

Appendix F

# **URBEMIS—Air Quality Modeling**



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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\San Diego\10\_Staff\Air Quality Staff\Union City\redo june 2010\URBEMIS\Union City TOD\_July2010 redo.urb924

Project Name: Union City Mixed-Use Project TOD

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	45.40	12.69	10.18	0.00	0.04	0.04	16,105.79
TOTALS (lbs/day, mitigated)	45.40	12.69	10.18	0.00	0.04	0.04	16,105.79
Percent Reduction	0.00	0.00	0.00	NaN	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	20.75	16.15	175.08	0.30	53.15	10.13	30,756.52
TOTALS (lbs/day, mitigated)	19.42	14.67	158.73	0.27	48.40	9.23	27,985.43
Percent Reduction	6.41	9.16	9.34	10.00	8.94	8.88	9.01

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	66.15	28.84	185.26	0.30	53.19	10.17	46,862.31
TOTALS (lbs/day, mitigated)	64.82	27.36	168.91	0.27	48.44	9.27	44,091.22
Percent Reduction	2.01	5.13	8.83	10.00	8.93	8.85	5.91

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.97	12.63	5.54	0.00	0.02	0.02	16,097.36
Hearth - No Summer Emissions							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	37.27						
Architectural Coatings	6.79						
TOTALS (lbs/day, unmitigated)	45.40	12.69	10.18	0.00	0.04	0.04	16,105.79

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.97	12.63	5.54	0.00	0.02	0.02	16,097.36
Hearth - No Summer Emissions							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	37.27						
Architectural Coatings	6.79						
TOTALS (lbs/day, mitigated)	45.40	12.69	10.18	0.00	0.04	0.04	16,105.79

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 100%

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Percentage of residences with natural gas fireplaces changed from 55% to 100%

The number of persons per household for consumer product use changed from 2.861 persons to 2.24 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	14.22	8.12	92.06	0.15	25.33	4.85	14,939.82
Strip mall	6.33	7.83	80.89	0.15	27.12	5.15	15,419.19
General office building	0.20	0.20	2.13	0.00	0.70	0.13	397.51
<b>TOTALS (lbs/day, unmitigated)</b>	<b>20.75</b>	<b>16.15</b>	<b>175.08</b>	<b>0.30</b>	<b>53.15</b>	<b>10.13</b>	<b>30,756.52</b>

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	13.20	7.04	79.86	0.13	21.98	4.21	12,959.57
Strip mall	6.03	7.44	76.84	0.14	25.76	4.89	14,648.23
General office building	0.19	0.19	2.03	0.00	0.66	0.13	377.63
<b>TOTALS (lbs/day, mitigated)</b>	<b>19.42</b>	<b>14.67</b>	<b>158.73</b>	<b>0.27</b>	<b>48.40</b>	<b>9.23</b>	<b>27,985.43</b>

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	60.81	3.61	dwelling units	973.00	3,512.53	14,725.23
Strip mall		56.99	1000 sq ft	37.50	2,137.13	15,799.77
General office building		8.06	1000 sq ft	6.20	49.97	404.90
					5,699.63	30,929.90

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.0	100.0	0.0
Light Truck < 3750 lbs	12.2	0.0	99.2	0.8
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	37.9	62.1	0.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commuter	Non-Work	Customer
Urban Trip Length (miles)	5.4	3.6	3.6	9.5	7.4	7.4
Rural Trip Length (miles)	8.9	3.5	3.8	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: G:\San Diego\10\_Staff\Air Quality Staff\Union City\redo june 2010\URBEMIS\Union City TOD\_July2010 redo.urb924

Project Name: Union City Mixed-Use Project TOD

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	45.34	18.01	7.83	0.03	0.45	0.45	22,965.60
TOTALS (lbs/day, mitigated)	45.34	18.01	7.83	0.03	0.45	0.45	22,965.60
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	16.68	23.67	187.42	0.26	53.15	10.13	26,596.45
TOTALS (lbs/day, mitigated)	15.11	21.52	169.72	0.24	48.40	9.23	24,196.86
Percent Reduction	9.41	9.08	9.44	7.69	8.94	8.88	9.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	62.02	41.68	195.25	0.29	53.60	10.58	49,562.05
TOTALS (lbs/day, mitigated)	60.45	39.53	177.55	0.27	48.85	9.68	47,162.46
Percent Reduction	2.53	5.16	9.07	6.90	8.86	8.51	4.84

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.97	12.63	5.54	0.00	0.02	0.02	16,097.36
Hearth	0.31	5.38	2.29	0.03	0.43	0.43	6,868.24
Landscaping - No Winter Emissions							
Consumer Products	37.27						
Architectural Coatings	6.79						
TOTALS (lbs/day, unmitigated)	45.34	18.01	7.83	0.03	0.45	0.45	22,965.60

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.97	12.63	5.54	0.00	0.02	0.02	16,097.36
Hearth	0.31	5.38	2.29	0.03	0.43	0.43	6,868.24
Landscaping - No Winter Emissions							
Consumer Products	37.27						
Architectural Coatings	6.79						
TOTALS (lbs/day, mitigated)	45.34	18.01	7.83	0.03	0.45	0.45	22,965.60

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 100%

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Percentage of residences with natural gas fireplaces changed from 55% to 100%

The number of persons per household for consumer product use changed from 2.861 persons to 2.24 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	9.04	11.87	100.87	0.13	25.33	4.85	12,959.28
Strip mall	7.45	11.51	84.38	0.13	27.12	5.15	13,294.12
General office building	0.19	0.29	2.17	0.00	0.70	0.13	343.05
<b>TOTALS (lbs/day, unmitigated)</b>	<b>16.68</b>	<b>23.67</b>	<b>187.42</b>	<b>0.26</b>	<b>53.15</b>	<b>10.13</b>	<b>26,596.45</b>

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	7.85	10.30	87.50	0.11	21.98	4.21	11,241.55
Strip mall	7.08	10.94	80.16	0.13	25.76	4.89	12,629.41
General office building	0.18	0.28	2.06	0.00	0.66	0.13	325.90
<b>TOTALS (lbs/day, mitigated)</b>	<b>15.11</b>	<b>21.52</b>	<b>169.72</b>	<b>0.24</b>	<b>48.40</b>	<b>9.23</b>	<b>24,196.86</b>

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	60.81	3.61	dwelling units	973.00	3,512.53	14,725.23
Strip mall		56.99	1000 sq ft	37.50	2,137.13	15,799.77
General office building		8.06	1000 sq ft	6.20	49.97	404.90
					5,699.63	30,929.90

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.0	100.0	0.0
Light Truck < 3750 lbs	12.2	0.0	99.2	0.8
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	37.9	62.1	0.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commuter	Non-Work	Customer
Urban Trip Length (miles)	5.4	3.6	3.6	9.5	7.4	7.4
Rural Trip Length (miles)	8.9	3.5	3.8	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\San Diego\10\_Staff\Air Quality Staff\Union City\redo june 2010\URBEMIS\Union City TOD\_July2010 redo.urb924

Project Name: Union City Mixed-Use Project TOD

Project Location: Alameda County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.25	2.32	1.43	0.00	0.00	0.00	2,941.96
TOTALS (tons/year, mitigated)	8.25	2.32	1.43	0.00	0.00	0.00	2,941.96
Percent Reduction	0.00	0.00	0.00	NaN	NaN	NaN	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	3.54	3.40	32.70	0.06	9.70	1.85	5,359.99
TOTALS (tons/year, mitigated)	3.27	3.09	29.64	0.05	8.83	1.68	4,876.87
Percent Reduction	7.63	9.12	9.36	16.67	8.97	9.19	9.01

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	11.79	5.72	34.13	0.06	9.70	1.85	8,301.95
TOTALS (tons/year, mitigated)	11.52	5.41	31.07	0.05	8.83	1.68	7,818.83
Percent Reduction	2.29	5.42	8.97	16.67	8.97	9.19	5.82

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.18	2.31	1.01	0.00	0.00	0.00	2,937.77
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	6.80						
Architectural Coatings	1.24						
<b>TOTALS (tons/year, unmitigated)</b>	<b>8.25</b>	<b>2.32</b>	<b>1.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2,941.96</b>

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.18	2.31	1.01	0.00	0.00	0.00	2,937.77
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	3.43
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	6.80						
Architectural Coatings	1.24						
<b>TOTALS (tons/year, mitigated)</b>	<b>8.25</b>	<b>2.32</b>	<b>1.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2,941.96</b>

