

Pico Power Project

***Appendix 8.1-D
Screening Health Risk Assessment***

October 2002

Appendix 8.1D

Screening Health Risk Assessment

The screening health risk assessment was conducted in accordance with the procedures developed by the California Air Pollution Control Officers' Association (CAPCOA) in the *Air Toxics "Hot Spots" Program: Revised 1992 Risk Assessment Guidelines* (CAPCOA, 1993).

The screening health risk assessment was carried out in three steps. First, emissions of toxic air pollutants from the project were calculated. These calculations are described in Section 8.1 and Appendix 8.1A, Table 8.1A-3 and -4, and the emissions are summarized in Table 8.1-18.

Next, the ISCST3 model was used to predict the maximum concentration at each receptor due to the facility. This was done first for the coarse grid of receptors, and the locations of maximum risk were determined. Fine grids were set up around the locations of maximum modeled risk and impacts were reevaluated using ISCST3. Finally, the ARB/OEHHA Health Risk Assessment (HRA) Program (September 1996, with 3-4-02 updated database) was used to evaluate acute, chronic and cancer risks through inhalation and non-inhalation pathways based upon the maximum predicted concentration at each receptor.

Based upon the water quality data, chromium (in any form other than Cr3) is not expected to be found in the cooling tower drift.

The other assumptions used in running the HRA program were as follows:

- Emission rates for non-criteria pollutants are taken from Table 8.1-18 of AFC Section 8.1
- Number of residents affected is based upon the 2000 population data for those census tracts or portions of census tracts which lie within a 1 mile radius of the proposed facility.
- Number of workers affected is based upon the county average percentage of non-farm workers as compared to the total county population in 2000. This average was applied to all affected census tracts.
- Deposition velocity is taken to be 0.02 m/s, as recommended by ARB for controlled sources.
- Fraction of residents with gardens is taken to be 0.25, which is probably conservatively high for the urban area.
- Fraction of produce grown at home is taken to be 0.05, which is also believed to be conservatively high.

The HRA program is a single source model, using the emissions from a single source and the relationship between emissions and ambient concentration to calculate modeled concentration and then to determine modeled risk. The HRA input files use emission rates for each toxic pollutant, in grams per second, and a value of χ/Q , in $\mu\text{g}/\text{m}^3$ per gram per second. Since the Pico Project has multiple sources, the actual maximum modeled concentration of each toxic substance was used in place of the emission rate and χ/Q was taken as 1 to allow the model to evaluate total risk from all sources. While the modeled impacts of the cooling tower and the combustion sources were modeled separately (for ammonia only), the HRA program results were added together to determine total risk. The maximum modeled annual concentrations from all sources occurred at the same location.

The receptor grids used for these modeling analyses are similar to those used for the refined modeling, with the addition of discrete receptors located at schools, hospitals, day care centers, elder care facilities, retirement homes, and nursing homes. Residences nearest the proposed facility were also included as discrete receptors. A list of the discrete sensitive receptors is included in Table 8.9-1. Figure 8.9-2 (AFC Section 8.9) shows the boundary limits for the 1 mile radius areas. Tables 8.1D-1 through -4 delineate the census tract population data, and Attachment 8.1Da delineates the census tract map and affected tracts within 1 mile of the facility.

The HRA program results for acute and chronic inhalation and chronic non-inhalation exposures, cancer burden and individual cancer risk (workplace and residential) for the cooling tower and the combustion sources are attached. Separate calculations are shown for each type of exposure and risk, and the results of the calculations are summarized below.

The modeling results show that the maximum calculated cancer risk from the Pico Project (turbines, duct burners, and cooling tower) is expected to be 0.133 in one million. This risk is well below the ten in one-million significance level currently used by the BAAQMD and CEC. The acute and chronic non-cancer hazard indices are <0.205 and <0.014, respectively. Both are well below the significant impact level of 1. The total cancer burden was calculated to be 0.001, which is also well below 1.0. Detailed calculations and results for each significant receptor are included in the modeling results, which are being submitted electronically.

In addition, a HRA was performed for the construction emissions (primarily construction equipment PM exhaust emissions). The results are as follows:

- Cancer Risk = 1.38 in one million
- Chronic Inhalation Hazard Index = 0.1628

These values are also well below the established significance levels.

These results are also provided in both hard copy and electronic format.

Other Health Risk Studies Conducted in the Project Region

Identification of available health studies concerning the potentially affected populations within the project region are as follows:

1. *The 2001 California Almanac of Emissions and Air Quality*, California Air Resources Board, Planning and Technical Support Division, 2001.

CARB presents a wide variety of air toxics data in the 2001 Almanac acquired from the statewide monitoring network. Data from the network is generally given for the years 1990-1999 for the top ten air toxics: acetaldehyde, benzene, 1-3 butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter. A summary of this data was presented in the AFC Public Health section (8.9). This data is not specifically targeted for the proposed power plant site, but rather to the state and specified air basin areas. CARB currently monitors approximately 63 toxic substances in the statewide network, with the nearest station being the San Jose-4th St. site.

2. *Screening Health Risk Assessment for the Russell City Energy Center, RCEC-AFC, Section 8.9, RTP Environmental Associates, May 2001.*

A conservative health risk assessment was prepared for the Russell City Energy Center (RCEC), located approximately 20 miles north of the Pico Project project, south of the Hayward Air Terminal Complex. The RCEC project is a 600 MW natural gas fired, combined cycle facility. Health risks associated from this facility were estimated as follows:

Table 8.1D-5

HRA Screening Category	HRA Screening Result
Cancer Risk	0.174 per million
Cancer Burden	0.043
Acute Inhalation Hazard Index	<0.246
Chronic Inhalation Hazard Index	<0.0216
Chronic Non-Inhalation Hazard Index	ND

3. *Screening Health Risk Assessment for the Los Esteros Energy Center, LECEF-AFC, Section 8.1.5.4, CH2M Hill, May 2001.*

A conservative health risk assessment was prepared for the LECEF, located approximately 3.37 miles north of the Pico Project project. The LECEF project is a 180 MW natural gas-fired, simple cycle facility. Health risks associated from this facility were estimated as follows:

Table 8.1D-6

HRA Screening Category	HRA Screening Result
Cancer Risk	0.02 per million
Cancer Burden	ND
Acute Inhalation Hazard Index	0.02
Chronic Inhalation Hazard Index	0.003
Chronic Non-Inhalation Hazard Index	ND

