	0.00E+00
Dibenz(a,i)pyrene	189559	0.00E+00
Dibenz(a,j)pyrene	191300	0.00E+00
Diesel Exhaust Particulate	85105	0.00E+00
Diethanolamine	111422	0.00E+00
Dimethylformamide	68122	0.00E+00
Direct Black 38 (Technical Grade)	1937377	0.00E+00
Direct Blue 6 (Technical Grade)	2602462	0.00E+00
Direct Brown 95 (Technical Grade)	16071866	0.00E+00
Epichlorohydrin	106898	0.00E+00
Ethylbenzene	100414	0.00E+00
Ethylene Glycol	107211	0.00E+00
Ethylene Glycol Monobutyl Ether	111762	0.00E+00
Ethylene Glycol Monoethyl Ether	110805	0.00E+00
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00
Ethylene Glycol Monomethyl Ether	109864	0.00E+00
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00
Ethylene Oxide	75218	0.00E+00
Ethylene Thiourea	96457	0.00E+00
Fluorides	1101	0.00E+00
Formaldehyde (gas)	50000	0.00E+00
Glutaraldehyde	111308	0.00E+00
Hexachlorobenzene	118741	0.00E+00
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00
Hexachlorocyclohexane-Alpha Isomer	319846	0.00E+00
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00
Hydrazine	302012	0.00E+00
Hydrogen Chloride	7647010	0.00E+00
Hydrogen Cyanide	74908	0.00E+00
Hydrogen Fluoride	7664393	0.00E+00
Hydrogen Selenide	7783075	0.00E+00
Hydrogen Sulfide	7783064	0.00E+00
Indeno(1,2,3-c-d)pyrene	193395	0.00E+00
Isophorone	78591	0.00E+00
Isopropyl Alcohol	67630	9.71E-01
Lead Acetate	301042	0.00E+00
Lead and Lead Compounds	7439921	0.00E+00
Lead Phosphate	7446277	0.00E+00
Lead Subacetate	1335126	0.00E+00
m-CRESOL	108394	0.00E+00
m-XYLENE	108383	0.00E+00
Maleic Anhydride	108316	0.00E+00
Manganese & Manganese Compounds	7439965	0.00E+00
Mercury (Inorganic)	7439976	0.00E+00
Mercuric chloride	7487947	9.71E-01
Methanol	67561	4.59E-04
Methyl Bromide	74839	0.00E+00
Methyl Ethyl Ketone	78933	0.00E+00
Methyl Isocyanate	624839	0.00E+00
Methyl Tertiary Butyl Ether	1634044	0.00E+00
Methylene Chloride (Dichloromethane)	75092	0.00E+00
Methylene Diphenyl Isocyanate (MDI)	101888	0.00E+00
Michlers Ketone	90948	0.00E+00
n-Hexane	110543	0.00E+00
n-Nitroso-n-methylethylamine	1059596	0.00E+00
n-Nitroso-n-Butylamine	924463	0.00E+00
n-Nitrosodi-n-Propylamine	621647	0.00E+00
n-Nitrosodiethylamine	55185	0.00E+00
n-Nitrosodimethylamine	62759	0.00E+00
n-Nitrosodiphenylamine	86306	0.00E+00
n-Nitrosomorpholine	59892	0.00E+00
n-Nitrosopiperidine	100754	0.00E+00
n-Nitrosopyrrolidine	930552	0.00E+00
Naphthalene	91203	0.00E+00
Nickel and Nickel Compounds	7440020	0.00E+00
Nickel acetate	373024	0.00E+00
Nickel carbonate	3332673	0.00E+00
Nickel carbonyl	13461303	0.00E+00
Nickel hydroxide	12054487	0.00E+00
Nickelocene	1271289	0.00E+00
Nickel Oxide	1313991	0.00E+00
Nickel Refinery Dust	1146	0.00E+00
Nickel Subsulfide	12035722	0.00E+00
Nitric Acid	7697372	0.00E+00
Nitrogen Dioxide	10102440	0.00E+00
o-CRESOL	95487	0.00E+00
o-XYLENE	95476	0.00E+00
Oleum	8014957	0.00E+00
Ozone	10028156	0.00E+00
p-Chloro-o-toluidine	95692	0.00E+00
p-Cresidine	120718	0.00E+00
p-CRESOL	106445	0.00E+00
p-Nitrosodiphenylamine	156105	0.00E+00
p-XYLENE	106423	0.00E+00
Pentachlorophenol	87865	0.00E+00
Perchloroethylene	127184	0.00E+00
Phenol	108952	0.00E+00
Phosgene	75445	0.00E+00
Phosphine	7803512	0.00E+00
Phosphoric Acid	7664382	0.00E+00
Phthalic Anhydride	85449	0.00E+00
Polychlorinated Biphenyls	1336363	0.00E+00
Potassium Bromate	7758012	0.00E+00
Propylene	115071	0.00E+00
Propylene Glycol Monomethyl Ether	107982	0.00E+00
Propylene oxide	75569	0.00E+00
Selenium	7782492	0.00E+00
Selenium sulfide	7446346	0.00E+00
Silica (crystalline, respirable)	7631869	0.00E+00
Sodium hydroxide	1310732	0.00E+00
Styrene	100425	0.00E+00
Sulfates	9960	0.00E+00
Sulfur Dioxide	7446095	0.00E+00
Sulfuric Acid	7664939	0.00E+00
Sulfur Trioxide	7446719	0.00E+00
Tertiary butyl acetate	540885	0.00E+00
Tetrachloroethylene	127184	0.00E+00
Thioacetamide	62555	0.00E+00
Toluene	108883	1.48E+00