Area Source Changes to Defaults

- Percent residential using natural gas changed from 60% to 100%
- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 100%
- The number of persons per household for consumer product use changed from 2.861 persons to 2.24 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	2.28	1.71	17.34	0.03	4.62	0.89	2,606.03
Strip mall	1.22	1.65	14.97	0.03	4.95	0.94	2,684.73
General office building	0.04	0.04	0.39	0.00	0.13	0.02	69.23
<b>TOTALS (tons/year, unmitigated)</b>	<b>3.54</b>	<b>3.40</b>	<b>32.70</b>	<b>0.06</b>	<b>9.70</b>	<b>1.85</b>	<b>5,359.99</b>

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	2.08	1.48	15.04	0.02	4.01	0.77	2,260.61
Strip mall	1.16	1.57	14.23	0.03	4.70	0.89	2,550.49
General office building	0.03	0.04	0.37	0.00	0.12	0.02	65.77
<b>TOTALS (tons/year, mitigated)</b>	<b>3.27</b>	<b>3.09</b>	<b>29.64</b>	<b>0.05</b>	<b>8.83</b>	<b>1.68</b>	<b>4,876.87</b>

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	60.81	3.61	dwelling units	973.00	3,512.53	14,725.23
Strip mall		56.99	1000 sq ft	37.50	2,137.13	15,799.77
General office building		8.06	1000 sq ft	6.20	49.97	404.90
					5,699.63	30,929.90

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4	0.0	100.0	0.0
Light Truck < 3750 lbs	12.2	0.0	99.2	0.8
Light Truck 3751-5750 lbs	19.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	6.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.8	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	23.1	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	0.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.9	37.9	62.1	0.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.0	0.0	0.0	0.0
Motor Home	0.6	0.0	83.3	16.7

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commuter	Non-Work	Customer
Urban Trip Length (miles)	5.4	3.6	3.6	9.5	7.4	7.4
Rural Trip Length (miles)	8.9	3.5	3.8	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Title : Alameda County Subarea Winter 3 CYrs 2007 to 2035 Default Title  
Version : Emfac2007 V2.3 Nov 1 2006  
Run Date : 2010/07/08 16:56:36  
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected  
Season : Winter  
Area : Alameda

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Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Winter  
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Alameda County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 42F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	8.964	11.546	8.842	24.638	18.412	54.192	11.045

Title : Alameda County Subarea Winter 3 CYrs 2007 to 2035 Default Title  
Version : Emfac2007 V2.3 Nov 1 2006  
Run Date : 2010/07/08 16:56:36  
Scen Year: 2022 -- All model years in the range 1978 to 2022 selected  
Season : Winter  
Area : Alameda

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Year: 2022 -- Model Years 1978 to 2022 Inclusive -- Winter  
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Alameda County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 42F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	1.545	2.769	2.926	6.889	15.300	28.662	2.587



JOB: APPIAN AND MISSION AM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)  
 BRG= WORST CASE VD= .0 CM/S  
 CLAS= 7 (G) VS= .0 CM/S  
 MIXH= 1000. M AMB= .0 PPM  
 SIGTH= 5. DEGREES TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M)	* EF	H	W
DESCRIPTION	* X1 Y1 X2 Y2 * TYPE VPH (G/MI)	(M)	(M)	
A. NF	* 2 -450 2 -150 * AG 147	11.1	.0	10.5
B. NA	* 2 -150 2 0 * AG 127	11.1	.0	9.9
C. ND	* 2 0 2 150 * AG 113	11.1	.0	9.9
D. NE	* 2 150 2 450 * AG 113	11.1	.0	10.5
E. SF	* -2 450 -2 150 * AG 226	11.1	.0	10.5
F. SA	* -2 150 -2 0 * AG 154	11.1	.0	9.9
G. SD	* -2 0 -2 -150 * AG 221	11.1	.0	9.9
H. SE	* -2 -150 -2 -450 * AG 221	11.1	.0	10.5
I. WF	* 450 2 150 2 * AG 1038	11.1	.0	10.5
J. WA	* 150 2 0 2 * AG 928	11.1	.0	9.9
K. WD	* 0 2 -150 2 * AG 1009	11.1	.0	9.9
L. WE	* -150 2 -450 2 * AG 1009	11.1	.0	10.5
M. EF	* -450 -2 -150 -2 * AG 1354	11.1	.0	10.5
N. EA	* -150 -2 0 -2 * AG 1295	11.1	.0	9.9
O. ED	* 0 -2 150 -2 * AG 1422	11.1	.0	9.9
P. EE	* 150 -2 450 -2 * AG 1422	11.1	.0	10.5
Q. NL	* 0 0 2 -150 * AG 20	11.1	.0	9.9
R. SL	* 0 0 -2 150 * AG 72	11.1	.0	9.9
S. WL	* 0 0 150 2 * AG 110	11.1	.0	9.9
T. EL	* 0 0 -150 -2 * AG 59	11.1	.0	9.9

JOB: APPIAN AND MISSION AM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)
	* X Y Z
1. NE3	* 8 8 1.8
2. SE3	* 8 -8 1.8
3. SW3	* -8 -8 1.8
4. NW3	* -8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* (DEG)	* BRG	* PRED CONC (PPM)	* A	B	C	CONC/LINK (PPM)	D	E	F	G	H
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K. WD	*	0	2	-150	2	*	AG	76	11.1	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	76	11.1	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	145	11.1	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	83	11.1	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	276	11.1	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	276	11.1	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	20	11.1	.0	9.9
R. SL	*	0	0	-2	150	*	AG	66	11.1	.0	9.9
S. WL	*	0	0	150	2	*	AG	147	11.1	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	62	11.1	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND 7TH ST AM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	*	A	B	C	CONC/LINK (PPM)	D	E	F	G	H
1. NE3	*	184.	* 3.3	*	.3	1.3	.1	.0	.0	.0	.0	.7	.4
2. SE3	*	356.	* 3.2	*	.0	.1	1.3	.2	.4	.6	.0	.0	.0
3. SW3	*	176.	* 3.2	*	.4	.5	.0	.0	.0	.0	1.9	.4	.4
4. NW3	*	176.	* 3.3	*	.4	.6	.0	.0	.0	.2	1.7	.3	.3

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND 7TH ST PM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		





1. NE3	*	184.	*	4.2	*	.3	1.8	.2	.0	.0	.0	.9	.6
2. SE3	*	356.	*	3.9	*	.0	.2	1.7	.3	.5	.9	.0	.0
3. SW3	*	176.	*	4.2	*	.6	.7	.0	.0	.0	.0	2.5	.5
4. NW3	*	176.	*	4.3	*	.5	.8	.0	.0	.0	.2	2.2	.4

		CONC/LINK (PPM)											
RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
JUNE 1989 VERSION  
PAGE 1

JOB: DECOTO RD AND 11TH ST PM Existing  
RUN: Hour 1 (WORST CASE ANGLE)  
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                                  Z0= 100. CM                                  ALT= 0. (M)  
BRG= WORST CASE                                  VD= .0 CM/S  
CLAS= 7 (G)    VS= .0 CM/S  
MIXH= 1000. M    AMB= .0 PPM  
SIGTH= 5. DEGREES                                  TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK	*	LINK COORDINATES (M)				*		EF	H	W
DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M)	(M)	
A. NF	*	2	-450	2	-150	* AG	1313	11.1	.0 10.5	
B. NA	*	2	-150	2	0	* AG	1238	11.1	.0 9.9	
C. ND	*	2	0	2	150	* AG	1256	11.1	.0 9.9	
D. NE	*	2	150	2	450	* AG	1256	11.1	.0 10.5	
E. SF	*	-2	450	-2	150	* AG	861	11.1	.0 10.5	
F. SA	*	-2	150	-2	0	* AG	835	11.1	.0 9.9	
G. SD	*	-2	0	-2	-150	* AG	994	11.1	.0 9.9	
H. SE	*	-2	-150	-2	-450	* AG	994	11.1	.0 10.5	
I. WF	*	450	2	150	2	* AG	216	11.1	.0 10.5	
J. WA	*	150	2	0	2	* AG	58	11.1	.0 9.9	
K. WD	*	0	2	-150	2	* AG	86	11.1	.0 9.9	
L. WE	*	-150	2	-450	2	* AG	86	11.1	.0 10.5	
M. EF	*	-450	-2	-150	-2	* AG	54	11.1	.0 10.5	
N. EA	*	-150	-2	0	-2	* AG	11	11.1	.0 9.9	
O. ED	*	0	-2	150	-2	* AG	108	11.1	.0 9.9	
P. EE	*	150	-2	450	-2	* AG	108	11.1	.0 10.5	
Q. NL	*	0	0	2	-150	* AG	75	11.1	.0 9.9	
R. SL	*	0	0	-2	150	* AG	26	11.1	.0 9.9	
S. WL	*	0	0	150	2	* AG	158	11.1	.0 9.9	
T. EL	*	0	0	-150	-2	* AG	43	11.1	.0 9.9	

