Appendix G: Air Quality Impact Analysis

G-1 Air Quality Report

Air Quality Appendix

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Prepared by: Michael Brandman Associates
September 2006

USE OF URBEMIS IN ESTIMATING PROJECT EMISSIONS

Prepared by: Michael Brandman Associates, September 15, 2006

URBEMIS is a computer program that can be used to estimate emissions associated with land use development projects in California. URBEMIS, which stands for Urban Emissions Model, was originally created by the California Air Resources Board in the early 1980s. Since that time, it has undergone several revisions. This version (URBEMIS 2002 for Windows version 8.7.0), distributed in 2005 in coordination with the California Air Pollution Control Officers' Association (CAPCOA), is the most current version of the URBEMIS software available at this time. URBEMIS2002 was used for this analysis to estimate short-term construction impacts and long-term area source and operational emissions.

Construction Emissions

Two model runs were used to quantify potential short term construction emissions from construction of Phase 1 of the project. As noted in the output files, mitigation including the required use of electricity on the project site will reduce building equipment from approximately 14 “other equipment” to 3 “other equipment.”

Long Term Emissions

Two model runs were used to quantify potential long term operational emissions from the project. The unmitigated file included hearth emissions. The mitigated file assumed 100% natural gas emissions.

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               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459ConstructionUnmitigated.urb
Project Name:                   Lancaster C1 - Construction
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                       SUMMARY REPORT
                    (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES
                                                                         PM10      PM10      PM10
 *** 2008 ***                   ROG       NOx        CO       SO2      TOTAL   EXHAUST      DUST
 TOTALS (lbs/day,unmitigated)    270.24    499.09    690.08      0.02    419.43     19.38    400.05



                       SUMMARY REPORT
                         (Tons/Year)

CONSTRUCTION EMISSION ESTIMATES
                                                                      PM10      PM10      PM10
 *** 2008 ***                ROG       NOx        CO       SO2      TOTAL   EXHAUST      DUST
 TOTALS (tpy, unmitigated)     13.74     37.88     48.28      0.00     14.71      1.48     13.23



                        DETAIL REPORT
                    (Pounds/Day - Summer)

Construction Start Month and Year: January, 2008
Construction Duration: 12
Total Land Use Area to be Developed: 160 acres
Maximum Acreage Disturbed Per Day: 40 acres
Single Family Units: 175 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)
                                                                      PM10     PM10        PM10
    Source                   ROG       NOx        CO       SO2      TOTAL   EXHAUST      DUST
 *** 2008***
Phase 1 - Demolition Emissions
Fugitive Dust                     -         -         -         -      0.00         -      0.00
Off-Road Diesel                0.00      0.00      0.00         -      0.00      0.00      0.00
On-Road Diesel                 0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                   0.00      0.00      0.00      0.00      0.00      0.00      0.00
  Maximum lbs/day              0.00      0.00      0.00      0.00      0.00      0.00      0.00

Phase 2 - Site Grading Emissions
Fugitive Dust                     -         -         -         -    400.00         -    400.00
Off-Road Diesel               80.07    497.79    677.15         -     19.35     19.35      0.00
On-Road Diesel                 0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                   0.53      1.30     12.93      0.01      0.08      0.03      0.05
  Maximum lbs/day             80.60    499.09    690.08      0.01    419.43     19.38    400.05

Phase 3 - Building Construction
Bldg Const Off-Road Diesel    30.43    209.76    239.80         -      8.28      8.28      0.00
Bldg Const Worker Trips        0.70      0.43      9.18      0.00      0.21      0.01      0.20
Arch Coatings Off-Gas        238.40         -         -         -         -         -         -
Arch Coatings Worker Trips     0.70      0.43      9.18      0.00      0.21      0.01      0.20
Asphalt Off-Gas                1.67         -         -         -         -         -         -
Asphalt Off-Road Diesel        7.26     45.25     60.39         -      1.60      1.60      0.00
Asphalt On-Road Diesel         0.46      8.52      1.70      0.02      0.20      0.19      0.01
Asphalt Worker Trips           0.03      0.02      0.37      0.00      0.01      0.00      0.01
  Maximum lbs/day            270.24    263.90    310.00      0.02     10.48     10.08      0.40

  Max lbs/day all phases     270.24    499.09    690.08      0.02    419.43     19.38    400.05


Phase 1 - Demolition Assumptions:  Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment
  No.     Type                          Horsepower    Load Factor     Hours/Day
     1    Graders                           174          0.575           8.0
     2    Other Equipment                   190          0.620           8.0
     1    Rubber Tired Loaders              165          0.465           8.0
    20    Scrapers                          313          0.660           8.0
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Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Apr '08
Phase 3 Duration: 9 months
  Start Month/Year for SubPhase Building: Apr '08
  SubPhase Building Duration: 9 months
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
    14    Other Equipment                       190          0.620            6.0
    10    Rough Terrain Forklifts                94          0.475            6.0
     1    Rubber Tired Loaders                  165          0.465            6.0
     2    Tractor/Loaders/Backhoes               79          0.465            6.0
     1    Trenchers                              82          0.695            6.0
  Start Month/Year for SubPhase Architectural Coatings: Oct '08
  SubPhase Architectural Coatings Duration: 3 months
  Start Month/Year for SubPhase Asphalt: Apr '08
  SubPhase Asphalt Duration: 1 months

  Acres to be Paved: 14
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     1    Graders                               174          0.575            6.0
     1    Off Highway Trucks                    417          0.490            6.0
     1    Other Equipment                       190          0.620            6.0
     1    Pavers                                132          0.590            6.0
     1    Rollers                               114          0.430            6.0



Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.57/58.33 to 10.44/120

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water 3 times per day
     has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Time and tune engines
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
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Phase 3 mitigation measure Off-Road Diesel Exhaust: Time and tune engines
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Phase 3 mitigation measure Offgassing: Low VOC paints
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                        DETAIL REPORT
                         (Tons/Year)

Construction Start Month and Year: January, 2008
Construction Duration: 12
Total Land Use Area to be Developed: 160 acres
Maximum Acreage Disturbed Per Day: 40 acres
Single Family Units: 175 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)
                                                                       PM10     PM10       PM10
    Source                       ROG       NOx        CO       SO2     TOTAL   EXHAUST      DUST
 *** 2008***
Phase 1 - Demolition Emissions
Fugitive Dust                      -         -         -         -      0.00         -      0.00
Off-Road Diesel                 0.00      0.00      0.00         -      0.00      0.00      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.00      0.00      0.00      0.00      0.00      0.00      0.00
  Total tons/year               0.00      0.00      0.00      0.00      0.00      0.00      0.00

Phase 2 - Site Grading Emissions
Fugitive Dust                      -         -         -         -     13.20         -     13.20
Off-Road Diesel                 2.64     16.43     22.35         -      0.64      0.64      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.02      0.04      0.40      0.00      0.00      0.00      0.00
  Total tons/year               2.66     16.47     22.75      0.00     13.84      0.64     13.20

Phase 3 - Building Construction
Bldg Const Off-Road Diesel      3.01     20.77     23.74         -      0.82      0.82      0.00
Bldg Const Worker Trips         0.07      0.04      0.81      0.00      0.02      0.00      0.02
Arch Coatings Off-Gas           7.87         -         -         -         -         -         -
Arch Coatings Worker Trips      0.02      0.01      0.30      0.00      0.01      0.00      0.01
Asphalt Off-Gas                 0.02         -         -         -         -         -         -
Asphalt Off-Road Diesel         0.08      0.50      0.66         -      0.02      0.02      0.00
Asphalt On-Road Diesel          0.01      0.09      0.02      0.00      0.00      0.00      0.00
Asphalt Worker Trips            0.00      0.00      0.00      0.00      0.00      0.00      0.00
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  Total tons/year              11.08     21.41     25.53      0.00      0.87      0.84      0.03

  Total all phases tons/yr     13.74     37.88     48.28      0.00     14.71      1.48     13.23


Phase 1 - Demolition Assumptions:  Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     1    Graders                               174          0.575            8.0
     2    Other Equipment                       190          0.620            8.0
     1    Rubber Tired Loaders                  165          0.465            8.0
    20    Scrapers                              313          0.660            8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Apr '08
Phase 3 Duration: 9 months
  Start Month/Year for SubPhase Building: Apr '08
  SubPhase Building Duration: 9 months
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
    14    Other Equipment                       190          0.620            6.0
    10    Rough Terrain Forklifts                94          0.475            6.0
     1    Rubber Tired Loaders                  165          0.465            6.0
     2    Tractor/Loaders/Backhoes               79          0.465            6.0
     1    Trenchers                              82          0.695            6.0
  Start Month/Year for SubPhase Architectural Coatings: Oct '08
  SubPhase Architectural Coatings Duration: 3 months
  Start Month/Year for SubPhase Asphalt: Apr '08
  SubPhase Asphalt Duration: 1 months
  Acres to be Paved: 14
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     1    Graders                               174          0.575            6.0
     1    Off Highway Trucks                    417          0.490            6.0
     1    Other Equipment                       190          0.620            6.0
     1    Pavers                                132          0.590            6.0
     1    Rollers                               114          0.430            6.0



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The Trip Rate and/or Acreage values for Single family housing
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Changes made to the default values for Construction

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Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water 3 times per day
     has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Time and tune engines
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
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Phase 3 mitigation measure Off-Road Diesel Exhaust: Time and tune engines
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Phase 3 mitigation measure Offgassing: Low VOC paints
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Time and tune engines
     has been changed from off to on.
```

```
               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459ConstructionMitigated.urb
Project Name:                   Lancaster C1 - Construction (Mitigated)
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        DETAIL REPORT
                    (Pounds/Day - Summer)

Construction Start Month and Year: January, 2008
Construction Duration: 12
Total Land Use Area to be Developed: 160 acres
Maximum Acreage Disturbed Per Day: 40 acres
Single Family Units: 175 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)
                                                                       PM10     PM10        PM10
    Source                       ROG       NOx        CO       SO2     TOTAL   EXHAUST      DUST
 *** 2008***
Phase 1 - Demolition Emissions
Fugitive Dust                      -         -         -         -      0.00         -      0.00
Off-Road Diesel                 0.00      0.00      0.00         -      0.00      0.00      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.00      0.00      0.00      0.00      0.00      0.00      0.00
  Maximum lbs/day               0.00      0.00      0.00      0.00      0.00      0.00      0.00

Phase 2 - Site Grading Emissions
Fugitive Dust                      -         -         -         -    128.00         -    128.00
Off-Road Diesel                76.07    378.32    643.29         -     18.38     18.38      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.53      1.30     12.93      0.01      0.08      0.03      0.05
  Maximum lbs/day              76.60    379.62    656.22      0.01    146.46     18.41    128.05

Phase 3 - Building Construction
Bldg Const Off-Road Diesel     12.64     64.93    103.03         -      2.83      2.83      0.00
Bldg Const Worker Trips         0.70      0.43      9.18      0.00      0.21      0.01      0.20
Arch Coatings Off-Gas          95.36         -         -         -         -         -         -
Arch Coatings Worker Trips      0.70      0.43      9.18      0.00      0.21      0.01      0.20
Asphalt Off-Gas                 1.67         -         -         -         -         -         -
Asphalt Off-Road Diesel         6.90     42.99     57.37         -      1.52      1.52      0.00
Asphalt On-Road Diesel          0.46      8.52      1.70      0.02      0.20      0.19      0.01
Asphalt Worker Trips            0.03      0.02      0.37      0.00      0.01      0.00      0.01
  Maximum lbs/day             109.41     65.79    121.38      0.02      3.25      2.85      0.40

  Max lbs/day all phases      109.41    379.62    656.22      0.02    146.46     18.41    128.05


Construction-Related Mitigation Measures

 Phase 2: Off-Road Diesel Exhaust: Use lean-NOx catalyst
   Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
 Phase 2: Soil Disturbance: Water 3 times per day
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 68.0%)
 Phase 2: Off-Road Diesel Exhaust: Time and tune engines and reduce idle time
   Percent Reduction(ROG 5.0% NOx 5.0% CO 5.0% SO2 5.0% PM10 5.0%)
 Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst
   Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
 Phase 3: Off-Road Diesel Exhaust: Reduce idle time and tune engines
   Percent Reduction(ROG 5.0% NOx 5.0% CO 5.0% SO2 5.0% PM10 5.0%)
 Phase 3: Offgassing: Low VOC paints and apply by hand application
   Percent Reduction(ROG 60.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 0.0%)
 Phase 3: Off-Road Diesel Exhaust: Reduce idle time and tune engines
   Percent Reduction(ROG 5.0% NOx 5.0% CO 5.0% SO2 5.0% PM10 5.0%)
Phase 1 - Demolition Assumptions:  Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     1    Graders                               174          0.575           8.0
     2    Other Equipment                       190          0.620           8.0
     1    Rubber Tired Loaders                  165          0.465           8.0
    20    Scrapers                              313          0.660           8.0


Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Apr '08
Phase 3 Duration: 9 months
  Start Month/Year for SubPhase Building: May '08
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  SubPhase Building Duration: 8 months
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     3    Other Equipment                       190          0.620           6.0
    10    Rough Terrain Forklifts                94          0.475           6.0
     1    Rubber Tired Loaders                  165          0.465           6.0
     2    Tractor/Loaders/Backhoes               79          0.465           6.0
     1    Trenchers                              82          0.695           6.0
  Start Month/Year for SubPhase Architectural Coatings: Oct '08
  SubPhase Architectural Coatings Duration: 3 months
  Start Month/Year for SubPhase Asphalt: Apr '08
  SubPhase Asphalt Duration: 1 months
  Acres to be Paved: 14
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     1    Graders                               174          0.575           6.0
     1    Off Highway Trucks                    417          0.490           6.0
     1    Other Equipment                       190          0.620           6.0
     1    Pavers                                132          0.590           6.0
     1    Rollers                               114          0.430           6.0


Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.57/58.33 to 10.44/120

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Phase 2 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
     has been changed from off to on.
Phase 2 mitigation measure Soil Disturbance: Water 3 times per day
     has been changed from off to on.
Phase 2 mitigation measure Off-Road Diesel Exhaust: Time and tune engines and reduce idle time
     has been changed from off to on.
Phase 3 mitigation measure Off-Road Diesel Exhaust: Use lean-NOx catalyst
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Phase 3 mitigation measure Off-Road Diesel Exhaust: Reduce idle time and tune engines
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Phase 3 mitigation measure Offgassing: Low VOC paints and apply by hand application
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                        DETAIL REPORT
                         (Tons/Year)

Construction Start Month and Year: January, 2008
Construction Duration: 12
Total Land Use Area to be Developed: 160 acres
Maximum Acreage Disturbed Per Day: 40 acres
Single Family Units: 175 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (tons/year)
                                                                       PM10      PM10       PM10
    Source                       ROG       NOx        CO       SO2     TOTAL   EXHAUST      DUST
 *** 2008***
Phase 1 - Demolition Emissions
Fugitive Dust                      -         -         -         -      0.00         -      0.00
Off-Road Diesel                 0.00      0.00      0.00         -      0.00      0.00      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.00      0.00      0.00      0.00      0.00      0.00      0.00
  Total tons/year               0.00      0.00      0.00      0.00      0.00      0.00      0.00

Phase 2 - Site Grading Emissions
Fugitive Dust                      -         -         -         -      4.22         -      4.22
Off-Road Diesel                 2.51     12.49     21.23         -      0.61      0.61      0.00
On-Road Diesel                  0.00      0.00      0.00      0.00      0.00      0.00      0.00
Worker Trips                    0.02      0.04      0.40      0.00      0.00      0.00      0.00
  Total tons/year               2.53     12.53     21.63      0.00      4.83      0.61      4.22

Phase 3 - Building Construction
Bldg Const Off-Road Diesel      1.11      5.72      9.06         -      0.25      0.25      0.00
Bldg Const Worker Trips         0.06      0.03      0.73      0.00      0.02      0.00      0.02
Arch Coatings Off-Gas           3.15         -         -         -         -         -         -
Arch Coatings Worker Trips      0.02      0.01      0.30      0.00      0.01      0.00      0.01
Asphalt Off-Gas                 0.02         -         -         -         -         -         -
Asphalt Off-Road Diesel         0.08      0.47      0.63         -      0.02      0.02      0.00
Asphalt On-Road Diesel          0.01      0.09      0.02      0.00      0.00      0.00      0.00
Asphalt Worker Trips            0.00      0.00      0.00      0.00      0.00      0.00      0.00
  Total tons/year               4.45      6.32     10.74      0.00      0.30      0.27      0.03

  Total all phases tons/yr      6.98     18.85     32.37      0.00      5.13      0.88      4.25
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Construction-Related Mitigation Measures

 Phase 2: Off-Road Diesel Exhaust: Use lean-NOx catalyst
   Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
 Phase 2: Soil Disturbance: Water 3 times per day
   Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 68.0%)
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   Percent Reduction(ROG 60.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 0.0%)
 Phase 3: Off-Road Diesel Exhaust: Reduce idle time and tune engines
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Phase 1 - Demolition Assumptions:  Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 3 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment
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Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Apr '08
Phase 3 Duration: 9 months
  Start Month/Year for SubPhase Building: May '08
  SubPhase Building Duration: 8 months
  Off-Road Equipment
  No.     Type                               Horsepower    Load Factor     Hours/Day
     3    Other Equipment                       190          0.620            6.0
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     1    Rubber Tired Loaders                  165          0.465            6.0
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Page: 1
09/19/2006 1:59 PM


               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459OperationalUnmitigated.urb
Project Name:                   Lancaster C1 - Operation
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                       SUMMARY REPORT
                    (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)     57.04      8.47     23.29      0.13      0.08


OPERATIONAL (VEHICLE) EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10

 TOTALS (lbs/day,unmitigated)     52.79     98.72    699.95      0.57    100.74

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)    109.82    107.19    723.25      0.70    100.82



                       SUMMARY REPORT
                    (Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)    423.52     20.91    678.28      1.61    100.61


OPERATIONAL (VEHICLE) EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10

 TOTALS (lbs/day,unmitigated)     67.37    118.15    824.90      0.57    100.74

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES
                                    ROG       NOx        CO       SO2      PM10
 TOTALS (lbs/day,unmitigated)    490.89    139.06  1,503.17      2.18    201.35




                       SUMMARY REPORT
                         (Tons/Year)

AREA SOURCE EMISSION ESTIMATES
                                 ROG       NOx        CO       SO2      PM10
 TOTALS (tpy, unmitigated)     24.18      1.92     30.03      0.08      4.12


OPERATIONAL (VEHICLE) EMISSION ESTIMATES
                                 ROG       NOx        CO       SO2      PM10
 TOTALS (tpy, unmitigated)     10.52     19.20    135.34      0.10     18.39

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES
                                 ROG       NOx        CO       SO2      PM10
 TOTALS (tpy, unmitigated)     34.70     21.12    165.37      0.18     22.51




                        DETAIL REPORT
                    (Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)
    Source                         ROG       NOx        CO       SO2      PM10
 Natural Gas                      0.63      8.14      3.47         0      0.02
 Hearth                         368.96     12.77    674.81      1.60    100.59
 Landscaping - No winter emissions
 Consumer Prdcts                 31.80         -         -         -         -
 Architectural Coatings          22.14         -         -         -         -
 TOTALS(lbs/day,unmitigated)    423.52     20.91    678.28      1.61    100.61


                 UNMITIGATED OPERATIONAL EMISSIONS

                                 ROG       NOx        CO       SO2      PM10
Single family housing          67.37    118.15    824.90      0.57    100.74

TOTAL EMISSIONS (lbs/day)      67.37    118.15    824.90      0.57    100.74
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Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010  Temperature (F): 40   Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

                                                                  No.      Total
Unit Type                 Acreage    Trip Rate                    Units    Trips

Single family housing      160.00    9.57 trips/dwelling unit    650.00 6,220.50

                                                 Sum of Total Trips     6,220.50
                                       Total Vehicle Miles Traveled    66,460.44

Vehicle Assumptions:

Fleet Mix:

Vehicle Type             Percent Type    Non-Catalyst     Catalyst         Diesel
Light Auto                  54.70            1.10           98.70            0.20
Light Truck < 3,750   lbs   15.20            2.00           96.00            2.00
Light Truck  3,751- 5,750   16.20            1.20           98.10            0.70
Med Truck    5,751- 8,500    7.30            1.40           95.90            2.70
Lite-Heavy   8,501-10,000    1.10            0.00           81.80           18.20
Lite-Heavy  10,001-14,000    0.30            0.00           66.70           33.30
Med-Heavy   14,001-33,000    1.00            0.00           20.00           80.00
Heavy-Heavy 33,001-60,000    0.90            0.00           11.10           88.90
Line Haul > 60,000    lbs    0.00            0.00            0.00          100.00
Urban Bus                    0.20            0.00           50.00           50.00
Motorcycle                   1.60           68.80           31.20            0.00
School Bus                   0.10            0.00            0.00          100.00
Motor Home                   1.40            7.10           85.70            7.20

Travel Conditions
                                 Residential                  Commercial
                          Home-     Home-     Home-
                          Work      Shop      Other   Commute  Non-Work Customer
Urban Trip Length (miles) 10.8       7.3       7.5       9.5       7.4       7.4
Rural Trip Length (miles) 16.8       7.1       7.9      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




Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.57/216.67 to 9.57/160

Changes made to the default values for Area

The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2010.