4. *Screening Health Risk Assessment for the Metcalf Energy Center, MEC-AFC, Section 8.6, CH2M Hill, June 1999.*

A conservative health risk assessment was prepared for the Metcalf Energy Center (MEC), located approximately 12.7 miles southeast of the Pico Project. The MEC project is a 600 MW natural gas fired, combined cycle facility. Health risks associated from this facility were estimated as follows:

Table 8.1D-7

HRA Screening Category	HRA Screening Result
Cancer Risk	0.25
Cancer Burden	ND
Acute Inhalation Hazard Index	<0.162
Chronic Inhalation Hazard Index	0.1077
Chronic Non-Inhalation Hazard Index	ND

In addition to the above studies conducted within the project region, the BAAQMD is currently implementing an air toxics program which integrates both federal and state air toxics mandates. The BAAQMD program is composed of four (4) basic elements, as follows:

- Preconstruction review of new and modified sources for potential health impacts.
- Implementation of the AB 2588 Air Toxics "Hot Spots" Program.
- Adoption and enforcement of source specific control measures to reduce air toxics emissions. This element relies upon the authority of state legislation (AB 1807), and federal legislation pursuant to the Clean Air Act, i.e., NESHAPs.
- Cooperative "toxics" air monitoring program with the State Air Resources Board.

Air monitoring data for calendar year 2000 shows the following for both gaseous and particulate toxic air contaminants.

Table 8.1D-8 Toxics Monitoring Data for BAAQMD for Calendar Year 2000

Toxic Contaminant	Concentration, ppb	Cancer Risk, per million
1,3 Butadiene	0.14	54.5
Benzene	0.46	43.7
Carbon Tetrachloride	0.10	27.7
Formaldehyde	1.90	14.2
Acetaldehyde	0.73	3.6
Perchloroethylene	0.06	2.6
Methylene Chloride	0.36	1.3
MTBE	0.73	0.7
Chloroform	0.01	0.3
Trichloroethylene	0.02	0.2
Hex. Chromium	0.11 ng/m ³	16.8

PAHs	0.54 ng/m ³	0.6
Nickel	3.27 ng/m ³	0.8
Lead	7.04 ng/m ³	0.1

Table 8.1D-1 Sensitive Receptor Listing

ARC_Street	ARC_City	ARC_State	Distance	Name	Street	City	State	Lat/Long		UTM		Receptor Coor's (m)	
								x	y	E(m)	N(m)	x	y
991 Clyde Avenue	Santa Clara	CA	0.880	Valley House Care Center	991 Clyde Avenue	Santa Clara	CA	-121.952	37.389	592778.4	4138326	-193	1339
3003 Scott Boulevard	Santa Clara	CA	0.500	Granada Islamic School	3003 Scott Boulevard	Santa Clara	CA	-121.960	37.376	592080.9	4136900	-890	-87
3003 Scott Boulevard	Santa Clara	CA	0.500	MCA Week-End School	3003 Scott Boulevard	Santa Clara	CA	-121.960	37.376	592080.9	4136900	-890	-87
750 Laurie Avenue	Santa Clara	CA	0.840	Montague Elementary School	750 Laurie Avenue	Santa Clara	CA	-121.949	37.388	593050.3	4138205	79	1218
2062 Walsh Avenue	Santa Clara	CA	0.780	Starstudent Com	2062 Walsh Avenue	Santa Clara	CA	-121.961	37.369	592232.6	4136342	-739	-644
			0.453	Nearest Residence								-538	492
UTM = Zone 10													
PICO Site (approx center)										592971.6	4136986.9	0	0

Table 8.1D-2

Population and Area Within 6 Mile Radius of PICO AFC

Data Set: 2000 US Census Summary Tape File 2 (STF 2)

Worker data from 1990 STF 3 adjusted for 2000

Est. Worker
Population
2000

TRACT	AREA SQMI	POP2000			
500100	0.76456	5360			2626
500200	0.73064	5068			2111
500300	1.06683	2211			423
500400	0.39447	2352			1494
500500	0.83039	4816			2682
500600	0.51927	3814			2170
500800	0.63489	1932			1088
500901	0.27661	2859			3680
500902	0.09506	3696			0
501000	0.30891	5544			2918
501100	0.73559	7903			3711
501200	0.32238	4792			2319
501300	0.28930	4165			2645
501400	0.60402	6532			3001
501501	0.23118	4232			3624
501502	0.32426	4392			0
501600	0.46684	7435			4281
501700	0.39952	5671			2250
501800	0.59595	5211			2666
501900	0.63624	3309			1348
502001	0.51722	5188			5257
502002	0.33206	5017			0
502101	0.75655	5011			2875
502102	0.70948	7395			4087
502201	0.37545	5855			5998
502202	0.43793	2997			0
502300	0.73744	5846			3767
502400	1.06512	6351			3843
502500	0.96408	5770			3465
502601	0.54438	2630			1683
502602	0.98798	6622			4977
502701	0.67061	4517			2424
502702	1.18165	7417			4502
502800	0.65848	4076			2520
502901	0.72840	5638			3459
502902	1.01616	7033			4361
502903	0.72775	5138			3175
502907	0.48371	3881			2495
502908	0.80749	6829			3795
503001	0.66512	3973			2230
503002	0.52429	3502			1914
503003	0.74706	5320			3441
503103	2.48999	8153			3459
503105	0.69014	2271			1170
503106	0.41050	9263			3740
503108	0.86988	6187			1841

503110	0.30227	4883		0
503111	0.35016	5436		0
503112	0.44026	3530		0
503113	0.26750	4980		0
503115	1.72137	2404		0
503211	0.41212	5058		0
503212	0.64961	4224		0
503213	0.42275	4794		0
503214	0.68530	5521		0
503304	0.56589	7258		3403
503305	0.89078	7254		3296
503306	0.63982	4411		1880
503401	0.28981	5796		4581
503402	0.33839	5219		0
503504	0.43407	6666		3054
503506	0.38250	6551		0
503507	0.14996	2335		0
503508	0.38931	6087		0
503510	0.40420	6388		0
503511	0.32509	3876		0
503601	0.50953	3128		1379
503602	0.47426	4745		1116
503702	0.58307	8349		2814
503703	0.26759	4662		1798
503706	0.44323	7354		0
503707	0.29087	6273		0
503708	0.46089	3013		0
503709	0.33991	6380		0
503802	0.64575	7353		3955
503803	0.41187	4695		0
503804	0.59476	4736		0
503900	0.75364	8080		3516
504001	0.43604	6026		0
504002	0.40690	5560		0
504101	0.38456	3912		4077
504102	0.51860	5529		0
504201	1.16392	4777		5106
504202	6.00686	4408		0
504307	0.65520	5107		3254
504308	7.33829	4158		2486
504310	1.73237	9271		3219
504311	0.85214	7126		3686
504314	0.55897	4755		3010
504315	0.62586	7074		4249
504316	0.43406	4868		0
504317	0.44172	4717		0
504318	1.67535	4312		0
504319	0.80489	5516		0
504320	0.36199	3083		0
504321	0.56691	5334		0
504410	0.42664	4398		2451
504411	0.52707	5602		3402