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
JUNE 1989 VERSION  
PAGE 2

JOB: DECOTO RD AND 11TH ST PM Existing  
RUN: Hour 1 (WORST CASE ANGLE)  
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS



P. EE	*	150	-2	450	-2	* AG	500	11.1	.0	10.5
Q. NL	*	0	0	2	-150	* AG	0	11.1	.0	9.9
R. SL	*	0	0	-2	150	* AG	34	11.1	.0	9.9
S. WL	*	0	0	150	2	* AG	0	11.1	.0	9.9
T. EL	*	0	0	-150	-2	* AG	12	11.1	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: LINDA DR AND ALVARADO-NILES AM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	*	CONC/LINK (PPM)							
	*			*	A	B	C	D	E	F	G	H
1. NE3	*	266.	* 2.9	*	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	274.	* 2.5	*	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	274.	* 2.5	*	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	94.	* 2.8	*	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.2	1.6	.3	.3	.5	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.7	.4	.2	1.0	.1	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.6	.5	.2	1.1	.0	.0	.0	.0	.0	.0
4. NW3	*	.3	1.5	.2	.0	.0	.0	.5	.3	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: LINDA DR AND ALVARADO-NILES PM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES

LINK	*	LINK COORDINATES (M)	*	EF	H	W
------	---	----------------------	---	----	---	---

DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH	(G/MI)	(M)	(M)
A. NF	*	2	-450	2	-150	* AG	0	11.1	.0	10.5
B. NA	*	2	-150	2	0	* AG	0	11.1	.0	9.9
C. ND	*	2	0	2	150	* AG	41	11.1	.0	9.9
D. NE	*	2	150	2	450	* AG	41	11.1	.0	10.5
E. SF	*	-2	450	-2	150	* AG	26	11.1	.0	10.5
F. SA	*	-2	150	-2	0	* AG	16	11.1	.0	9.9
G. SD	*	-2	0	-2	-150	* AG	0	11.1	.0	9.9
H. SE	*	-2	-150	-2	-450	* AG	0	11.1	.0	10.5
I. WF	*	450	2	150	2	* AG	547	11.1	.0	10.5
J. WA	*	150	2	0	2	* AG	547	11.1	.0	9.9
K. WD	*	0	2	-150	2	* AG	563	11.1	.0	9.9
L. WE	*	-150	2	-450	2	* AG	563	11.1	.0	10.5
M. EF	*	-450	-2	-150	-2	* AG	881	11.1	.0	10.5
N. EA	*	-150	-2	0	-2	* AG	840	11.1	.0	9.9
O. ED	*	0	-2	150	-2	* AG	850	11.1	.0	9.9
P. EE	*	150	-2	450	-2	* AG	850	11.1	.0	10.5
Q. NL	*	0	0	2	-150	* AG	0	11.1	.0	9.9
R. SL	*	0	0	-2	150	* AG	10	11.1	.0	9.9
S. WL	*	0	0	150	2	* AG	0	11.1	.0	9.9
T. EL	*	0	0	-150	-2	* AG	41	11.1	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: LINDA DR AND ALVARADO-NILES PM Existing  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	CONC/LINK (PPM)								
				A	B	C	D	E	F	G	H	
1. NE3	*	266.	* 3.0 *	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	274.	* 3.3 *	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	274.	* 3.3 *	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	266.	* 2.9 *	.0	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	*	CONC/LINK (PPM)											
		I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.1	1.2	.2	.5	.7	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.5	.3	.3	1.8	.2	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.5	.4	.4	1.9	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	1.4	.3	.5	.7	.0	.0	.0	.0	.0	.0



1. NE3	*	184.	*	1.2	*	.0	.3	.0	.0	.0	.0	.2	.1
2. SE3	*	274.	*	1.3	*	.0	.1	.0	.0	.0	.0	.2	.0
3. SW3	*	86.	*	1.4	*	.0	.0	.0	.0	.0	.0	.2	.0
4. NW3	*	176.	*	1.4	*	.1	.1	.0	.0	.0	.0	.5	.0

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.2	.0	.2	.0	.0	.0
2. SE3	*	.0	.0	.2	.1	.0	.5	.0	.0	.0	.0	.0	.0
3. SW3	*	.0	.1	.0	.0	.0	.0	.5	.0	.0	.0	.1	.0
4. NW3	*	.0	.0	.2	.0	.0	.2	.0	.0	.1	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: APPIAN AND MISSION PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                      Z0= 100. CM                      ALT= 0. (M)  
 BRG= WORST CASE              VD= .0 CM/S  
 CLAS= 7 (G)                      VS= .0 CM/S  
 MIXH= 1000. M                      AMB= .0 PPM  
 SIGTH= 5. DEGREES              TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)	*	EF (G/MI)	H (M)	W (M)
	*	X1 Y1 X2 Y2	*	TYPE VPH		
A. NF	*	2 -450 2 -150	*	AG 1988	1.5	.0 10.5
B. NA	*	2 -150 2 0	*	AG 1264	1.5	.0 9.9
C. ND	*	2 0 2 150	*	AG 535	1.5	.0 9.9
D. NE	*	2 150 2 450	*	AG 535	1.5	.0 10.5
E. SF	*	-2 450 -2 150	*	AG 242	1.5	.0 10.5
F. SA	*	-2 150 -2 0	*	AG 188	1.5	.0 9.9
G. SD	*	-2 0 -2 -150	*	AG 1953	1.5	.0 9.9
H. SE	*	-2 -150 -2 -450	*	AG 1953	1.5	.0 10.5
I. WF	*	450 2 150 2	*	AG 2248	1.5	.0 10.5
J. WA	*	150 2 0 2	*	AG 1479	1.5	.0 9.9
K. WD	*	0 2 -150 2	*	AG 2236	1.5	.0 9.9
L. WE	*	-150 2 -450 2	*	AG 2236	1.5	.0 10.5
M. EF	*	-450 -2 -150 -2	*	AG 1792	1.5	.0 10.5
N. EA	*	-150 -2 0 -2	*	AG 1684	1.5	.0 9.9
O. ED	*	0 -2 150 -2	*	AG 1546	1.5	.0 9.9
P. EE	*	150 -2 450 -2	*	AG 1546	1.5	.0 10.5
Q. NL	*	0 0 2 -150	*	AG 724	1.5	.0 9.9
R. SL	*	0 0 -2 150	*	AG 54	1.5	.0 9.9
S. WL	*	0 0 150 2	*	AG 769	1.5	.0 9.9
T. EL	*	0 0 -150 -2	*	AG 108	1.5	.0 9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: APPIAN AND MISSION PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide



N. EA	*	-150	-2	0	-2	*	AG	300	1.5	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	712	1.5	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	712	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	155	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	421	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	193	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	57	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND 7TH ST AM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	CONC/LINK (PPM)							
	*		*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* .7	.0	.2	.0	.0	.0	.0	.2	.0
2. SE3	*	356.	* .7	.0	.0	.2	.0	.1	.1	.0	.0
3. SW3	*	4.	* .8	.0	.0	.1	.0	.0	.3	.0	.0
4. NW3	*	176.	* .8	.0	.0	.0	.0	.0	.0	.4	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND 7TH ST PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES





1. NE3	*	184.	*	.9	*	.0	.4	.0	.0	.0	.0	.2	.0
2. SE3	*	356.	*	.9	*	.0	.0	.3	.0	.0	.1	.0	.0
3. SW3	*	86.	*	.8	*	.0	.0	.0	.0	.0	.0	.2	.0
4. NW3	*	176.	*	.8	*	.0	.1	.0	.0	.0	.0	.4	.0