                        DETAIL REPORT
                    (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)
    Source                         ROG       NOx        CO       SO2      PM10
 Natural Gas                      0.63      8.14      3.47         0      0.02
 Hearth - No summer emissions
 Landscaping                      2.47      0.33     19.83      0.13      0.06
 Consumer Prdcts                 31.80         -         -         -         -
 Architectural Coatings          22.14         -         -         -         -
 TOTALS(lbs/day,unmitigated)     57.04      8.47     23.29      0.13      0.08



                 UNMITIGATED OPERATIONAL EMISSIONS

                                 ROG       NOx        CO       SO2      PM10
Single family housing          52.79     98.72    699.95      0.57    100.74

TOTAL EMISSIONS (lbs/day)      52.79     98.72    699.95      0.57    100.74

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.
```

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OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010  Temperature (F): 60   Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

                                                                No.      Total
Unit Type                 Acreage    Trip Rate                  Units    Trips

Single family housing      160.00    9.57 trips/dwelling unit    650.00 6,220.50

                                                 Sum of Total Trips     6,220.50
                                        Total Vehicle Miles Traveled    66,460.44

Vehicle Assumptions:

Fleet Mix:

Vehicle Type             Percent Type    Non-Catalyst     Catalyst         Diesel
Light Auto                  54.70            1.10            98.70            0.20
Light Truck < 3,750   lbs   15.20            2.00            96.00            2.00
Light Truck  3,751- 5,750   16.20            1.20            98.10            0.70
Med Truck    5,751- 8,500    7.30            1.40            95.90            2.70
Lite-Heavy   8,501-10,000    1.10            0.00            81.80           18.20
Lite-Heavy  10,001-14,000    0.30            0.00            66.70           33.30
Med-Heavy   14,001-33,000    1.00            0.00            20.00           80.00
Heavy-Heavy 33,001-60,000    0.90            0.00            11.10           88.90
Line Haul > 60,000    lbs    0.00            0.00             0.00          100.00
Urban Bus                    0.20            0.00            50.00           50.00
Motorcycle                   1.60           68.80            31.20            0.00
School Bus                   0.10            0.00             0.00          100.00
Motor Home                   1.40            7.10            85.70            7.20

Travel Conditions
                                 Residential                 Commercial
                          Home-     Home-     Home-
                          Work      Shop      Other   Commute  Non-Work Customer
Urban Trip Length (miles) 10.8       7.3       7.5       9.5       7.4       7.4
Rural Trip Length (miles) 16.8       7.1       7.9      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



Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.57/216.67 to 9.57/160

Changes made to the default values for Area

The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2010.


                        DETAIL REPORT
                         (Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)
    Source                        ROG       NOx        CO       SO2      PM10
 Natural Gas                     0.11      1.49      0.63      0.00      0.00
 Hearth                         15.12      0.40     27.62      0.07      4.11
 Landscaping                     0.22      0.03      1.78      0.01      0.01
 Consumer Prdcts                 5.80         -         -         -         -
 Architectural Coatings          2.92         -         -         -         -
 TOTALS (tpy, unmitigated)      24.18      1.92     30.03      0.08      4.12




               UNMITIGATED OPERATIONAL EMISSIONS

                                  ROG       NOx        CO       SO2      PM10
Single family housing           10.52     19.20    135.34      0.10     18.39

TOTAL EMISSIONS (tons/yr)       10.52     19.20    135.34      0.10     18.39

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES
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Analysis Year: 2010                        Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

                                                                  No.      Total
Unit Type                 Acreage    Trip Rate                    Units    Trips

Single family housing      160.00    9.57 trips/dwelling unit    650.00 6,220.50

                                                 Sum of Total Trips     6,220.50
                                       Total Vehicle Miles Traveled    66,460.44

Vehicle Assumptions:

Fleet Mix:

Vehicle Type             Percent Type    Non-Catalyst     Catalyst         Diesel
Light Auto                  54.70            1.10           98.70            0.20
Light Truck < 3,750   lbs   15.20            2.00           96.00            2.00
Light Truck  3,751- 5,750   16.20            1.20           98.10            0.70
Med Truck    5,751- 8,500    7.30            1.40           95.90            2.70
Lite-Heavy   8,501-10,000    1.10            0.00           81.80           18.20
Lite-Heavy  10,001-14,000    0.30            0.00           66.70           33.30
Med-Heavy   14,001-33,000    1.00            0.00           20.00           80.00
Heavy-Heavy 33,001-60,000    0.90            0.00           11.10           88.90
Line Haul > 60,000    lbs    0.00            0.00            0.00          100.00
Urban Bus                    0.20            0.00           50.00           50.00
Motorcycle                   1.60           68.80           31.20            0.00
School Bus                   0.10            0.00            0.00          100.00
Motor Home                   1.40            7.10           85.70            7.20

Travel Conditions
                                 Residential                  Commercial
                          Home-     Home-     Home-
                          Work      Shop      Other   Commute  Non-Work Customer
Urban Trip Length (miles) 10.8       7.3       7.5       9.5       7.4       7.4
Rural Trip Length (miles) 16.8       7.1       7.9      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



Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
 have changed from the defaults 9.57/216.67 to 9.57/160

Changes made to the default values for Area

The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2010.
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               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459OperationalMitigated.urb
Project Name:                   Lancaster C1 - Operation (Mitigated)
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        DETAIL REPORT
                    (Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Mitigated)
    Source                         ROG       NOx        CO       SO2      PM10
 Natural Gas                      0.50      6.52      2.77         0      0.01
 Hearth                           0.32      5.39      2.29      0.03      0.44
 Landscaping - No winter emissions
 Consumer Prdcts                 31.80         -         -         -         -
 Architectural Coatings          22.14         -         -         -         -
 TOTALS (lbs/day, mitigated)     54.76     11.91      5.07      0.03      0.45

Area Source Mitigation Measures

  Residential Increase Efficiency Beyond Title 24
   Percent Reduction:  20


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               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459OperationalMitigated.urb
Project Name:                   Lancaster C1 - Operation (Mitigated)
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        DETAIL REPORT
                    (Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)
    Source                         ROG       NOx        CO       SO2      PM10
 Natural Gas                      0.50      6.52      2.77         0      0.01
 Hearth - No summer emissions
 Landscaping                      2.47      0.33     19.83      0.13      0.06
 Consumer Prdcts                 31.80         -         -         -         -
 Architectural Coatings          22.14         -         -         -         -
 TOTALS (lbs/day, mitigated)     56.91      6.84     22.60      0.13      0.08

Area Source Mitigation Measures

  Residential Increase Efficiency Beyond Title 24
   Percent Reduction:  20


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               URBEMIS 2002 For Windows   8.7.0

File Name:                      S:\Client\0459 Lancaster\0459C112\URBEMIS\0459OperationalMitigated.urb
Project Name:                   Lancaster C1 - Operation (Mitigated)
Project Location:               Mountain Counties and Rural Counties
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

                        DETAIL REPORT
                         (Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Mitigated)
    Source                       ROG       NOx        CO       SO2      PM10
 Natural Gas                    0.09      1.19      0.51         0      0.00
 Hearth                         0.00      0.00      0.00      0.00      0.00
 Landscaping                    0.22      0.03      1.78      0.01      0.01
 Consumer Prdcts                5.80         -         -         -         -
 Architectural Coatings         2.92         -         -         -         -
 TOTALS (tpy, mitigated)        9.04      1.22      2.29      0.01      0.01

Area Source Mitigation Measures

  Residential Increase Efficiency Beyond Title 24
   Percent Reduction:  20
```

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/216.67 to 9.57/160

Changes made to the default values for Area

The area souce mitigation measure option switch changed from off to on.
The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.
The landscape year changed from 2005 to 2010.
Mitigation measure Residential Increase Efficiency Beyond Title 24
has been changed from off to on.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2010.

Construction Emissions (pounds per day)
Conversion from PM10 to PM2.5

Emissions from URBEMIS2002 Output

Percent of Fugitive PM10 which is PM2.5	21%
Percent of Exhaust PM10 which is PM2.5	89%

Phase/Activity	**Unmitigated**		**Mitigated**	
	PM10	**PM2.5**	**PM10**	**PM2.5**
Demolition				
Fugitive Dust	0	0.00	0.00	0.00
Off-road Diesel	0	0.00	0.00	0.00
On-road Diesel	0	0.00	0.00	0.00
Worker Trips	0	0.00	0.00	0.00
Subtotal Demolition	0	0.00	0.00	0.00
Grading				
Fugitive Dust	400.00	84.00	128.00	26.88
Off-road Diesel	19.35	17.22	18.38	16.36
On-road Diesel	0.00	0.00	0.00	0.00
Worker Trips	0.08	0.07	0.08	0.07
Subtotal Grading	419.43	101.29	146.46	43.31
Building Construction				
Bldg Const Off-Road Diesel	8.28	7.37	2.83	2.52
Bldg Const Worker Trips	0.21	0.19	0.21	0.19
Arch Coatings Off-Gas	0.00	0.00	0.00	0.00
Arch Coatings Worker Trips	0.21	0.19	0.21	0.19
Asphalt Off-Gas	0.00	0.00	0.00	0.00
Asphalt Off-Road Diesel	1.60	1.42	1.52	1.35
Asphalt On-Road Diesel	0.20	0.18	0.20	0.18
Asphalt Worker Trips	0.01	0.01	0.01	0.01
Subtotal Building Construction	10.51	9.35	4.98	4.43

Construction Emissions (tons per year)
Conversion from PM10 to PM2.5

Emissions from URBEMIS2002 Output

Percent of Fugitive PM10 which is PM2.5	21%
Percent of Exhaust PM10 which is PM2.5	89%

Phase/Activity	**Unmitigated**		**Mitigated**	
	PM10	**PM2.5**	**PM10**	**PM2.5**
Demolition				
Fugitive Dust	0	0.00	0.00	0.00
Off-road Diesel	0	0.00	0.00	0.00
On-road Diesel	0	0.00	0.00	0.00
Worker Trips	0	0.00	0.00	0.00
Subtotal Demolition	0	0.00	0.00	0.00
Grading				
Fugitive Dust	13.20	2.77	4.22	0.89
Off-road Diesel	0.64	0.57	0.61	0.54
On-road Diesel	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00
Subtotal Grading	13.84	3.34	4.83	1.43
Building Construction				
Bldg Const Off-Road Diesel	0.82	0.73	0.25	0.22
Bldg Const Worker Trips	0.02	0.02	0.02	0.02
Arch Coatings Off-Gas	0.00	0.00	0.00	0.00
Arch Coatings Worker Trips	0.01	0.01	0.01	0.01
Asphalt Off-Gas	0.00	0.00	0.00	0.00
Asphalt Off-Road Diesel	0.02	0.02	0.02	0.02
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00
Subtotal Building Construction	0.87	0.77	0.30	0.27

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    11     0    11   600 *  AG    678   4.5     .0  13.7
 B. NB Approach  *    11   600    11   754 *  AG    672   8.7     .0  13.7
 C. NB Depart    *    11   754    11   908 *  AG    421   8.7     .0  13.7
 D. NB External  *    11   908    11  1508 *  AG    421   4.5     .0  13.7
 E. NB Left      *    11   600     5   754 *  AG      6   8.7     .0  13.7
 F. SB Left      *     0   908     5   754 *  AG     46   8.7     .0  13.7
 G. SB External  *     0  1508     0   908 *  AG    408   4.5     .0  13.7
 H. SB Approach  *     0   908     0   754 *  AG    362   8.7     .0  13.7
 I. SB Depart    *     0   754     0   600 *  AG    482   8.7     .0  13.7
 J. SB External  *     0   600     0     0 *  AG    482   4.5     .0  13.7
 K. EB External  *  -750   750  -150   750 *  AG    486   4.5     .0  10.6
 L. EB Approach  *  -150   750     5   750 *  AG    482   8.7     .0  10.6
 M. EB Depart    *     5   750   161   750 *  AG    791   8.7     .0  10.6
 N. EB External  *   161   750   761   750 *  AG    791   4.5     .0  10.6
 O. WB External  *   761   758   161   758 *  AG    657   4.5     .0  10.6
 P. WB Approach  *   161   758     5   758 *  AG    524   8.7     .0  10.6
 Q. WB Depart    *     5   758  -150   758 *  AG    535   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG    535   4.5     .0  10.6
 S. EB Left      *  -150   750     5   754 *  AG      4   8.7     .0  10.6
 T. WB Left      *   161   758     5   754 *  AG    133   8.7     .0  10.6



 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     14    747   2.0
 3. Receptor *     14    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   1.8 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   1.4 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. Receptor *  182. *   1.5 *   .1   .7   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   1.6 *   .0   .0   .1   .0   .0   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .1   .0   .0   .1   .9   .1   .1   .2   .0   .0   .0   .1
 2. Receptor *   .1   .0   .0   .6   .2   .0   .0   .0   .2   .1   .0   .0
 3. Receptor *   .0   .1   .0   .0   .2   .0   .0   .1   .0   .0   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .1   .0   .6   .1   .0   .0   .1
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-------------------------------
 A. NB External  *      8     0     8   600 *  AG     661   4.5     .0  10.6
 B. NB Approach  *      8   600     8   754 *  AG     655   8.7     .0  10.6
 C. NB Depart    *      8   754     8   908 *  AG     421   8.7     .0  10.6
 D. NB External  *      8   908     8  1508 *  AG     421   4.5     .0  10.6
 E. NB Left      *      8   600     4   754 *  AG       6   8.7     .0  10.6
 F. SB Left      *      0   908     4   754 *  AG      46   8.7     .0  10.6
 G. SB External  *      0  1508     0   908 *  AG     408   4.5     .0  10.6
 H. SB Approach  *      0   908     0   754 *  AG     362   8.7     .0  10.6
 I. SB Depart    *      0   754     0   600 *  AG     453   8.7     .0  10.6
 J. SB External  *      0   600     0     0 *  AG     453   4.5     .0  10.6
 K. EB External  *   -750   750  -150   750 *  AG     383   4.5     .0  10.6
 L. EB Approach  *   -150   750     4   750 *  AG     379   8.7     .0  10.6
 M. EB Depart    *      4   750   158   750 *  AG     671   8.7     .0  10.6
 N. EB External  *    158   750   758   750 *  AG     671   4.5     .0  10.6
 O. WB External  *    758   758   158   758 *  AG     452   4.5     .0  10.6
 P. WB Approach  *    158   758     4   758 *  AG     348   8.7     .0  10.6
 Q. WB Depart    *      4   758  -150   758 *  AG     359   8.7     .0  10.6
 R. WB External  *   -150   758  -750   758 *  AG     359   4.5     .0  10.6
 S. EB Left      *   -150   750     4   754 *  AG       4   8.7     .0  10.6
 T. WB Left      *    158   758     4   754 *  AG     104   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. Receptor *  357. *   1.3 *   .0   .1   .5   .0   .0   .0   .0   .1
 3. Receptor *  183. *   1.5 *   .0   .8   .0   .0   .0   .0   .0   .0
 4. Receptor *  177. *   1.2 *   .1   .2   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .1   .0   .0   .0   .8   .0   .0   .1   .0   .0   .0   .0
 2. Receptor *   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *   .2   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   .6   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-------------------------------
 A. NB External  *     8     0     8   600 *  AG    154   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG    147   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG      4   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG      4   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG      7   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG      1   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG      3   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG      2   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    237   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    237   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG     23   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG     23   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG    159   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG    159   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG   1190   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG    966   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG    970   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG    970   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG      0   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG    224   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. Receptor *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   84. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  268. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   92. *   1.8 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .0   .2   .0   .0   .5   .0   .0   .0   .2
 2. Receptor *   .0   .0   .0   .0   .2   .0   .1   .4   .0   .0   .0   .2
 3. Receptor *   .0   .0   .0   .0   .0   .0   .0   .2  1.1   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .0   .0   .2  1.1   .2   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
  ---------------*-------------------------*---------------------------------
  A. NB External *     8     0     8   600 *  AG    154   4.5     .0  10.6
  B. NB Approach *     8   600     8   754 *  AG    147   8.7     .0  10.6
  C. NB Depart   *     8   754     8   908 *  AG      4   8.7     .0  10.6
  D. NB External *     8   908     8  1508 *  AG      4   4.5     .0  10.6
  E. NB Left     *     8   600     4   754 *  AG      7   8.7     .0  10.6
  F. SB Left     *     0   908     4   754 *  AG      1   8.7     .0  10.6
  G. SB External *     0  1508     0   908 *  AG      3   4.5     .0  10.6
  H. SB Approach *     0   908     0   754 *  AG      2   8.7     .0  10.6
  I. SB Depart   *     0   754     0   600 *  AG    237   8.7     .0  10.6
  J. SB External *     0   600     0     0 *  AG    237   4.5     .0  10.6
  K. EB External *  -750   750  -150   750 *  AG    603   4.5     .0  10.6
  L. EB Approach *  -150   750     4   750 *  AG    603   8.7     .0  10.6
  M. EB Depart   *     4   750   158   750 *  AG    739   8.7     .0  10.6
  N. EB External *   158   750   758   750 *  AG    739   4.5     .0  10.6
  O. WB External *   758   758   158   758 *  AG    985   4.5     .0  10.6
  P. WB Approach *   158   758     4   758 *  AG    761   8.7     .0  10.6
  Q. WB Depart   *     4   758  -150   758 *  AG    765   8.7     .0  10.6
  R. WB External *  -150   758  -750   758 *  AG    765   4.5     .0  10.6
  S. EB Left     *  -150   750     4   754 *  AG      0   8.7     .0  10.6
  T. WB Left     *   158   758     4   754 *  AG    224   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

              *    COORDINATES (M)
   RECEPTOR   *    X      Y      Z
  ------------*---------------------
  1. Receptor *     -3    747   2.0
  2. Receptor *     11    747   2.0
  3. Receptor *     11    761   2.0
  4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                CONC/LINK
              *  BRG  * CONC  *                  (PPM)
  RECEPTOR    * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*----------------------------------------
  1. Receptor *   86. *   1.8 *   .0   .0   .0   .0   .0   .0   .0   .0
  2. Receptor *   86. *   1.7 *   .0   .0   .0   .0   .0   .0   .0   .0
  3. Receptor *  267. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
  4. Receptor *   93. *   1.8 *   .0   .0   .0   .0   .0   .0   .0   .0



              *                          CONC/LINK
              *                            (PPM)
  RECEPTOR    *   I    J    K    L    M    N    O    P    Q    R    S    T
  ------------*-------------------------------------------------------------
  1. Receptor *   .0   .0   .0   .1   .8   .0   .2   .3   .0   .0   .0   .2
  2. Receptor *   .0   .0   .0   .0  1.0   .0   .2   .3   .0   .0   .0   .2
  3. Receptor *   .0   .0   .1   .2   .0   .0   .0   .2   .9   .1   .0   .0
  4. Receptor *   .0   .0   .0   .0   .2   .1   .1   .9   .2   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 *  AG    202   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG    187   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG    287   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG    287   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG     15   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG    119   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG    238   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG    119   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    277   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    277   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG    832   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG    817   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG   1027   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG   1027   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG   1515   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG   1353   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG   1196   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG   1196   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG     15   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG    162   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.3 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   86. *   2.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *   2.3 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   2.7 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *    I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.1   .0   .2   .5   .0   .0   .0   .1
 2. Receptor *   .0   .0   .0   .0  1.3   .1   .2   .4   .0   .0   .0   .1
 3. Receptor *   .0   .0   .2   .2   .0   .0   .0   .3  1.3   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .3   .2   .2  1.5   .3   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 *  AG    202   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG    187   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG    287   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG    287   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG     15   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG    119   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG    238   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG    119   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    277   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    277   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG    711   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG    696   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG    906   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG    906   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG   1310   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG   1148   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG    991   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG    991   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG     15   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG    162   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   86. *   2.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *   2.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   2.4 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .1  1.0   .0   .2   .4   .0   .0   .0   .1
 2. Receptor *   .0   .0   .0   .0  1.2   .0   .2   .4   .0   .0   .0   .1
 3. Receptor *   .0   .0   .1   .2   .0   .0   .0   .2  1.1   .1   .0   .0
 4. Receptor *   .0   .0   .0   .0   .3   .2   .2  1.3   .2   .0   .0   .2
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           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     9     0     9   600 *  AG    358   4.5     .0  12.2
 B. NB Approach  *     9   600     9   755 *  AG    340   8.7     .0  12.2
 C. NB Depart    *     9   755     9   911 *  AG    431   8.7     .0  12.2
 D. NB External  *     9   911     9  1511 *  AG    431   4.5     .0  12.2
 E. NB Left      *     9   600     5   755 *  AG     18   8.7     .0  12.2
 F. SB Left      *     0   911     5   755 *  AG    122   8.7     .0  12.2
 G. SB External  *     0  1511     0   911 *  AG    255   4.5     .0  12.2
 H. SB Approach  *     0   911     0   755 *  AG    133   8.7     .0  12.2
 I. SB Depart    *     0   755     0   600 *  AG    237   8.7     .0  12.2
 J. SB External  *     0   600     0     0 *  AG    237   4.5     .0  12.2
 K. EB External  *  -750   750  -150   750 *  AG   1659   4.5     .0  13.7
 L. EB Approach  *  -150   750     5   750 *  AG   1502   8.7     .0  13.7
 M. EB Depart    *     5   750   159   750 *  AG   1790   8.7     .0  13.7
 N. EB External  *   159   750   759   750 *  AG   1790   4.5     .0  13.7
 O. WB External  *   759   761   159   761 *  AG    968   4.5     .0  13.7
 P. WB Approach  *   159   761     5   761 *  AG    827   8.7     .0  13.7
 Q. WB Depart    *     5   761  -150   761 *  AG    782   8.7     .0  13.7
 R. WB External  *  -150   761  -750   761 *  AG    782   4.5     .0  13.7
 S. EB Left      *  -150   750     5   755 *  AG    157   8.7     .0  13.7
 T. WB Left      *   159   761     5   755 *  AG    141   8.7     .0  13.7


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    764   2.0
 4. Receptor *     -3    764   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   88. *   2.8 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  272. *   2.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  266. *   1.9 *   .0   .0   .1   .0   .0   .0   .0   .0
 4. Receptor *   94. *   2.1 *   .0   .0   .1   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .3  1.8   .3   .2   .1   .0   .0   .0   .0
 2. Receptor *   .0   .0   .3  1.5   .3   .0   .0   .0   .1   .2   .1   .0
 3. Receptor *   .0   .0   .3   .4   .0   .0   .0   .1   .8   .0   .1   .0
 4. Receptor *   .0   .0   .0   .0   .4   .3   .0   .8   .1   .0   .0   .1
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     9     0     9   600 *  AG    358   4.5     .0  12.2
 B. NB Approach  *     9   600     9   756 *  AG    340   8.7     .0  12.2
 C. NB Depart    *     9   756     9   911 *  AG    431   8.7     .0  12.2
 D. NB External  *     9   911     9  1511 *  AG    431   4.5     .0  12.2
 E. NB Left      *     9   600     5   756 *  AG     18   8.7     .0  12.2
 F. SB Left      *     0   911     5   756 *  AG    122   8.7     .0  12.2
 G. SB External  *     0  1511     0   911 *  AG    255   4.5     .0  12.2
 H. SB Approach  *     0   911     0   756 *  AG    133   8.7     .0  12.2
 I. SB Depart    *     0   756     0   600 *  AG    237   8.7     .0  12.2
 J. SB External  *     0   600     0     0 *  AG    237   4.5     .0  12.2
 K. EB External  *  -750   750  -150   750 *  AG   1477   4.5     .0  14.4
 L. EB Approach  *  -150   750     5   750 *  AG   1320   8.7     .0  14.4
 M. EB Depart    *     5   750   159   750 *  AG   1608   8.7     .0  14.4
 N. EB External  *   159   750   759   750 *  AG   1608   4.5     .0  14.4
 O. WB External  *   759   761   159   761 *  AG    907   4.5     .0  14.4
 P. WB Approach  *   159   761     5   761 *  AG    766   8.7     .0  14.4
 Q. WB Depart    *     5   761  -150   761 *  AG    721   8.7     .0  14.4
 R. WB External  *  -150   761  -750   761 *  AG    721   4.5     .0  14.4
 S. EB Left      *  -150   750     5   756 *  AG    157   8.7     .0  14.4
 T. WB Left      *   159   761     5   756 *  AG    141   8.7     .0  14.4