504412	0.39610	4862		2674
504413	0.24139	1738		0
504414	0.66495	5370		0
504415	0.46346	5231		0
504416	0.44608	3712		0
504417	3.48270	2638		0
504418	0.41126	5424		0
504420	6.57306	4599		0
504421	0.59834	4870		0
504422	0.33012	4288		0
504504	2.33023	5478		0
504505	0.75399	3796		0
504506	0.69550	5090		0
504507	0.68051	5767		0
504602	22.62275	2234		0
504802	0.71860	5199		3399
504803	0.53552	3799		1121
504805	0.56011	4905		0
504806	0.31166	3067		0
504901	0.54745	1551		1338
505001	3.45757	7224		2997
505005	2.01795	5914		0
505006	5.36537	3699		0
505007	1.14350	4228		0
505100	2.71239	2138		1034
505202	3.57654	6061		2840
505203	0.57107	2982		1602
505301	0.36014	4441		2657
505302	0.55633	4215		2645
505303	0.40567	6070		3599
505304	0.38621	3218		1984
505305	0.59622	5289		3122
505401	0.46501	5358		3100
505402	0.41831	2842		1924
505403	0.54468	6362		4112
505500	0.53208	3627		2042
505600	0.36963	3690		2310
505700	0.61750	5369		2992
505800	0.64609	3872		2558
505900	0.82385	6718		3847
506000	0.51257	4707		2822
506101	0.57872	4685		3020
506102	0.43670	3554		2627
506103	0.59636	4401		2867
506202	0.97574	6849		4245
506203	0.41860	5996		3445
506204	0.71478	5828		3746
506301	0.56600	5176		3425
506302	0.79361	5970		3684
506304	0.42410	4538		2783
506305	0.41905	7323		3846
506401	0.50938	3365		1541

506402	0.55271	5756	3841
506501	0.33576	7373	3943
506502	1.16368	3612	2279
506503	0.67253	5818	3565
506601	0.60756	4279	2708
506603	0.49781	4185	2739
506604	0.93451	7134	4468
506605	0.39005	4119	2681
506606	0.46013	4502	2865
506701	0.62167	3810	2309
506702	0.65777	5809	3887
506703	0.50711	3455	2140
507402	0.89242	4035	2057
507903	0.58259	4809	3020
507904	0.48643	3375	2175
508001	0.87606	6320	3610
508002	0.86111	8272	4284
508101	1.00619	5882	3019
508102	1.04219	2684	1353
508202	1.00691	7381	4692
508203	0.60590	4797	0
508204	0.39391	4025	0
508403	0.49107	2638	0
508404	0.72246	5111	0
508503	0.56616	5837	3874
508504	0.48132	6773	4323
508505	0.45226	4437	2895
508506	0.54081	7970	5136
508601	0.51051	3519	3653
508602	0.50921	3399	0
508703	0.56620	6760	4538
508704	2.33474	4873	0
508800	0.25824	3943	2222
508900	0.35809	5371	2924
509000	0.60378	7366	4300
509102	1.21014	4597	2974
512005	0.94552	6871	4485
Totals	173.7	940370	386154

Table 8.1D-3

PCT1. TOTAL POPULATION [1] - Universe: Total population

Race or Ethnic Group: Total population

Data Set: Census 2000 Summary File 2 (SF 2) 100-Percent Data

NOTE: For information on confidentiality protection, nonsampling error, and definitions see <http://factfinder.census.gov/home/en/datanotes/expsf2.htm>.

" "	"Total"	
"Census Tract 5001, Santa Clara County, California"	"5,360"	
"Census Tract 5002, Santa Clara County, California"	"5,068"	
"Census Tract 5003, Santa Clara County, California"	"2,211"	
"Census Tract 5004, Santa Clara County, California"	"2,352"	
"Census Tract 5005, Santa Clara County, California"	"4,816"	
"Census Tract 5006, Santa Clara County, California"	"3,814"	
"Census Tract 5008, Santa Clara County, California"	"1,932"	
"Census Tract 5009.01, Santa Clara County, California"	"2,859"	
"Census Tract 5009.02, Santa Clara County, California"	"3,696"	
"Census Tract 5010, Santa Clara County, California"	"5,544"	
"Census Tract 5011, Santa Clara County, California"	"7,903"	
"Census Tract 5012, Santa Clara County, California"	"4,792"	
"Census Tract 5013, Santa Clara County, California"	"4,165"	
"Census Tract 5014, Santa Clara County, California"	"6,532"	
"Census Tract 5015.01, Santa Clara County, California"	"4,232"	
"Census Tract 5015.02, Santa Clara County, California"	"4,392"	
"Census Tract 5016, Santa Clara County, California"	"7,435"	
"Census Tract 5017, Santa Clara County, California"	"5,671"	
"Census Tract 5018, Santa Clara County, California"	"5,211"	
"Census Tract 5019, Santa Clara County, California"	"3,309"	
"Census Tract 5020.01, Santa Clara County, California"	"5,188"	
"Census Tract 5020.02, Santa Clara County, California"	"5,017"	
"Census Tract 5021.01, Santa Clara County, California"	"5,011"	
"Census Tract 5021.02, Santa Clara County, California"	"7,395"	
"Census Tract 5022.01, Santa Clara County, California"	"5,855"	
"Census Tract 5022.02, Santa Clara County, California"	"2,997"	
"Census Tract 5023, Santa Clara County, California"	"5,846"	
"Census Tract 5024, Santa Clara County, California"	"6,351"	
"Census Tract 5025, Santa Clara County, California"	"5,770"	
"Census Tract 5026.01, Santa Clara County, California"	"2,630"	
"Census Tract 5026.02, Santa Clara County, California"	"6,622"	
"Census Tract 5027.01, Santa Clara County, California"	"4,517"	
"Census Tract 5027.02, Santa Clara County, California"	"7,417"	
"Census Tract 5028, Santa Clara County, California"	"4,076"	
"Census Tract 5029.01, Santa Clara County, California"	"5,638"	
"Census Tract 5029.02, Santa Clara County, California"	"7,033"	
"Census Tract 5029.03, Santa Clara County, California"	"5,138"	
"Census Tract 5029.06, Santa Clara County, California"	"4,678"	
"Census Tract 5029.07, Santa Clara County, California"	"3,881"	
"Census Tract 5029.08, Santa Clara County, California"	"6,829"	
"Census Tract 5029.09, Santa Clara County, California"	"4,979"	
"Census Tract 5029.10, Santa Clara County, California"	"3,365"	
"Census Tract 5030.01, Santa Clara County, California"	"3,973"	
"Census Tract 5030.02, Santa Clara County, California"	"3,502"	
"Census Tract 5030.03, Santa Clara County, California"	"5,320"	
"Census Tract 5031.03, Santa Clara County, California"	"8,153"	
"Census Tract 5031.05, Santa Clara County, California"	"2,271"	
"Census Tract 5031.06, Santa Clara County, California"	"9,263"	
"Census Tract 5031.08, Santa Clara County, California"	"6,187"	
"Census Tract 5031.10, Santa Clara County, California"	"4,883"	
"Census Tract 5031.11, Santa Clara County, California"	"5,436"	