		CONC/LINK (PPM)											
RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND 11TH ST PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                      Z0= 100. CM                      ALT= 0. (M)  
 BRG= WORST CASE              VD= .0 CM/S  
 CLAS= 7 (G)                      VS= .0 CM/S  
 MIXH= 1000. M                      AMB= .0 PPM  
 SIGTH= 5. DEGREES              TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK	*	LINK COORDINATES (M)				*	EF	H	W
DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M)	(M)
A. NF	*	2	-450	2	-150	* AG	2021	1.5	.0 10.5
B. NA	*	2	-150	2	0	* AG	1564	1.5	.0 9.9
C. ND	*	2	0	2	150	* AG	1462	1.5	.0 9.9
D. NE	*	2	150	2	450	* AG	1462	1.5	.0 10.5
E. SF	*	-2	450	-2	150	* AG	1132	1.5	.0 10.5
F. SA	*	-2	150	-2	0	* AG	704	1.5	.0 9.9
G. SD	*	-2	0	-2	-150	* AG	1323	1.5	.0 9.9
H. SE	*	-2	-150	-2	-450	* AG	1323	1.5	.0 10.5
I. WF	*	450	2	150	2	* AG	647	1.5	.0 10.5
J. WA	*	150	2	0	2	* AG	157	1.5	.0 9.9
K. WD	*	0	2	-150	2	* AG	512	1.5	.0 9.9
L. WE	*	-150	2	-450	2	* AG	512	1.5	.0 10.5
M. EF	*	-450	-2	-150	-2	* AG	222	1.5	.0 10.5
N. EA	*	-150	-2	0	-2	* AG	171	1.5	.0 9.9
O. ED	*	0	-2	150	-2	* AG	725	1.5	.0 9.9
P. EE	*	150	-2	450	-2	* AG	725	1.5	.0 10.5
Q. NL	*	0	0	2	-150	* AG	457	1.5	.0 9.9
R. SL	*	0	0	-2	150	* AG	428	1.5	.0 9.9
S. WL	*	0	0	150	2	* AG	490	1.5	.0 9.9
T. EL	*	0	0	-150	-2	* AG	51	1.5	.0 9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND 11TH ST PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS



P. EE	*	150	-2	450	-2	*	AG	2000	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	78	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	186	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	769	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	207	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND PASEO PADRE AM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG	* PRED	* CONC	CONC/LINK (PPM)							
	*	(DEG)	* (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* 1.4	*	.0	.5	.0	.0	.0	.0	.2	.1
2. SE3	*	274.	* 1.3	*	.0	.2	.0	.0	.0	.0	.2	.0
3. SW3	*	85.	* 1.4	*	.0	.1	.0	.0	.0	.0	.3	.0
4. NW3	*	176.	* 1.4	*	.1	.2	.0	.0	.0	.0	.6	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.2	.0	.0	.4	.0	.0	.0	.0	.0	.0
3. SW3	*	.0	.2	.0	.0	.0	.0	.5	.0	.0	.0	.1	.0
4. NW3	*	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND PASEO PADRE PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	EF	H	W
	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M)	(M)

	*		*		*		*		*		*
A. NF	*	2	-450	2	-150	*	AG	2744	1.5	.0	10.5
B. NA	*	2	-150	2	0	*	AG	2446	1.5	.0	9.9
C. ND	*	2	0	2	150	*	AG	1983	1.5	.0	9.9
D. NE	*	2	150	2	450	*	AG	1983	1.5	.0	10.5
E. SF	*	-2	450	-2	150	*	AG	1493	1.5	.0	10.5
F. SA	*	-2	150	-2	0	*	AG	1344	1.5	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	1692	1.5	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	1692	1.5	.0	10.5
I. WF	*	450	2	150	2	*	AG	1618	1.5	.0	10.5
J. WA	*	150	2	0	2	*	AG	948	1.5	.0	9.9
K. WD	*	0	2	-150	2	*	AG	1556	1.5	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	1556	1.5	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	1218	1.5	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	751	1.5	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	1842	1.5	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	1842	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	298	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	149	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	670	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	467	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND PASEO PADRE PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	* 8	* 8	* 1.8
2. SE3	* 8	* -8	* 1.8
3. SW3	* -8	* -8	* 1.8
4. NW3	* -8	* 8	* 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	CONC/LINK (PPM)								
			* A	* B	* C	* D	* E	* F	* G	* H	
1. NE3	* 184.	* 1.4	* .0	* .6	* .0	* .0	* .0	* .0	* .0	* .2	* .1
2. SE3	* 356.	* 1.2	* .0	* .0	* .5	* .0	* .0	* .1	* .0	* .0	* .0
3. SW3	* 86.	* 1.3	* .0	* .2	* .0	* .0	* .0	* .0	* .0	* .2	* .0
4. NW3	* 176.	* 1.2	* .1	* .2	* .0	* .0	* .0	* .0	* .0	* .4	* .0

RECEPTOR	CONC/LINK (PPM)											
	* I	* J	* K	* L	* M	* N	* O	* P	* Q	* R	* S	* T
1. NE3	* .0	* .0	* .0	* .0	* .0	* .0	* .1	* .0	* .0	* .0	* .0	* .0
2. SE3	* .0	* .0	* .0	* .0	* .0	* .0	* .2	* .0	* .0	* .0	* .0	* .0
3. SW3	* .0	* .1	* .0	* .0	* .0	* .0	* .5	* .0	* .0	* .0	* .1	* .0
4. NW3	* .0	* .0	* .2	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: EW CONNECTOR AND ALVARADO-NILES AM NP  
 RUN: Hour 1 (WORST CASE ANGLE)



RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: EW CONNECTOR AND ALVARADO-NILES PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                                  Z0= 100. CM                                  ALT= 0. (M)  
 BRG= WORST CASE                                  VD= .0 CM/S  
 CLAS= 7 (G)    VS= .0 CM/S  
 MIXH= 1000. M    AMB= .0 PPM  
 SIGTH= 5. DEGREES                                  TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	2172	1.5	.0	10.5
B. NA	2	-150	2	0	AG	1657	1.5	.0	9.9
C. ND	2	0	2	150	AG	2185	1.5	.0	9.9
D. NE	2	150	2	450	AG	2185	1.5	.0	10.5
E. SF	-2	450	-2	150	AG	2180	1.5	.0	10.5
F. SA	-2	150	-2	0	AG	1980	1.5	.0	9.9
G. SD	-2	0	-2	-150	AG	2528	1.5	.0	9.9
H. SE	-2	-150	-2	-450	AG	2528	1.5	.0	10.5
I. WF	450	2	150	2	AG	1018	1.5	.0	10.5
J. WA	150	2	0	2	AG	741	1.5	.0	9.9
K. WD	0	2	-150	2	AG	1126	1.5	.0	9.9
L. WE	-150	2	-450	2	AG	1126	1.5	.0	10.5
M. EF	-450	-2	-150	-2	AG	1582	1.5	.0	10.5
N. EA	-150	-2	0	-2	AG	1002	1.5	.0	9.9
O. ED	0	-2	150	-2	AG	1113	1.5	.0	9.9
P. EE	150	-2	450	-2	AG	1113	1.5	.0	10.5
Q. NL	0	0	2	-150	AG	515	1.5	.0	9.9
R. SL	0	0	-2	150	AG	200	1.5	.0	9.9
S. WL	0	0	150	2	AG	277	1.5	.0	9.9
T. EL	0	0	-150	-2	AG	580	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: EW CONNECTOR AND ALVARADO-NILES PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8

3. SW3 \* -8 -8 1.8  
 4. NW3 \* -8 8 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG * (DEG)	* PRED * CONC * (PPM)	CONC/LINK (PPM)								
			A	B	C	D	E	F	G	H	
1. NE3	* 184.	* 1.2 *	.0	.4	.0	.0	.0	.0	.0	.2	.1
2. SE3	* 356.	* 1.2 *	.0	.0	.5	.0	.1	.2	.0	.0	.0
3. SW3	* 4.	* 1.3 *	.0	.0	.2	.1	.0	.5	.0	.0	.0
4. NW3	* 176.	* 1.4 *	.1	.2	.0	.0	.0	.0	.0	.6	.0