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    764   2.0
 4. Receptor *     -3    764   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   88. *   2.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  272. *   2.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  266. *   1.8 *   .0   .0   .1   .0   .0   .0   .0   .0
 4. Receptor *   94. *   2.0 *   .0   .0   .1   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.6   .3   .2   .1   .0   .0   .0   .0
 2. Receptor *   .0   .0   .2  1.3   .2   .0   .0   .0   .1   .1   .1   .0
 3. Receptor *   .0   .0   .2   .4   .0   .0   .0   .1   .7   .0   .1   .0
 4. Receptor *   .0   .0   .0   .0   .4   .3   .0   .8   .1   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     5     0     5   600 *  AG    266   4.5     .0  10.0
 B. NB Approach  *     5   600     5   756 *  AG    259   8.7     .0  10.0
 C. NB Depart    *     5   756     5   911 *  AG    646   8.7     .0  10.0
 D. NB External  *     5   911     5  1511 *  AG    646   4.5     .0  10.0
 E. NB Left      *     5   600     2   756 *  AG      7   8.7     .0  10.0
 F. SB Left      *     0   911     2   756 *  AG    268   8.7     .0  10.0
 G. SB External  *     0  1511     0   911 *  AG    555   4.5     .0  10.0
 H. SB Approach  *     0   911     0   756 *  AG    287   8.7     .0  10.0
 I. SB Depart    *     0   756     0   600 *  AG    337   8.7     .0  10.0
 J. SB External  *     0   600     0     0 *  AG    337   4.5     .0  10.0
 K. EB External  *  -750   750  -150   750 *  AG   1854   4.5     .0  14.4
 L. EB Approach  *  -150   750     2   750 *  AG   1766   8.7     .0  14.4
 M. EB Depart    *     2   750   155   750 *  AG   2092   8.7     .0  14.4
 N. EB External  *   155   750   755   750 *  AG   2092   4.5     .0  14.4
 O. WB External  *   755   761   155   761 *  AG   1338   4.5     .0  14.4
 P. WB Approach  *   155   761     2   761 *  AG   1262   8.7     .0  14.4
 Q. WB Depart    *     2   761  -150   761 *  AG    938   8.7     .0  14.4
 R. WB External  *  -150   761  -750   761 *  AG    938   4.5     .0  14.4
 S. EB Left      *  -150   750     2   756 *  AG     88   8.7     .0  14.4
 T. WB Left      *   155   761     2   756 *  AG     76   8.7     .0  14.4


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *      8    747   2.0
 3. Receptor *      8    764   2.0
 4. Receptor *     -3    764   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   3.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  272. *   2.9 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  266. *   2.4 *   .0   .0   .2   .0   .0   .0   .0   .0
 4. Receptor *   94. *   2.8 *   .0   .0   .2   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  2.1   .3   .2   .2   .0   .0   .0   .0
 2. Receptor *   .1   .0   .3  1.8   .3   .0   .0   .0   .1   .2   .0   .0
 3. Receptor *   .0   .0   .3   .4   .0   .0   .0   .2  1.0   .0   .0   .0
 4. Receptor *   .0   .0   .0   .0   .5   .3   .1  1.3   .1   .0   .0   .0
```

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

              JOB: "4. Ave J & 60th St. W.  without project
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*--------------------------------
A. NB External  *     5     0     5   600 *  AG    266   4.5     .0  10.0
B. NB Approach  *     5   600     5   756 *  AG    259   8.7     .0  10.0
C. NB Depart    *     5   756     5   911 *  AG    646   8.7     .0  10.0
D. NB External  *     5   911     5  1511 *  AG    646   4.5     .0  10.0
E. NB Left      *     5   600     2   756 *  AG      7   8.7     .0  10.0
F. SB Left      *     0   911     2   756 *  AG    268   8.7     .0  10.0
G. SB External  *     0  1511     0   911 *  AG    555   4.5     .0  10.0
H. SB Approach  *     0   911     0   756 *  AG    287   8.7     .0  10.0
I. SB Depart    *     0   756     0   600 *  AG    337   8.7     .0  10.0
J. SB External  *     0   600     0     0 *  AG    337   4.5     .0  10.0
K. EB External  *  -750   750  -150   750 *  AG   1673   4.5     .0  14.4
L. EB Approach  *  -150   750     2   750 *  AG   1585   8.7     .0  14.4
M. EB Depart    *     2   750   155   750 *  AG   1911   8.7     .0  14.4
N. EB External  *   155   750   755   750 *  AG   1911   4.5     .0  14.4
O. WB External  *   755   761   155   761 *  AG   1277   4.5     .0  14.4
P. WB Approach  *   155   761     2   761 *  AG   1201   8.7     .0  14.4
Q. WB Depart    *     2   761  -150   761 *  AG    877   8.7     .0  14.4
R. WB External  *  -150   761  -750   761 *  AG    877   4.5     .0  14.4
S. EB Left      *  -150   750     2   756 *  AG     88   8.7     .0  14.4
T. WB Left      *   155   761     2   756 *  AG     76   8.7     .0  14.4



III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *      8    747   2.0
3. Receptor *      8    764   2.0
4. Receptor *     -3    764   2.0


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *               CONC/LINK
            *  BRG  * CONC  *                 (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*--------------------------------------------
1. Receptor *   87. *   3.0 *   .0   .0   .0   .0   .0   .0   .0   .0
2. Receptor *  272. *   2.7 *   .0   .0   .0   .0   .0   .0   .0   .0
3. Receptor *  266. *   2.2 *   .0   .0   .2   .0   .0   .0   .0   .0
4. Receptor *   94. *   2.6 *   .0   .0   .2   .0   .0   .0   .0   .0


            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. Receptor *   .0   .0   .0   .2  1.9   .2   .2   .2   .0   .0   .0   .0
2. Receptor *   .1   .0   .3  1.6   .2   .0   .0   .0   .1   .2   .0   .0
3. Receptor *   .0   .0   .3   .4   .0   .0   .0   .2   .9   .0   .0   .0
4. Receptor *   .0   .0   .0   .0   .5   .3   .1  1.2   .0   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    12     0    12   600 *  AG   1101   4.5     .0  15.2
 B. NB Approach  *    12   600    12   755 *  AG    545   8.7     .0  15.2
 C. NB Depart    *    12   755    12   911 *  AG    614   8.7     .0  15.2
 D. NB External  *    12   911    12  1511 *  AG    614   4.5     .0  15.2
 E. NB Left      *    12   600     6   755 *  AG    556   8.7     .0  15.2
 F. SB Left      *     0   911     6   755 *  AG    100   8.7     .0  15.2
 G. SB External  *     0  1511     0   911 *  AG    593   4.5     .0  15.2
 H. SB Approach  *     0   911     0   755 *  AG    493   8.7     .0  15.2
 I. SB Depart    *     0   755     0   600 *  AG    920   8.7     .0  15.2
 J. SB External  *     0   600     0     0 *  AG    920   4.5     .0  15.2
 K. EB External  *  -750   750  -150   750 *  AG   1230   4.5     .0  13.7
 L. EB Approach  *  -150   750     6   750 *  AG   1162   8.7     .0  13.7
 M. EB Depart    *     6   750   162   750 *  AG   1097   8.7     .0  13.7
 N. EB External  *   162   750   762   750 *  AG   1097   4.5     .0  13.7
 O. WB External  *   762   761   162   761 *  AG   1601   4.5     .0  13.7
 P. WB Approach  *   162   761     6   761 *  AG   1397   8.7     .0  13.7
 Q. WB Depart    *     6   761  -150   761 *  AG   1894   8.7     .0  13.7
 R. WB External  *  -150   761  -750   761 *  AG   1894   4.5     .0  13.7
 S. EB Left      *  -150   750     6   755 *  AG     68   8.7     .0  13.7
 T. WB Left      *   162   761     6   755 *  AG    204   8.7     .0  13.7


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     15    747   2.0
 3. Receptor *     15    764   2.0
 4. Receptor *     -3    764   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.7 *   .0   .1   .0   .0   .2   .0   .0   .0
 2. Receptor *  273. *   2.8 *   .0   .1   .0   .0   .2   .0   .0   .0
 3. Receptor *  267. *   3.1 *   .0   .0   .1   .0   .0   .0   .0   .1
 4. Receptor *   93. *   2.8 *   .0   .0   .2   .0   .0   .0   .0   .1



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .2   .0   .0   .2  1.1   .1   .2   .4   .0   .0   .0   .2
 2. Receptor *   .2   .0   .2  1.2   .2   .0   .0   .0   .3   .3   .0   .0
 3. Receptor *   .0   .0   .2   .2   .0   .0   .0   .3  1.8   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .2   .2  1.4   .4   .0   .0   .2
```

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

              JOB: ="4. Ave J & 60th St. W.  without projec
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM           ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *    12     0    12   600 *  AG   1013   4.5     .0  15.2
B. NB Approach  *    12   600    12   755 *  AG    545   8.7     .0  15.2
C. NB Depart    *    12   755    12   911 *  AG    614   8.7     .0  15.2
D. NB External  *    12   911    12  1511 *  AG    614   4.5     .0  15.2
E. NB Left      *    12   600     6   755 *  AG    468   8.7     .0  15.2
F. SB Left      *     0   911     6   755 *  AG    100   8.7     .0  15.2
G. SB External  *     0  1511     0   911 *  AG    593   4.5     .0  15.2
H. SB Approach  *     0   911     0   755 *  AG    493   8.7     .0  15.2
I. SB Depart    *     0   755     0   600 *  AG    869   8.7     .0  15.2
J. SB External  *     0   600     0     0 *  AG    869   4.5     .0  15.2
K. EB External  *  -750   750  -150   750 *  AG   1110   4.5     .0  13.7
L. EB Approach  *  -150   750     6   750 *  AG   1042   8.7     .0  13.7
M. EB Depart    *     6   750   162   750 *  AG   1028   8.7     .0  13.7
N. EB External  *   162   750   762   750 *  AG   1028   4.5     .0  13.7
O. WB External  *   762   761   162   761 *  AG   1484   4.5     .0  13.7
P. WB Approach  *   162   761     6   761 *  AG   1280   8.7     .0  13.7
Q. WB Depart    *     6   761  -150   761 *  AG   1689   8.7     .0  13.7
R. WB External  *  -150   761  -750   761 *  AG   1689   4.5     .0  13.7
S. EB Left      *  -150   750     6   755 *  AG     68   8.7     .0  13.7
T. WB Left      *   162   761     6   755 *  AG    204   8.7     .0  13.7


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *     15    747   2.0
3. Receptor *     15    764   2.0
4. Receptor *     -3    764   2.0


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
------------*-------*-------*----------------------------------------
1. Receptor *   86. *   2.5 *   .0   .1   .0   .0   .1   .0   .0   .0
2. Receptor *  273. *   2.6 *   .0   .1   .0   .0   .1   .0   .0   .0
3. Receptor *  267. *   2.8 *   .0   .0   .1   .0   .0   .0   .0   .1
4. Receptor *   93. *   2.7 *   .0   .0   .2   .0   .0   .0   .0   .1


            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. Receptor *   .2   .0   .0   .2  1.0   .0   .2   .3   .0   .0   .0   .2
2. Receptor *   .2   .0   .2  1.0   .2   .0   .0   .0   .3   .3   .0   .0
3. Receptor *   .0   .0   .2   .2   .0   .0   .0   .3  1.6   .2   .0   .0
4. Receptor *   .0   .0   .0   .0   .2   .2   .2  1.3   .3   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    10     0    10   600 *  AG   1006   4.5     .0  12.9
 B. NB Approach  *    10   600    10   756 *  AG    565   8.7     .0  12.9
 C. NB Depart    *    10   756    10   912 *  AG    610   8.7     .0  12.9
 D. NB External  *    10   912    10  1512 *  AG    610   4.5     .0  12.9
 E. NB Left      *    10   600     5   756 *  AG    441   8.7     .0  12.9
 F. SB Left      *     0   912     5   756 *  AG     90   8.7     .0  12.9
 G. SB External  *     0  1512     0   912 *  AG    465   4.5     .0  12.9
 H. SB Approach  *     0   912     0   756 *  AG    375   8.7     .0  12.9
 I. SB Depart    *     0   756     0   600 *  AG    879   8.7     .0  12.9
 J. SB External  *     0   600     0     0 *  AG    879   4.5     .0  12.9
 K. EB External  *  -750   750  -150   750 *  AG   1237   4.5     .0  15.2
 L. EB Approach  *  -150   750     5   750 *  AG   1119   8.7     .0  15.2
 M. EB Depart    *     5   750   160   750 *  AG   1038   8.7     .0  15.2
 N. EB External  *   160   750   760   750 *  AG   1038   4.5     .0  15.2
 O. WB External  *   760   762   160   762 *  AG   1544   4.5     .0  15.2
 P. WB Approach  *   160   762     5   762 *  AG   1307   8.7     .0  15.2
 Q. WB Depart    *     5   762  -150   762 *  AG   1725   8.7     .0  15.2
 R. WB External  *  -150   762  -750   762 *  AG   1725   4.5     .0  15.2
 S. EB Left      *  -150   750     5   756 *  AG    118   8.7     .0  15.2
 T. WB Left      *   160   762     5   756 *  AG    237   8.7     .0  15.2


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     13    747   2.0
 3. Receptor *     13    765   2.0
 4. Receptor *     -3    765   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.5 *   .0   .1   .0   .0   .1   .0   .0   .0
 2. Receptor *  273. *   2.6 *   .0   .1   .0   .0   .1   .0   .0   .0
 3. Receptor *  267. *   2.8 *   .0   .0   .1   .0   .0   .0   .0   .0
 4. Receptor *   93. *   2.6 *   .0   .0   .2   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .2   .0   .0   .2  1.0   .1   .3   .3   .0   .0   .0   .2
 2. Receptor *   .2   .0   .2  1.1   .2   .0   .0   .0   .3   .3   .1   .0
 3. Receptor *   .0   .0   .2   .2   .0   .0   .0   .2  1.6   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .2   .2  1.3   .3   .0   .0   .2
```

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

              JOB: "4. Ave J & 60th St. W.  without project
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *    10     0    10   600 *  AG    583   4.5     .0  12.9
B. NB Approach  *    10   600    10   756 *  AG    399   8.7     .0  12.9
C. NB Depart    *    10   756    10   912 *  AG    384   8.7     .0  12.9
D. NB External  *    10   912    10  1512 *  AG    384   4.5     .0  12.9
E. NB Left      *    10   600     5   756 *  AG    184   8.7     .0  12.9
F. SB Left      *     0   912     5   756 *  AG     39   8.7     .0  12.9
G. SB External  *     0  1512     0   912 *  AG    245   4.5     .0  12.9
H. SB Approach  *     0   912     0   756 *  AG    206   8.7     .0  12.9
I. SB Depart    *     0   756     0   600 *  AG    660   8.7     .0  12.9
J. SB External  *     0   600     0     0 *  AG    660   4.5     .0  12.9
K. EB External  *  -750   750  -150   750 *  AG   1678   4.5     .0  15.2
L. EB Approach  *  -150   750     5   750 *  AG   1518   8.7     .0  15.2
M. EB Depart    *     5   750   160   750 *  AG   1335   8.7     .0  15.2
N. EB External  *   160   750   760   750 *  AG   1335   4.5     .0  15.2
O. WB External  *   760   762   160   762 *  AG    851   4.5     .0  15.2
P. WB Approach  *   160   762     5   762 *  AG    759   8.7     .0  15.2
Q. WB Depart    *     5   762  -150   762 *  AG    978   8.7     .0  15.2
R. WB External  *  -150   762  -750   762 *  AG    978   4.5     .0  15.2
S. EB Left      *  -150   750     5   756 *  AG    160   8.7     .0  15.2
T. WB Left      *   160   762     5   756 *  AG     92   8.7     .0  15.2


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *     13    747   2.0
3. Receptor *     13    765   2.0
4. Receptor *     -3    765   2.0


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *               CONC/LINK
            *  BRG  * CONC  *                 (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
------------*-------*-------*-------------------------------------------
1. Receptor *   88. *   2.4 *   .0   .1   .0   .0   .0   .0   .0   .0
2. Receptor *  272. *   2.7 *   .0   .0   .0   .0   .0   .0   .0   .0
3. Receptor *  266. *   2.0 *   .0   .0   .0   .0   .0   .0   .0   .0
4. Receptor *  177. *   1.8 *   .1   .1   .0   .0   .1   .0   .0   .0


            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. Receptor *   .2   .0   .0   .2  1.3   .2   .2   .1   .0   .0   .0   .0
2. Receptor *   .2   .0   .3  1.5   .2   .0   .0   .0   .1   .2   .1   .0
3. Receptor *   .0   .0   .3   .3   .0   .0   .0   .1   .9   .1   .1   .0
4. Receptor *   .7   .0   .0   .4   .0   .0   .0   .0   .2   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 *  AG    643   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG    381   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG    434   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG    434   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG    262   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG      5   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG    443   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG    438   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    716   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    716   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG    406   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG    324   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG     42   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG     42   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG     95   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG      7   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG    395   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG    395   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG     82   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG     88   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *  177. *   1.5 *   .1   .1   .0   .0   .1   .0   .0   .0
 2. Receptor *  273. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  184. *   1.3 *   .0   .5   .0   .0   .2   .0   .0   .0
 4. Receptor *  177. *   1.7 *   .1   .1   .0   .0   .2   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *  1.0   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   .2   .0   .0   .4   .0   .0   .0   .0   .1   .0   .0   .0
 3. Receptor *   .3   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   .8   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 * AG    625   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 * AG    381   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 * AG    379   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 * AG    379   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 * AG    244   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 * AG      5   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 * AG    434   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 * AG    429   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 * AG    462   8.7     .0  10.6
 J. SB External  *     0   600     0     0 * AG    462   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 * AG     97   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 * AG     70   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 * AG     42   8.7     .0  10.6
 N. EB External  *   158   750   758   750 * AG     42   4.5     .0  10.6
 O. WB External  *   758   758   158   758 * AG     95   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 * AG      7   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 * AG    368   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 * AG    368   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 * AG     27   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 * AG     88   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *    3. *   1.1 *  .0   .0   .1   .0   .0   .0   .0   .5
 2. Receptor *  183. *   1.1 *  .1   .6   .0   .0   .2   .0   .0   .0
 3. Receptor *  183. *   1.2 *  .0   .5   .0   .0   .2   .0   .0   .0
 4. Receptor *  176. *   1.3 *  .1   .2   .0   .0   .2   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *  .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  .1   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  .2   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *  .6   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK     *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 *  AG    242   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG    242   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG     40   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG     40   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG      0   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG    121   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG    121   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG      0   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    142   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    142   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG    465   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG    465   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG    828   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG    828   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG    403   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG    261   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG    221   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG    221   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG      0   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG    142   8.7     .0  10.6



 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *    1.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   87. *    1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *   94. *    1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   94. *    1.1 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .0  1.0   .1   .0   .0   .0   .0   .0   .1
 2. Receptor *   .0   .0   .0   .0  1.1   .1   .0   .0   .0   .0   .0   .0
 3. Receptor *   .0   .0   .0   .0   .3   .1   .0   .4   .0   .0   .0   .2
 4. Receptor *   .0   .0   .0   .0   .3   .1   .0   .3   .0   .0   .0   .1
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *             EF     H     W
    DESCRIPTION  *   X1     Y1     X2     Y2   * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-------------------------------
 A. NB External  *      8     0     8   600 *  AG    242   4.5     .0  10.6
 B. NB Approach  *      8   600     8   754 *  AG    242   8.7     .0  10.6
 C. NB Depart    *      8   754     8   908 *  AG     22   8.7     .0  10.6
 D. NB External  *      8   908     8  1508 *  AG     22   4.5     .0  10.6
 E. NB Left      *      8   600     4   754 *  AG      0   8.7     .0  10.6
 F. SB Left      *      0   908     4   754 *  AG     65   8.7     .0  10.6
 G. SB External  *      0  1508     0   908 *  AG     65   4.5     .0  10.6
 H. SB Approach  *      0   908     0   754 *  AG      0   8.7     .0  10.6
 I. SB Depart    *      0   754     0   600 *  AG    142   8.7     .0  10.6
 J. SB External  *      0   600     0     0 *  AG    142   4.5     .0  10.6
 K. EB External  *   -750   750  -150   750 *  AG    390   4.5     .0  10.6
 L. EB Approach  *   -150   750     4   750 *  AG    390   8.7     .0  10.6
 M. EB Depart    *      4   750   158   750 *  AG    697   8.7     .0  10.6
 N. EB External  *    158   750   758   750 *  AG    697   4.5     .0  10.6
 O. WB External  *    758   758   158   758 *  AG    360   4.5     .0  10.6
 P. WB Approach  *    158   758     4   758 *  AG    218   8.7     .0  10.6
 Q. WB Depart    *      4   758  -150   758 *  AG    196   8.7     .0  10.6
 R. WB External  *   -150   758  -750   758 *  AG    196   4.5     .0  10.6
 S. EB Left      *   -150   750     4   754 *  AG      0   8.7     .0  10.6
 T. WB Left      *    158   758     4   754 *  AG    142   8.7     .0  10.6



 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X       Y       Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *   87. *   1.3 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *   94. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   94. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
 1. Receptor *   .0   .0   .0   .0   .8   .1   .0   .0   .0   .0   .0   .1
 2. Receptor *   .0   .0   .0   .0  1.0   .1   .0   .0   .0   .0   .0   .0
 3. Receptor *   .0   .0   .0   .0   .2   .1   .0   .3   .0   .0   .0   .2
 4. Receptor *   .0   .0   .0   .0   .3   .1   .0   .3   .0   .0   .0   .1
```