"Census Tract 5031.12, Santa Clara County, California"	"3,530"
"Census Tract 5031.13, Santa Clara County, California"	"4,980"
"Census Tract 5031.15, Santa Clara County, California"	"2,404"
"Census Tract 5031.16, Santa Clara County, California"	"3,604"
"Census Tract 5032.04, Santa Clara County, California"	"7,810"
"Census Tract 5032.07, Santa Clara County, California"	"4,349"
"Census Tract 5032.08, Santa Clara County, California"	"3,884"
"Census Tract 5032.10, Santa Clara County, California"	"4,564"
"Census Tract 5032.11, Santa Clara County, California"	"5,058"
"Census Tract 5032.12, Santa Clara County, California"	"4,224"
"Census Tract 5032.13, Santa Clara County, California"	"4,794"
"Census Tract 5032.14, Santa Clara County, California"	"5,521"
"Census Tract 5032.17, Santa Clara County, California"	"5,250"
"Census Tract 5032.18, Santa Clara County, California"	"4,479"
"Census Tract 5033.04, Santa Clara County, California"	"7,258"
"Census Tract 5033.05, Santa Clara County, California"	"7,254"
"Census Tract 5033.06, Santa Clara County, California"	"4,411"
"Census Tract 5033.12, Santa Clara County, California"	"3,117"
"Census Tract 5033.13, Santa Clara County, California"	"4,684"
"Census Tract 5033.15, Santa Clara County, California"	"7,711"
"Census Tract 5033.17, Santa Clara County, California"	"7,560"
"Census Tract 5033.19, Santa Clara County, California"	"6,964"
"Census Tract 5033.20, Santa Clara County, California"	"8,632"
"Census Tract 5033.21, Santa Clara County, California"	"4,851"
"Census Tract 5033.22, Santa Clara County, California"	"4,374"
"Census Tract 5033.23, Santa Clara County, California"	"4,669"
"Census Tract 5033.24, Santa Clara County, California"	"3,931"
"Census Tract 5033.25, Santa Clara County, California"	"4,768"
"Census Tract 5033.26, Santa Clara County, California"	"3,311"
"Census Tract 5033.27, Santa Clara County, California"	"4,599"
"Census Tract 5033.28, Santa Clara County, California"	"8,871"
"Census Tract 5034.01, Santa Clara County, California"	"5,796"
"Census Tract 5034.02, Santa Clara County, California"	"5,219"
"Census Tract 5035.04, Santa Clara County, California"	"6,666"
"Census Tract 5035.06, Santa Clara County, California"	"6,551"
"Census Tract 5035.07, Santa Clara County, California"	"2,335"
"Census Tract 5035.08, Santa Clara County, California"	"6,087"
"Census Tract 5035.09, Santa Clara County, California"	"4,009"
"Census Tract 5035.10, Santa Clara County, California"	"6,388"
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Source: U.S. Census Bureau
Census 2000

Table 8.1D-4

U.S. Census Bureau

State and County QuickFacts

[QuickFacts Main](#) | [FAQs](#) | [What's New](#)

Santa Clara County, California

[California counties - view map](#)Select a state
[USA QuickFacts](#)

Select a county

[Locate a county by place name](#)Follow the link for
definition and source information.

Browse more data sets for Santa Clara County, California

	People QuickFacts	Santa Clara County	California
	Population, 2000	1,682,585	33,871,648
	Population, percent change, 1990 to 2000	12.4%	13.6%
	Persons under 5 years old, percent, 2000	7.1%	7.3%
	Persons under 18 years old, percent, 2000	24.7%	27.3%
	Persons 65 years old and over, percent, 2000	9.5%	10.6%
	White persons, percent, 2000 (a)	53.8%	59.5%
	Black or African American persons, percent, 2000 (a)	2.8%	6.7%
	American Indian and Alaska Native persons, percent, 2000 (a)	0.7%	1.0%
	Asian persons, percent, 2000 (a)	25.6%	10.9%
	Native Hawaiian and Other Pacific Islander, percent, 2000 (a)	0.3%	0.3%
	Persons reporting some other race, percent, 2000 (a)	12.1%	16.8%
	Persons reporting two or more races, percent, 2000	4.7%	4.7%
	Female persons, percent, 2000	49.3%	50.2%
	Persons of Hispanic or Latino origin, percent, 2000 (b)	24.0%	32.4%
	White persons, not of Hispanic/Latino origin, percent, 2000	44.2%	46.7%
	High school graduates, persons 25 years and over, 1990	799,660	14,244,971
	College graduates, persons 25 years and over, 1990	317,542	4,366,674
	Housing units, 2000	579,329	12,214,549
	Homeownership rate, 2000	59.8%	56.9%
	Households, 2000	565,863	11,502,870
	Persons per household, 2000	2.92	2.87
	Households with persons under 18, percent, 2000	38.6%	39.7%
	Median household money income, 1997 model-based estimate	\$59,639	\$39,595
	Persons below poverty, percent, 1997 model-based estimate	9.0%	16.0%
	Children below poverty, percent, 1997 model-based estimate	13.6%	24.6%