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	* .0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
2. SE3	* .0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	* .0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NW3	* .0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: LINDA DR AND ALVARADO-NILES AM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)  
 BRG= WORST CASE VD= .0 CM/S  
 CLAS= 7 (G) VS= .0 CM/S  
 MIXH= 1000. M AMB= .0 PPM  
 SIGTH= 5. DEGREES TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				* TYPE	VPH	EF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2					
A. NF	* 2	-450	2	-150	* AG	0	1.5	.0	10.5
B. NA	* 2	-150	2	0	* AG	0	1.5	.0	9.9
C. ND	* 2	0	2	150	* AG	5	1.5	.0	9.9
D. NE	* 2	150	2	450	* AG	5	1.5	.0	10.5
E. SF	* -2	450	-2	150	* AG	27	1.5	.0	10.5
F. SA	* -2	150	-2	0	* AG	19	1.5	.0	9.9
G. SD	* -2	0	-2	-150	* AG	25	1.5	.0	9.9
H. SE	* -2	-150	-2	-450	* AG	25	1.5	.0	10.5
I. WF	* 450	2	150	2	* AG	1199	1.5	.0	10.5
J. WA	* 150	2	0	2	* AG	1199	1.5	.0	9.9
K. WD	* 0	2	-150	2	* AG	1213	1.5	.0	9.9
L. WE	* -150	2	-450	2	* AG	1213	1.5	.0	10.5
M. EF	* -450	-2	-150	-2	* AG	884	1.5	.0	10.5
N. EA	* -150	-2	0	-2	* AG	884	1.5	.0	9.9
O. ED	* 0	-2	150	-2	* AG	867	1.5	.0	9.9
P. EE	* 150	-2	450	-2	* AG	867	1.5	.0	10.5
Q. NL	* 0	0	2	-150	* AG	0	1.5	.0	9.9
R. SL	* 0	0	-2	150	* AG	8	1.5	.0	9.9
S. WL	* 0	0	150	2	* AG	0	1.5	.0	9.9
T. EL	* 0	0	-150	-2	* AG	0	1.5	.0	9.9

JOB: LINDA DR AND ALVARADO-NILES AM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	B	C	D	E	F	G	H
1. NE3	266.	.6	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	274.	.5	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	274.	.5	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	266.	.6	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	* I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0	.0	.0
4. NW3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0

JOB: LINDA DR AND ALVARADO-NILES PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                      Z0= 100. CM                      ALT= 0. (M)  
 BRG= WORST CASE                      VD= .0 CM/S  
 CLAS= 7 (G)                      VS= .0 CM/S  
 MIXH= 1000. M                      AMB= .0 PPM  
 SIGTH= 5. DEGREES                      TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	* AG	0	1.5	.0	10.5
B. NA	2	-150	2	0	* AG	0	1.5	.0	9.9
C. ND	2	0	2	150	* AG	11	1.5	.0	9.9
D. NE	2	150	2	450	* AG	11	1.5	.0	10.5
E. SF	-2	450	-2	150	* AG	32	1.5	.0	10.5

F. SA	*	-2	150	-2	0	*	AG	23	1.5	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	20	1.5	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	20	1.5	.0	10.5
I. WF	*	450	2	150	2	*	AG	1036	1.5	.0	10.5
J. WA	*	150	2	0	2	*	AG	1036	1.5	.0	9.9
K. WD	*	0	2	-150	2	*	AG	1048	1.5	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	1048	1.5	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	1012	1.5	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	1012	1.5	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	1001	1.5	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	1001	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	0	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	9	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	0	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	0	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: LINDA DR AND ALVARADO-NILES PM NP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	* 8	* 8	* 1.8
2. SE3	* 8	* -8	* 1.8
3. SW3	* -8	* -8	* 1.8
4. NW3	* -8	* 8	* 1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	* B	* C	* D	* E	* F	* G	* H
1. NE3	* 266.	* .6	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0
2. SE3	* 274.	* .6	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0
3. SW3	* 274.	* .6	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0
4. NW3	* 266.	* .6	* .0	* .0	* .0	* .0	* .0	* .0	* .0	* .0

RECEPTOR	* I	* J	* K	* L	* M	* N	* O	* P	* Q	* R	* S	* T
1. NE3	* .0	* .0	* .3	* .0	* .0	* .1	* .0	* .0	* .0	* .0	* .0	* .0
2. SE3	* .0	* .0	* .1	* .0	* .0	* .3	* .0	* .0	* .0	* .0	* .0	* .0
3. SW3	* .0	* .0	* .1	* .0	* .0	* .3	* .0	* .0	* .0	* .0	* .0	* .0
4. NW3	* .0	* .0	* .3	* .0	* .0	* .1	* .0	* .0	* .0	* .0	* .0	* .0





RECEPTOR	COORDINATES (M)		
	X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG * (DEG)	* PRED * CONC * (PPM)	CONC/LINK (PPM)								
			A	B	C	D	E	F	G	H	
1. NE3	184.	1.2	.0	.3	.0	.0	.0	.0	.0	.2	.1
2. SE3	274.	1.2	.0	.1	.0	.0	.0	.0	.0	.1	.0
3. SW3	85.	1.3	.0	.0	.0	.0	.0	.0	.0	.2	.0
4. NW3	176.	1.3	.1	.1	.0	.0	.0	.0	.0	.5	.0

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.2	.0	.0	.0	.0	.1	.0	.1	.0	.0	.0
2. SE3	.0	.0	.2	.1	.0	.4	.0	.0	.0	.0	.0	.0
3. SW3	.0	.2	.0	.0	.0	.0	.4	.0	.0	.0	.1	.0
4. NW3	.0	.0	.2	.0	.0	.1	.0	.0	.1	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND PASEO PADRE AM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S                                      Z0= 100. CM                                      ALT= 0. (M)  
 BRG= WORST CASE                                      VD= .0 CM/S  
 CLAS= 7 (G)    VS= .0 CM/S  
 MIXH= 1000. M    AMB= .0 PPM  
 SIGTH= 5. DEGREES                                      TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				* TYPE	VPH	EF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2					
A. NF	2	-450	2	-150	* AG	1962	1.5	.0	10.5
B. NA	2	-150	2	0	* AG	1884	1.5	.0	9.9
C. ND	2	0	2	150	* AG	1387	1.5	.0	9.9
D. NE	2	150	2	450	* AG	1387	1.5	.0	10.5
E. SF	-2	450	-2	150	* AG	1614	1.5	.0	10.5
F. SA	-2	150	-2	0	* AG	1428	1.5	.0	9.9
G. SD	-2	0	-2	-150	* AG	2634	1.5	.0	9.9
H. SE	-2	-150	-2	-450	* AG	2634	1.5	.0	10.5
I. WF	450	2	150	2	* AG	2249	1.5	.0	10.5
J. WA	150	2	0	2	* AG	1455	1.5	.0	9.9
K. WD	0	2	-150	2	* AG	1591	1.5	.0	9.9
L. WE	-150	2	-450	2	* AG	1591	1.5	.0	10.5
M. EF	-450	-2	-150	-2	* AG	1804	1.5	.0	10.5
N. EA	-150	-2	0	-2	* AG	1597	1.5	.0	9.9
O. ED	0	-2	150	-2	* AG	2017	1.5	.0	9.9

P. EE	*	150	-2	450	-2	*	AG	2017	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	78	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	186	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	794	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	207	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND PASEO PADRE AM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG	* PRED	* CONC	CONC/LINK (PPM)							
	*	(DEG)	* (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* 1.3	*	.0	.5	.0	.0	.0	.0	.2	.1
2. SE3	*	274.	* 1.3	*	.0	.2	.0	.0	.0	.0	.2	.0
3. SW3	*	85.	* 1.4	*	.0	.1	.0	.0	.0	.0	.3	.0
4. NW3	*	176.	* 1.4	*	.1	.2	.0	.0	.0	.0	.6	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.2	.0	.0	.4	.0	.0	.0	.0	.0	.0
3. SW3	*	.0	.2	.0	.0	.0	.0	.5	.0	.0	.0	.1	.0
4. NW3	*	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND PASEO PADRE PM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	EF	H	W
	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M)	(M)









P. EE	*	150	-2	450	-2	*	AG	1173	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	35	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	595	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	387	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	72	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND 11TH ST AM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG	* PRED	* CONC	CONC/LINK (PPM)							
	*	(DEG)	* (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* .8	*	.0	.3	.0	.0	.0	.0	.2	.0
2. SE3	*	356.	* .9	*	.0	.0	.3	.0	.0	.1	.0	.0
3. SW3	*	86.	* .8	*	.0	.0	.0	.0	.0	.0	.1	.0
4. NW3	*	176.	* .8	*	.0	.1	.0	.0	.0	.0	.4	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: DECOTO RD AND 11TH ST PM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	EF	H	W
	*	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M)	(M)