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

               JOB: 21. Ave. K & 50th St. W. with Project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     5     0     5   600 *  AG    678   4.5     .0  10.0
 B. NB Approach  *     5   600     5   752 *  AG    672   8.7     .0  10.0
 C. NB Depart    *     5   752     5   905 *  AG    421   8.7     .0  10.0
 D. NB External  *     5   905     5  1505 *  AG    421   4.5     .0  10.0
 E. NB Left      *     5   600     2   752 *  AG      6   8.7     .0  10.0
 F. SB Left      *     0   905     2   752 *  AG     46   8.7     .0  10.0
 G. SB External  *     0  1505     0   905 *  AG    408   4.5     .0  10.0
 H. SB Approach  *     0   905     0   752 *  AG    362   8.7     .0  10.0
 I. SB Depart    *     0   752     0   600 *  AG    482   8.7     .0  10.0
 J. SB External  *     0   600     0     0 *  AG    482   4.5     .0  10.0
 K. EB External  *  -750   750  -150   750 *  AG    486   4.5     .0  10.0
 L. EB Approach  *  -150   750     2   750 *  AG    482   8.7     .0  10.0
 M. EB Depart    *     2   750   155   750 *  AG    791   8.7     .0  10.0
 N. EB External  *   155   750   755   750 *  AG    791   4.5     .0  10.0
 O. WB External  *   755   755   155   755 *  AG    657   4.5     .0  10.0
 P. WB Approach  *   155   755     2   755 *  AG    524   8.7     .0  10.0
 Q. WB Depart    *     2   755  -150   755 *  AG    535   8.7     .0  10.0
 R. WB External  *  -150   755  -750   755 *  AG    535   4.5     .0  10.0
 S. EB Left      *  -150   750     2   752 *  AG      4   8.7     .0  10.0
 T. WB Left      *   155   755     2   752 *  AG    133   8.7     .0  10.0


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *      8    747   2.0
 3. Receptor *      8    758   2.0
 4. Receptor *     -3    758   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   2.1 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. Receptor *  183. *   1.8 *   .0   .8   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   1.8 *   .0   .0   .1   .0   .0   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .1   .0   .0   .0  1.0   .1   .1   .3   .0   .0   .0   .2
 2. Receptor *   .1   .0   .0   .6   .2   .0   .0   .0   .3   .1   .0   .0
 3. Receptor *   .3   .0   .0   .0   .2   .0   .0   .1   .0   .0   .0   .0
 4. Receptor *   .0   .0   .0   .0   .4   .1   .0   .7   .0   .0   .0   .2
```

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

              JOB: 21. Ave. K & 50th St. W. without Project
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *     5     0     5   600 *  AG    661   4.5     .0  10.0
B. NB Approach  *     5   600     5   752 *  AG    655   8.7     .0  10.0
C. NB Depart    *     5   752     5   905 *  AG    421   8.7     .0  10.0
D. NB External  *     5   905     5  1505 *  AG    421   4.5     .0  10.0
E. NB Left      *     5   600     2   752 *  AG      6   8.7     .0  10.0
F. SB Left      *     0   905     2   752 *  AG     46   8.7     .0  10.0
G. SB External  *     0  1505     0   905 *  AG    408   4.5     .0  10.0
H. SB Approach  *     0   905     0   752 *  AG    362   8.7     .0  10.0
I. SB Depart    *     0   752     0   600 *  AG    453   8.7     .0  10.0
J. SB External  *     0   600     0     0 *  AG    453   4.5     .0  10.0
K. EB External  *  -750   750  -150   750 *  AG    383   4.5     .0  10.0
L. EB Approach  *  -150   750     2   750 *  AG    379   8.7     .0  10.0
M. EB Depart    *     2   750   155   750 *  AG    671   8.7     .0  10.0
N. EB External  *   155   750   755   750 *  AG    671   4.5     .0  10.0
O. WB External  *   755   755   155   755 *  AG    452   4.5     .0  10.0
P. WB Approach  *   155   755     2   755 *  AG    348   8.7     .0  10.0
Q. WB Depart    *     2   755  -150   755 *  AG    359   8.7     .0  10.0
R. WB External  *  -150   755  -750   755 *  AG    359   4.5     .0  10.0
S. EB Left      *  -150   750     2   752 *  AG      4   8.7     .0  10.0
T. WB Left      *   155   755     2   752 *  AG    104   8.7     .0  10.0


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *      8    747   2.0
3. Receptor *      8    758   2.0
4. Receptor *     -3    758   2.0


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   1.8 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. Receptor *  357. *   1.4 *   .0   .1   .6   .0   .0   .0   .0   .2
 3. Receptor *  183. *   1.7 *   .0   .8   .0   .0   .0   .0   .0   .0
 4. Receptor *  177. *   1.4 *   .1   .3   .0   .0   .0   .0   .0   .0


            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-----------------------------------------------------------
1. Receptor *   .1   .0   .0   .0   .9   .0   .0   .2   .0   .0   .0   .1
2. Receptor *   .0   .0   .0   .0   .2   .0   .0   .1   .0   .0   .0   .0
3. Receptor *   .3   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0
4. Receptor *   .6   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
```

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

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     8     0     8   600 *  AG     78   4.5     .0  10.6
 B. NB Approach  *     8   600     8   754 *  AG     67   8.7     .0  10.6
 C. NB Depart    *     8   754     8   908 *  AG    235   8.7     .0  10.6
 D. NB External  *     8   908     8  1508 *  AG    235   4.5     .0  10.6
 E. NB Left      *     8   600     4   754 *  AG     11   8.7     .0  10.6
 F. SB Left      *     0   908     4   754 *  AG    112   8.7     .0  10.6
 G. SB External  *     0  1508     0   908 *  AG    158   4.5     .0  10.6
 H. SB Approach  *     0   908     0   754 *  AG     46   8.7     .0  10.6
 I. SB Depart    *     0   754     0   600 *  AG    101   8.7     .0  10.6
 J. SB External  *     0   600     0     0 *  AG    101   4.5     .0  10.6
 K. EB External  *  -750   750  -150   750 *  AG    984   4.5     .0  10.6
 L. EB Approach  *  -150   750     4   750 *  AG    969   8.7     .0  10.6
 M. EB Depart    *     4   750   158   750 *  AG   1111   8.7     .0  10.6
 N. EB External  *   158   750   758   750 *  AG   1111   4.5     .0  10.6
 O. WB External  *   758   758   158   758 *  AG   1681   4.5     .0  10.6
 P. WB Approach  *   158   758     4   758 *  AG   1626   8.7     .0  10.6
 Q. WB Depart    *     4   758  -150   758 *  AG   1454   8.7     .0  10.6
 R. WB External  *  -150   758  -750   758 *  AG   1454   4.5     .0  10.6
 S. EB Left      *  -150   750     4   754 *  AG     15   8.7     .0  10.6
 T. WB Left      *   158   758     4   754 *  AG     55   8.7     .0  10.6


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y       Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     11    747   2.0
 3. Receptor *     11    761   2.0
 4. Receptor *     -3    761   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   2.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *   2.7 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   2.9 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.2   .1   .2   .5   .0   .0   .0   .0
 2. Receptor *   .0   .0   .1  1.1   .2   .0   .0   .0   .4   .2   .0   .0
 3. Receptor *   .0   .0   .2   .3   .0   .0   .0   .3  1.6   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .3   .2   .2  1.7   .3   .0   .0   .0
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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: "4. Ave J & 60th St. W.  without project
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *     8     0     8   600 *  AG      0   4.5     .0  10.6
B. NB Approach  *     8   600     8   754 *  AG      0   8.7     .0  10.6
C. NB Depart    *     8   754     8   908 *  AG    488   8.7     .0  10.6
D. NB External  *     8   908     8  1508 *  AG    488   4.5     .0  10.6
E. NB Left      *     8   600     4   754 *  AG      0   8.7     .0  10.6
F. SB Left      *     0   908     4   754 *  AG    203   8.7     .0  10.6
G. SB External  *     0  1508     0   908 *  AG    484   4.5     .0  10.6
H. SB Approach  *     0   908     0   754 *  AG    281   8.7     .0  10.6
I. SB Depart    *     0   754     0   600 *  AG    819   8.7     .0  10.6
J. SB External  *     0   600     0     0 *  AG    819   4.5     .0  10.6
K. EB External  *  -750   750  -150   750 *  AG   1671   4.5     .0  10.6
L. EB Approach  *  -150   750     4   750 *  AG   1671   8.7     .0  10.6
M. EB Depart    *     4   750   158   750 *  AG   1055   8.7     .0  10.6
N. EB External  *   158   750   758   750 *  AG   1055   4.5     .0  10.6
O. WB External  *   758   758   158   758 *  AG   2634   4.5     .0  10.6
P. WB Approach  *   158   758     4   758 *  AG   2634   8.7     .0  10.6
Q. WB Depart    *     4   758  -150   758 *  AG   2427   8.7     .0  10.6
R. WB External  *  -150   758  -750   758 *  AG   2427   4.5     .0  10.6
S. EB Left      *  -150   750     4   754 *  AG      0   8.7     .0  10.6
T. WB Left      *   158   758     4   754 *  AG      0   8.7     .0  10.6


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *     11    747   2.0
3. Receptor *     11    761   2.0
4. Receptor *     -3    761   2.0


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *               CONC/LINK
            *  BRG  * CONC  *                 (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
1. Receptor *  273. *   3.2 *   .0   .0   .0   .0   .0   .0   .0   .0
2. Receptor *  273. *   3.3 *   .0   .0   .0   .0   .0   .0   .0   .0
3. Receptor *  267. *   4.1 *   .0   .0   .1   .0   .0   .0   .0   .0
4. Receptor *   93. *   4.1 *   .0   .0   .1   .0   .0   .0   .0   .0


            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. Receptor *   .0   .0   .2  2.1   .0   .0   .0   .0   .5   .3   .0   .0
2. Receptor *   .2   .0   .2  1.8   .2   .0   .0   .0   .6   .3   .0   .0
3. Receptor *   .0   .0   .3   .4   .0   .0   .0   .6  2.4   .2   .0   .0
4. Receptor *   .0   .0   .0   .0   .3   .2   .2  2.6   .5   .0   .0   .0
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           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: "4. Ave J & 60th St. W.  with project"
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S              Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     9     0     9   600 *  AG    388   4.5     .0  12.2
 B. NB Approach  *     9   600     9   755 *  AG    285   8.7     .0  12.2
 C. NB Depart    *     9   755     9   909 *  AG    315   8.7     .0  12.2
 D. NB External  *     9   909     9  1509 *  AG    315   4.5     .0  12.2
 E. NB Left      *     9   600     5   755 *  AG    103   8.7     .0  12.2
 F. SB Left      *     0   909     5   755 *  AG     83   8.7     .0  12.2
 G. SB External  *     0  1509     0   909 *  AG    337   4.5     .0  12.2
 H. SB Approach  *     0   909     0   755 *  AG    254   8.7     .0  12.2
 I. SB Depart    *     0   755     0   600 *  AG    417   8.7     .0  12.2
 J. SB External  *     0   600     0     0 *  AG    417   4.5     .0  12.2
 K. EB External  *  -750   750  -150   750 *  AG   1165   4.5     .0  12.2
 L. EB Approach  *  -150   750     5   750 *  AG   1120   8.7     .0  12.2
 M. EB Depart    *     5   750   159   750 *  AG   1265   8.7     .0  12.2
 N. EB External  *   159   750   759   750 *  AG   1265   4.5     .0  12.2
 O. WB External  *   759   759   159   759 *  AG   1807   4.5     .0  12.2
 P. WB Approach  *   159   759     5   759 *  AG   1656   8.7     .0  12.2
 Q. WB Depart    *     5   759  -150   759 *  AG   1700   8.7     .0  12.2
 R. WB External  *  -150   759  -750   759 *  AG   1700   4.5     .0  12.2
 S. EB Left      *  -150   750     5   755 *  AG     45   8.7     .0  12.2
 T. WB Left      *   159   759     5   755 *  AG    151   8.7     .0  12.2


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    762   2.0
 4. Receptor *     -3    762   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.7 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   2.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *   3.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   3.1 *   .0   .0   .0   .0   .0   .0   .0   .0


             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .1   .0   .0   .2  1.3   .1   .3   .5   .0   .0   .0   .1
 2. Receptor *   .1   .0   .2  1.2   .2   .0   .0   .0   .4   .3   .0   .0
 3. Receptor *   .0   .0   .2   .3   .0   .0   .0   .3  1.8   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .3   .2   .2  1.7   .4   .0   .0   .2
```

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

               JOB: "4. Ave J & 60th St. W.  without project
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     9     0     9   600 *  AG   2001   4.5     .0  12.2
 B. NB Approach  *     9   600     9   755 *  AG    870   8.7     .0  12.2
 C. NB Depart    *     9   755     9   909 *  AG    889   8.7     .0  12.2
 D. NB External  *     9   909     9  1509 *  AG    889   4.5     .0  12.2
 E. NB Left      *     9   600     5   755 *  AG   1131   8.7     .0  12.2
 F. SB Left      *     0   909     5   755 *  AG    433   8.7     .0  12.2
 G. SB External  *     0  1509     0   909 *  AG    946   4.5     .0  12.2
 H. SB Approach  *     0   909     0   755 *  AG    513   8.7     .0  12.2
 I. SB Depart    *     0   755     0   600 *  AG    143   8.7     .0  12.2
 J. SB External  *     0   600     0     0 *  AG    143   4.5     .0  12.2
 K. EB External  *  -750   750  -150   750 *  AG   1048   4.5     .0  12.2
 L. EB Approach  *  -150   750     5   750 *  AG    867   8.7     .0  12.2
 M. EB Depart    *     5   750   159   750 *  AG   1652   8.7     .0  12.2
 N. EB External  *   159   750   759   750 *  AG   1652   4.5     .0  12.2
 O. WB External  *   759   759   159   759 *  AG   1381   4.5     .0  12.2
 P. WB Approach  *   159   759     5   759 *  AG   1381   8.7     .0  12.2
 Q. WB Depart    *     5   759  -150   759 *  AG   2692   8.7     .0  12.2
 R. WB External  *  -150   759  -750   759 *  AG   2692   4.5     .0  12.2
 S. EB Left      *  -150   750     5   755 *  AG    181   8.7     .0  12.2
 T. WB Left      *   159   759     5   755 *  AG      0   8.7     .0  12.2


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    762   2.0
 4. Receptor *     -3    762   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *    3.2 *   .0   .2   .0   .0   .3   .0   .0   .0
 2. Receptor *  275. *    3.1 *   .0   .2   .0   .0   .4   .0   .0   .0
 3. Receptor *  267. *    4.1 *   .0   .0   .2   .0   .0   .1   .0   .1
 4. Receptor *   93. *    3.3 *   .0   .0   .2   .0   .0   .1   .0   .1


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.7   .2   .2   .4   .0   .0   .0   .0
 2. Receptor *   .0   .0   .0   .9   .3   .0   .0   .0   .9   .2   .2   .0
 3. Receptor *   .0   .0   .2   .2   .0   .0   .0   .3  2.6   .3   .1   .0
 4. Receptor *   .0   .0   .0   .0   .4   .3   .2  1.4   .6   .0   .0   .0
```

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

               JOB: Future without project - (24) Avenue K &
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    13     0    13   600 *  AG     78    4.5    .0  15.5
 B. NB Approach  *    13   600    13   756 *  AG     67    8.7    .0  15.5
 C. NB Depart    *    13   756    13   913 *  AG    135    8.7    .0  15.5
 D. NB External  *    13   913    13  1513 *  AG    135    4.5    .0  15.5
 E. NB Left      *    13   600     6   756 *  AG     11    8.7    .0  15.5
 F. SB Left      *     0   913     6   756 *  AG    112    8.7    .0  15.5
 G. SB External  *     0  1513     0   913 *  AG    158    4.5    .0  15.5
 H. SB Approach  *     0   913     0   756 *  AG     46    8.7    .0  15.5
 I. SB Depart    *     0   756     0   600 *  AG    101    8.7    .0  15.5
 J. SB External  *     0   600     0     0 *  AG    101    4.5    .0  15.5
 K. EB External  *  -750   750  -150   750 *  AG    892    4.5    .0  15.5
 L. EB Approach  *  -150   750     6   750 *  AG    877    8.7    .0  15.5
 M. EB Depart    *     6   750   163   750 *  AG   1019    8.7    .0  15.5
 N. EB External  *   163   750   763   750 *  AG   1019    4.5    .0  15.5
 O. WB External  *   763   763   163   763 *  AG   1425    4.5    .0  15.5
 P. WB Approach  *   163   763     6   763 *  AG   1370    8.7    .0  15.5
 Q. WB Depart    *     6   763  -150   763 *  AG   1298    8.7    .0  15.5
 R. WB External  *  -150   763  -750   763 *  AG   1298    4.5    .0  15.5
 S. EB Left      *  -150   750     6   756 *  AG     15    8.7    .0  15.5
 T. WB Left      *   163   763     6   756 *  AG     55    8.7    .0  15.5


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *     X      Y     Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     16    747   2.0
 3. Receptor *     16    766   2.0
 4. Receptor *     -3    766   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. Receptor *   87. *   1.8 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   1.7 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  268. *   2.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   92. *   2.2 *   .0   .0   .0   .0   .0   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.0   .1   .3   .2   .0   .0   .0   .0
 2. Receptor *   .0   .0   .1   .8   .2   .0   .0   .0   .2   .2   .0   .0
 3. Receptor *   .0   .0   .2   .0   .0   .0   .0   .3  1.2   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .1   .2   .2  1.3   .2   .0   .0   .0
```

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

               JOB: 24 Future with Project Ave K and 30th St W
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S              Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK       *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 -----------------*------------------------*--------------------------------
 A. NB External  *     9     0     9   600 *  AG    772   4.5     .0  11.8
 B. NB Approach  *     9   600     9   756 *  AG    686   8.7     .0  11.8
 C. NB Depart    *     9   756     9   913 *  AG    792   8.7     .0  11.8
 D. NB External  *     9   913     9  1513 *  AG    792   4.5     .0  11.8
 E. NB Left      *     9   600     4   756 *  AG     86   8.7     .0  11.8
 F. SB Left      *     0   913     4   756 *  AG    135   8.7     .0  11.8
 G. SB External  *     0  1513     0   913 *  AG    960   4.5     .0  11.8
 H. SB Approach  *     0   913     0   756 *  AG    825   8.7     .0  11.8
 I. SB Depart    *     0   756     0   600 *  AG    858   8.7     .0  11.8
 J. SB External  *     0   600     0     0 *  AG    858   4.5     .0  11.8
 K. EB External  *  -750   750  -150   750 *  AG   1442   4.5     .0  15.8
 L. EB Approach  *  -150   750     4   750 *  AG   1291   8.7     .0  15.8
 M. EB Depart    *     4   750   159   750 *  AG   1497   8.7     .0  15.8
 N. EB External  *   159   750   759   750 *  AG   1497   4.5     .0  15.8
 O. WB External  *   759   763   159   763 *  AG   1995   4.5     .0  15.8
 P. WB Approach  *   159   763     4   763 *  AG   1810   8.7     .0  15.8
 Q. WB Depart    *     4   763  -150   763 *  AG   2022   8.7     .0  15.8
 R. WB External  *  -150   763  -750   763 *  AG   2022   4.5     .0  15.8
 S. EB Left      *  -150   750     4   756 *  AG    151   8.7     .0  15.8
 T. WB Left      *   159   763     4   756 *  AG    185   8.7     .0  15.8


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *     X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    766   2.0
 4. Receptor *     -3    766   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------------
 1. Receptor *   86. *   2.9 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   2.8 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *   3.3 *   .0   .0   .2   .0   .0   .0   .0   .2
 4. Receptor *   93. *   3.3 *   .0   .0   .2   .0   .0   .0   .0   .2


             *                           CONC/LINK
             *                             (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .2   .0   .0   .2  1.4   .1   .3   .3   .0   .0   .0   .1
 2. Receptor *   .2   .0   .2  1.2   .2   .0   .0   .0   .3   .3   .1   .0
 3. Receptor *   .0   .0   .3   .2   .0   .0   .0   .3  1.8   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .3   .2  1.7   .3   .0   .0   .2
```

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

              JOB: Future with project - (25) Ave K & 20th
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S             Z0= 100. CM           ALT=   700. (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=  4.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *             EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NB External  *     9     0     9   600 *  AG    554   5.9     .0  11.8
B. NB Approach  *     9   600     9   756 *  AG    446   8.7     .0  11.8
C. NB Depart    *     9   756     9   913 *  AG    751   8.7     .0  11.8
D. NB External  *     9   913     9  1513 *  AG    751   5.9     .0  11.8
E. NB Left      *     9   600     4   756 *  AG    108   8.7     .0  11.8
F. SB Left      *     0   913     4   756 *  AG    289   8.7     .0  11.8
G. SB External  *     0  1513     0   913 *  AG    998   5.9     .0  11.8
H. SB Approach  *     0   913     0   756 *  AG    709   8.7     .0  11.8
I. SB Depart    *     0   756     0   600 *  AG    796   8.7     .0  11.8
J. SB External  *     0   600     0     0 *  AG    796   5.9     .0  11.8
K. EB External  *  -750   750  -150   750 *  AG   1729   5.9     .0  15.8
L. EB Approach  *  -150   750     4   750 *  AG   1470   8.7     .0  15.8
M. EB Depart    *     4   750   159   750 *  AG   1782   8.7     .0  15.8
N. EB External  *   159   750   759   750 *  AG   1782   5.9     .0  15.8
O. WB External  *   759   763   159   763 *  AG   2224   5.9     .0  15.8
P. WB Approach  *   159   763     4   763 *  AG   2023   8.7     .0  15.8
Q. WB Depart    *     4   763  -150   763 *  AG   2176   8.7     .0  15.8
R. WB External  *  -150   763  -750   763 *  AG   2176   5.9     .0  15.8
S. EB Left      *  -150   750     4   756 *  AG    259   8.7     .0  15.8
T. WB Left      *   159   763     4   756 *  AG    201   8.7     .0  15.8


