
APPENDIX D

AIR QUALITY TECHNICAL APPENDIX

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INTRODUCTION

This appendix explains the methodology and approach used to estimate criteria pollutant air emissions for the Merced County General Plan Update.

The air quality analysis evaluates emissions for existing conditions (2010) and general plan buildout (2030). The emission estimates were made for the unincorporated portion of the county. Emissions of criteria pollutants were estimated for three general emission categories:

- Operational or on-road vehicle emissions,
- Area sources (which include fuel combustion used for space heating, water heating, and to power landscape maintenance equipment; and evaporative emissions associated with consumer products and paints), and
- Agricultural emissions.

The URBEMIS2007 model was used to estimate operational and area source GHG emissions. To estimate emissions, land use information was entered into URBEMIS. Land use information was based on the number of single and multi-family residential units and the square footage of retail, commercial, and industrial space associated with the unincorporated portion of the County. Square footages were based on estimates of the number of employees in the retail, commercial, and industrial sectors, which were converted to square footages using standard conversion factors.

To ensure consistency with the traffic report, the URBEMIS default trip lengths were adjusted so that the total vehicle miles traveled (VMT) reported by URBEMIS was consistent with the total VMT reported for the traffic analysis.

The California Air Resources Board's OFFROAD2007 model was used to estimate 2010 and 2030 agricultural emissions for Merced County. The results of each model run are reported below.

CONVERSION OF JOB ESTIMATES TO BUILDING SQUARE FOOTAGE

Information in the following table was used to convert number of employees in the retail, commercial, and industrial sector to square feet (Energy Information Administration, 1995). The warehouse value of 1,700 square feet per employee was used to estimate industrial square footage. The retail and service value of 900 square feet per employee was used to estimate retail square footage, and the office value of 400 square feet per employee was used to estimate office square footage.

| Land Use Type | Square feet per employee | |
|---------------|--------------------------|----------|
| 1 | Warehouse | 1,700.00 |
| 2 | Public Assembly | 1,300.00 |
| 3 | Lodging | 1,300.00 |
| 4 | Food Sales | 1,000.00 |
| 5 | Retail and Service | 900.00 |
| 6 | Education | 766.00 |
| 7 | Public Order and Safety | 750.00 |
| 8 | Food Service | 600.00 |
| 9 | Other | 550.00 |
| 10 | Health Care | 500.00 |
| 11 | Office | 400.00 |

Source: Energy Information Administration, 1995.

VMT ADJUSTMENTS: VMT REPORTED BY TRAFFIC STUDY

The following table shows the VMT, vehicle hours traveled, and average speed for several scenarios. This table was generated by the traffic consultant, KD Anderson and Associates. The values shown are for the entire county, consequently, they had to be adjusted to show traveled in unincorporated portions of the county.

Merced County General Plan Update Traffic Model Data:

Daily Vehicle Miles, Hours, and Average Speed

| Scenario | Daily Vehicle Miles Traveled (VMT) | Daily Vehicle Hours Traveled (VHT) | Average Daily Speed in Miles per Hour (MPH) |
|--------------------|------------------------------------|------------------------------------|---|
| 2005 | 10,731,826.35 | 258,832.04 | 41.46 |
| 2030 Base | 10,676,476.37 | 587,661.76 | 33.48 |
| 2030 Mitigated | 19,618,347.44 | 552,509.19 | 35.51 |
| Buildout Base | 21,751,272.64 | 663,228.15 | 32.80 |
| Buildout Mitigated | 21,616,577.70 | 606,452.36 | 35.64 |

Source: KD Anderson and Associates, 2011.

Adjustments to VMT

Two adjustments were made to the VMT estimates reported by the traffic study. VMT for two additional years not reported in the traffic study were estimated (2010 and 2020) by interpolating between 2005 and 2030. Also, the VMT estimates reported by the traffic study were for the entire county. For the air analysis, they were split into VMT for incorporated and unincorporated areas by using the population ratio of incorporated to unincorporated areas (Merced County Association of Governments, 2004.) The results of these VMT adjustments are shown in the following tables. The 2010 Base and Buildout Base were used to adjust VMT in the URBEMIS model runs.