	*		*		*		*		*		*
A. NF	*	2	-450	2	-150	*	AG	1961	1.5	.0	10.5
B. NA	*	2	-150	2	0	*	AG	1506	1.5	.0	9.9
C. ND	*	2	0	2	150	*	AG	1393	1.5	.0	9.9
D. NE	*	2	150	2	450	*	AG	1393	1.5	.0	10.5
E. SF	*	-2	450	-2	150	*	AG	1125	1.5	.0	10.5
F. SA	*	-2	150	-2	0	*	AG	670	1.5	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	1319	1.5	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	1319	1.5	.0	10.5
I. WF	*	450	2	150	2	*	AG	684	1.5	.0	10.5
J. WA	*	150	2	0	2	*	AG	163	1.5	.0	9.9
K. WD	*	0	2	-150	2	*	AG	513	1.5	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	513	1.5	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	222	1.5	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	171	1.5	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	767	1.5	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	767	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	455	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	455	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	521	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	51	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: DECOTO RD AND 11TH ST PM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG	* PRED	*	CONC/LINK							
	*	(DEG)	* CONC	*	(PPM)							
	*		* (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* 1.0	*	.0	.4	.0	.0	.0	.0	.1	.0
2. SE3	*	356.	* .9	*	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	*	176.	* .8	*	.1	.1	.0	.0	.0	.0	.4	.0
4. NW3	*	176.	* .9	*	.1	.2	.0	.0	.0	.0	.4	.0

RECEPTOR	*	CONC/LINK											
	*	(PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: EW CONNECTOR AND ALVARADO-NILES AM WP

RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)  
 BRG= WORST CASE VD= .0 CM/S  
 CLAS= 7 (G) VS= .0 CM/S  
 MIXH= 1000. M AMB= .0 PPM  
 SIGTH= 5. DEGREES TEMP= 5.5 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	2015	1.5	.0	10.5
B. NA	2	-150	2	0	AG	1649	1.5	.0	9.9
C. ND	2	0	2	150	AG	1944	1.5	.0	9.9
D. NE	2	150	2	450	AG	1944	1.5	.0	10.5
E. SF	-2	450	-2	150	AG	2326	1.5	.0	10.5
F. SA	-2	150	-2	0	AG	1942	1.5	.0	9.9
G. SD	-2	0	-2	-150	AG	2763	1.5	.0	9.9
H. SE	-2	-150	-2	-450	AG	2763	1.5	.0	10.5
I. WF	450	2	150	2	AG	870	1.5	.0	10.5
J. WA	150	2	0	2	AG	330	1.5	.0	9.9
K. WD	0	2	-150	2	AG	1081	1.5	.0	9.9
L. WE	-150	2	-450	2	AG	1081	1.5	.0	10.5
M. EF	-450	-2	-150	-2	AG	1424	1.5	.0	10.5
N. EA	-150	-2	0	-2	AG	1043	1.5	.0	9.9
O. ED	0	-2	150	-2	AG	847	1.5	.0	9.9
P. EE	150	-2	450	-2	AG	847	1.5	.0	10.5
Q. NL	0	0	2	-150	AG	366	1.5	.0	9.9
R. SL	0	0	-2	150	AG	384	1.5	.0	9.9
S. WL	0	0	150	2	AG	540	1.5	.0	9.9
T. EL	0	0	-150	-2	AG	381	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: EW CONNECTOR AND ALVARADO-NILES AM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	* B	* C	CONC/LINK (PPM)	D	E	F	G	H
1. NE3	184.	1.2	.0	.4	.0	.0	.0	.0	.0	.2	.1
2. SE3	356.	1.1	.0	.0	.5	.0	.1	.2	.0	.0	.0
3. SW3	4.	1.3	.0	.0	.2	.1	.0	.5	.0	.0	.0
4. NW3	176.	1.4	.1	.2	.0	.0	.0	.0	.0	.6	.0



2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG	* PRED	* CONC	CONC/LINK							
	*	(DEG)	* (PPM)	*	(PPM)							
	*		*	*	A	B	C	D	E	F	G	H
1. NE3	*	184.	* 1.2	*	.0	.4	.0	.0	.0	.0	.2	.1
2. SE3	*	356.	* 1.2	*	.0	.0	.5	.0	.1	.2	.0	.0
3. SW3	*	4.	* 1.3	*	.0	.0	.2	.1	.0	.5	.0	.0
4. NW3	*	176.	* 1.4	*	.1	.2	.0	.0	.0	.0	.6	.0

RECEPTOR	*	CONC/LINK											
	*	(PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
2. SE3	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 1

JOB: LINDA DR AND ALVARADO-NILES AM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	5.5 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	EF (G/MI)	H (M)	W (M)	
	*	X1	Y1	X2	Y2	* TYPE				
A. NF	*	2	-450	2	-150	* AG	0	1.5	.0	10.5
B. NA	*	2	-150	2	0	* AG	0	1.5	.0	9.9
C. ND	*	2	0	2	150	* AG	5	1.5	.0	9.9
D. NE	*	2	150	2	450	* AG	5	1.5	.0	10.5
E. SF	*	-2	450	-2	150	* AG	27	1.5	.0	10.5
F. SA	*	-2	150	-2	0	* AG	19	1.5	.0	9.9
G. SD	*	-2	0	-2	-150	* AG	0	1.5	.0	9.9
H. SE	*	-2	-150	-2	-450	* AG	0	1.5	.0	10.5
I. WF	*	450	2	150	2	* AG	1381	1.5	.0	10.5
J. WA	*	150	2	0	2	* AG	1381	1.5	.0	9.9
K. WD	*	0	2	-150	2	* AG	1395	1.5	.0	9.9
L. WE	*	-150	2	-450	2	* AG	1395	1.5	.0	10.5
M. EF	*	-450	-2	-150	-2	* AG	912	1.5	.0	10.5
N. EA	*	-150	-2	0	-2	* AG	912	1.5	.0	9.9
O. ED	*	0	-2	150	-2	* AG	920	1.5	.0	9.9
P. EE	*	150	-2	450	-2	* AG	920	1.5	.0	10.5
Q. NL	*	0	0	2	-150	* AG	0	1.5	.0	9.9
R. SL	*	0	0	-2	150	* AG	8	1.5	.0	9.9
S. WL	*	0	0	150	2	* AG	0	1.5	.0	9.9
T. EL	*	0	0	-150	-2	* AG	0	1.5	.0	9.9



E. SF	*	-2	450	-2	150	*	AG	32	1.5	.0	10.5
F. SA	*	-2	150	-2	0	*	AG	23	1.5	.0	9.9
G. SD	*	-2	0	-2	-150	*	AG	0	1.5	.0	9.9
H. SE	*	-2	-150	-2	-450	*	AG	0	1.5	.0	10.5
I. WF	*	450	2	150	2	*	AG	1093	1.5	.0	10.5
J. WA	*	150	2	0	2	*	AG	1093	1.5	.0	9.9
K. WD	*	0	2	-150	2	*	AG	1105	1.5	.0	9.9
L. WE	*	-150	2	-450	2	*	AG	1105	1.5	.0	10.5
M. EF	*	-450	-2	-150	-2	*	AG	1150	1.5	.0	10.5
N. EA	*	-150	-2	0	-2	*	AG	1150	1.5	.0	9.9
O. ED	*	0	-2	150	-2	*	AG	1159	1.5	.0	9.9
P. EE	*	150	-2	450	-2	*	AG	1159	1.5	.0	10.5
Q. NL	*	0	0	2	-150	*	AG	0	1.5	.0	9.9
R. SL	*	0	0	-2	150	*	AG	9	1.5	.0	9.9
S. WL	*	0	0	150	2	*	AG	0	1.5	.0	9.9
T. EL	*	0	0	-150	-2	*	AG	0	1.5	.0	9.9

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL  
 JUNE 1989 VERSION  
 PAGE 2

JOB: LINDA DR AND ALVARADO-NILES PM WP  
 RUN: Hour 1 (WORST CASE ANGLE)  
 POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. NE3	*	8	8	1.8
2. SE3	*	8	-8	1.8
3. SW3	*	-8	-8	1.8
4. NW3	*	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	*	A	B	C	D	E	F	G	H
1. NE3	*	266.	* .6 *	*	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	*	86.	* .6 *	*	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	*	274.	* .6 *	*	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	*	94.	* .6 *	*	.0	.0	.0	.0	.0	.0	.0	.0

RECEPTOR	*	CONC/LINK (PPM)											
	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	*	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0	.0	.0
2. SE3	*	.0	.1	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	*	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0	.0	.0
4. NW3	*	.0	.3	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0

DATE : 8/ 2/10  
 TIME : 6:22:23

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
 General Information  
 =====

Run start date: 1/ 1/91     Julian: 1  
 end date: 12/31/91     Julian: 365

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to P for calculating PM averages.