	Business QuickFacts	Santa Clara County	California
	Private nonfarm establishments, 1999	44,909	784,935
	Private nonfarm employment, 1999	941,476	12,356,363
	Private nonfarm employment, percent change 1990-1999	16.4%	9.2%

Nonemployer establishments, 1998	94,308	1,971,388
Manufacturers shipments, 1997 (\$1000)	72,528,275	379,612,443
Retail sales, 1997 (\$1000)	16,673,573	263,118,346
Retail sales per capita, 1997	\$10,282	\$8,167
Minority-owned firms, percent of total, 1997	30.3%	28.8%
Women-owned firms, percent of total, 1997	26.1%	27.3%
Housing units authorized by building permits, 2000	6,639	145,575
Federal funds and grants, 2000 (\$1000)	8,901,462	175,750,893
Local government employment - full-time equivalent, 1997	53,744	1,194,169

Geography QuickFacts		Santa Clara County	California
Land area, 2000 (square miles)		1,291	155,959
Persons per square mile, 2000		1,303.3	217.2
Metropolitan Area		San Jose, CA PMSA	

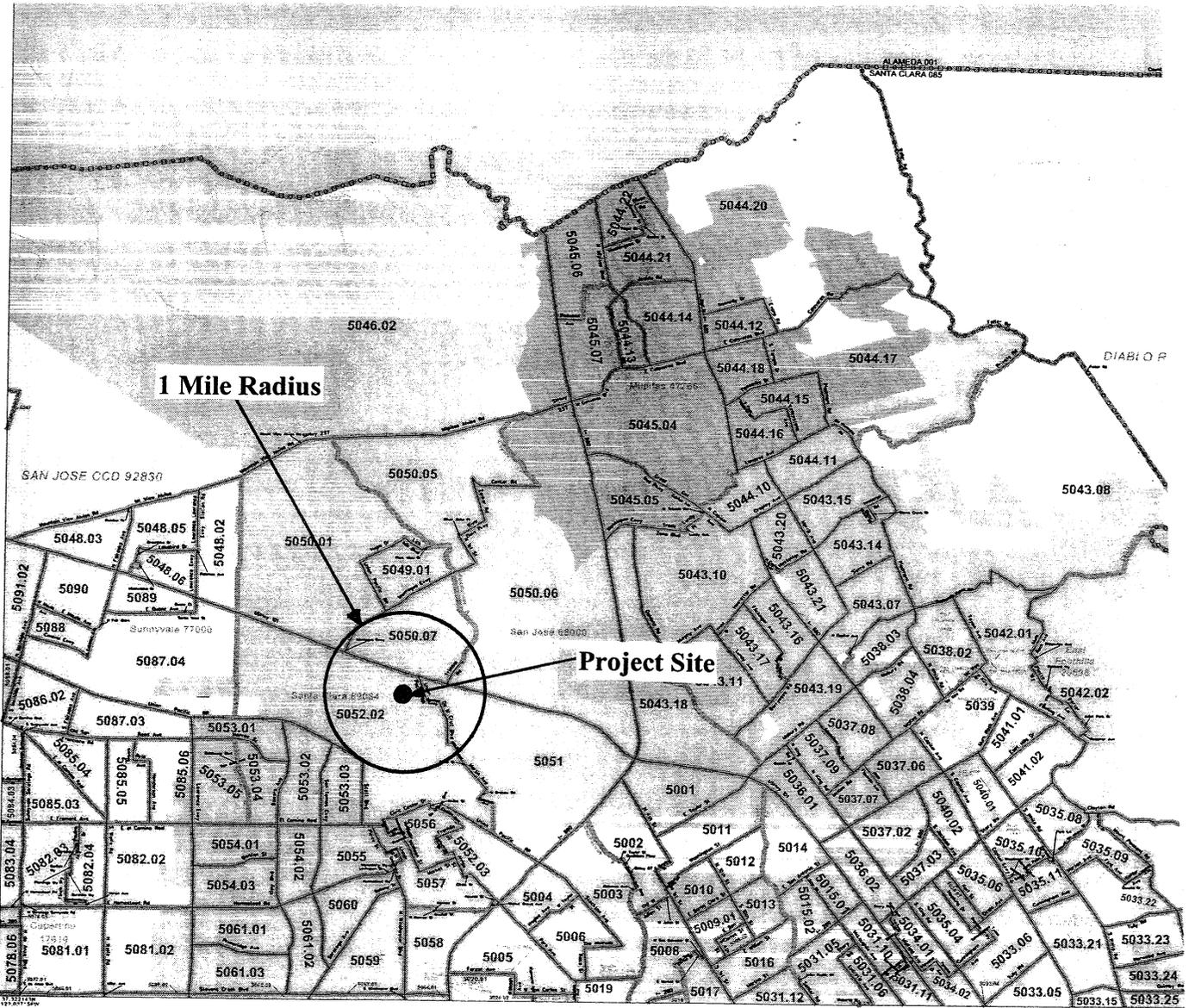
(a) Includes persons reporting only one race.
 (b) Hispanics may be of any race, so also are included in applicable race categories.

FN: Footnote on this item for this area in place of data
 NA: Not available
 D: Suppressed to avoid disclosure of confidential information
 X: Not applicable
 S: Suppressed; does not meet publication standards
 Z: Value greater than zero but less than half unit of measure shown
 F: Fewer than 100 firms

Data Quality Statement

What do you think of our new QuickFacts? Send comments to quickfacts@lists.census.gov.