| | VMT | VMT Incorporated | VMT Unincorporated | Vehicle Hours Traveled (VHT) | Speed | Population | | |
|-----------------------|------------|---------------------|-----------------------|---------------------------------------|-------|--------------|----------------|---------|
| | | | | | | Incorporated | Unincorporated | Total |
| 2005 | 10,731,826 | 6,830,144 | 3,901,682 | 258,832 | 41.46 | 155,100 | 88,600 | 243,700 |
| 2010 Base | 12,520,756 | 8,087,266 | 4,433,490 | 324,598 | 38.57 | 178,400 | 97,800 | 276,200 |
| 2020 Base | 16,098,616 | 10,345,061 | 5,753,555 | 456,130 | 35.29 | 219,000 | 121,800 | 340,800 |
| 2020 Mitigated | 16,063,739 | 10,322,649 | 5,741,090 | 435,038 | 36.92 | | | |
| 2030 Base | 19,676,476 | 12,484,092 | 7,192,384 | 587,662 | 33.48 | 264,700 | 152,500 | 417,200 |
| 2030 Mitigated | 19,618,347 | 12,447,211 | 7,171,136 | 552,509 | 35.51 | | | |
| Buildout Base | 21,751,272 | 13,800,483 | 7,950,789 | 663,228 | 32.80 | 264,700 | 152,500 | 417,200 |
| Buildout Mitigated | 21,616,577 | 13,715,024 | 7,901,553 | 606,452 | 35.64 | | | |

URBEMIS Existing Conditions (2010) Results

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\EPP - Merced County General Plan Update\Air Quality Calculations\URBEMIS files\2010_UNINC_Merced.urb924

Project Name: 2010 UNINCORP Merced

Project Location: Merced County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

| AREA SOURCE EMISSION ESTIMATES | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---|------------|------------|-----------|------------|-------------|--------------|--------------|
| TOTALS (tons/year, unmitigated) | 489.23 | 113.39 | 2,145.48 | 6.53 | 327.13 | 314.86 | 148,194.34 |
| OPERATIONAL (VEHICLE) EMISSION ESTIMATES | | | | | | | |
| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
| TOTALS (tons/year, unmitigated) | 1,034.75 | 2,356.16 | 12,516.49 | 8.53 | 743.78 | 197.55 | 869,045.63 |
| SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES | | | | | | | |
| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
| TOTALS (tons/year, unmitigated) | 1,523.98 | 2,469.55 | 14,661.97 | 15.06 | 1,070.91 | 512.41 | 1,017,239.97 |

| AREA SOURCE EMISSION ESTIMATES | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|--|---------------|---------------|-----------------|-------------|---------------|---------------|-------------------|
| Area Source Unmitigated Detail Report: | | | | | | | |
| AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated | | | | | | | |
| <u>Source</u> | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
| Natural Gas | 5.59 | 72.92 | 34.61 | 0.00 | 0.14 | 0.14 | 92,425.94 |
| Hearth | 220.74 | 39.25 | 2,002.64 | 6.53 | 326.70 | 314.44 | 55,594.50 |
| Landscape | 19.50 | 1.22 | 108.23 | 0.00 | 0.29 | 0.28 | 173.90 |
| Consumer Products | 187.56 | | | | | | |
| Architectural Coatings | 55.84 | | | | | | |
| TOTALS (tons/year, unmitigated) | 489.23 | 113.39 | 2,145.48 | 6.53 | 327.13 | 314.86 | 148,194.34 |

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 0% to 62%

Percentage of residences with natural gas fireplaces changed from 0% to 38%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| <u>Source</u> | <u>ROG</u> | <u>NOX</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM25</u> | <u>CO2</u> |
|-------------------------|------------|------------|-----------|------------|-------------|-------------|------------|
| Single family housing | 544.86 | 1,223.13 | 6,601.22 | 4.45 | 386.65 | 102.83 | 453,336.51 |
| Apartments mid rise | 27.69 | 59.58 | 321.56 | 0.22 | 18.83 | 5.01 | 22,082.90 |
| Strip mall | 331.13 | 794.62 | 4,138.65 | 2.86 | 250.41 | 66.40 | 291,330.02 |
| General office building | 12.23 | 27.91 | 148.20 | 0.10 | 8.82 | 2.34 | 10,302.69 |
| Warehouse | 118.84 | 250.92 | 1,306.86 | 0.90 | 79.07 | 20.97 | 91,993.51 |

| AREA SOURCE EMISSION ESTIMATES | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (tons/year, unmitigated) | 1,034.75 | 2,356.16 | 12,516.49 | 8.53 | 743.78 | 197.55 | 869,045.63 |