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Receptor *     -3    747   2.0
2. Receptor *     12    747   2.0
3. Receptor *     12    766   2.0
4. Receptor *     -3    766   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *    3.4 *   .0   .1   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *    3.3 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. Receptor *  267. *    3.8 *   .0   .0   .2   .0   .0   .0   .0   .2
 4. Receptor *   93. *    3.8 *   .0   .0   .2   .0   .0   .0   .0   .2


            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. Receptor *   .2   .0   .0   .2  1.7   .3   .5   .3   .0   .0   .0   .1
2. Receptor *   .2   .0   .3  1.4   .3   .0   .0   .0   .3   .5   .2   .0
3. Receptor *   .0   .0   .4   .2   .0   .0   .0   .3  1.9   .3   .1   .0
4. Receptor *   .0   .0   .0   .0   .3   .4   .3  1.9   .3   .0   .0   .2
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           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: Future without project - (25) Ave K & 20
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    13     0    13   600 *  AG    388   4.5     .0  15.5
 B. NB Approach  *    13   600    13   756 *  AG    285   8.7     .0  15.5
 C. NB Depart    *    13   756    13   913 *  AG    315   8.7     .0  15.5
 D. NB External  *    13   913    13  1513 *  AG    315   4.5     .0  15.5
 E. NB Left      *    13   600     6   756 *  AG    103   8.7     .0  15.5
 F. SB Left      *     0   913     6   756 *  AG     83   8.7     .0  15.5
 G. SB External  *     0  1513     0   913 *  AG    337   4.5     .0  15.5
 H. SB Approach  *     0   913     0   756 *  AG    254   8.7     .0  15.5
 I. SB Depart    *     0   756     0   600 *  AG    417   8.7     .0  15.5
 J. SB External  *     0   600     0     0 *  AG    417   4.5     .0  15.5
 K. EB External  *  -750   750  -150   750 *  AG   1073   4.5     .0  15.5
 L. EB Approach  *  -150   750     6   750 *  AG   1028   8.7     .0  15.5
 M. EB Depart    *     6   750   163   750 *  AG   1173   8.7     .0  15.5
 N. EB External  *   163   750   763   750 *  AG   1173   4.5     .0  15.5
 O. WB External  *   763   763   163   763 *  AG   1651   4.5     .0  15.5
 P. WB Approach  *   163   763     6   763 *  AG   1500   8.7     .0  15.5
 Q. WB Depart    *     6   763  -150   763 *  AG   1544   8.7     .0  15.5
 R. WB External  *  -150   763  -750   763 *  AG   1544   4.5     .0  15.5
 S. EB Left      *  -150   750     6   756 *  AG     45   8.7     .0  15.5
 T. WB Left      *   163   763     6   756 *  AG    151   8.7     .0  15.5



 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     16    747   2.0
 3. Receptor *     16    766   2.0
 4. Receptor *     -3    766   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   86. *   2.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   2.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  268. *   2.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. Receptor *   93. *   2.6 *   .0   .0   .0   .0   .0   .0   .0   .0



             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .2  1.1   .1   .3   .3   .0   .0   .0   .1
 2. Receptor *   .1   .0   .2  1.0   .2   .0   .0   .0   .2   .3   .0   .0
 3. Receptor *   .0   .0   .2   .1   .0   .0   .0   .3  1.4   .2   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .2   .2  1.4   .3   .0   .0   .1
```

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

               JOB: Future with project - (27) Ave K & NB Ra
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *     9     0     9   600 *  AG   2149   4.5     .0  11.8
 B. NB Approach  *     9   600     9   756 *  AG    870   8.7     .0  11.8
 C. NB Depart    *     9   756     9   913 *  AG    889   8.7     .0  11.8
 D. NB External  *     9   913     9  1513 *  AG    889   4.5     .0  11.8
 E. NB Left      *     9   600     4   756 *  AG   1279   8.7     .0  11.8
 F. SB Left      *     0   913     4   756 *  AG    433   8.7     .0  11.8
 G. SB External  *     0  1513     0   913 *  AG    946   4.5     .0  11.8
 H. SB Approach  *     0   913     0   756 *  AG    513   8.7     .0  11.8
 I. SB Depart    *     0   756     0   600 *  AG    143   8.7     .0  11.8
 J. SB External  *     0   600     0     0 *  AG    143   4.5     .0  11.8
 K. EB External  *  -750   750  -150   750 *  AG   1053   4.5     .0  15.8
 L. EB Approach  *  -150   750     4   750 *  AG    872   8.7     .0  15.8
 M. EB Depart    *     4   750   159   750 *  AG   1657   8.7     .0  15.8
 N. EB External  *   159   750   759   750 *  AG   1657   4.5     .0  15.8
 O. WB External  *   759   763   159   763 *  AG   1389   4.5     .0  15.8
 P. WB Approach  *   159   763     4   763 *  AG   1389   8.7     .0  15.8
 Q. WB Depart    *     4   763  -150   763 *  AG   2848   8.7     .0  15.8
 R. WB External  *  -150   763  -750   763 *  AG   2848   4.5     .0  15.8
 S. EB Left      *  -150   750     4   756 *  AG    181   8.7     .0  15.8
 T. WB Left      *   159   763     4   756 *  AG      0   8.7     .0  15.8


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     12    747   2.0
 3. Receptor *     12    766   2.0
 4. Receptor *     -3    766   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
 1. Receptor *   87. *   3.0 *   .0   .2   .0   .0   .4   .0   .0   .0
 2. Receptor *  275. *   2.9 *   .0   .2   .0   .0   .4   .0   .0   .0
 3. Receptor *  268. *   3.9 *   .0   .0   .2   .0   .0   .1   .0   .1
 4. Receptor *   93. *   2.9 *   .0   .0   .2   .0   .0   .1   .0   .1


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .0   .0   .0   .1  1.6   .2   .3   .2   .0   .0   .0   .0
 2. Receptor *   .0   .0   .0   .8   .3   .0   .0   .0   .6   .3   .2   .0
 3. Receptor *   .0   .0   .2   .0   .0   .0   .0   .2  2.5   .4   .0   .0
 4. Receptor *   .0   .0   .0   .0   .2   .3   .2  1.3   .4   .0   .0   .0
```

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

               JOB: Future without project - (27) Ave K & NB
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=   1.0 M/S             Z0= 100. CM            ALT=   700. (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=  4.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
 A. NB External  *    13     0    13   600 *  AG    554   4.5     .0  15.5
 B. NB Approach  *    13   600    13   757 *  AG    446   8.7     .0  15.5
 C. NB Depart    *    13   757    13   914 *  AG    751   8.7     .0  15.5
 D. NB External  *    13   914    13  1514 *  AG    751   4.5     .0  15.5
 E. NB Left      *    13   600     6   757 *  AG    108   8.7     .0  15.5
 F. SB Left      *     0   914     6   757 *  AG    289   8.7     .0  15.5
 G. SB External  *     0  1514     0   914 *  AG    998   4.5     .0  15.5
 H. SB Approach  *     0   914     0   757 *  AG    709   8.7     .0  15.5
 I. SB Depart    *     0   757     0   600 *  AG    796   8.7     .0  15.5
 J. SB External  *     0   600     0     0 *  AG    796   4.5     .0  15.5
 K. EB External  *  -750   750  -150   750 *  AG   1637   4.5     .0  16.5
 L. EB Approach  *  -150   750     6   750 *  AG   1378   8.7     .0  16.5
 M. EB Depart    *     6   750   163   750 *  AG   1690   8.7     .0  16.5
 N. EB External  *   163   750   763   750 *  AG   1690   4.5     .0  16.5
 O. WB External  *   763   764   163   764 *  AG   1178   4.5     .0  16.5
 P. WB Approach  *   163   764     6   764 *  AG    977   8.7     .0  16.5
 Q. WB Depart    *     6   764  -150   764 *  AG   1130   8.7     .0  16.5
 R. WB External  *  -150   764  -750   764 *  AG   1130   4.5     .0  16.5
 S. EB Left      *  -150   750     6   757 *  AG    259   8.7     .0  16.5
 T. WB Left      *   163   764     6   757 *  AG    201   8.7     .0  16.5



 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. Receptor *     -3    747   2.0
 2. Receptor *     16    747   2.0
 3. Receptor *     16    767   2.0
 4. Receptor *     -3    767   2.0


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. Receptor *   87. *   2.7 *   .0   .1   .0   .0   .0   .0   .0   .0
 2. Receptor *  273. *   2.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. Receptor *  266. *   2.4 *   .0   .0   .2   .0   .0   .0   .0   .2
 4. Receptor *   94. *   2.4 *   .0   .0   .2   .0   .0   .0   .0   .2