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 Census of Population and Housing, 1990 Census of Population and Housing, Small Area Income and Poverty Estimates, County Business Patterns, 1997 Economic Census, Minority- and Women-Owned Business, Building Permits, Consolidated Federal Funds Report, 1997 Census of Governments



Attachment 8.1Da

2000 Census Tract Map with
One Mile Radius


FOSTER WHEELER ENVIRONMENTAL CORPORATION

Gas Turbine/HRSG Risk Output

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

ACUTE INHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 17, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

MAX. 1-HR EMISSION RATE INFORMATION

File: MIRGTDB.M96

Pollutant Name	Emission Rate (g/s)
ACROLEIN	1.480E-02
AMMONIA	5.460E+01
BENZENE	1.330E-02
FORMALDEHYDE	4.400E-01
PROPYLENE OXIDE	1.180E-01
TOLUENE	2.840E-01
XYLENES	1.040E-01

ACUTE INHALATION HAZARD INDEX

Pollutant	Resp	CV/BL	CNS	Eye	Repro	Kidn	GI/LV	Immun
ACROLEIN	0.0779	--	--	0.0779	--	--	--	--
AMMONIA	0.0171	--	--	0.0171	--	--	--	--
BENZENE	--	<.0001	--	--	<.0001	--	--	<.0001
FORMALDEHYDE	0.0047	--	--	0.0047	--	--	--	0.0047
PROPYLENE OXIDE	<.0001	--	--	<.0001	<.0001	--	--	--
TOLUENE	<.0001	--	<.0001	<.0001	<.0001	--	--	--
XYLENES	<.0001	--	--	<.0001	--	--	--	--
Total Acute	0.0997	<.0001	<.0001	0.0997	<.0001	--	--	0.0047

A Zero Background Concentration file was used to perform this analysis, therefore, there is no contribution from background pollutants.

California Air Resources Board
And
Office of Environmental Health Hazard Assessment
Health Risk Assessment Program
Version 2.0e

CHRONIC INHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 17, 2002

Pollutant Database Date : Nov. 15, 2000
Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRGTDB.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	5.810E-06
ACETALDEHYDE	1.860E-03
ACROLEIN	1.690E-04
AMMONIA	6.280E-01
BENZENE	1.520E-04
ETHYL BENZENE	8.180E-04
FORMALDEHYDE	5.030E-03
N-HEXANE	1.180E-02
NAPHTHALENE	6.080E-05
PAH: BENZO (A) PYRENE	7.530E-06
PROPYLENE (PROPENE)	3.520E-02
PROPYLENE OXIDE	1.350E-03
TOLUENE	3.250E-03
XYLENES	1.190E-03

CHRONIC INHALATION HAZARD INDEX

Pollutant	Resp	CV/BL	CNS	Skin	Repro	Kidn	GI/LV	Immun
1,3-BUTADIENE	--	--	--	--	<.0001	--	--	--
ACETALDEHYDE	0.0002	--	--	--	--	--	--	--
ACROLEIN	0.0028	--	--	0.0028	--	--	--	--
AMMONIA	0.0031	--	--	--	--	--	--	--
BENZENE	--	<.0001	<.0001	--	<.0001	--	--	--
ETHYL BENZENE	--	--	--	--	<.0001	<.0001	<.0001	--
FORMALDEHYDE	0.0017	--	--	0.0017	--	--	--	--
N-HEXANE	--	--	<.0001	--	--	--	--	--
NAPHTHALENE	<.0001	--	--	--	--	--	--	--
PROPYLENE (PROP	<.0001	--	--	--	--	--	--	--
PROPYLENE OXIDE	<.0001	--	--	--	--	--	--	--
TOLUENE	<.0001	--	<.0001	--	<.0001	--	--	--
XYLENES	<.0001	--	<.0001	--	--	--	--	--
Total Chronic	0.0079	<.0001	<.0001	0.0045	<.0001	<.0001	<.0001	--

A Zero Background Concentration file was used to perform this analysis, therefore, there is no contribution from background pollutants.

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

CHRONIC NONINHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 17, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRGTDB.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	5.810E-06
ACETALDEHYDE	1.860E-03
ACROLEIN	1.690E-04
AMMONIA	6.280E-01
BENZENE	1.520E-04
ETHYL BENZENE	8.180E-04
FORMALDEHYDE	5.030E-03
N-HEXANE	1.180E-02
NAPHTHALENE	6.080E-05
PAH:BENZO(A)PYRENE	7.530E-06
PROPYLENE (PROPENE)	3.520E-02
PROPYLENE OXIDE	1.350E-03
TOLUENE	3.250E-03
XYLENES	1.190E-03

EXPOSURE ROUTE INFORMATION

File: MIRGTDB.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

CHRONIC NONINHALATION EXPOSURE

Pollutant	Avg. Dose (mg/kg-d)	REL (mg/kg-d)	Avg Dose/REL
1,3-BUTADIENE	---	---	---
ACETALDEHYDE	---	---	---
ACROLEIN	---	---	---
AMMONIA	---	---	---
BENZENE	---	---	---
ETHYL BENZENE	---	---	---
FORMALDEHYDE	---	---	---
N-HEXANE	---	---	---
NAPHTHALENE	4.62E-08	---	---
PAH: BENZO (A) PYRENE	4.20E-09	---	---
PROPYLENE (PROPENE)	---	---	---
PROPYLENE OXIDE	---	---	---
TOLUENE	---	---	---
XYLENES	---	---	---

California Air Resources Board
And
Office of Environmental Health Hazard Assessment
Health Risk Assessment Program
Version 2.0e

INDIVIDUAL CANCER RISK REPORT

Run Made By
R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 17, 2002

Pollutant Database Date : Nov. 15, 2000
Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRGTDB.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	5.810E-06
ACETALDEHYDE	1.860E-03
ACROLEIN	1.690E-04
AMMONIA	6.280E-01
BENZENE	1.520E-04
ETHYL BENZENE	8.180E-04
FORMALDEHYDE	5.030E-03
N-HEXANE	1.180E-02
NAPHTHALENE	6.080E-05
PAH: BENZO (A) PYRENE	7.530E-06
PROPYLENE (PROPENE)	3.520E-02
PROPYLENE OXIDE	1.350E-03
TOLUENE	3.250E-03
XYLENES	1.190E-03

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRGTDB.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	5.810E-06
ACETALDEHYDE	1.860E-03
ACROLEIN	1.690E-04
AMMONIA	6.280E-01
BENZENE	1.520E-04
ETHYL BENZENE	8.180E-04
FORMALDEHYDE	5.030E-03
N-HEXANE	1.180E-02
NAPHTHALENE	6.080E-05
PAH: BENZO (A) PYRENE	7.530E-06
PROPYLENE (PROPENE)	3.520E-02
PROPYLENE OXIDE	1.350E-03
TOLUENE	3.250E-03
XYLENES	1.190E-03