2.62E-04

4.59E-04

9.32E-03

Toluene Diisocyanates	26471625	0.00E+00	
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00	
Toluene Diisocyanates (2,4 and 2, 6)	93087	0.00E+00	
Trichloroethylene	79016	0.00E+00	
Triethylamine	121448	0.00E+00	
Urethane	51796	0.00E+00	
Vanadium pentoxide	1314621	0.00E+00	
Vinyl acetate	108054	0.00E+00	
Vinyl chloride	75014	0.00E+00	
Xylenes (technical mixture of m, o, p-isomers)	1330207	1.22E-01	3.29E-04
Vanadium	7440622	0.00E+00	

<b>TOTAL UNADJUSTED Risk Values</b>	<b>0.000</b>	<b>0.010</b>	<b>0.000</b>
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Step 1:	
Plant Name	Fortune Data Center
Plant No.	22974

Step 3:	
Specify Source Type	
Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Step 2:	
Estimate Distance	
What is the distance (m) from the facility boundary to the MEI?	110

Step 5:		
Read Estimates		
Total Cancer Risk	8.702	per 1,000,000
Total Chronic Hazard	0.011	
Total PM2.5 Concentration	0.000	µg/m <sup>3</sup>

Step 2: Enter Emissions Data

Chemical Name	CAS No.	Rate	Risk	Hazard	Concentration
	(Releases removed)	(lb/day)	(# / 1,000,000)	Index	(µg/m <sup>3</sup> )
<b>Fine Particulate Matter (PM2.5)</b>					
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	3900100	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzo-p-dioxin	55673897	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sulfone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2,3,4,4',5'-PeCB	65510443	0.00E+00			
2,3,4,4',5'-HxCB	52663726	0.00E+00			
2,3',4,4',5'-PeCB	31508006	0.00E+00			
2,3,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5',5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5'-HxCB	38380084	0.00E+00			
2,3,3',4,4',5'-PeCB	32598144	0.00E+00			
2,3,4,4',5'-PeCB	74473370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzo-furan	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related comp	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminobenzene	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5',5'-HxCB	32774166	0.00E+00			
3,3',4,4',5'-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4',5'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			
4,4-Methylenedianiline	101779	0.00E+00			
4-Chloro-ortho-phenylenediamine	95430	0.00E+00			
4-Dimethylaminazobenzene	60117	0.00E+00			
4-Nitropyrene	57839324	0.00E+00			
5-Methylchrysenes	3697243	0.00E+00			
5-Nitroacenaphthene	602879	0.00E+00			
6-Nitrochrysenes	7496028	0.00E+00			
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00			
7H-dibenzo(g,k)carbazole	194592	0.00E+00			
Acetaldehyde	75070	0.00E+00			
Acetamide	60355	0.00E+00			
Acrolein	107028	0.00E+00			
Acrylamide	79061	0.00E+00			
Acrylic Acid	79107	0.00E+00			
Acrylonitrile	107131	0.00E+00			
Allyl chloride	107051	0.00E+00			
Ammonia	7664417	0.00E+00			
Aniline	62533	0.00E+00			
Arsenic	7440382	2.51E-06	3.85E-02	3.16E-04	
Arsine	7784421	0.00E+00			
Asbestos [1/(100 PCM fibers/m <sup>3</sup> ) <sup>-1</sup> ]	1332214	0.00E+00			
Benzo(a)anthracene	56533	0.00E+00			
Benzenes	71432	4.63E-03	5.92E-01	2.92E-03	
Benzenes	93875	0.00E+00			
Benzo(a)pyrene	50328	0.00E+00			
Benzo(b)fluoranthene	205992	0.00E+00			
Benzo(k)fluoranthene	205823	0.00E+00			
Benzo(k)fluoranthene	207089	0.00E+00			
Benzyl Chloride	100447	0.00E+00			
Beryllium	7440417	1.47E-06	1.58E-02	3.97E-04	
Bis(2-chloroethyl) Ether	111444	0.00E+00			
Bis(2-chloromethyl) Ether	542851	0.00E+00			
Calcium	7440439	6.27E-06	1.20E-01	5.93E-04	
Capsulactam	105602	0.00E+00			
Carbon Disulfide	75150	0.00E+00			
Carbon Monoxide	630080	1.11E-01			
Carbon Tetrachloride	56235	0.00E+00			
Carbonyl Sulfide	463581	0.00E+00			
Chlorinated paraffins (Avg. chain length C12, approx. 9)	108171262	0.00E+00			
Chlorine	7782505	0.00E+00			
Chlorine Dioxide	10049044	0.00E+00			
Chlorite	7758192	0.00E+00			
Chlorobenzene	108907	0.00E+00			
Chlorobromomethane	124481	0.00E+00			
Chloroethane (Ethyl Chloride)	75001	0.00E+00			
Chloroform	67663	0.00E+00			
Chloropicrin	76062	0.00E+00			
Chromic Trioxide	1333820	0.00E+00			
Chromium-hexavalent	18540299	1.30E-07	8.48E-02	1.23E-06	
Barium chromate2	10294403	0.00E+00			
Calcium chromate2	13765190	0.00E+00			
Lead chromate2	7758976	0.00E+00			

Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1339773	0.00E+00		
Cupferron	132206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz[ <i>a,h</i> ]acridine	226368	0.00E+00		
Dibenz[ <i>a,h</i> ]anthracene	53703	0.00E+00		
Dibenz[ <i>a,j</i> ]acridine	224420	0.00E+00		
Dibenz[ <i>a,e</i> ]pyrene	192654	0.00E+00		
Dibenz[ <i>a,h</i> ]pyrene	189640	0.00E+00		
Dibenz[ <i>a,i</i> ]pyrene	189559	0.00E+00		
Dibenz[ <i>b</i> ]pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	1.28E-02	1.80E-01	4.84E-03
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		
Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		
Ethylene Thiourea	96457	0.00E+00		
Fluorides	1101	0.00E+00		
Formaldehyde (gas)	50000	3.83E-04	1.03E-02	8.04E-05
Glutaraldehyde	111308	0.00E+00		
Hexachlorobenzene	118741	0.00E+00		
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00		
Hexachlorocyclohexane-Alpha Isomer	319846	0.00E+00		
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00		
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00		
Hydrazine	302012	0.00E+00		
		0.00E+00		
Hydrogen Chloride	7647010	0.00E+00		
Hydrogen Cyanide	74908	0.00E+00		
Hydrogen Fluoride	7664393	0.00E+00		
Hydrogen Selenide	7783075	0.00E+00		
Hydrogen Sulfide	7783064	0.00E+00		
Indeno[1,2- <i>3-c</i> ]dipyrene	193395	0.00E+00		
Isophorone	78591	0.00E+00		
Isopropyl Alcohol	67630	0.00E+00		
Lead Acetate	301042	0.00E+00		
Lead and Lead Compounds	7439921	5.32E-06	2.86E-04	
Lead Phosphate	7446277	0.00E+00		
Lead Subacetate	1335126	0.00E+00		
m-CRESOL	108394	0.00E+00		
m-XYLENE	108383	0.00E+00		
Maleic Anhydride	108316	0.00E+00		
Manganese & Manganese Compounds	7439965	8.35E-06		1.75E-04
Mercury (Inorganic)	7439976	1.77E-06		1.12E-04
Mercuric chloride	7487947	0.00E+00		
Methanol	67561	0.00E+00		
Methyl Bromide	74839	0.00E+00		
Methyl Ethyl Ketone	78933	0.00E+00		
Methyl Isocyanate	624839	0.00E+00		
Methyl Tertiary Butyl Ether	1634044	0.00E+00		
Methylene Chloride (Dichloromethane)	75092	0.00E+00		
Methylene Diphenyl Isocyanate (MDI)	101888	0.00E+00		
Michlers Ketone	90948	0.00E+00		
n-Hexane	110543	0.00E+00		
n-Nitroso-n-methylethylamine	1059596	0.00E+00		
n-Nitroso-n-Butylamine	924463	0.00E+00		
n-Nitrosodi-n-Propylamine	621647	0.00E+00		
n-Nitrosodimethylamine	55185	0.00E+00		
n-Nitrosodimethylamine	62759	0.00E+00		
n-Nitrosodiphenylamine	86306	0.00E+00		
n-Nitrosomorpholine	59892	0.00E+00		
n-Nitrosopiperidine	100754	0.00E+00		
n-Nitrosopyrrolidine	930552	0.00E+00		
Naphthalene	91203	0.00E+00		
Nickel and Nickel Compounds	7440020	0.00E+00	1.19E-01	1.38E-02
Nickel acetate	373024	0.00E+00		
Nickel carbonate	3332673	0.00E+00		
Nickel carbonyl	13461303	0.00E+00		
Nickel hydroxide	12054487	0.00E+00		
Nickelocene	1271289	0.00E+00		
Nickel Oxide	1313991	0.00E+00		
Nickel Refinery Dust	1146	0.00E+00		
Nickel Subsulfide	12035722	0.00E+00		
Nitric Acid	7697372	0.00E+00		
Nitrogen Dioxide	10102440	0.00E+00		
o-CRESOL	95487	0.00E+00		
o-XYLENE	95476	0.00E+00		
Oleum	8014957	0.00E+00		
Ozone	10028156	0.00E+00		
p-Chloro-o-toluidine	95692	0.00E+00		
p-Cresidine	120718	0.00E+00		
p-CRESOL	106445	0.00E+00		
p-Nitrosodiphenylamine	156105	0.00E+00		
p-XYLENE	106423	0.00E+00		
Pentachlorophenol	87865	0.00E+00		
Perchloroethylene	127184	0.00E+00		
Phenol	108952	0.00E+00		
Phosgene	75445	0.00E+00		
Phosphine	7803512	0.00E+00		
Phosphoric Acid	7664382	0.00E+00		
Phthalic Anhydride	85449	0.00E+00		
Polychlorinated Biphenyls	1336363	0.00E+00		
Potassium Bromate	7758012	0.00E+00		
Propylene	115071	0.00E+00		
Propylene Glycol Monomethyl Ether	107982	0.00E+00		
Propylene oxide	75569	0.00E+00		
Selenium	7782492	0.00E+00		
Selenium sulfide	7446346	0.00E+00		
Silica (crystalline, respirable)	7631869	0.00E+00		
Sodium hydroxide	1310732	0.00E+00		
Styrene	100425	0.00E+00		
Sulfates	9960	0.00E+00		
Sulfur Dioxide	7446095	2.32E-03		
Sulfuric Acid	7664939	0.00E+00		
Sulfur Trioxide	7446719	0.00E+00		
Tertiary butyl acetate	540885	0.00E+00		
Tetrachloroethylene	127184	0.00E+00		
Thioacetamide	62555	0.00E+00		
Toluene	108883	0.00E+00		