Ambient background concentrations are excluded from the averages below.

Site & Meteorological Constants  
 -----

VS = .0 CM/S            VD = .0 CM/S            Z0 = 100. CM            ATIM = 60.

Met. Sfc. Sta. Id & Yr = 1901     91  
 Upper Air Sta. Id & Yr = 1901     91

Urban mixing heights were processed.

In 1991, Julian day 1 is a Tuesday.

Link Data Constants - (Variable data in \*.LNK file)  
 -----

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* LENGTH (M)	BRG (DEG)	TYPE	H (M)	W (M)	NLANES
1. Link_1	.0	-10000.0	.0	10000.0	20000.	360.	AG	5.0	8.0	

Receptor Data  
 -----

RECEPTOR	* X	* Y	* Z
1. Rcpt_1	30.5	.0	1.8
2. Rcpt_2	-30.5	.0	1.8

DATE : 8/ 2/10  
TIME : 6:22:23

PAGE: 2

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

\* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED  
\* (MICROGRAMS/M\*\*3)  
\* REC1 REC2

	REC1	REC2
MAX+BKG *	.4	.4
- BKG *	.0	.0
MAX *	.4	.4
WIND DIR*	183	1
JULIAN *	4	2
HOURLY *	22	8

THE HIGHEST CONCENTRATION OF .40 UG/M\*\*3 OCCURRED AT RECEPTOR REC2

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:22:26

PAGE: 3

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
Output Section  
=====

NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (\*). FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESSES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3

EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcpt No.	Highest Ending			Second Highest Ending			Third Highest Ending			Fourth Highest Ending			Fifth Highest Ending		
	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm
1	.17*	( 14,24)	C 0	.16*	(272,24)	C 1	.15	( 15,24)	C 0	.15	(256,24)	C 0	.15	(274,24)	C 0
2	.17	(358,24)	C 0	.14	(338,24)	C 0	.14	(345,24)	C 0	.14	(337,24)	C 0	.14	( 2,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS  
IN MICROGRAMS/M\*\*3  
EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	.08*	(365,24)	C 12
2	.05	(365,24)	C 12

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:22:26

PAGE: 4

JOB: C:\Documents and Settings\mmcfalls\Desktop

RUN: CAL3QHCR RUN

CALM DURATION FREQUENCY

Hours of Consecutive Calm Winds	Frequency of Occurrence	(Julian day/hour ending) of Significant Occurrences
1	4	( 39,12)(144, 3)(155,10)(272, 6)
8	1	(233, 8)

Program terminated normally

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:23:23

PAGE: 1

JOB: C:\Documents and Settings\mmcfalls\Desktop

RUN: CAL3QHCR RUN

=====  
General Information  
=====

Run start date: 1/ 1/92 Julian: 1  
end date: 12/31/92 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to P for calculating PM averages.

Ambient background concentrations are excluded from the averages below.

Site & Meteorological Constants

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 1901 92
Upper Air Sta. Id & Yr = 1901 92

Urban mixing heights were processed.

In 1992, Julian day 1 is a Wednesday.

Link Data Constants - (Variable data in \*.LNK file)

Table with columns: LINK DESCRIPTION, LINK COORDINATES (M) (X1, Y1, X2, Y2), LENGTH (M), BRG (DEG), TYPE, H (M), W (M), NLANS. Row 1: 1. Link\_1, .0, -10000.0, .0, 10000.0, 20000., 360., AG, 5.0, 8.0

Receptor Data

Table with columns: RECEPTOR, COORDINATES (M) (X, Y, Z). Row 1: 1. Rcpt\_1, 30.5, .0, 1.8. Row 2: 2. Rcpt\_2, -30.5, .0, 1.8

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10
TIME : 6:23:23

PAGE: 2

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

Table with columns: MAX+BKG, REC1, REC2. Row 1: .4, .4. Row 2: - BKG, .0, .0

```

-----*-----
MAX * .4 .4
WIND DIR* 347 13
JULIAN * 10 11
HOUR * 5 4

```

THE HIGHEST CONCENTRATION OF .40 UG/M\*\*3 OCCURRED AT RECEPTOR REC1 .

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:23:26

PAGE: 3

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

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=====
Output Section
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (\*). FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Ending			Second Highest Ending			Third Highest Ending			Fourth Highest Ending			Fifth Highest Ending		
	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm
1	.17*	(321,24)	C 0	.16*	( 25,24)	C 0	.15	(248,24)	C 0	.14	(361,24)	C 0	.14	(330,24)	C 0
2	.15	(318,24)	C 0	.14	( 15,24)	C 0	.14	( 39,24)	C 0	.13	(319,24)	C 0	.13	( 29,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	.07*	(366,24)	C 4
2	.06	(366,24)	C 4

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10

PAGE: 4

TIME : 6:23:26

JOB: C:\Documents and Settings\mmcfalls\Desktop

RUN: CAL3QHCR RUN

CALM DURATION FREQUENCY

Hours of Consecutive Calm Winds	Frequency of Occurrence	(Julian day/hour ending) of Significant Occurrences
1	2	( 63,11)(350,15)
2	1	(218,14)

Program terminated normally

DATE : 8/ 2/10  
 TIME : 6:24:22

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
 General Information  
 =====

Run start date: 1/ 1/93 Julian: 1  
 end date: 12/31/93 Julian: 365

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to P for calculating PM averages.

Ambient background concentrations are excluded from the averages below.

Site & Meteorological Constants  
 -----

VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 1901 93  
 Upper Air Sta. Id & Yr = 1901 93

Urban mixing heights were processed.

In 1993, Julian day 1 is a Friday.

Link Data Constants - (Variable data in \*.LNK file)  
 -----

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	H	W	NLANES
	*	X1	Y1	X2	Y2	*	(M)	(DEG)	(M)	(M)		
1. Link_1	*	.0	-10000.0	.0	10000.0	*	20000.	360.	AG	5.0	8.0	

Receptor Data  
 -----

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. Rcpt_1	*	30.5	.0	1.8
2. Rcpt_2	*	-30.5	.0	1.8

TIME : 6:24:22

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

\* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED  
 \* (MICROGRAMS/M\*\*3)

	REC1	REC2
MAX+BKG *	.4	.4
- BKG *	.0	.0
MAX *	.4	.4
WIND DIR*	186	4
JULIAN *	14	5
HOURLY *	24	10

THE HIGHEST CONCENTRATION OF .40 UG/M\*\*3 OCCURRED AT RECEPTOR REC2 .

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:24:26

PAGE: 3

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
Output Section  
=====

NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (\*). FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcpt No.	Highest Ending			Second Highest Ending			Third Highest Ending			Fourth Highest Ending			Fifth Highest Ending		
	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm
1	.19	(337,24)	C 0	.18	(351,24)	C 0	.15	(360,24)	C 0	.15	(352,24)	C 0	.14	( 18,24)	C 0
2	.19*	(362,24)	C 0	.18*	(365,24)	C 0	.18	(343,24)	C 0	.18	(363,24)	C 0	.17	(355,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS  
 IN MICROGRAMS/M\*\*3  
 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	.07*	(365,24)	C 40
2	.07	(365,24)	C 40

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
 TIME : 6:24:26

PAGE: 4

JOB: C:\Documents and Settings\mmcfalls\Desktop

RUN: CAL3QHCR RUN

CALM DURATION FREQUENCY

Hours of Consecutive Calm Winds	Frequency of Occurrence	(Julian day/hour ending) of Significant Occurrences
1	5	( 85,10)(132,11)(180,11)(202,16)(335,11)
3	2	(131,13)(231,16)
5	1	(134,15)

Program terminated normally

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
 TIME : 6:25: 1

PAGE: 1

JOB: C:\Documents and Settings\mmcfalls\Desktop

RUN: CAL3QHCR RUN

=====  
 General Information  
 =====

Run start date: 1/ 1/94 Julian: 1  
 end date: 12/31/94 Julian: 365

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to P for calculating PM averages.

Ambient background concentrations are excluded from the averages below.

Site & Meteorological Constants

-----  
VS = .0 CM/S      VD = .0 CM/S      Z0 = 100. CM      ATIM = 60.

Met. Sfc. Sta. Id & Yr = 1901    94  
Upper Air Sta. Id & Yr = 1901    94

Urban mixing heights were processed.