EXPOSURE ROUTE INFORMATION

File: MIRGTDB.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

44 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
1,3-BUTADIENE	6.21E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACETALDEHYDE	3.16E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BENZENE	2.77E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FORMALDEHYDE	1.90E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAH:BENZO (A) PYR	5.21E-09	8.01E-09	5.09E-09	1.89E-08	2.05E-08	0.00E+00
PROPYLENE OXIDE	3.14E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	3.39E-08	8.01E-09	5.09E-09	1.89E-08	2.05E-08	0.00E+00

TOTAL RISK: 8.64E-08

70 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
1,3-BUTADIENE	9.88E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACETALDEHYDE	5.02E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BENZENE	4.41E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FORMALDEHYDE	3.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAH:BENZO (A) PYR	8.28E-09	1.24E-08	7.88E-09	3.01E-08	0.00E+00	0.00E+00
PROPYLENE OXIDE	4.99E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	5.39E-08	1.24E-08	7.88E-09	3.01E-08	0.00E+00	0.00E+00

TOTAL RISK: 1.04E-07

California Air Resources Board
And
Office of Environmental Health Hazard Assessment
Health Risk Assessment Program.
Version 2.0e

CANCER BURDEN REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 17, 2002

Pollutant Database Date : Nov. 15, 2000
Database Reference..... : CAPCOA Risk Assessment Guidelines

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRGTDB.E96

Pollutant Name	Emission Rate (g/s)
1,3-BUTADIENE	5.810E-06
ACETALDEHYDE	1.860E-03
ACROLEIN	1.690E-04
AMMONIA	6.280E-01
BENZENE	1.520E-04
ETHYL BENZENE	8.180E-04
FORMALDEHYDE	5.030E-03
N-HEXANE	1.180E-02
NAPHTHALENE	6.080E-05
PAH: BENZO (A) PYRENE	7.530E-06
PROPYLENE (PROPENE)	3.520E-02
PROPYLENE OXIDE	1.350E-03
TOLUENE	3.250E-03
XYLENES	1.190E-03

FACTORS USED IN CANCER BURDEN CALCULATIONS

Deposition Velocity (m/s) : 0.02
Fraction of Produce Grown At Home . : 0.05
Fraction of Residents with Gardens : 0.25

RECEPTOR INFORMATION

File: MIRGTDB.R96

Receptor ID	X/Q	Residents	Workers
MIR	1.0E+00	7043	15600

EXPOSED POPULATION AND CANCER BURDEN BY RECEPTOR AND ROUTE

Rec ID	Residents	Workers	Air	Soil	Dermal	Garden
MIR	7043	15600	5.90E-04	1.20E-04	8.62E-05	5.29E-05
Total	7043	15600	5.90E-04	1.20E-04	8.62E-05	5.29E-05

TOTAL BURDEN: 8.48E-04

Cooling Tower Risk Output

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

ACUTE INHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 18, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

MAX. 1-HR EMISSION RATE INFORMATION

File: MIRCT.M96

Pollutant Name	Emission Rate (g/s)
ARSENIC AND COMPOUNDS (INOR	8.400E-06
COPPER AND COMPOUNDS	2.150E-05
MERCURY AND COMPOUNDS (INOR	1.840E-08
NICKEL AND COMPOUNDS	5.020E-05

ACUTE INHALATION HAZARD INDEX

Pollutant	Resp	CV/BL	CNS	Eye	Repro	Kidn	GI/LV	Immun
ARSENIC AND COM	--	--	--	--	<.0001	--	--	--
COPPER AND COMP	<.0001	--	--	--	--	--	--	--
MERCURY AND COM	--	--	--	--	<.0001	--	--	--
NICKEL AND COMP	<.0001	--	--	--	--	--	--	<.0001
Total Acute	<.0001	--	--	--	<.0001	--	--	<.0001

A Zero Background Concentration file was used to perform this analysis, therefore, there is no contribution from background pollutants.

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

CHRONIC INHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 18, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCT.E96

Pollutant Name	Emission Rate (g/s)
ARSENIC AND COMPOUNDS (INOR	4.280E-07
CADMIUM AND COMPOUNDS	8.560E-07
COPPER AND COMPOUNDS	2.570E-06
LEAD AND COMPOUNDS	8.560E-07
MERCURY AND COMPOUNDS (INOR	2.200E-09
NICKEL AND COMPOUNDS	5.990E-06
ZINC COMPOUNDS	4.440E-05

CHRONIC INHALATION HAZARD INDEX

Pollutant	Resp	CV/BL	CNS	Skin	Repro	Kidn	GI/LV	Immun
ARSENIC AND COM	--	<.0001	<.0001	--	<.0001	--	--	--
CADMIUM AND COM	<.0001	--	--	--	--	<.0001	--	--
COPPER AND COMP	<.0001	--	--	--	--	--	--	--
MERCURY AND COM	--	--	<.0001	--	--	--	--	--
NICKEL AND COMP	0.0001	0.0001	--	--	--	--	--	--
ZINC COMPOUNDS	<.0001	<.0001	--	--	--	--	--	--
Total Chronic	0.0002	0.0001	<.0001	--	<.0001	<.0001	--	--

A Zero Background Concentration file was used to perform this analysis, therefore, there is no contribution from background pollutants.

California Air Resources Board
And
Office of Environmental Health Hazard Assessment
Health Risk Assessment Program
Version 2.0e

CHRONIC NONINHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 18, 2002

Pollutant Database Date : Nov. 15, 2000
Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCT.E96

Pollutant Name	Emission Rate (g/s)
ARSENIC AND COMPOUNDS (INOR	4.280E-07
CADMIUM AND COMPOUNDS	8.560E-07
COPPER AND COMPOUNDS	2.570E-06
LEAD AND COMPOUNDS	8.560E-07
MERCURY AND COMPOUNDS (INOR	2.200E-09
NICKEL AND COMPOUNDS	5.990E-06
ZINC COMPOUNDS	4.440E-05

EXPOSURE ROUTE INFORMATION

File: MIRCT.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

CHRONIC NONINHALATION EXPOSURE

Pollutant	Avg. Dose (mg/kg-d)	REL (mg/kg-d)	Avg Dose/REL
ARSENIC AND COMPOUNDS (I	1.29E-09	3.00E-04	4.31E-06
CADMIUM AND COMPOUNDS	3.12E-09	5.00E-04	6.24E-06
COPPER AND COMPOUNDS	---	---	---
LEAD AND COMPOUNDS	2.59E-09	---	---
MERCURY AND COMPOUNDS (I	9.30E-12	3.00E-04	3.10E-08
NICKEL AND COMPOUNDS	---	5.00E-02	---
ZINC COMPOUNDS	---	---	---