Toluene Diisocyanates	26471625	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	93087	0.00E+00
Trichloroethylene	79016	0.00E+00
Triethylamine	121448	0.00E+00
Urethane	51796	0.00E+00
Vanadium pentoxide	1314621	0.00E+00
Vinyl acetate	108054	0.00E+00
Vinyl chloride	75014	0.00E+00
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00
Vanadium	7440622	0.00E+00

**TOTAL UNADJUSTED Risk Values 18.986 0.023 0.000**

# Roadway Screening Analysis Calculator

# Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

## INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- **County:** Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- **Roadway Direction:** Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- **Side of the Roadway:** Identify on which side of the roadway the project is located.
- **Distance from Roadway:** Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- **Annual Average Daily Traffic (ADT):** Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters	Results
County Santa Clara	<b>Santa Clara County</b>
Roadway Direction East-West	<b>EAST-WEST DIRECTIONAL ROADWAY</b>
Side of the Roadway North	<b>PM2.5 annual average</b>
Distance from Roadway 45 feet	<b>0.181</b> ( $\mu\text{g}/\text{m}^3$ )
Annual Average Daily Traffic (ADT) 20,610	<b>Cancer Risk</b>
	<b>9.06</b> (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

### Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

# Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

### INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- **County:** Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- **Roadway Direction:** Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- **Side of the Roadway:** Identify on which side of the roadway the project is located.
- **Distance from Roadway:** Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- **Annual Average Daily Traffic (ADT):** Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters	Results
County <input type="text" value="Santa Clara"/>	<b>Santa Clara County</b>
Roadway Direction <input type="text" value="North-South"/>	<b>NORTH-SOUTH DIRECTIONAL ROADWAY</b>
Side of the Roadway <input type="text" value="West"/>	<b>PM2.5 annual average</b>
Distance from Roadway <input type="text" value="710"/> feet	<b>0.013</b> ( $\mu\text{g}/\text{m}^3$ )
Annual Average Daily Traffic (ADT) <input type="text" value="12,799"/>	<b>Cancer Risk</b>
	<b>0.63</b> (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

### Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

# Operational Health Risk Assessment



November 15, 2019

Mr. Scott Carelli  
**Consultant**  
Stack Infrastructure  
2001 Fortune Drive  
San Jose, CA 95131

**Subject: Summary of Findings from Health Risk Assessment for Stack Infrastructure**

Dear Scott:

On behalf of Stack Infrastructure, ProActive Consulting Group (ProActive) has prepared the requested Health Risk Assessment for twenty (20) emergency generators at 2001 Fortune Drive in San Jose. The health risk assessment was prepared using the latest version of the California Air Resources Board Hotspots Analysis and Reporting Program (HARP) and the meteorological data from the San Jose International Airport.

**Exhaust Parameters**

Uncontrolled Hourly PM Emission Rate per Engine	0.80 lbs/hr
Estimated Particulate Matter Efficiency	85%
Controlled Hourly PM Emission Rate per Engine	0.12 lbs/hr
Annual PM Emissions per Engine (50 hrs/yr)	6 lbs/yr
Annual PM Emissions per Engine (40 hrs/yr)	4.8 lbs/yr
Stack Height	16 ft
Stack Diameter	14 in
Stack Orientation	Vertical with Flapper Raincap
Exhaust Flow Rate	25,620 ft <sup>3</sup> /min
Exhaust Temperature	891.9 °F

### Results

The table below summarizes the health risks assuming the generators operate for 50 hours per year for testing and maintenance.

	Maximum Exposed Resident	Maximum Exposed Worker
Cancer Risk	1.66 in a million	7.62 in a million
Chronic Hazard Index	$3.2 \times 10^{-4}$	$1.5 \times 10^{-3}$

The table below summarizes the health risks assuming the generators operate for 40 hours per year for testing and maintenance.

	Maximum Exposed Resident	Maximum Exposed Worker
Cancer Risk	1.33 in a million	6.10 in a million
Chronic Hazard Index	$2.5 \times 10^{-4}$	$1.2 \times 10^{-3}$

### Discussion

The aerial maps included display the estimated location of the proposed generators and the risk contours for the surrounding area.

ProActive's assessment found that the generators have a moderate impact on the surrounding communities, even with the proposed particulate filters. This is due to the large kW rating and the number of generators at the facility.

The wind conditions of the region disperse the particulate matter to the south-east of the facility. Therefore, the maximum exposed individual resident (Receptor 325) is located at approximately 2029 Flickinger Way in San Jose while the maximum exposed individual worker (Receptor 937) is located at 2180 Fortune Drive in San Jose.

The BAAQMD Regulation 2-5 requires emergency engines equipped with diesel particulate filters to have a cancer risk lower than 10 in a million for the maximum exposed resident and worker. Although, the updated health risk assessment shows that the maximum exposed receptor has a cancer risk lower than this threshold, the BAAQMD will conduct its own health risk

November 15, 2019  
Mr. Scott Carelli  
Page 3 of 3

assessment that may differ from ProActive's and may reduce testing and maintenance hours depending on the resulting risk or other factors.