             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
 1. Receptor *   .2   .0   .0   .2  1.5   .2   .2   .1   .0   .0   .0   .0
 2. Receptor *   .2   .0   .2  1.2   .3   .0   .0   .0   .2   .2   .2   .0
 3. Receptor *   .0   .0   .3   .3   .0   .0   .0   .2  1.0   .1   .1   .0
 4. Receptor *   .0   .0   .0   .0   .3   .3   .1   .9   .2   .0   .0   .2
```

G-2 Global Warming Report

Global Climate Change Analysis
Rich Haven Specific Plan
City of Ontario, California

Prepared for:

City of Ontario
303 East "B" Street
Ontario, California 91764

Contact: Richard Ayala, Senior Planner

Prepared by:

Michael Brandman Associates
621 E. Carnegie Drive, Suite 100
San Bernardino, California 92408
909.884.2255

Contact: Cori Wilson, Air Quality Specialist

June 28, 2007

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ACRONYMS AND ABBREVIATIONS

µm	Micrometer
CARB	California Air Resources Control Board
CAT	Climate Action Team (Report)
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CFC	Chlorofluorocarbons
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
EPA	Environmental Protection Agency
GCC	Global Climate Change
GHG	Greenhouse Gases
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NMC	New Model Colony
PAH	Polycyclic Aromatic Hydrocarbons
ppm	Parts per Million
ppt	Parts per Trillion
PVC	Polyvinyl Chloride
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison

SF_6	Sulfur Hexafluoride
Tg CO_2 Eq.	Teragrams of Carbon Dioxide Equivalent
Tg	Teragrams (One Million Metric Tons)
UNFCCC	United Nations Framework Convention on Climate Change
VMT	Vehicle Miles Traveled

SECTION 1: INTRODUCTION

This document assesses the cumulative impact of the Rich Haven Specific Plan Project (Project) on global climate change. This document accompanies the Draft Environmental Impact Report (EIR) prepared for the Project and incorporates it by reference.

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; the project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases in the world.

In 2006, the State Legislature signed AB 32, which charged the California Air Resources Board (CARB) to develop regulations on how the state would address global climate change (also known as "global warming"). CARB, the California Environmental Protection Agency (Cal EPA), the United States (U.S.) EPA, or other appropriate governmental organizations have not yet developed guidelines on how to prepare a California Environmental Quality Act (CEQA) assessment for global climate change. Nevertheless, this analysis develops thresholds and determines project significance with regards to its contribution to greenhouse gases. Note that this analysis is specific to the Rich Haven project and may not apply to other projects in the City of Ontario.

1.1 - Executive Summary

The proposed project will replace the existing cattle and hog operations with residential and commercial uses. However, a small net increase of greenhouse gases is anticipated with project implementation. The proposed project is anticipated to result in a net increase of approximately 0.044 Tg carbon dioxide equivalent. Without mitigation, the project could potentially result in a cumulatively significant impact to global climate change. However, with mitigation and project design features, the proposed project complies with identified California strategies to reduce greenhouse gas emissions to the levels contained in AB 32 and Executive Order S-3-05. It is anticipated that the project will not be significantly impacted from rising sea levels or other secondary effects of global climate change. Thus, because the project's incremental contribution to emissions is not cumulatively considerable, because the project will not interfere with California's efforts to reduce state-wide emissions, and because the project incorporates all feasible mitigation and project design features to reduce greenhouse gases, the project's impacts are less than significant.

1.1.1 - Mitigation Measures

The following mitigation measures will reduce direct and indirect greenhouse gas emissions from the project.

GCC-1 To encourage recycling, there shall be areas designated for recycling incorporated into the project design in the multi-family housing and the commercial/retail uses.

GCC-2 To increase energy efficiency, the following measures shall be implemented to the satisfaction of the City of Ontario: a) there shall be a 20 percent reduction in all buildings combined space heating, cooling, and water heating energy compared to the current Title 24 Standards; b) the project shall incorporate light roof colors; c) each appliance (i.e., washer/dryers, refrigerators, stoves, etc.) provided by the builder must be Energy Star qualified if an Energy Star designation is applicable for that appliance; photovoltaic cells (solar panels); low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines) shall be installed if provided by the builder/applicant and; d) solar powered water heaters shall be offered to the homebuyers as an option.

GCC-3 To reduce idling emissions at commercial loading docks, the following shall be implemented to the satisfaction of the City of Ontario: all dock and delivery areas shall be posted with signs informing truck drivers of the California Air Resources Board (CARB) regulations; truck drivers shall turn off engines when not in use; all diesel delivery trucks servicing the project shall not idle for more than five minutes per truck trip per day; and electricity shall be provided in any major loading dock areas that anticipate transportation refrigeration units visiting the site.

1.2 - Project Description

1.2.1 - Project Location

The project is located in southwestern San Bernardino County, within the City of Ontario. The project site consists of approximately 510.6-gross acres of land generally located south of Riverside Drive and the Southern California Edison (SCE) substation, west of Milliken Avenue, north of the proposed Esperanza Specific Plan and the new Edison Avenue alignment, and east of Haven Avenue.

1.2.2 - Existing Uses

The project site is developed with dairies, a hog farm, associated single-family residences, and high-voltage electrical transmission lines owned and operated by SCE.

1.2.3 - Proposed Project

The Project is within the New Model Colony (NMC). The vision of the NMC is intended to become a place of diversity that includes a mix of residential neighborhoods, high intensity regional serving centers, employment centers, and an activity core that serves as the common focal point for all NMC neighborhoods and districts. All uses that are typically found in sustainable communities are here—housing, retail, offices, entertainment, educational, medical, visitor-oriented, industrial, schools, cultural, recreational and parks, government, and open space. These uses will be connected through a network of greenways/trails, open spaces, amenities, and infrastructure. Development will be organized around a number of amenities including a regional-scaled public park, lake and waterways, a golf course, and extensively landscaped parkways and trails.

Development of the Project includes development of residential neighborhoods and a regional commercial center consistent with the planned uses of the NMC.

The Residential Component encompasses 350.6 acres and could provide a mixture of low, medium, and high-density residential uses ranging from 3.9 to 18.0 dwelling units (du)/acre with a maximum of 2,479 du. All residential neighborhoods are linked by a network of sidewalks and on-street bicycle paths to the parks, Colony High School (located on the north boundary of the project site), the SCE Corridor Trails (located in the central portions of the project site) and to commercial uses on the southeasterly portion of the project site. The residential component includes parks and a 24.8-acre Middle School.

The Project includes approximately 160 acres designated for development of Regional Commercial uses and Mixed Use Development with up to 1,777 du and between 889,200 and 1,306,200 square feet (sq ft) of commercial use. The Commercial District could include a full range of commercial, office, research, retail, food service, office, medical office, vertical residential, live-work units, as well as stand alone residential neighborhoods.

1.2.4 - Project Design Features

The project has the following design features that may reduce greenhouse emissions.

Mixed Use Component

As indicated above, the project contains both residential and commercial/retail uses, which reduces vehicle miles traveled. One of the major sources of greenhouse gases is from motor vehicle emissions. Therefore, a reduction of vehicle miles travels equates to a reduction in greenhouse gases.

Pedestrian and Bicycle Facilities

The Rich Haven Specific Plan will provide pedestrian and bicycle facilities to interconnect with the NMC trail systems. Internal project streets will be constructed with pedestrian friendly streets to inter connect all portions of the project area and all surrounding uses such as the Colony High School and the proposed elementary schools within outside the project area. Pedestrian and bicycle trails will be located within the Edison easements. These trails will provide a link to the City's Master Plan of Trails that have been proposed for SCE easements and corridors located within the City. A multi-purpose pedestrian and bicycle trail would be constructed between Haven and Mill Creek avenues. Pedestrian and bicycle access to the SCE Corridor Trail would be provided at key points from both the residential and commercial components of the Project. SCE permits a variety of open space uses on its easements including passive park facilities.

The pedestrian and bicycle facilities will help to reduce vehicle trips thereby reducing greenhouse gas emissions.

Landscaping

Landscaping will be provided throughout the project site to include a mix of deciduous and evergreen trees, shrubs, vines, and various types of groundcover. The residential component proposes a combination of street trees, under story trees, accent trees, alley trees, buffer plantings, vines, and turf. The recreation and open space component proposes a combination of accent and shade trees and groundcover plantings along the SCE Corridor Trail. The remainder of the SCE Corridor is proposed to remain as open space and no landscaping is proposed for this portion. The commercial component proposes evergreen trees, landscaping at project site entrance points and at building entrances, canopy trees within parking lots, and various landscaping along walkways and building edges.

The onsite landscaping helps to counter-balance the project's contribution of greenhouse gases by providing onsite carbon storage. The trees and shrubs take in carbon dioxide and store it.

Recreation and Open Space Component

Parks will be provided in the amount of 5 acres per 1,000 residents with a minimum of 2 acres per 1,000 residents in each development. These parks may include picnic areas, tot lots, trails, and open play fields.

Parks will help to reduce vehicle trips because the uses will be accessible to those living and working within the project area.

Water Recycling Features

The project will contain water-recycling features as described in the project description in the Draft Environmental Impact Report.

SECTION 2: GLOBAL CLIMATE CHANGE

Briefly stated, global climate change (GCC) is a change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over GCC use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of greenhouse gases (GHG) needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the range of global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 Centigrade (°C) to 6.4°C (IPCC 2007). Regardless of analytical methodology, global average temperature and sea level are expected to rise under all scenarios (IPCC 2007).

2.1 - Greenhouse Gases

Gases that trap heat in the atmosphere are called GHG, analogous to the way a greenhouse retains heat. Common GHG include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHG. The accumulation of GHG in the atmosphere regulates the earth’s temperature. Without the natural heat trapping effect of GHG, the earth’s surface would be about 34 degrees °C cooler (CAT 2006). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. A feedback is “an internal climate process that amplifies or dampens the climate response to a specific forcing” (NRC 2005). Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere; it is the “cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas” (EPA 2006a).

Individual GHG species have varying GWP and atmospheric lifetimes. The carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is carbon dioxide; as shown in Table 1, carbon dioxide has a GWP of one. Compared to methane’s GWP of 21, methane has a greater global warming effect than carbon dioxide on a molecule per molecule basis (EPA 2006b).

One teragram (equal to one million metric tons) of carbon dioxide equivalent (Tg CO_2 Eq.) is the mass emissions of an individual GHG multiplied by its GWP.

The atmospheric lifetime and GWP of selected greenhouse gases are summarized in Table 1. As shown in the table, GWP ranges from 1 (carbon dioxide) to 23,900 (sulfur hexafluoride).

Table 1: Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50 – 200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11700
HFC-134a	14.6	1300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF_4)	50000	6500
PFC: Hexafluoroethane (C_2F_6)	10000	9200
Sulfur Hexafluoride (SF_6)	3200	23900
Source: EPA 2006b		

Of all greenhouse gases in the atmosphere, water vapor is the most abundant, important, and variable. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves. Two additional greenhouse gases, ozone and aerosols, have undetermined GWP; they are described below.

Ozone is a greenhouse gas; however, unlike other GHG, ozone in the troposphere is relatively short-lived and therefore is not global in nature. It is difficult to make an accurate determination of the contribution of ozone precursors (nitrogen oxides and volatile organic compounds) to GCC (CARB 2004b).

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during bio mass burning incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

The nine greenhouses gases characterized in Table 1 each contain various degrees of pollutant properties as described below.

Carbon dioxide (CO_2) is an odorless, colorless gas, which has both natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of carbon dioxide are from burning coal, oil, natural gas, and wood. Concentrations of carbon dioxide were 379 parts per million (ppm) in 2005, which is an increase of 1.4 ppm per year since 1960 (IPCC 2007).

Methane is a flammable gas and is the main component of natural gas. When one molecule of methane is burned in the presence of oxygen, one molecule of carbon dioxide and two molecules of water are released. There are no ill health effects from methane. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Higher concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, racecars, and as an aerosol spray propellant.

Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth’s surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs for automobile air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down though the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above the earth’s surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. Concentrations of tetrafluoromethane in the atmosphere are over 70 parts per trillion (ppt) (EPA 2006d). The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas evaluated, 23,900. Concentrations in the 1990s were about 4 ppt (EPA 2006d). Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

2.1.1 - Federal and State Inventory

In 2004, total worldwide GHG emissions was estimated to be 20,135 Tg CO_2 Eq., excluding emissions/removals from land use, land use change, and forestry (UNFCCC 2006). (Note that sinks, or GHG removal processes, play an important role in the GHG inventory as forest and other land uses absorb carbon.) In 2004, GHG emissions in the U.S. were 7074.4 Tg CO_2 Eq. (EPA 2006a). In 2005, total U.S. GHG emissions were 7,260.4 Tg CO_2 Eq., a 16.3 increase from 1990 emissions, while U.S. gross domestic product has increased by 55 percent over the same period (EPA 2007a). Emissions rose from 2004 to 2005, increasing by 0.8 percent. The main causes of the increase: (1) strong economic growth in 2005, leading to increased demand for electricity and (2) an increase in the demand for electricity due to warmer summer conditions (EPA 2007a). However, a decrease in demand for fuels due to warmer winter conditions and higher fuel prices moderated the increase in emissions (EPA 2007a). California is a substantial contributor of GHG as it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). In 2004, California produced 492 Tg CO_2 Eq. (CEC 2006), which is approximately seven percent of U.S. emissions. The major source of GHG in California is transportation, contributing 41 percent of the State's total GHG emissions (CEC 2006). Electricity generation is the second largest source, contributing 22 percent of the State's GHG emissions.

2.2 - Legislation

2.2.1 - International and Federal Legislation

International and Federal legislation has been enacted to deal with GCC issues. The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol governs compounds that deplete ozone in the stratosphere—chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform. The Protocol provided that these compounds were to be phased out by 2000 (2005 for methyl chloroform).

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess "the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation" (IPCC 2004).

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments do the following: gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change (UNFCCC 2007).

A particularly notable result of UNFCC efforts was a treaty known as the Kyoto Protocol. Countries sign the treaty to demonstrate their commitment to reduce their emissions of GHG or engage in emissions trading. More than 160 countries—representing 55 percent of global emissions—are currently participating in the protocol. In 1998, United States Vice President, Al Gore, symbolically signed the Protocol; however, in order for the Protocol to be formally ratified, it must be adopted by the United States legislature. This was not done by the Congress during the Clinton Administration, and the current US President, George W. Bush, has indicated that he does not intend to submit the treaty for ratification.

In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return greenhouse gas emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in greenhouse gas emissions.

The United States Environmental Protection Agency (EPA) currently does not regulate GHG emissions from motor vehicles. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that EPA regulate four GHG, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made April 2, 2007, in which the Court held that petitioners have a standing to challenge the EPA and that the EPA has statutory authority to regulate emission of GHG from new motor vehicles.

2.2.2 - California Legislation

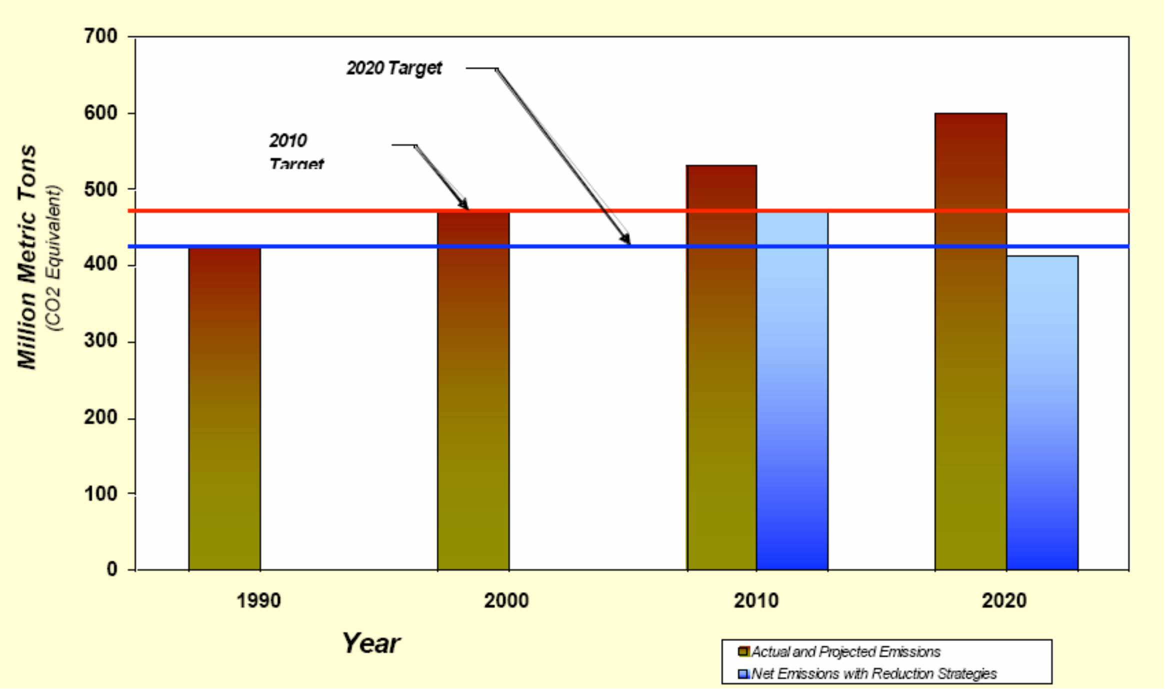
There has recently been multiple new legislation regarding global climate change and greenhouse gases in California. Although it was not originally intended to reduce greenhouse gases, California Code of Regulations Title 24 Part 6: California’s Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest amendments were made in October 2005 and currently require new homes to use half the energy they used only a decade ago. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030 (CARB, 2004).

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S 3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels (CA 2005). To meet these targets, the Governor directed the Secretary of the Cal EPA to lead a Climate Action Team (CAT) made up of representatives from the Business, Transportation and Housing Agency; the Department of Food and Agriculture; the Resources Agency; the Air Resources Board; the Energy Commission; and the Public Utilities Commission. The CAT‘s Report to the Governor in 2006, contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (CAT 2006).

The CAT report (2006) contains baseline emissions as estimated by CARB and the California Energy Commission, as shown in Exhibit 1 below. As shown in the exhibit, the emission reduction strategies reduce greenhouse gas emissions to the targets contained in AB 32. The emissions in 1990 were estimated to be 426 Tg. CO_2 Eq.; therefore, the 2020 target is to result in emissions of the 1990 levels.

Exhibit 1: California Greenhouse Gas Emissions



Source: State of California, Environmental Protection Agency, Climate Action Team. March 2006. Climate Action Team Report to Governor Schwarzenegger and the California Legislature. (CAT 2006).

Also in 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG in California. GHG as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires the California Air Resources Board (CARB), the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. On or before June 30, 2007, CARB is required to publish a list of discrete early action GHG emission reduction measures that can be implemented by 2010.

AB 32 also requires that by January 1, 2008, the State Board determines what the statewide greenhouse gas emissions level was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not yet been approved, reported emissions vary from 425 to 468 Tg CO_2 Eq. (CEC 2006). In 2004, the emissions were estimated at 492 Tg CO_2 Eq. (CEC 2006).

CARB published its Proposed Early Actions to Mitigate Climate Change in California (CARB 2007), which describes recommendations for discrete early action measures to reduce GHG emissions. The final report is expected be published prior to July 1, 2007. The measures will become part of California's strategy for achieving GHG reductions under AB 32. One of the sources for the potential measures includes the CAT Report. Three new regulations are proposed to meet the definition of "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture (CARB 2007). CARB estimates that by 2020, the reductions from those three measures would be approximately 13-26 million metric tons of carbon dioxide equivalent. Note that CARB currently defers measures involving General Plans and CEQA; early action is not recommended.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. However, the CAT Report contains strategies that many other California agencies can take. The CAT published a public review draft of Proposed Early Actions to Mitigate Climate Change in California (CAT 2007). Most of the strategies were in the 2006 CAT Report or are similar to the 2006 CAT strategies.

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It also requires that a Low Carbon Fuel Standard for transportation fuels be established for California.

The Western Regional Climate Action Initiative was signed on February 26, 2007 by five states: Washington, Oregon, Arizona, New Mexico, and California. British Columbia, Canada joined on April 20, 2007. The Initiative plans on collaborating to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative plans on designing a regional market-based multi-sector mechanism, such as a load-based cap and trade program by August 2008. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions.

California is also exploring the possibility of cap and trade systems for greenhouse gases. The Market Advisory Committee to CARB published draft recommendations for designing a greenhouse gas cap and trade system for California (MAC 2007).

SECTION 3: IMPACT ANALYSIS

3.1 - Thresholds of Significance

Even a very large individual project cannot generate enough greenhouse gas emissions to influence global climate change. A project participates in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases, which when taken together form global climate change impacts.

CEQA requires that Lead Agencies inform decision makers and the public regarding potential significant environmental effects of proposed projects; feasible ways that environmental damage can be avoided or reduced through the use of feasible mitigation measures and/or project alternatives; and disclose the reasons why the Lead Agency approved a project if significant environmental effects are involved (CEQA Guidelines §15002). CEQA also requires Lead Agencies to evaluate potential environmental effects based to the fullest extent possible on scientific and factual data (CEQA Guidelines §15064[b]). Significance conclusions must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15064f[5]).

There are currently no published thresholds of significance established by any state or regional regulatory agency for measuring the cumulative impact of global climate change on or from a project. CEQA Guidelines §15064.7 indicates, “each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects.” Other jurisdictions have derived their own thresholds (EH 2006, RC 2006, and SJ 2007). Thresholds were derived for this project based on available information at the time of preparation of the analysis. The following approach is used to assess the significance of the project’s cumulative contribution to global climate change:

1. **Inventory:** An inventory of greenhouse gas emissions (i.e., carbon dioxide, methane, nitrous oxide) generated by the project will be presented for informational purposes. The inventory will also be compared to the inventory for California and the United States.