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

INDIVIDUAL CANCER RISK REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 18, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCT.E96

Pollutant Name	Emission Rate (g/s)
ARSENIC AND COMPOUNDS (INOR	4.280E-07
CADMIUM AND COMPOUNDS	8.560E-07
COPPER AND COMPOUNDS	2.570E-06
LEAD AND COMPOUNDS	8.560E-07
MERCURY AND COMPOUNDS (INOR	2.200E-09
NICKEL AND COMPOUNDS	5.990E-06
ZINC COMPOUNDS	4.440E-05

EXPOSURE ROUTE INFORMATION

File: MIRCT.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

70 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
ARSENIC AND COM	1.41E-09	1.67E-09	3.54E-11	2.32E-10	0.00E+00	0.00E+00
CADMIUM AND COM	3.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LEAD AND COMPOU	1.03E-11	1.89E-11	4.01E-13	2.65E-12	0.00E+00	0.00E+00
NICKEL AND COMP	1.56E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	6.58E-09	1.69E-09	3.58E-11	2.35E-10	0.00E+00	0.00E+00

TOTAL RISK: 8.54E-09

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

CANCER BURDEN REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 18, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCT.E96

Pollutant Name	Emission Rate (g/s)
ARSENIC AND COMPOUNDS (INOR	4.280E-07
CADMIUM AND COMPOUNDS	8.560E-07
COPPER AND COMPOUNDS	2.570E-06
LEAD AND COMPOUNDS	8.560E-07
MERCURY AND COMPOUNDS (INOR	2.200E-09
NICKEL AND COMPOUNDS	5.990E-06
ZINC COMPOUNDS	4.440E-05

FACTORS USED IN CANCER BURDEN CALCULATIONS

Deposition Velocity (m/s) : 0.02
Fraction of Produce Grown At Home . : 0.05
Fraction of Residents with Gardens : 0.25

RECEPTOR INFORMATION

File: MIRCT.R96

Receptor ID	X/Q	Residents	Workers
MIR	1.0E+00	7043	15600

EXPOSED POPULATION AND CANCER BURDEN BY RECEPTOR AND ROUTE

Rec ID	Residents	Workers	Air	Soil	Dermal	Garden
MIR	7043	15600	7.20E-05	1.63E-05	3.91E-07	4.13E-07
Total	7043	15600	7.20E-05	1.63E-05	3.91E-07	4.13E-07

TOTAL BURDEN: 8.90E-05

Construction Risk Output

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program.

Version 2.0e

INDIVIDUAL CANCER RISK REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 19, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCON.E96

Pollutant Name	Emission Rate (g/s)
----------------	---------------------

PARTICULATE EMISSIONS FROM	8.142E-01
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EXPOSURE ROUTE INFORMATION

File: MIRCON.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

70 YEAR
INDIVIDUAL CANCER RISK BY POLLUTANT AND ROUTE

Pollutant	Air	Soil	Skin	Garden	MMilk	Other
PARTICULATE EMI	2.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Route Total	2.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TOTAL RISK: $2.44E-04 \times \text{Worker Multiplier} = (8/24) \times (260/365) \times (1.67/70) =$
 0.005665

Final Risk Value = $0.000244 \times 0.005665 = 1.38 \text{ E } -06$

This analysis uses the max fence line (onsite) receptor concentration applied to the onsite worker population.

California Air Resources Board

And

Office of Environmental Health Hazard Assessment

Health Risk Assessment Program

Version 2.0e

CHRONIC INHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 19, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCON.E96

Pollutant Name	Emission Rate (g/s)
----------------	---------------------

PARTICULATE EMISSIONS FROM	8.142E-01
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CHRONIC INHALATION HAZARD INDEX

Pollutant	Resp	CV/BL	CNS	Skin	Repro	Kidn	GI/LV	Immun
PARTICULATE EMI	0.1628	--	--	--	--	--	--	--
Total Chronic	0.1628	--	--	--	--	--	--	--

A Zero Background Concentration file was used to perform this analysis, therefore, there is no contribution from background pollutants.

California Air Resources Board

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Version 2.0e

CHRONIC NONINHALATION EXPOSURE REPORT

Run Made By

R.B.Booth

Foster Wheeler Env. Corp.

Project : PICO

Sep. 19, 2002

Pollutant Database Date : Nov. 15, 2000

Database Reference..... : CAPCOA Risk Assessment Guidelines

DILUTION FACTOR FOR POINT UNDER EVALUATION

X/Q (ug/m3)/(g/s) : 1.00E+00

ANNUAL AVERAGE EMISSION RATE INFORMATION

File: MIRCON.E96

Pollutant Name	Emission Rate (g/s)
----------------	---------------------

PARTICULATE EMISSIONS FROM	8.142E-01
----------------------------	-----------

EXPOSURE ROUTE INFORMATION

File: MIRCON.I96

Deposition Velocity (m/s): 0.020

Fraction of Homegrown Produce ..: 0.050

Dilution Factor for Farm/Ranch X/Q (ug/m3)/(g/s): 0.0000

Fraction of Animals' Diet From Grazing: 0.0000

Fraction of Animals' Diet From Impacted Feed: 0.0000

Fraction of Animals' Water Impacted by Deposition: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume Changes: 0.000E+00

Fraction of Meat in Diet Impacted ...: 0.0000

 Beef: 0.0000

 Pork: 0.0000

 Lamb/Goat: 0.0000

 Chicken: 0.0000

Fraction of Milk in Diet Impacted ...: 0.0000

 Goat Milk Fraction ...: 0.0000

Fraction of Eggs in Diet Impacted ...: 0.0000

Fraction of Impacted Drinking Water : 0.0000

 X/Q at water source ...: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

Fraction of Fish from Impacted Water: 0.0000

 X/Q at Fish Source: 0.0000

 Surface Area (m2): 0.000E+00

 Volume (liters): 0.000E+00

 Volume changes: 0.000E+00

CHRONIC NONINHALATION EXPOSURE

Pollutant	Avg. Dose (mg/kg-d)	REL (mg/kg-d)	Avg Dose/REL
PARTICULATE EMISSIONS FR	---	---	---