Thank you for your attention to this matter. Should you have any questions or comments, please don't hesitate to contact me at (714) 893-7900.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick Tam". The signature is written in a cursive style with a large initial "P" and a long, sweeping underline.

Patrick Tam, MS  
Senior Project Manager  
SCAQMD Certified Permitting Professional B6005



# Raw cancer risk data files provided by ProActive

\*HARP - HRACalc v19044 11/13/2019 11:03:50 AM - Cancer Risk - Input File: Z:\ACTIVE FOLDERS\Clients\Infomart Silicon Valley\HARP\STACK INFOMART\hra\ Stack\_50HRAInput.hra

REC	GRP	NETID	X	Y	CONC	POLID	POLABBR	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK	DERMAL_R	MMILK_RI	WATER_RI	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_FEGG_RISK	1ST_DRIVE	2ND_DRIVER	
937	CARTGRID	2	598155.5	4139904	0.007262	9901	DieselExhP	7.62E-06	70YrCance	*	7.62E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MEI
938	CARTGRID	2	598180.5	4139904	0.007005	9901	DieselExhP	7.35E-06	70YrCance	*	7.35E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
936	CARTGRID	2	598130.5	4139904	0.006941	9901	DieselExhP	7.29E-06	70YrCance	*	7.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
918	CARTGRID	2	598180.5	4139879	0.006744	9901	DieselExhP	7.08E-06	70YrCance	*	7.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
956	CARTGRID	2	598130.5	4139929	0.006652	9901	DieselExhP	6.98E-06	70YrCance	*	6.98E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
917	CARTGRID	2	598155.5	4139879	0.006558	9901	DieselExhP	6.88E-06	70YrCance	*	6.88E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1115	CARTGRID	2	598105.5	4140129	0.006545	9901	DieselExhP	6.87E-06	70YrCance	*	6.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
919	CARTGRID	2	598205.5	4139879	0.006522	9901	DieselExhP	6.85E-06	70YrCance	*	6.85E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
957	CARTGRID	2	598155.5	4139929	0.006493	9901	DieselExhP	6.81E-06	70YrCance	*	6.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
939	CARTGRID	2	598205.5	4139904	0.006478	9901	DieselExhP	6.80E-06	70YrCance	*	6.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1096	CARTGRID	2	598130.5	4140104	0.006362	9901	DieselExhP	6.68E-06	70YrCance	*	6.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1116	CARTGRID	2	598130.5	4140129	0.006176	9901	DieselExhP	6.48E-06	70YrCance	*	6.48E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1095	CARTGRID	2	598105.5	4140104	0.006123	9901	DieselExhP	6.43E-06	70YrCance	*	6.43E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
920	CARTGRID	2	598230.5	4139879	0.006098	9901	DieselExhP	6.40E-06	70YrCance	*	6.40E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1097	CARTGRID	2	598155.5	4140104	0.006069	9901	DieselExhP	6.37E-06	70YrCance	*	6.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
378	CARTGRID	1	598180.5	4139929	0.006065	9901	DieselExhP	6.37E-06	70YrCance	*	6.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
958	CARTGRID	2	598180.5	4139929	0.006065	9901	DieselExhP	6.37E-06	70YrCance	*	6.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
377	CARTGRID	1	598105.5	4139929	0.005992	9901	DieselExhP	6.29E-06	70YrCance	*	6.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
955	CARTGRID	2	598105.5	4139929	0.005992	9901	DieselExhP	6.29E-06	70YrCance	*	6.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1114	CARTGRID	2	598080.5	4140129	0.005978	9901	DieselExhP	6.27E-06	70YrCance	*	6.27E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
940	CARTGRID	2	598230.5	4139904	0.00586	9901	DieselExhP	6.15E-06	70YrCance	*	6.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
348	CARTGRID	1	598180.5	4139854	0.005801	9901	DieselExhP	6.09E-06	70YrCance	*	6.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
916	CARTGRID	2	598130.5	4139879	0.005795	9901	DieselExhP	6.08E-06	70YrCance	*	6.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1077	CARTGRID	2	598155.5	4140079	0.005664	9901	DieselExhP	5.94E-06	70YrCance	*	5.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
935	CARTGRID	2	598105.5	4139904	0.005656	9901	DieselExhP	5.94E-06	70YrCance	*	5.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
959	CARTGRID	2	598205.5	4139929	0.005582	9901	DieselExhP	5.86E-06	70YrCance	*	5.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1076	CARTGRID	2	598130.5	4140079	0.005528	9901	DieselExhP	5.80E-06	70YrCance	*	5.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1098	CARTGRID	2	598180.5	4140104	0.005499	9901	DieselExhP	5.77E-06	70YrCance	*	5.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
349	CARTGRID	1	598255.5	4139854	0.005478	9901	DieselExhP	5.75E-06	70YrCance	*	5.75E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1117	CARTGRID	2	598155.5	4140129	0.005466	9901	DieselExhP	5.74E-06	70YrCance	*	5.74E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
438	CARTGRID	1	598180.5	4140079	0.005436	9901	DieselExhP	5.71E-06	70YrCance	*	5.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1078	CARTGRID	2	598180.5	4140079	0.005436	9901	DieselExhP	5.71E-06	70YrCance	*	5.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
960	CARTGRID	2	598230.5	4139929	0.005104	9901	DieselExhP	5.36E-06	70YrCance	*	5.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1094	CARTGRID	2	598080.5	4140104	0.00507	9901	DieselExhP	5.32E-06	70YrCance	*	5.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1079	CARTGRID	2	598205.5	4140079	0.004991	9901	DieselExhP	5.24E-06	70YrCance	*	5.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
437	CARTGRID	1	598105.5	4140079	0.004944	9901	DieselExhP	5.19E-06	70YrCance	*	5.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1075	CARTGRID	2	598105.5	4140079	0.004944	9901	DieselExhP	5.19E-06	70YrCance	*	5.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1058	CARTGRID	2	598180.5	4140054	0.00488	9901	DieselExhP	5.12E-06	70YrCance	*	5.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION
1057	CARTGRID																							





































































































# Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

## INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- **County:** Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- **Roadway Direction:** Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- **Side of the Roadway:** Identify on which side of the roadway the project is located.
- **Distance from Roadway:** Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- **Annual Average Daily Traffic (ADT):** Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters	Results
County	<b>Santa Clara County</b>
Roadway Direction	<b>NORTH-SOUTH DIRECTIONAL ROADWAY</b>
Side of the Roadway	<b>PM2.5 annual average</b>
Distance from Roadway	<b>0.174</b> ( $\mu\text{g}/\text{m}^3$ )
Annual Average Daily Traffic (ADT)	<b>Cancer Risk</b>
	<b>7.39</b> (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

## Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.



Step 1:  
Enter Facility Data

Plant Name	Microchip Technology, Inc.
Plant No.	24489

Step 3:  
Specify Source Type

Does facility have only diesel backup generators?	no
Is this analysis for a gas station?	no

Step 2:  
Estimate Distance

What is the distance (m) from the facility boundary to the MEI?	135
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Step 5:  
Read Estimates

Total Cancer Risk	3.530	per 1,000,000
Total Chronic Hazard	2.996	
Total PM2.5 Concentration	0.000	µg/m <sup>3</sup>

Step 2:  
Enter Emissions Data

Chemical Name	CAS No. <small>(dashes removed)</small>	Emission <small>(lb/day)</small>	Cancer <small>(# / 1,000,000)</small>	Chronic <small>(Index)</small>	Concentration <small>(µg/m3)</small>
Fine Particulate Matter (PM2.5)		0.00E+00			
1,1,1-Trichloroethane	71556	0.00E+00			
1,1,2,2-Tetrachloroethane	79345	0.00E+00			
1,1,2-Trichloroethane	79005	0.00E+00			
1,1-Dichloroethane	75343	0.00E+00			
1,1-Dichloroethylene	75354	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879	0.00E+00			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469	0.00E+00			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394	0.00E+00			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286	0.00E+00			
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857	0.00E+00			
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0.00E+00			
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219	0.00E+00			
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.00E+00			
1,2,3,7,8-Pentachlorodibenzofuran	57117416	0.00E+00			
1,2-Dibromo-3-chloropropane	96128	0.00E+00			
1,2-Dibromoethane	106934	0.00E+00			
1,2-Dichloroethane	107062	0.00E+00			
1,2-Epoxybutane	106887	0.00E+00			
1,3-Butadiene	106990	0.00E+00			
1,3-Propane sultone	1120714	0.00E+00			
1,4-Dichlorobenzene	106467	0.00E+00			
1,4-Dioxane	123911	0.00E+00			
1,6-Dinitropyrene	42397648	0.00E+00			
1,8-Dinitropyrene	42397659	0.00E+00			
1-Nitropyrene	5522430	0.00E+00			
2,3,4,4',5'-PeCB	65510443	0.00E+00			
2,3',4,4',5'-HxCB	52663726	0.00E+00			
2,3',4,4',5'-PeCB	31508006	0.00E+00			
2,3',4,4',5'-HxCB	69782907	0.00E+00			
2,3,3',4,4',5,5'-HpCB	39635319	0.00E+00			
2,3,3',4,4',5'-HxCB	38380084	0.00E+00			
2,3,3',4,4'-PeCB	32598144	0.00E+00			
2,3,4,4',5'-PeCB	74472370	0.00E+00			
2,3,4,6,7,8-hexachlorodibenzofuran	60851345	0.00E+00			
2,3,4,7,8-Pentachlorodibenzofuran	57117314	0.00E+00			
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compc	1746016	0.00E+00			
2,3,7,8-Tetrachlorodibenzofuran	51207319	0.00E+00			
2,4,6-Trichlorophenol	88062	0.00E+00			
2,4-Diaminoanisole	615054	0.00E+00			
2,4-Diaminotoluene	95807	0.00E+00			
2,4-Dinitrotoluene	121142	0.00E+00			
2-Aminoanthraquinone	117793	0.00E+00			
2-Nitrofluorene	607578	0.00E+00			
3,3',4,4',5,5'-HxCB	32774166	0.00E+00			
3,3',4,4',5'-PeCB	57465288	0.00E+00			
3,3',4,4'-TCB	32598133	0.00E+00			
3,3-Dichlorobenzidine	91941	0.00E+00			
3,4,4'-TCB	70362504	0.00E+00			
3-Methylcholanthrene	56495	0.00E+00			
4,4-Methylene bis(2-chloroaniline)	101144	0.00E+00			