2. **Compliance with Strategies:** Project compliance with the emission reduction strategies contained in the California Climate Action Team’s (CAT) Report to the Governor will be assessed. This report proposes a path to achieve the Governor’s greenhouse gas reduction targets contained in Executive Order S-3-05. While the report and Executive Order S-3-05 do not specifically mention CEQA, they do include a list of various measures that can be employed to achieve the GHG reduction targets. If the project implements feasible and relevant actions listed in the emissions reduction strategies, the project would have a less than significant impact to global climate change. Similar to Executive Order S-3-05, AB 32 also contains the same reduction target for the year 2020, which is to reduce emissions in 2020 to 1990 levels.

Therefore, compliance with those strategies leads to compliance with AB 32. The inventory and assessment of compliance with State Strategies provide information that will assist the City in determining the significance of the Project's contribution to GCC. This information may not necessarily be relevant to other projects, however. Thus, this Analysis does not establish generally applicable thresholds in the City.

3. **Incorporation of Greenhouse Gas Reduction Features**: Greenhouse gas emissions from the project are emitted indirectly through vehicles and through electricity usage. If the project incorporates all feasible greenhouse gas reduction features and mitigation, then the project would result in a less than significant impact to its cumulative contribution to greenhouse gases and global climate change.

3.2 - Project Inventory of Greenhouse Gases

An inventory of greenhouse gas emissions (carbon dioxide, methane, nitrous oxide) generated by the project is presented below.

The emissions are estimated and are converted to teragrams of carbon dioxide equivalents (Tg CO_2 Eq.) using the formula: Tg CO_2 Eq. = (tons of gas) x (GWP) x (0.902 metric tons of gas) x (1,000,000). One Tg is equal to one million metric tons.

3.2.1 - Existing Emissions

The existing project consists of cattle and hog operations. The methane and nitrous oxide emissions from enteric fermentation and manure management were estimated (see Appendix A for emission spreadsheets). As shown in Table 2, existing operations emitted approximately 0.035 Tg CO_2 Eq. per year.

Table 2: Existing Greenhouse Gas Emissions

	Emissions (Tg CO_2 Eq. per year)	
Source	**Nitrous Oxide**	**Methane**
Dairy Cow	0.001	0.032
Swine/Hog	0.000	0.002
Total (Tg CO_2 Eq. per year)	0.001	0.034
Source: Spreadsheet contained in Appendix A		

3.2.2 - Project Emissions

Emissions generated during construction and operation will result in greenhouse gas emissions, as described below.

Construction

The project will emit greenhouse gases during construction of the project from worker vehicles accessing the site as well as the construction equipment. Emissions during construction are estimated using UREMIS2007. The project emissions of carbon dioxide are shown in Table 3 below. Emissions of nitrous oxide and methane are negligible. As shown in the table, the first year of construction would result in 0.0017 Tg CO_2 Eq. and the second year would result in 0.01 Tg CO_2 Eq.

Table 3: Project Greenhouse Gas Emissions (Construction, Unmitigated)

Year	Phase	Carbon Dioxide Emissions (tons per year)	Carbon Dioxide Emissions (Tg CO_2 Eq.)
First year of construction	Demolition	66.67	0.0001
	Grading	1807.42	0.0016
	Total for first year	**1874.09**	**0.0017**
Second year of construction	Building	14661.37	0.0133
	Painting	131.47	0.0001
	Asphalt	133.54	0.0001
	Total for second year	**14926.37**	**0.0135**
Source: URBEMIS2007, Appendix D			

Operation

A summary of the anticipated greenhouse gas emissions from operation of the proposed project is presented in Table 4. Unmitigated greenhouse gas emissions from the project would arise from natural gas consumption, fireplaces, and motor vehicles. Indirect emissions from electricity generation would also be emitted. Although the estimation of those emissions is not as required by the SCAQMD (SCAQMD 2007), the emissions are estimated and are presented in Table 4. The emissions were estimated by assuming that electricity use would be 37,670,000 kilowatt-hours (KWh) per year, or 37,670 megawatt-hours (MWh) per year (from the project EIR, utilities section). The emission factor for electricity use was obtained from the California Climate Action Registry (CCAR 2007) and is 804.54 pounds of CO_2 per MWh.

Table 4: Project Greenhouse Gas Emissions (Operation, at Buildout, Unmitigated)

Source (units)	Carbon Dioxide	Nitrous Oxide	Methane
Natural Gas (pounds per day)	74,099	0	7
Fireplace (pounds per day)	64,717	0	0
Motor Vehicles, summer (pounds per day)	352,602	47	89
Indirect Electricity (pounds per day)	83,033	NG	NG
Total (pounds per day)	574,451	47	96

Table 4: Project Greenhouse Gas Emissions (Operation, at Buildout, Unmitigated) (Cont)

Source (units)	Carbon Dioxide	Nitrous Oxide	Methane
Total (metric tons per year)	95,108	8	16
Total (Tg CO_2 Eq. per year)	0.095	0.0024	0.0003
Source: Spreadsheets contained in Appendix B. NG = negligible			

As shown in Table 4, the primary greenhouse gas generated by the project would be carbon dioxide. At buildout, total unmitigated carbon dioxide equivalents would be 0.097 Tg CO_2 Eq., which is 0.02 percent of California's 2004 emissions (0.097 Tg CO_2 Eq. divided by 492 Tg CO_2 Eq. = 0.0002 * 100 = 0.02 percent). The project inventory is 0.001 percent of 2005 U.S. emissions (7260.4 Tg CO_2 Eq.) and 0.0005 percent of reported 2004 global emissions (20,135 Tg CO_2 Eq.).

Other greenhouse gases that are considered negligible are discussed below.

Water Vapor: The project does not contribute to this greenhouse gas because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks and not emissions from project related activities.

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NOx and ROGs) to global warming (CARB 2004b). Therefore, it is assumed that project emissions of ozone precursors would not significantly contribute to global climate change.

Chlorofluorocarbons: As mentioned previously, there is a ban on chlorofluorocarbons; therefore, the project will not generate emissions of these greenhouse gases and is not considered any further in this analysis.

Hydrofluorocarbons: The project may emit a small amount of hydrofluorocarbons (HFC) emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment (EPA 2004c). However, the details regarding the refrigerant to be used and the capacity are unknown at this time.

Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit any of these greenhouse gases.

Mitigation

Mitigation measures AQ-2 through AQ-6 as contained in the project Draft EIR will reduce emissions of carbon dioxide during construction from worker trips and the construction equipment.

Mitigation measure AQ-10 as contained in the project Draft EIR will reduce emissions from fireplaces.

Project design features as described in Section 1.2.4 - Project Design Features will reduce vehicle miles traveled.

Mitigation measure GCC-2, as contained in Section 1.1.1 - Mitigation Measures, increases energy efficiency, which results in a 20% reduction in natural gas consumption.

3.2.3 - Inventory after Mitigation

Construction

Mitigation measures will reduce emissions during construction by approximately 5 percent from off-road equipment and approximately 6 percent from worker trips. In addition, mitigation that requires electrical hook-ups will reduce emissions from off-road equipment even further.

Operation

Greenhouse gases after implementation of mitigation are displayed in Table 5. It was assumed that the mitigation for energy efficiency would result in a 20 percent reduction in indirect electricity emissions. At buildout, total mitigated carbon dioxide equivalents would be 0.079 Tg CO_2 Eq., which is 0.016 percent of California's 2004 emissions (0.079 Tg CO_2 Eq. divided by 492 Tg CO_2 Eq.). The project inventory is 0.001 percent of 2005 U.S. emissions (7260.4 Tg CO_2 Eq.) and 0.0004 percent of reported 2004 global emissions (20,135 Tg CO_2 Eq.).

Table 5: Project Greenhouse Gas Emissions (Operation, at Buildout, Mitigated)

Source (units)	Carbon Dioxide	Nitrous Oxide	Methane
Natural Gas (pounds per day)	57,938	0	5
Motor Vehicles, summer (pounds per day)	338,639	45	86
Indirect Electricity (pounds per day)	66,426	NG	NG
Total (pounds per day)	463,003	45	91
Total (metric tons per year)	76656	8	15
Total (Tg CO_2 Eq. per year)	0.0767	0.0023	0.0003
Source: Spreadsheets contained in Appendix C.			

Emissions models such as EMFAC and URBEMIS evaluate aggregate emissions and do not demonstrate, with respect to a global impact, how much of these emissions are "new" emissions specifically attributable to the proposed project in question. For most projects, the main contribution of greenhouse gas emissions is from motor vehicles, but how much of those emissions are "new" is uncertain. New projects do not create new drivers. The project contains mixed uses, which can actually reduce the number of vehicle miles traveled that a person drives. This mixed-use vehicle reduction was somewhat accounted for in the air quality analysis through URBEMIS mitigation reductions of 2 percent. Additionally, the project traffic study (MM 2006) used a double counting adjustment for internal trips.

It is anticipated that the project will not substantially add to the global inventory of greenhouse gas emissions. The existing greenhouse gas emissions were estimated to be 0.035 Tg CO_2 Eq (Table 2). The proposed project's emissions (after mitigation) were estimated to be 0.079 Tg CO_2 Eq. (**Error! Reference source not found.**). Therefore, the net increase from the project is approximately 0.04 Tg. CO_2 Eq. per year, which is 0.008 percent of California's 2004 emissions (0.04 Tg CO2 Eq. divided by 492 Tg CO2 Eq. multiplied by 100), 0.0006 percent of 2005 U.S. emissions (7260.4 Tg CO2 Eq.), and 0.0002 percent of reported 2004 global emissions (20,135 Tg CO2 Eq.).

In 2020, California's emissions are projected to be 426 Tg. CO_2 Eq., as shown in Exhibit 1 (CAT 2006). The net increase in emissions, in relation to California's projected emissions, at build-out is 0.009% (0.04 divided by 426 Tg. CO_2 Eq. and multiplied by 100).

While not solely determinative of the project's significance, the analysis above indicates that the project's GHG emissions are not cumulatively considerable.

3.3 - Compliance with Strategies

California Governor Arnold Schwarzenegger announced on June 1, 2005 through Executive Order S 3-05, GHG emission reduction targets as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels (CA 2005).

AB 32 requires that by January 1, 2008, CARB shall determine what the statewide greenhouse gas emissions level was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not been approved on this date, other publications indicate that levels varied from 425 to 468 Tg CO_2 Eq. (CEC 2006). In 2004, the emissions were estimated at 492 Tg CO_2 Eq. (CEC 2006).

The California Environmental Protection Agency prepared a Climate Action Team Report (CAT Report) to Governor Schwarzenegger and the Legislature that "proposes a path to achieve the Governor's targets that will build on voluntary actions of California businesses, local government and community actions, and State incentive and regulatory programs" (CAT 2006). The report introduces strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05.

CARB published its Proposed Early Actions to Mitigate Climate Change in California (CARB 2007), which describes recommendations for discrete early action measures to reduce GHG emissions. The report is for public review and the final report is expected to be published prior to July 1, 2007. The measures will become part of California's strategy for achieving GHG reductions under AB 32. The measures will become effective in 2010. One of the sources for the potential measures includes the CAT Report. Three new regulations are proposed to meet the definition of "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture (CARB 2007). CARB estimates that by 2020, the reductions from those three measures would be approximately 13-26 million metric tons of CO_2 Eq.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. However, the CAT Report contains strategies that many other California agencies can take. The CAT published a public review draft of Proposed Early Actions to Mitigate Climate Change in California (CAT 2007). Most of the strategies were in the 2006 CAT Report or are similar to the 2006 CAT strategies. As the 2007 report is only a draft and is not the final, this assessment will assess project compliance with the 2006 CAT Report.

The project will be built out prior to 2020; therefore, the project's emissions are likely contained in the emissions projections shown in Exhibit 1 displayed in Section 2.2.2.

The 2006 CAT Report strategies that apply to the project are contained in Table 6. As shown in the table, the project complies with all feasible and applicable measures to bring California to the emission reduction targets.

Table 6: California Greenhouse Gas Emission Reduction Strategies

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.	These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with these strategies.
Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Consistent with Mitigation. In areas that anticipate diesel truck activity, mitigation measures limit idling.
Hydrofluorocarbon Reduction: 1) Ban retail sale of HFC in small cans; 2) Require that only low GWP refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leak-tightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to will comply with the measures.

Table 6: California Greenhouse Gas Emission Reduction Strategies (Cont)

Strategy	Project Design/Mitigation to Comply with Strategy
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Consistent with mitigation.
Manure Management: The proposed San Joaquin Valley Rule 4570 will reduce volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable.
Alternative Fuels - Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	Not applicable.
Alternative Fuels - Ethanol: Increased use of ethanol fuel.	Not applicable.
Achieve 50 percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed.	Consistent. Project design encourages recycling within the project.
Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent recycling goal.	
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable.
Urban Forestry: A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Consistent. Project design features include the incorporation of trees.
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable. The project area was not forested in recent times as it was used for agricultural (dairy and hog farming).
Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions.	Consistent. Project design features will encourage water use efficiency.
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	Consistent with Mitigation. Mitigation requires an increase in efficiency compared to the current Title 24 Standards.

Table 6: California Greenhouse Gas Emission Reduction Strategies (Cont)

Strategy	Project Design/Mitigation to Comply with Strategy
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	Consistent with Mitigation. Mitigation requires the use of energy efficient appliances (i.e., washer/dryers, refrigerators, stoves, etc.)
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable.
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment.	Consistent. The project is promoting jobs/housing proximity and some high-density residential.
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable.
Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels.	Consistent with Mitigation. Mitigation requires increased energy efficiency.
California Solar Initiative: Installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	Consistent with Mitigation. Mitigation requires that the project offer solar options to home buyers.
Source: State of California, Environmental Protection Agency, Climate Action Team, 2006.	

Level of Significance before Mitigation

Potentially significant impact.

Mitigation

Mitigation measures GCC-1 through GCC-3, as contained in 1.1.1 - Mitigation Measures, are required.

Level of Significance after Mitigation

Less than significant. With mitigation, the project is compliant with all applicable state strategies to reduce greenhouse gases to levels proposed Executive Order S-3-05.

3.4 - Incorporation of Greenhouse Gas Reduction Features

Greenhouse gas emissions from the project are emitted indirectly through vehicles and through electricity usage. If the project incorporates all feasible greenhouse gas reduction features and mitigation, then the project would result in a less than significant impact to its cumulative contribution to greenhouse gases and global climate change.

As discussed in Section 1.2.4 - Project Design Features, the project has incorporated project design features such as mixed use, pedestrian and bicycle facilities, landscaping, and recreational and open space components. In addition, mitigation measures GCC-1 through GCC-3 will increase energy efficiency and reduce vehicle emissions even further. Therefore, the project is implementing all feasible design features and mitigation measures to reduce its contribution to greenhouse gases and global climate change. Therefore, the project results in a less than significant impact regarding global climate change with mitigation.

Level of Significance after Mitigation

Less than Significant.

3.5 - General Plan Compliance

The project lies within the New Colony General Plan Amendment Area; therefore, the policies in the New Colony General Plan Amendment pertain to the proposed project. Objective 25 in the NMC General Plan is to “minimize degradation of air resources.” The policies contain measures to reduce emissions during construction. As indicated in the Draft EIR, the project will comply with those measures.

3.6 - Climate Change Impacts on the Project

As discussed in Section 3.2.3 - Inventory after Mitigation, the project will result in the emissions of greenhouse gases. However, how will the cumulative effect of the project’s greenhouse gases and the greenhouse gases from all sources around the globe impact the project?

AB 32 indicates that “the potential effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infections diseases, asthma, and other health-related problems" (AB 32, section 38501(a)).

Air quality problems could be increased due to increased use of electricity to cool, which may result in increased indirect emissions. The project will not significantly contribute to this effect as mitigation increases energy efficiency in the project. Additionally, the impact of other air quality problems is addressed in the Draft EIR. The project will increase water efficiency through mitigation thereby reducing the use of water from the dwindling Sierra snow pack. The project is located at approximately 770 feet above sea level, which is not a height to pose a threat from rising sea waters. In summary, global climate change impacts to the proposed project are anticipated to be less than significant.

3.7 - Conclusion

The proposed project will replace the existing cattle and hog operations with residential and commercial uses. However, a small net increase of greenhouse gases is anticipated with project implementation. The proposed project is anticipated to result in a net increase of approximately 0.044 Tg CO_2 Eq. Without mitigation, the project could potentially result in a cumulatively significant impact to global climate change. However, with mitigation and project design features, the proposed project complies with identified California strategies to reduce greenhouse gas emissions to the levels contained in AB 32 and Executive Order S-3-05. It is anticipated that the project will not be significantly impacted from rising sea levels or other secondary effects of global climate change. Thus, because the project's incremental contribution to emissions is not cumulatively considerable, because the project will not interfere with California's efforts to reduce state-wide emissions, and because the project incorporates all feasible mitigation and project design features to reduce greenhouse gases, the project's impacts are less than significant.

SECTION 4: REFERENCES

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Appendix A: Existing Greenhouse Gas Emission Spreadsheets

Existing Greenhouse Gas Emissions
Rich Haven Specific Plan
Prepared 6/17/07
Prepared by Michael Brandman Associates

Methane

Type	Number	Emission Factor (Kg/head/year)	Emissions (Kg/year)	Emissions (tons/year)	Emissions (metric tons/year)	Global Warming Potential	Tg CO2 Eq. per year
Dairy Cow Enteric Fermentation	8161	121	987481	1086	985	21	0.021
Dairy Cow Manure Management	8161	68	554948	610	554	21	0.012
Swine Manure Management	3200	27	86400	95	86	21	0.002

Nitrous Oxide

Type	Number	N Excretion Rate (kg/1000 kg animal mass/day)	Animal Mass (kg/animal)	N Excretion (kg/year)	Emission Factor (kg N2O/kg N Excreted	Emissions (kg N2O/year)	Emissions (tons/year)	Emissions (metric tons/year)	Global Warming Potential	Tg CO2 Eq. per year
Dairy Cow Manure Management	8161	0.44	604	791636.59	0.005	3958	4.4	3.9	310	0.001
Swine Manure Management	3200	0.42	46	22565.76	0.005	113	0.1	0.1	310	0.000

Total

	Nitrous Oxide	Methane	Total
Dairy Cow (Tg CO2 eq./year)	0.001	0.032	0.034
Swine (Tg CO2 eq./year)	0.000	0.002	0.002
Total	0.001	0.034	0.035

Animal Facilities

Facility Name	Address	No. of Animal Units	Source
Case Vander Eyk, Jr. Dairy	13661 Haven Ave.	1848	PIER 2003
Koetsier & Son Dairy	13932 Milliken	1423	PIER 2003
Northview Dairy	10601 Riverside Dr.	2890	PIER 2003
Other dairy		2000	(Estimated)

Source of emission factors and methodology: 2006 International Panel on Climate Change Guidelines for National Greenhouse Gas Inventories. Chapter 10, Emissions from Livestock and Manure Management.
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- Based on average mean temperature of Upland, CA of 62 degrees F (17 degrees C) pursuant to the Western Regional Climate Center

Source of cow facilities: PIER 2003. Public Interest Energy Research. Task 1.1.2: Develop Database of Agricultural Facilities in Southern California, Targeting the Chino Basin, Dairy Operations Database, Appendix C. November 2003. Commonwealth Energy Biogas/PV Mini-Grid Renewable Resources Program Making Renewables Part of an Affordable and Diverse Electric System in California Contract No. 500-00-036 Inventory Report for Agricultural and Food Processing Facilities. http://www.pierminigrid.org/pubproject11.html

Source of swine number: Estimated based on the number of barns (approx. 32 buildings, estimated at 100 per building)

Appendix B: Proposed Project Greenhouse Gas Emission Spreadsheets (Unmitigated)

Summary of Greenhouse Gases
Unmitigated
Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015

Source (units)	Carbon Dioxide	Nitrous Oxide	Methane	Total
Natural Gas (pounds per day)	74099	0	7	
Fireplace (pounds per day)	64717	0	0	
Motor Vehicles (pounds per day)	352602	47	89	
Total (pounds per day)	491418	47	96	
Total (tons per year)	89684	9	18	
Total (metric tons per year)	81361	8	16	
Global Warming Potential	1	310	21	
Total (Tg CO2 Eq. per year)	0.0814	0.0024	0.0003	0.0841

California Emissions in 2004	492	Tg CO2 Eq. per year
Project percent of California Emissions	0.02%	

Mobile Emissions - Methane ***Unmitigated*** Page 1
Rich Haven Specific Plan 17-Jun-07
Prepared by Michael Brandman Associates
Buildout Year 2015 **Vehicle Miles Traveled** 302,260

Starting Emissions	5.09	lbs/day	0.0025	tons/day	0.93	tons/year
Running Emissions	84.23	lbs/day	0.0421	tons/day	15.37	tons/year
Total	89.32	lbs/day	0.0447	tons/day	16.30	tons/year

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4%	0.4%	99.4%	0.2%
Light Truck < 3,750 lbs	15.3%	0.7%	98.0%	1.3%
Light Truck 3,751- 5,750	16.4%	0.6%	98.8%	0.6%
Med Truck 5,751- 8,500	7.3%	0.0%	98.6%	1.4%
Lite-Heavy 8,501-10,000	1.1%	0.0%	81.8%	18.2%
Lite-Heavy 10,001-14,000	0.3%	0.0%	66.7%	33.3%
Med-Heavy 14,001-33,000	1.0%	0.0%	20.0%	80.0%
Heavy-Heavy 33,001-60,000	0.8%	0.0%	0.0%	100.0%
Line Haul > 60,000 lbs	0.0%	0.0%	0.0%	100.0%
Urban Bus	0.2%	0.0%	50.0%	50.0%
Motorcycle	1.6%	50.0%	50.0%	0.0%
School Bus	0.1%	0.0%	0.0%	100.0%
Motor Home	1.5%	0.0%	93.3%	6.7%

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.1931	0.1127	0.0161
Light Truck < 3,750 lbs	LDT1	0.2253	0.1448	0.0161
Light Truck 3,751- 5,750	LDT2	0.2253	0.1448	0.0161
Med Truck 5,751- 8,500	MDV	0.2253	0.1448	0.0161
Lite-Heavy 8,501-10,000	LHDT1	0.2012	0.1448	0.0805
Lite-Heavy 10,001-14,000	LHDT2	0.2012	0.1448	0.0805
Med-Heavy 14,001-33,000	MHDT	0.2012	0.1448	0.0805
Heavy-Heavy 33,001-60,000	HHDT	0.2012	0.1448	0.0805
Line Haul > 60,000 lbs	LHV	0.2012	0.1448	0.0805
Urban Bus	UB	0.2012	0.1448	0.0805
Motorcycle	MCY	0.2092	0.2092	0.2092
School Bus	SBUS	0.2012	0.1448	0.0805
Motor Home	MH	0.2012	0.1448	0.0805

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.28	40.52	0.01
Light Truck < 3,750 lbs	0.16	14.44	0.02
Light Truck 3,751- 5,750	0.15	15.60	0.01
Med Truck 5,751- 8,500	0.00	6.93	0.01
Lite-Heavy 8,501-10,000	0.00	0.87	0.11
Lite-Heavy 10,001-14,000	0.00	0.19	0.05
Med-Heavy 14,001-33,000	0.00	0.19	0.43
Heavy-Heavy 33,001-60,000	0.00	0.00	0.43
Line Haul > 60,000 lbs	0.00	0.00	0.00
Urban Bus	0.00	0.10	0.05
Motorcycle	1.11	1.11	0.00
School Bus	0.00	0.00	0.05
Motor Home	0.00	1.35	0.05
Total	1.70	81.30	1.23

Mobile Emissions - Methane
Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015 **Total Trips** 46796

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.059	0.009	-0.003
Light Truck < 3,750 lbs	LDT1	0.067	0.099	-0.004
Light Truck 3,751- 5,750	LDT2	0.067	0.099	-0.004
Med Truck 5,751- 8,500	MDV	0.067	0.099	-0.004
Lite-Heavy 8,501-10,000	LHDT1	0.147	0.215	-0.004
Lite-Heavy 10,001-14,000	LHDT2	0.147	0.215	-0.004
Med-Heavy 14,001-33,000	MHDT	0.147	0.215	-0.004
Heavy-Heavy 33,001-60,000	HHDT	0.147	0.215	-0.004
Line Haul > 60,000 lbs	LHV	0.147	0.215	-0.004
Urban Bus	UB	0.147	0.215	-0.004
Motorcycle	MCY	0.024	0.024	0.033
School Bus	SBUS	0.147	0.215	-0.004
Motor Home	MH	0.147	0.215	-0.004

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	101.8	25304.3	50.9