In 1994, Julian day 1 is a Saturday.

Link Data Constants - (Variable data in \*.LNK file)

-----

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	H	W	NLANES
	*	X1	Y1	X2	Y2	*	(M)	(DEG)	(M)	(M)		
1. Link_1	*	.0	-10000.0	.0	10000.0	*	20000.	360.	AG	5.0	8.0	

-----

Receptor Data

-----

RECEPTOR	*	COORDINATES (M)		
	*	X	Y	Z
1. Rcpt_1	*	30.5	.0	1.8
2. Rcpt_2	*	-30.5	.0	1.8

-----

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:25: 1

PAGE: 2

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

Model Results

-----

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

\* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED  
\* (MICROGRAMS/M\*\*3)  
\*      REC1      REC2  
-----  
MAX+BKG \*      .4      .4

- BKG	*	.0	.0
-----*			
MAX	*	.4	.4
WIND DIR*		348	172
JULIAN	*	1	3
HOUR	*	19	9

THE HIGHEST CONCENTRATION OF .40 UG/M\*\*3 OCCURRED AT RECEPTOR REC1 .

DATE : 8/ 2/10  
 TIME : 6:25: 4

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
 Output Section  
 =====

NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (\*). FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.
2. THE NUMBERS IN PARENTHESES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3  
 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcpttr No.	Highest			Second Highest			Third Highest			Fourth Highest			Fifth Highest		
	Conc	Ending Day Hr	Calm	Conc	Ending Day Hr	Calm	Conc	Ending Day Hr	Calm	Conc	Ending Day Hr	Calm	Conc	Ending Day Hr	Calm
1	.16	( 16,24)	C 0	.15	( 4,24)	C 0	.15	( 2,24)	C 0	.15	( 20,24)	C 0	.15	(275,24)	C 0
2	.20*	( 8,24)	C 0	.18*	(350,24)	C 0	.17	( 12,24)	C 0	.16	( 13,24)	C 0	.16	( 25,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS  
 IN MICROGRAMS/M\*\*3  
 EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	.08*	(365,24)	C 70
2	.06	(365,24)	C 70

DATE : 8/ 2/10  
 TIME : 6:25: 4

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

CALM DURATION FREQUENCY

Hours of Consecutive Calm Winds	Frequency of Occurrence	(Julian day/hour ending) of Significant Occurrences
1	3	( 18, 8)( 60,16)(189,15)
8	1	(251, 8)

Program terminated normally

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:25:42

PAGE: 1

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
General Information  
=====

Run start date: 1/ 1/96 Julian: 1  
end date: 12/31/96 Julian: 366

A Tier 1 approach was used for input data preparation.

The MODE flag has been set to P for calculating PM averages.

Ambient background concentrations are excluded from the averages below.

Site & Meteorological Constants

-----  
VS = .0 CM/S VD = .0 CM/S Z0 = 100. CM ATIM = 60.

Met. Sfc. Sta. Id & Yr = 1901 96  
Upper Air Sta. Id & Yr = 1901 96

Urban mixing heights were processed.

In 1996, Julian day 1 is a Monday.

Link Data Constants - (Variable data in \*.LNK file)

-----

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH	BRG	TYPE	H	W	NLANES
	*	X1	Y1	X2	Y2	*	(M)	(DEG)	(M)	(M)		
1. Link_1	*	.0	-10000.0	.0	10000.0	*	20000.	360.	AG	5.0	8.0	

-----

Receptor Data

-----

RECEPTOR	COORDINATES (M)		
	X	Y	Z
1. Rcpt_1	30.5	.0	1.8
2. Rcpt_2	-30.5	.0	1.8

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
 TIME : 6:25:42

PAGE: 2

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

Model Results

Remarks : In search of the wind direction corresponding to the maximum concentration, only the first direction, of the directions with the same maximum concentrations, is indicated as the maximum.

\* MAXIMUM HOURLY CONCENTRATIONS WITH ANY AMBIENT BACKGROUND CONCENTRATIONS (BKG) ADDED  
 \* (MICROGRAMS/M\*\*3)

	REC1	REC2
MAX+BKG *	.4	.4
- BKG *	.0	.0
MAX *	.4	.4
WIND DIR*	341	176
JULIAN *	5	2
HOUR *	23	20

THE HIGHEST CONCENTRATION OF .40 UG/M\*\*3 OCCURRED AT RECEPTOR REC2 .

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
 TIME : 6:25:45

PAGE: 3

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

=====  
 Output Section  
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NOTES PERTAINING TO THE REPORT

1. THE HIGHEST AVERAGE IN EACH OF THE FIRST TWO COLUMNS OF EACH TABLE BELOW ARE SUFFIXED BY AN ASTERISK (\*). FOR PM OUTPUT, THERE IS ONLY ONE COLUMN AND ASTERISK FOR THE ANNUAL AVERAGE/PERIOD OF CONCERN TABLE.

2. THE NUMBERS IN PARENTHESSES ARE THE JULIAN DAY AND ENDING HOUR FOR THE PRECEDING AVERAGE.
3. THE NUMBER OF CALM HOURS USED IN PRODUCING EACH AVERAGE ARE PREFIXED BY A C.

PRIMARY AND SECONDARY AVERAGES.

FIVE HIGHEST 24-HOUR END-TO-END AVERAGE CONCENTRATIONS IN MICROGRAMS/M\*\*3  
EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Rcptr No.	Highest Ending			Second Highest Ending			Third Highest Ending			Fourth Highest Ending			Fifth Highest Ending		
	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm	Conc	Day Hr	Calm
1	.16	(156,24)	C 0	.16	(277,24)	C 0	.15	( 76,24)	C 0	.15	(222,24)	C 0	.15	(330,24)	C 0
2	.17*	( 6,24)	C 0	.16*	(355,24)	C 0	.15	( 46,24)	C 0	.15	(315,24)	C 0	.14	(314,24)	C 0

THE HIGHEST ANNUAL AVERAGE CONCENTRATIONS  
IN MICROGRAMS/M\*\*3  
EXCLUDING AMBIENT BACKGROUND CONCENTRATIONS.

Receptor Number	Maximum Conc	Ending Day Hr	Calm
1	.08*	(366,24)	C 69
2	.06	(366,24)	C 69

CAL3QHCR (Dated: 95221)

DATE : 8/ 2/10  
TIME : 6:25:45

PAGE: 4

JOB: C:\Documents and Settings\mmcfalls\Deskt

RUN: CAL3QHCR RUN

CALM DURATION FREQUENCY

Hours of Consecutive Calm Winds	Frequency of Occurrence	(Julian day/hour ending) of Significant Occurrences
1	2	( 67,12)(162,11)
19	1	( 2,19)

Program terminated normally

# Freight Train HRA Calcs for Union City TOD

## Sources

Emission Factor Data: <http://www.epa.gov/nonroad/locomotv/420f09025.pdf>  
 Met data: <http://hank.baacmd.gov/tec/data/metdata1901.html>  
 Train data: <http://www.polb.com/civica/filebank/blobload.asp?BlobID=5377>

**Trains**  
 6 per day  
 0.25 per hour

## Emission factor

Assume a weighted average of 2010 and 2040 emission factor average over time  
 Assume 2010 EF for 2010-2039, 2040 EF for 2040-2070

	grams/gallon	back-calculated to g/bhp-hr	years per emission factor (for	% of time	weight
2010	4.7	0.226	30	43%	0.096841
2040	0.4	0.019	40	57%	0.010989
			70		0.10783 weighted EF

20.8 g/gal to g/hp-hr conversion

0.10783 PM emission factor in grams/bhp-hr (weighed average of 2010 and 2040 EF)

4000 avg HP  
 3 # of engines per locomotive  
 0.28 LF  
 0.25 trains per hour  
 90.576923 grams/hr  
 15 mph (speed train traveling)  
 6.04 g/mi  
 60.38461538

## Receptors

100 feet from railway to project site  
 0.3048 feet to meter conversion  
 30.48 meters

## Links

20000 meter long link  
 8 meter, mixing width (tracks + 6m)  
 5 meter, link height (Z of exhaust)

## Results

1996	1994	1993	1992	1991
0.04	0.04	0.04	0.04	0.04

1-hr Max Concentration (ug/m3) --> from CALINE3  
 average 1-hr max  
 0.1 1-hour --> annual conversion  
 0.004 annual concentration (micrograms/meter3)  
 300 DPM REL  
 1.2 Cancer risk (per million) --> Risk = Annual concentration x REL