4,4-Methylenedianiline	101779	0.00E+00		
4-Chloro-ortho-phenylenediamine	95830	0.00E+00		
4-Dimethylaminoazobenzene	60117	0.00E+00		
4-Nitropyrene	57835924	0.00E+00		
5-Methylchrysene	3697243	0.00E+00		
5-Nitroacenaphthene	602879	0.00E+00		
6-Nitrochrysene	7496028	0.00E+00		
7,12-Dimethylbenz(a)anthracene	57976	0.00E+00		
7H-dibenzo(c,g)carbazole	194592	0.00E+00		
Acetaldehyde	75070	0.00E+00		
Acetamide	60355	0.00E+00		
Acrolein	107028	0.00E+00		
Acrylamide	79061	0.00E+00		
Acrylic Acid	79107	0.00E+00		
Acrylonitrile	107131	0.00E+00		
Allyl chloride	107051	0.00E+00		
Ammonia	7664417	0.00E+00		
Aniline	62533	0.00E+00		
Arsenic	7440382	0.00E+00		
Arsine	7784421	0.00E+00		
Asbestos [1/(100 PCM fibers/m³)] <sup>-1</sup>	1332214	0.00E+00		
Benzo(a)anthracene	56553	0.00E+00		
Benzene	71432	8.38E-07	1.07E-04	5.28E-07
Benzidine	92875	0.00E+00		
Benzo(a)pyrene	50328	0.00E+00		
Benzo(b)fluoranthene	205992	0.00E+00		
Benzo(j)fluoranthene	205823	0.00E+00		
Benzo(k)fluoranthene	207089	0.00E+00		
Benzyl Chloride	100447	0.00E+00		
Beryllium	7440417	0.00E+00		
Bis(2-chloroethyl) Ether	111444	0.00E+00		
Bis(2-chloromethyl) Ether	542881	0.00E+00		
Cadmium	7440439	0.00E+00		
Caprolactam	105602	0.00E+00		
Carbon Disulfide	75150	0.00E+00		
Carbon Monoxide	630080	2.09E-03		
Carbon Tetrachloride	56235	0.00E+00		
Carbonyl Sulfide	463581	0.00E+00		
Chlorinated paraffins (Avg. chain length C12; approx. 6i)	108171262	0.00E+00		
Chlorine	7782505	0.00E+00		
Chlorine Dioxide	10049044	2.22E+00	6.99E+00	
Chlorite	7758192	0.00E+00		
Chlorobenzene	108907	0.00E+00		
Chlorodibromomethane	124481	0.00E+00		
Chloroethane (Ethyl Chloride)	75003	0.00E+00		
Chloroform	67663	0.00E+00		
Chloropicrin	76062	0.00E+00		
Chromic Trioxide	1333820	0.00E+00		
Chromium-hexavalent	18540299	0.00E+00		
Barium chromate2	10294403	0.00E+00		
Calcium chromate2	13765190	0.00E+00		
Lead chromate2	7758976	0.00E+00		
Sodium dichromate2	10588019	0.00E+00		
Strontium chromate2	7789062	0.00E+00		
CHROMIC TRIOXIDE (as chromic acid mist)	1333820	0.00E+00		
Chrysene	218019	0.00E+00		
Copper	7440508	0.00E+00		
Copper and Copper Compounds	7440508	0.00E+00		
Cresol Mixtures	1319773	0.00E+00		
Cupferron	135206	0.00E+00		
Cyanide	57125	0.00E+00		
Di(2-ethylhexyl)phthalate	117817	0.00E+00		
Dibenz(a-h)acridine	226368	0.00E+00		
Dibenz(a-h)anthracene	53703	0.00E+00		
Dibenz(a-j)acridine	224420	0.00E+00		
Dibenzo(a-c)pyrene	192654	0.00E+00		
Dibenzo(a-h)pyrene	189640	0.00E+00		
Dibenzo(a-i)pyrene	189559	0.00E+00		
Dibenzo(a-l)pyrene	191300	0.00E+00		
Diesel Exhaust Particulate	85105	2.54E-04	3.57E-01	9.60E-05
Diethanolamine	111422	0.00E+00		
Dimethylformamide	68122	0.00E+00		
Direct Black 38 (Technical Grade)	1937377	0.00E+00		
Direct Blue 6 (Technical Grade)	2602462	0.00E+00		