Light Truck < 3,750 lbs	LDT1	50.1	7016.6	93.1
Light Truck 3,751- 5,750	LDT2	46.0	7582.4	46.0
Med Truck 5,751- 8,500	MDV	0.0	3368.3	47.8
Lite-Heavy 8,501-10,000	LHDT1	0.0	421.1	93.7
Lite-Heavy 10,001-14,000	LHDT2	0.0	93.6	46.7
Med-Heavy 14,001-33,000	MHDT	0.0	93.6	374.4
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	374.4
Line Haul > 60,000 lbs	LHV	0.0	0.0	0.0
Urban Bus	UB	0.0	46.8	46.8
Motorcycle	MCY	374.4	374.4	0.0
School Bus	SBUS	0.0	0.0	46.8
Motor Home	MH	0.0	654.9	47.0
Total		572.4	44956.0	1267.7

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0132	0.5010	-0.0003
Light Truck < 3,750 lbs	LDT1	0.0074	1.5282	-0.0008
Light Truck 3,751- 5,750	LDT2	0.0068	1.6515	-0.0004
Med Truck 5,751- 8,500	MDV	0.0000	0.7336	-0.0004
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.1992	-0.0008
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0443	-0.0004
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0443	-0.0033
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	-0.0033
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	0.0000
Urban Bus	UB	0.0000	0.0221	-0.0004
Motorcycle	MCY	0.0198	0.0198	0.0000
School Bus	SBUS	0.0000	0.0000	-0.0004
Motor Home	MH	0.0000	0.3098	-0.0004
Total		0.0472	5.0537	-0.0110

- Source of running emission factors: U.S. Environmental Protection Agency. Climate Leaders Greenhouse Gas Inventory Protocol, Core Module Guidance. Direct Emissions from Mobile Combustion Sources. October 2004.
- Source of vehicle percentages: URBEMIS2002 default values.
- Source of starting emissions: U.S. Environmental Protection Agency. Prepared by ICF Consulting. EPA420-P-04-016. Update of Methane and Nitrous Oxide Emission Factors for On-Highway Vehicles. November 2004.

Mobile Emissions - Nitrous Oxide ***Unmitigated***

Rich Haven Specific Plan 17-Jun-07
Prepared by Michael Brandman Associates
Buildout Year 2015 **Vehicle Miles Traveled** 302,260

Starting Emissions	8.27 lbs/day	0.0041 tons/day	1.51 tons/year
Running Emissions	38.92 lbs/day	0.0195 tons/day	7.10 tons/year
Total	47.19 lbs/day	0.0236 tons/day	8.61 tons/year

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4%	0.4%	99.4%	0.2%
Light Truck < 3,750 lbs	15.3%	0.7%	98.0%	1.3%
Light Truck 3,751- 5,750	16.4%	0.6%	98.8%	0.6%
Med Truck 5,751- 8,500	7.3%	0.0%	98.6%	1.4%
Lite-Heavy 8,501-10,000	1.1%	0.0%	81.8%	18.2%
Lite-Heavy 10,001-14,000	0.3%	0.0%	66.7%	33.3%
Med-Heavy 14,001-33,000	1.0%	0.0%	20.0%	80.0%
Heavy-Heavy 33,001-60,000	0.8%	0.0%	0.0%	100.0%
Line Haul > 60,000 lbs	0.0%	0.0%	0.0%	100.0%
Urban Bus	0.2%	0.0%	50.0%	50.0%
Motorcycle	1.6%	50.0%	50.0%	0.0%
School Bus	0.1%	0.0%	0.0%	100.0%
Motor Home	1.5%	0.0%	93.3%	6.7%

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0166	0.0518	0.0161
Light Truck < 3,750 lbs	LDT1	0.0208	0.0649	0.0322
Light Truck 3,751- 5,750	LDT2	0.0208	0.0649	0.0322
Med Truck 5,751- 8,500	MDV	0.0208	0.0649	0.0322
Lite-Heavy 8,501-10,000	LHDT1	0.0480	0.1499	0.0483
Lite-Heavy 10,001-14,000	LHDT2	0.0480	0.1499	0.0483
Med-Heavy 14,001-33,000	MHDT	0.0480	0.1499	0.0483
Heavy-Heavy 33,001-60,000	HHDT	0.0480	0.1499	0.0483
Line Haul > 60,000 lbs	LHV	0.0480	0.1499	0.0483
Urban Bus	UB	0.0480	0.1499	0.0483
Motorcycle	MCY	0.0073	0.0073	0.0073
School Bus	SBUS	0.0480	0.1499	0.0483
Motor Home	MH	0.0480	0.1499	0.0483

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.02	18.63	0.01
Light Truck < 3,750 lbs	0.01	6.47	0.04
Light Truck 3,751- 5,750	0.01	6.99	0.02
Med Truck 5,751- 8,500	0.00	3.11	0.02
Lite-Heavy 8,501-10,000	0.00	0.90	0.06
Lite-Heavy 10,001-14,000	0.00	0.20	0.03
Med-Heavy 14,001-33,000	0.00	0.20	0.26
Heavy-Heavy 33,001-60,000	0.00	0.00	0.26
Line Haul > 60,000 lbs	0.00	0.00	0.00
Urban Bus	0.00	0.10	0.03
Motorcycle	0.04	0.04	0.00
School Bus	0.00	0.00	0.03
Motor Home	0.00	1.40	0.03
Total	0.09	38.03	0.80

Mobile Emissions - Nitrous Oxide

Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015 **Total Trips** 46796

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.028	0.072	0.000
Light Truck < 3,750 lbs	LDT1	0.032	0.093	-0.001
Light Truck 3,751- 5,750	LDT2	0.032	0.093	-0.001
Med Truck 5,751- 8,500	MDV	0.032	0.093	-0.001
Lite-Heavy 8,501-10,000	LHDT1	0.070	0.194	-0.002
Lite-Heavy 10,001-14,000	LHDT2	0.070	0.194	-0.002
Med-Heavy 14,001-33,000	MHDT	0.070	0.194	-0.002
Heavy-Heavy 33,001-60,000	HHDT	0.070	0.194	-0.002
Line Haul > 60,000 lbs	LHV	0.070	0.194	-0.002
Urban Bus	UB	0.070	0.194	-0.002
Motorcycle	MCY	0.012	0.012	0.012
School Bus	SBUS	0.070	0.194	-0.002
Motor Home	MH	0.070	0.194	-0.002

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	101.8	25304.3	50.9
Light Truck < 3,750 lbs	LDT1	50.1	7016.6	93.1
Light Truck 3,751- 5,750	LDT2	46.0	7582.4	46.0
Med Truck 5,751- 8,500	MDV	0.0	3368.3	47.8
Lite-Heavy 8,501-10,000	LHDT1	0.0	421.1	93.7
Lite-Heavy 10,001-14,000	LHDT2	0.0	93.6	46.7
Med-Heavy 14,001-33,000	MHDT	0.0	93.6	374.4
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	374.4
Line Haul > 60,000 lbs	LHV	0.0	0.0	0.0
Urban Bus	UB	0.0	46.8	46.8
Motorcycle	MCY	374.4	374.4	0.0
School Bus	SBUS	0.0	0.0	46.8
Motor Home	MH	0.0	654.9	47.0
Total		572.4	44956.0	1267.7

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0063	4.0082	0.0000
Light Truck < 3,750 lbs	LDT1	0.0035	1.4356	-0.0002
Light Truck 3,751- 5,750	LDT2	0.0032	1.5514	-0.0001
Med Truck 5,751- 8,500	MDV	0.0000	0.6892	-0.0001
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.1797	-0.0004
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0400	-0.0002
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0399	-0.0016
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	-0.0016
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	0.0000
Urban Bus	UB	0.0000	0.0200	-0.0002
Motorcycle	MCY	0.0099	0.0099	0.0000
School Bus	SBUS	0.0000	0.0000	-0.0002
Motor Home	MH	0.0000	0.2795	-0.0002
Total		0.0229	8.2533	-0.0049

- Source of running emission factors: U.S. Environmental Protection Agency. Climate Leaders Greenhouse Gas Inventory Protocol, Core Module Guidance. Direct Emissions from Mobile Combustion Sources. October 2004.
- Source of vehicle percentages: URBEMIS2002 default values.
- Source of starting emissions: U.S. Environmental Protection Agency. Prepared by ICF Consulting. EPA420-P-04-016. Update of Methane and Nitrous Oxide Emission Factors for On-Highway Vehicles. November 2004.

Mobile Emissions - Carbon Dioxide
Unmitigated
Rich Haven Specific Plan 17-Jun-07
Prepared by Michael Brandman Associates

Buildout Year 2015	2015	
Total Daily Project VMT	302,260	miles per day
Total Daily Project Trips	46796	trips per day

Running Emissions	343745	lbs/day	171.87	tons/day	62733	tons/year
Start Emissions	7668	lbs/day	3.83	tons/day	1399	tons/year
Idle Emissions	1189	lbs/day	0.59	tons/day	217	tons/year
Total	352602	lbs/day	176.30	tons/day	64350	tons/year

Emission Factors for South Coast Air Basin

CO2 Running Emissions Factor	516	grams/mile
CO2 Start Emission Factor	74	grams/start
CO2 Idle Emission Factor	1.8	grams/mile

South Coast Air Basin - EMFAC burden model run

VMT	391418000	miles per day
Trips	75311700	trips per day
CO2 Running Emissions	222570	tons/day
CO2 Start Emissions	6170	tons/day
CO2 Idle Emissions	770	tons/day

Composite emission factors were estimated using the total number of trips, vehicle miles traveled, and the running exhaust emissions, starting emissions, and idle emissions for the South Coast Air Basin as derived from the CARB EMFAC2002 burden model run.

Fireplace Emissions

Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015
Unmitigated

			Source
PM10 Emission Factor	34.6	lb/ton	US EPA
CO2 Emission Factor	3400	lb/ton	US EPA
Conversion factor from PM10 to CO2	98.3		
URBEMIS estimates of unmitigated hearth emissions-PM10	658.59	lb/day	Air Quality Appendix
CO2 emissions	64717	lb/day	
CO2 emissions	10715	metric tons/year	
CO2 emissions	0.011	Tg CO2 Eq	

Sources:
US EPA: AP-42 emission factor, section 1.9, Residential Fireplaces.
http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s09.pdf

Air Quality Appendix: Prepared by Michael Brandman Associates November 2006 for the Rich Haven Specific Plan EIR. References the unmitigated URBEMIS output for PM10

Natural Gas Combustion

Rich Haven Specific Plan
Prepared by Michael Brandman Associates
6/17/2007

Gas	Type of Land Use	Square Feet (1000 sf) or Units	Natural Gas Usage Factor* (SCF/square foot or unit/month)	Natural Gas Usage for Project (SCF/month)	Natural Gas usage for Project (SCF/year)	Emission Factor (g CO2/SCF)**	Emission Factor (g/MMBTU)**	Heating Value of Natural Gas (BTU/SCF)**	Emissions (tons per year)	Emissions (pounds per day)
Carbon Dioxide	Office	135	2.0	270	3240	54.2	N/A	N/A	0	1
	Retail/Shopping	753	2.9	2183.7	26204.4	54.2	N/A	N/A	2	9
	Residential	1330	6665	8864450	106373400	54.2	N/A	N/A	6342	34751
	Industrial	0	241611	0	0	54.2	N/A	N/A	0	0
	Multi-family	2928	4011.5	11745672	140948064	54.2	N/A	N/A	8403	46046
Methane	Office	135	2.0	270	3240	N/A	4.75	1020	0.00	0.00
	Retail/Shopping	753	2.9	2183.7	26204.4	N/A	4.75	1020	0.00	0.00
	Residential	1330	6665	8864450	106373400	N/A	4.75	1020	0.57	3.11
	Industrial	0	241611	0	0	N/A	4.75	1020	0.00	0.00
	Multi-family	2928	4011.5	11745672	140948064	N/A	4.75	1020	0.75	4.12
Nitrous Oxide	Office	135	2.0	270	3240	N/A	0.095	1020	0.00	0.00
	Retail/Shopping	753	2.9	2183.7	26204.4	N/A	0.095	1020	0.00	0.00
	Residential	1330	6665	8864450	106373400	N/A	0.095	1020	0.01	0.06
	Industrial	0	241611	0	0	N/A	0.095	1020	0.00	0.00
	Multi-family	2928	4011.5	11745672	140948064	N/A	0.095	1020	0.02	0.08

Total

Units	Mitigation Reduction	Carbon Dioxide	Nitrous Oxide	Methane
pounds per day	8.3%	74099	0.13	6.62
tons per year		13523	0	1
GWP		1	310	21
Tg CO2 Eq/year		0.0135	0.000007	0.000025

* Natural gas usage factor from URBEMIS2002 default
** USEPA, 2004: Direct Emissions from Stationary Combustion Sources, Climate Leaders Greenhouse Inventory Protocol, Core Model Guidance, October 2004
Emissions of CO2 = Emission Factor x Natural Gas Usage x Number of Units/Square Feet
Emissions of CH4, N2O = Emission Factor x Heating Value of Natural Gas x Natural Gas Usage x Number of Units/Square Feet

The mitigation reduction = 8.3% is from the 2005 Residential Compliance Manual - Title 24 Building Standards, Introduction (http://www.energy.ca.gov/2005publications/CEC-400-2005-005/chapters_4q/1_Introduction.pdf).

Appendix C: Proposed Project Greenhouse Gas Emission Spreadsheets (Mitigated)

Summary of Greenhouse Gases
Mitigated
Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015

Source (units)	Carbon Dioxide	Nitrous Oxide	Methane	Total
Natural Gas (pounds per day)	57938	0	5	
Motor Vehicles (pounds per day)	345550	46	88	
Reduction from Mitigation (2%)	6911	1	2	
Subtotal Motor Vehicles	338639	45	86	
Total (pounds per day)	396577	45	91	
Total (tons per year)	72375	8	17	
Total (metric tons per year)	65659	8	15	
Global Warming Potential	1	310	21	
Total (Tg CO2 Eq. per year)	0.0657	0.0023	0.0003	0.0683

California Emissions in 2004	492	Tg CO2 Eq. per year
Project percent of California Emissions	0.013883%	

Mobile Emissions - Methane	***Mitigated***	Page 1
Rich Haven Specific Plan		17-Jun-07
Prepared by Michael Brandman Associates		
Buildout Year 2015	**Vehicle Miles Traveled**	296,215

Starting Emissions	4.99	lbs/day	0.0025	tons/day	0.91	tons/year
Running Emissions	82.55	lbs/day	0.0413	tons/day	15.07	tons/year
Total	87.54	lbs/day	0.0438	tons/day	15.98	tons/year

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4%	0.4%	99.4%	0.2%
Light Truck < 3,750 lbs	15.3%	0.7%	98.0%	1.3%
Light Truck 3,751- 5,750	16.4%	0.6%	98.8%	0.6%
Med Truck 5,751- 8,500	7.3%	0.0%	98.6%	1.4%
Lite-Heavy 8,501-10,000	1.1%	0.0%	81.8%	18.2%
Lite-Heavy 10,001-14,000	0.3%	0.0%	66.7%	33.3%
Med-Heavy 14,001-33,000	1.0%	0.0%	20.0%	80.0%
Heavy-Heavy 33,001-60,000	0.8%	0.0%	0.0%	100.0%
Line Haul > 60,000 lbs	0.0%	0.0%	0.0%	100.0%
Urban Bus	0.2%	0.0%	50.0%	50.0%
Motorcycle	1.6%	50.0%	50.0%	0.0%
School Bus	0.1%	0.0%	0.0%	100.0%
Motor Home	1.5%	0.0%	93.3%	6.7%

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.1931	0.1127	0.0161
Light Truck < 3,750 lbs	LDT1	0.2253	0.1448	0.0161
Light Truck 3,751- 5,750	LDT2	0.2253	0.1448	0.0161
Med Truck 5,751- 8,500	MDV	0.2253	0.1448	0.0161
Lite-Heavy 8,501-10,000	LHDT1	0.2012	0.1448	0.0805
Lite-Heavy 10,001-14,000	LHDT2	0.2012	0.1448	0.0805
Med-Heavy 14,001-33,000	MHDT	0.2012	0.1448	0.0805
Heavy-Heavy 33,001-60,000	HHDT	0.2012	0.1448	0.0805
Line Haul > 60,000 lbs	LHV	0.2012	0.1448	0.0805
Urban Bus	UB	0.2012	0.1448	0.0805
Motorcycle	MCY	0.2092	0.2092	0.2092
School Bus	SBUS	0.2012	0.1448	0.0805
Motor Home	MH	0.2012	0.1448	0.0805

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.27	39.71	0.01
Light Truck < 3,750 lbs	0.16	14.15	0.02
Light Truck 3,751- 5,750	0.14	15.29	0.01
Med Truck 5,751- 8,500	0.00	6.79	0.01
Lite-Heavy 8,501-10,000	0.00	0.85	0.11
Lite-Heavy 10,001-14,000	0.00	0.19	0.05
Med-Heavy 14,001-33,000	0.00	0.19	0.42
Heavy-Heavy 33,001-60,000	0.00	0.00	0.42
Line Haul > 60,000 lbs	0.00	0.00	0.00
Urban Bus	0.00	0.09	0.05
Motorcycle	1.09	1.09	0.00
School Bus	0.00	0.00	0.05
Motor Home	0.00	1.32	0.05
Total	1.67	79.68	1.21

Mobile Emissions - Methane

Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015 **Total Trips** 45860

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.059	0.009	-0.003
Light Truck < 3,750 lbs	LDT1	0.067	0.099	-0.004
Light Truck 3,751- 5,750	LDT2	0.067	0.099	-0.004
Med Truck 5,751- 8,500	MDV	0.067	0.099	-0.004
Lite-Heavy 8,501-10,000	LHDT1	0.147	0.215	-0.004
Lite-Heavy 10,001-14,000	LHDT2	0.147	0.215	-0.004
Med-Heavy 14,001-33,000	MHDT	0.147	0.215	-0.004
Heavy-Heavy 33,001-60,000	HHDT	0.147	0.215	-0.004
Line Haul > 60,000 lbs	LHV	0.147	0.215	-0.004
Urban Bus	UB	0.147	0.215	-0.004
Motorcycle	MCY	0.024	0.024	0.033
School Bus	SBUS	0.147	0.215	-0.004
Motor Home	MH	0.147	0.215	-0.004

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	99.8	24798.2	49.9
Light Truck < 3,750 lbs	LDT1	49.1	6876.2	91.2
Light Truck 3,751- 5,750	LDT2	45.1	7430.8	45.1
Med Truck 5,751- 8,500	MDV	0.0	3300.9	46.9
Lite-Heavy 8,501-10,000	LHDT1	0.0	412.6	91.8
Lite-Heavy 10,001-14,000	LHDT2	0.0	91.8	45.8
Med-Heavy 14,001-33,000	MHDT	0.0	91.7	366.9
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	366.9
Line Haul > 60,000 lbs	LHV	0.0	0.0	0.0
Urban Bus	UB	0.0	45.9	45.9
Motorcycle	MCY	366.9	366.9	0.0
School Bus	SBUS	0.0	0.0	45.9
Motor Home	MH	0.0	641.8	46.1
Total		560.9	44056.8	1242.3

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0130	0.4910	-0.0003
Light Truck < 3,750 lbs	LDT1	0.0072	1.4976	-0.0008
Light Truck 3,751- 5,750	LDT2	0.0067	1.6184	-0.0004
Med Truck 5,751- 8,500	MDV	0.0000	0.7189	-0.0004
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.1952	-0.0008
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0434	-0.0004
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0434	-0.0032
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	-0.0032
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	0.0000
Urban Bus	UB	0.0000	0.0217	-0.0004
Motorcycle	MCY	0.0194	0.0194	0.0000
School Bus	SBUS	0.0000	0.0000	-0.0004
Motor Home	MH	0.0000	0.3036	-0.0004
Total		0.0462	4.9526	-0.0108

- Source of running emission factors: U.S. Environmental Protection Agency. Climate Leaders Greenhouse Gas Inventory Protocol, Core Module Guidance. Direct Emissions from Mobile Combustion Sources. October 2004.
- Source of vehicle percentages: URBEMIS2002 default values.
- Source of starting emissions: U.S. Environmental Protection Agency. Prepared by ICF Consulting. EPA420-P-04-016. Update of Methane and Nitrous Oxide Emission Factors for On-Highway Vehicles. November 2004.

Mobile Emissions - Nitrous Oxide *Mitigated*
Rich Haven Specific Plan 17-Jun-07
Prepared by Michael Brandman Associates
Buildout Year 2015 **Vehicle Miles Traveled** 296,215

Starting Emissions	8.11	lbs/day	0.0041	tons/day	1.48	tons/year
Running Emissions	38.14	lbs/day	0.0191	tons/day	6.96	tons/year
Total	46.25	lbs/day	0.0231	tons/day	8.44	tons/year

Vehicle Percentages

Vehicle Type	Percent	Non-Catalyst	Catalyst	Diesel
Light Auto	54.4%	0.4%	99.4%	0.2%
Light Truck < 3,750 lbs	15.3%	0.7%	98.0%	1.3%
Light Truck 3,751- 5,750	16.4%	0.6%	98.8%	0.6%
Med Truck 5,751- 8,500	7.3%	0.0%	98.6%	1.4%
Lite-Heavy 8,501-10,000	1.1%	0.0%	81.8%	18.2%
Lite-Heavy 10,001-14,000	0.3%	0.0%	66.7%	33.3%
Med-Heavy 14,001-33,000	1.0%	0.0%	20.0%	80.0%
Heavy-Heavy 33,001-60,000	0.8%	0.0%	0.0%	100.0%
Line Haul > 60,000 lbs	0.0%	0.0%	0.0%	100.0%
Urban Bus	0.2%	0.0%	50.0%	50.0%
Motorcycle	1.6%	50.0%	50.0%	0.0%
School Bus	0.1%	0.0%	0.0%	100.0%
Motor Home	1.5%	0.0%	93.3%	6.7%

Running Emission Factors (g/mile)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0166	0.0518	0.0161
Light Truck < 3,750 lbs	LDT1	0.0208	0.0649	0.0322
Light Truck 3,751- 5,750	LDT2	0.0208	0.0649	0.0322
Med Truck 5,751- 8,500	MDV	0.0208	0.0649	0.0322
Lite-Heavy 8,501-10,000	LHDT1	0.0480	0.1499	0.0483
Lite-Heavy 10,001-14,000	LHDT2	0.0480	0.1499	0.0483
Med-Heavy 14,001-33,000	MHDT	0.0480	0.1499	0.0483
Heavy-Heavy 33,001-60,000	HHDT	0.0480	0.1499	0.0483
Line Haul > 60,000 lbs	LHV	0.0480	0.1499	0.0483
Urban Bus	UB	0.0480	0.1499	0.0483
Motorcycle	MCY	0.0073	0.0073	0.0073
School Bus	SBUS	0.0480	0.1499	0.0483
Motor Home	MH	0.0480	0.1499	0.0483

Running Emissions (pounds per day)

Vehicle Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.02	18.25	0.01
Light Truck < 3,750 lbs	0.01	6.34	0.04
Light Truck 3,751- 5,750	0.01	6.85	0.02
Med Truck 5,751- 8,500	0.00	3.04	0.02
Lite-Heavy 8,501-10,000	0.00	0.88	0.06
Lite-Heavy 10,001-14,000	0.00	0.20	0.03
Med-Heavy 14,001-33,000	0.00	0.20	0.25
Heavy-Heavy 33,001-60,000	0.00	0.00	0.25
Line Haul > 60,000 lbs	0.00	0.00	0.00
Urban Bus	0.00	0.10	0.03
Motorcycle	0.04	0.04	0.00
School Bus	0.00	0.00	0.03
Motor Home	0.00	1.37	0.03
Total	0.09	37.26	0.79

Mobile Emissions - Nitrous Oxide
Rich Haven Specific Plan
Prepared by Michael Brandman Associates
Buildout Year 2015 **Total Trips** 45860

Starting Emission Factors (g/start)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.028	0.072	0.000
Light Truck < 3,750 lbs	LDT1	0.032	0.093	-0.001
Light Truck 3,751- 5,750	LDT2	0.032	0.093	-0.001
Med Truck 5,751- 8,500	MDV	0.032	0.093	-0.001
Lite-Heavy 8,501-10,000	LHDT1	0.070	0.194	-0.002
Lite-Heavy 10,001-14,000	LHDT2	0.070	0.194	-0.002
Med-Heavy 14,001-33,000	MHDT	0.070	0.194	-0.002
Heavy-Heavy 33,001-60,000	HHDT	0.070	0.194	-0.002
Line Haul > 60,000 lbs	LHV	0.070	0.194	-0.002
Urban Bus	UB	0.070	0.194	-0.002
Motorcycle	MCY	0.012	0.012	0.012
School Bus	SBUS	0.070	0.194	-0.002
Motor Home	MH	0.070	0.194	-0.002

Trip Distribution

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	99.8	24798.2	49.9
Light Truck < 3,750 lbs	LDT1	49.1	6876.2	91.2
Light Truck 3,751- 5,750	LDT2	45.1	7430.8	45.1
Med Truck 5,751- 8,500	MDV	0.0	3300.9	46.9
Lite-Heavy 8,501-10,000	LHDT1	0.0	412.6	91.8
Lite-Heavy 10,001-14,000	LHDT2	0.0	91.8	45.8
Med-Heavy 14,001-33,000	MHDT	0.0	91.7	366.9
Heavy-Heavy 33,001-60,000	HHDT	0.0	0.0	366.9
Line Haul > 60,000 lbs	LHV	0.0	0.0	0.0
Urban Bus	UB	0.0	45.9	45.9
Motorcycle	MCY	366.9	366.9	0.0
School Bus	SBUS	0.0	0.0	45.9
Motor Home	MH	0.0	641.8	46.1
Total		560.9	44056.8	1242.3

Starting Emissions (pounds per day)

Vehicle Type	Type	Non-Catalyst	Catalyst	Diesel
Light Auto	LDA	0.0061	3.9280	0.0000
Light Truck < 3,750 lbs	LDT1	0.0035	1.4069	-0.0002
Light Truck 3,751- 5,750	LDT2	0.0032	1.5203	-0.0001
Med Truck 5,751- 8,500	MDV	0.0000	0.6754	-0.0001
Lite-Heavy 8,501-10,000	LHDT1	0.0000	0.1761	-0.0004
Lite-Heavy 10,001-14,000	LHDT2	0.0000	0.0392	-0.0002
Med-Heavy 14,001-33,000	MHDT	0.0000	0.0391	-0.0016
Heavy-Heavy 33,001-60,000	HHDT	0.0000	0.0000	-0.0016
Line Haul > 60,000 lbs	LHV	0.0000	0.0000	0.0000
Urban Bus	UB	0.0000	0.0196	-0.0002
Motorcycle	MCY	0.0097	0.0097	0.0000
School Bus	SBUS	0.0000	0.0000	-0.0002
Motor Home	MH	0.0000	0.2739	-0.0002
Total		0.0225	8.0882	-0.0048

- Source of running emission factors: U.S. Environmental Protection Agency. Climate Leaders Greenhouse Gas Inventory Protocol, Core Module Guidance. Direct Emissions from Mobile Combustion Sources. October 2004.
- Source of vehicle percentages: URBEMIS2002 default values.
- Source of starting emissions: U.S. Environmental Protection Agency. Prepared by ICF Consulting. EPA420-P-04-016. Update of Methane and Nitrous Oxide Emission Factors for On-Highway Vehicles. November 2004.

Mobile Emissions - Carbon Dioxide
Mitigated
Rich Haven Specific Plan

17-Jun-07

Prepared by Michael Brandman Associates

Buildout Year 2015	2015	
Total Daily Project VMT	296,215	miles per day
Total Daily Project Trips	45860	trips per day

Running Emissions	336870	lbs/day	168.44	tons/day	61479	tons/year
Start Emissions	7514	lbs/day	3.76	tons/day	1371	tons/year
Idle Emissions	1165	lbs/day	0.58	tons/day	213	tons/year
Total	345550	lbs/day	172.78	tons/day	63063	tons/year

Emission Factors for South Coast Air Basin

CO2 Running Emissions Factor	516	grams/mile
CO2 Start Emission Factor	74	grams/start
CO2 Idle Emission Factor	1.8	grams/mile

South Coast Air Basin - EMFAC burden model run

VMT	391418000	miles per day
Trips	75311700	trips per day
CO2 Running Emissions	222570	tons/day
CO2 Start Emissions	6170	tons/day
CO2 Idle Emissions	770	tons/day

Composite emission factors were estimated using the total number of trips, vehicle miles traveled, and the running exhaust emissions, starting emissions, and idle emissions for the South Coast Air Basin as derived from the CARB EMFAC2002 burden model run.

Natural Gas Combustion

Rich Haven Specific Plan
Prepared by Michael Brandman Associates
6/17/2007

Gas	Type of Land Use	Square Feet (1000 sf) or Units	Natural Gas Usage Factor* (SCF/square foot or unit/month)	Natural Gas Usage for Project (SCF/month)	Natural Gas usage for Project (SCF/year)	Emission Factor (g CO2/SCF)**	Emission Factor (g/MMBTU)**	Heating Value of Natural Gas (BTU/SCF)**	Emissions (tons per year)	Emissions (pounds per day)
Carbon Dioxide	Office	135	2.0	270	3240	54.2	N/A	N/A	0	1
	Retail/Shopping	753	2.9	2183.7	26204.4	54.2	N/A	N/A	2	9
	Residential	1330	6665	8864450	106373400	54.2	N/A	N/A	6342	34751
	Industrial	0	241611	0	0	54.2	N/A	N/A	0	0
	Multi-family	2928	4011.5	11745672	140948064	54.2	N/A	N/A	8403	46046
Methane	Office	135	2.0	270	3240	N/A	4.75	1020	0.00	0.00
	Retail/Shopping	753	2.9	2183.7	26204.4	N/A	4.75	1020	0.00	0.00
	Residential	1330	6665	8864450	106373400	N/A	4.75	1020	0.57	3.11
	Industrial	0	241611	0	0	N/A	4.75	1020	0.00	0.00
	Multi-family	2928	4011.5	11745672	140948064	N/A	4.75	1020	0.75	4.12
Nitrous Oxide	Office	135	2.0	270	3240	N/A	0.095	1020	0.00	0.00
	Retail/Shopping	753	2.9	2183.7	26204.4	N/A	0.095	1020	0.00	0.00
	Residential	1330	6665	8864450	106373400	N/A	0.095	1020	0.01	0.06
	Industrial	0	241611	0	0	N/A	0.095	1020	0.00	0.00
	Multi-family	2928	4011.5	11745672	140948064	N/A	0.095	1020	0.02	0.08

Total

Units	Mitigation Reduction	Carbon Dioxide	Nitrous Oxide	Methane
pounds per day	28.3%	57938	0.10	5.18
tons per year		10574	0	1
GWP		1	310	21
Tg CO2 Eq/year		0.0106	0.000006	0.000020

* Natural gas usage factor from URBEMIS2002 default
** USEPA, 2004: Direct Emissions from Stationary Combustion Sources, Climate Leaders Greenhouse Inventory Protocol, Core Model Guidance, October 2004
Emissions of CO2 = Emission Factor x Natural Gas Usage x Number of Units/Square Feet
Emissions of CH4, N2O = Emission Factor x Heating Value of Natural Gas x Natural Gas Usage x Number of Units/Square Feet

The mitigation reduction = 20% assumed in URBEMIS through increasing energy efficiency. 8.3% is from the 2005 Residential Compliance Manual - Title 24 Building Standards, Introduction (http://www.energy.ca.gov/2005publications/CEC-400-2005-005/chapters_4q/1_Introduction.pdf).

Appendix D: Urebemis Construction Annual Unmitigated

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Urbemis 2007 Version 9.2.0

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: S:\Client\0116\0116 0021 Rich Haven\Climate Change\GreenhouseGasURBEMIS.urb9

Project Name: Rich Haven Greenhouse Gas Emissions

Project Location: South Coast AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	CO2
2007	1,874.09
Demolition 06/01/2007-06/15/2007	66.67
Fugitive Dust	0.00
Demo Off Road Diesel	41.10
Demo On Road Diesel	23.00
Demo Worker Trips	2.57
Mass Grading 06/18/2007-12/31/2007	1,807.42
Mass Grading Dust	0.00
Mass Grading Off Road Diesel	1,199.19
Mass Grading On Road Diesel	546.75
Mass Grading Worker Trips	61.48

2008	14,926.37
Building 01/01/2008-09/15/2008	14,661.37
Building Off Road Diesel	2,917.44
Building Vendor Trips	5,393.96
Building Worker Trips	6,349.97
Coating 06/01/2008-08/31/2008	131.47
Architectural Coating	0.00
Coating Worker Trips	131.47
Asphalt 08/18/2008-08/29/2008	133.54
Paving Off-Gas	0.00
Paving Off Road Diesel	50.02
Paving On Road Diesel	80.71
Paving Worker Trips	2.80

Phase Assumptions

Phase: Demolition 6/1/2007 - 6/15/2007 - Default Demolition Description

Building Volume Total (cubic feet): 710841.9

Building Volume Daily (cubic feet): 71042.88

On Road Truck Travel (VMT): 986.71

Off-Road Equipment:

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

2 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

8 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Mass Grading 6/18/2007 - 12/31/2007 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 717.56
Maximum Daily Acreage Disturbed: 179.39
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 1829.79
Off-Road Equipment:
2 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
4 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
20 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Paving 8/18/2008 - 8/29/2008 - Default Paving Description
Acres to be Paved: 71
Off-Road Equipment:
3 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
3 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
6 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2008 - 9/15/2008 - Default Building Construction Description
Off-Road Equipment:
4 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day
35 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
17 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

Phase: Architectural Coating 6/1/2008 - 8/31/2008 - Default Architectural Coating Description
Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100
Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250