Direct Brown 95 (Technical Grade)	16071866	0.00E+00		
Epichlorohydrin	106898	0.00E+00		
Ethylbenzene	100414	0.00E+00		
Ethylene Glycol	107211	0.00E+00		
Ethylene Glycol Monobutyl Ether	111762	0.00E+00		
Ethylene Glycol Monoethyl Ether	110805	0.00E+00		
Ethylene Glycol Monoethyl Ether Acetate	111159	0.00E+00		
Ethylene Glycol Monomethyl Ether	109864	0.00E+00		
Ethylene Glycol Monomethyl Ether Acetate	110496	0.00E+00		
Ethylene Oxide	75218	0.00E+00		
Ethylene Thiourea	96457	0.00E+00		
Fluorides	1101	0.00E+00		
Formaldehyde (gas)	50000	1.66E-05	4.46E-04	3.49E-06
Glutaraldehyde	111308	0.00E+00		
Hexachlorobenzene	118741	0.00E+00		
Hexachlorocyclohexane (Technical Grade)	608731	0.00E+00		
Hexachlorocyclohexane- Alpha Isomer	319846	0.00E+00		
Hexachlorocyclohexane- Beta Isomer	319857	0.00E+00		
Hexachlorocyclohexane- Gamma Isomer	58899	0.00E+00		
Hydrazine	302012	0.00E+00		
		0.00E+00		
Hydrogen Chloride	7647010	0.00E+00		
Hydrogen Cyanide	74908	0.00E+00		
Hydrogen Fluoride	7664393	0.00E+00		
Hydrogen Selenide	7783075	0.00E+00		
Hydrogen Sulfide	7783064	0.00E+00		
Indeno[1-2-3-c-d]pyrene	193395	0.00E+00		
Isophorone	78591	0.00E+00		
Isopropyl Alcohol	67630	0.00E+00		
Lead Acetate	301042	0.00E+00		
Lead and Lead Compounds	7439921	5.32E-06	2.86E-04	
Lead Phosphate	7446277	0.00E+00		
Lead Subacetate	1335326	0.00E+00		
m-CRESOL	108394	0.00E+00		
m-XYLENE	108383	0.00E+00		
Maleic Anhydride	108316	0.00E+00		
Manganese & Manganese Compounds	7439965	0.00E+00		
Mercury (Inorganic)	7439976	0.00E+00		
Mercuric chloride	7487947	0.00E+00		
Methanol	67561	0.00E+00		
Methyl Bromide	74839	0.00E+00		
Methyl Ethyl Ketone	78933	0.00E+00		
Methyl Isocyanate	624839	0.00E+00		
Methyl Tertiary Butyl Ether	1634044	0.00E+00		
Methylene Chloride (Dichloromethane)	75092	0.00E+00		
Methylene Diphenyl Isocyanate (MDI)	101688	0.00E+00		
Michlers Ketone	90948	0.00E+00		
n-Hexane	110543	0.00E+00		
n-Nitroso-n-methylethylamine	10595956	0.00E+00		
n-Nitrosodi-n-Butylamine	924163	0.00E+00		
n-Nitrosodi-n-Propylamine	621647	0.00E+00		
n-Nitrosodiethylamine	55185	0.00E+00		
n-Nitrosodimethylamine	62759	0.00E+00		
n-Nitrosodiphenylamine	86306	0.00E+00		
n-Nitrosomorpholine	59892	0.00E+00		
n-Nitrosopiperidine	100754	0.00E+00		
n-Nitrosopyrrolidine	930552	0.00E+00		
Naphthalene	91203	0.00E+00		
Nickel and Nickel Compounds	7440020	0.00E+00		
Nickel acetate	373024	0.00E+00		
Nickel carbonate	3333673	0.00E+00		
Nickel carbonyl	13463393	0.00E+00		
Nickel hydroxide	12054487	0.00E+00		
Nickelocene	1271289	0.00E+00		
Nickel Oxide	1313991	7.49E-03	8.72E+00	7.08E-01
Nickel Refinery Dust	1146	0.00E+00		
Nickel Subulfide	12035722	0.00E+00		
Nitric Acid	7697372	0.00E+00		
Nitrogen Dioxide	10102440	4.19E-06		
o-CRESOL	95487	0.00E+00		
o-XYLENE	95476	0.00E+00		
Oleum	8014957	0.00E+00		
Ozone	10028156	0.00E+00		
p-Chloro-o-toluidine	95692	0.00E+00		

p-Cresidine	120718	0.00E+00
p-CRESOL	106445	0.00E+00
p-Nitrosodiphenylamine	156105	0.00E+00
p-XYLENE	106423	0.00E+00
Pentachlorophenol	87865	0.00E+00
Perchloroethylene	127184	0.00E+00
Phenol	108952	0.00E+00
Phosgene	75445	0.00E+00
Phosphine	7803512	0.00E+00
Phosphoric Acid	7664382	0.00E+00
Phthalic Anhydride	85449	0.00E+00
Polychlorinated Biphenyls	1336363	0.00E+00
Potassium Bromate	7758012	0.00E+00
Propylene	115071	0.00E+00
Propylene Glycol Monomethyl Ether	107982	0.00E+00
Propylene oxide	75569	0.00E+00
Selenium	7782492	0.00E+00
Selenium sulfide	7446346	0.00E+00
Silica (crystalline, respirable)	7631869	0.00E+00
Sodium hydroxide	1310732	0.00E+00
Styrene	100425	0.00E+00
Sulfates	9960	0.00E+00
Sulfur Dioxide	7446095	1.03E-05
Sulfuric Acid	7664939	0.00E+00
Sulfur Trioxide	7446719	0.00E+00
Tertiary-butyl acetate	540885	0.00E+00
Tetrachloroethylene	127184	0.00E+00
Thioacetamide	62555	0.00E+00
Toluene	108883	0.00E+00
Toluene Diisocyanates	26471625	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	584849	0.00E+00
Toluene Diisocyanates (2,4 and 2, 6)	91087	0.00E+00
Trichloroethylene	79016	0.00E+00
Triethylamine	121448	0.00E+00
Urethane	51796	0.00E+00
Vanadium pentoxide	1314621	0.00E+00
Vinyl acetate	108054	0.00E+00
Vinyl chloride	75014	0.00E+00
Xylenes (technical mixture of m, o, p-isomers)	1330207	0.00E+00
Vanadium	7440622	0.00E+00

TOTAL UNADJUSTED Risk Values 9.074 7.701 0.000