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|-------------------------|----------|-----------|----------------|-----------|-------------|--------------|
| Single family housing | 8,933.33 | 9.57 | dwelling units | 26,800.00 | 256,475.99 | 2,303,821.28 |
| Apartments mid rise | 57.08 | 5.76 | dwelling units | 2,169.00 | 12,493.44 | 112,223.58 |
| Strip mall | | 42.94 | 1000 sq ft | 4,435.00 | 190,438.89 | 1,493,802.72 |
| General office building | | 11.01 | 1000 sq ft | 557.00 | 6,132.57 | 52,556.13 |
| Warehouse | | 4.96 | 1000 sq ft | 12,124.00 | 60,135.04 | 471,699.27 |
| | | | | | 525,675.93 | 4,434,102.98 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|--------------|--------------|--------------|----------|--------|
| Light Auto | 41.1 | 1.5 | 98.0 | 0.5 |

| AREA SOURCE EMISSION ESTIMATES | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| Light Truck < 3750 lbs | | 14.6 | | 3.4 | | 89.1 | 7.5 |
| Light Truck 3751-5750 lbs | | 20.7 | | 1.9 | | 97.6 | 0.5 |
| Med Truck 5751-8500 lbs | | 10.5 | | 1.0 | | 98.0 | 1.0 |
| Lite-Heavy Truck 8501-10,000 lbs | | 2.0 | | 0.0 | | 70.0 | 30.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | | 0.9 | | 0.0 | | 44.4 | 55.6 |
| Med-Heavy Truck 14,001-33,000 lbs | | 1.1 | | 9.1 | | 18.2 | 72.7 |
| Heavy-Heavy Truck 33,001-60,000 lbs | | 4.2 | | 0.0 | | 0.0 | 100.0 |
| Other Bus | | 0.1 | | 0.0 | | 0.0 | 100.0 |
| Urban Bus | | 0.0 | | 0.0 | | 0.0 | 0.0 |
| Motorcycle | | 3.7 | | 67.6 | | 32.4 | 0.0 |
| School Bus | | 0.2 | | 0.0 | | 0.0 | 100.0 |
| Motor Home | | 0.9 | | 0.0 | | 88.9 | 11.1 |

Travel Conditions

| | Residential | | | Commercial | | |
|---------------------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 11.3 | 7.7 | 7.9 | 10.0 | 7.8 | 7.8 |
| 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 | | | |

| AREA SOURCE EMISSION ESTIMATES | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| % of Trips - Commercial (by land use) | | | | | | | |
| Strip mall | | | | | 2.0 | 1.0 | 97.0 |
| General office building | | | | | 35.0 | 17.5 | 47.5 |
| Warehouse | | | | | 2.0 | 1.0 | 97.0 |

URBEMIS GENERAL PLAN BUILDOUT (2030) RESULTS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\EPP - Merced County General Plan Update\Air Quality Calculations\URBEMIS files\2030_UNINC_Buildout_Merced.urb924

Project Name: Buildout UNINC 2030 Merced

Project Location: Merced County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (tons/year, unmitigated) | 961.58 | 244.05 | 4,132.38 | 12.53 | 626.93 | 603.44 | 316,188.94 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|--------------|
| TOTALS (tons/year, unmitigated) | 635.60 | 847.65 | 6,703.66 | 15.13 | 1,252.88 | 280.82 | 1,555,002.09 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|--------------|
| TOTALS (tons/year, unmitigated) | 1,597.18 | 1,091.70 | 10,836.04 | 27.66 | 1,879.81 | 884.26 | 1,871,191.03 |

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| <u>Source</u> | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| Natural Gas | 12.66 | 166.50 | 88.35 | 0.00 | 0.31 | 0.31 | 209,314.78 |
| Hearth | 423.47 | 75.22 | 3,837.78 | 12.52 | 626.07 | 602.59 | 106,542.87 |
| Landscape | 37.22 | 2.33 | 206.25 | 0.01 | 0.55 | 0.54 | 331.29 |
| Consumer Products | 365.32 | | | | | | |
| Architectural Coatings | 122.91 | | | | | | |
| TOTALS (tons/year, unmitigated) | 961.58 | 244.05 | 4,132.38 | 12.53 | 626.93 | 603.44 | 316,188.94 |

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 0% to 61%

Percentage of residences with natural gas fireplaces changed from 0% to 39%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| <u>Source</u> | <u>ROG</u> | <u>NOX</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM25</u> | <u>CO2</u> |
|---------------|------------|------------|-----------|------------|-------------|-------------|------------|
|---------------|------------|------------|-----------|------------|-------------|-------------|------------|

| | | | | | | | |
|--|---------------|---------------|-----------------|--------------|-----------------|---------------|---------------------|
| Single family housing | 225.57 | 286.51 | 2,349.67 | 5.19 | 425.72 | 95.81 | 532,593.12 |
| Apartments mid rise | 14.83 | 17.60 | 144.35 | 0.32 | 26.15 | 5.89 | 32,720.06 |
| Strip mall | 325.03 | 459.58 | 3,553.37 | 8.12 | 677.08 | 151.38 | 836,251.18 |
| General office building | 21.27 | 27.65 | 220.90 | 0.50 | 40.97 | 9.19 | 50,977.64 |
| Warehouse | 48.90 | 56.31 | 435.37 | 1.00 | 82.96 | 18.55 | 102,460.09 |
| TOTALS (tons/year, unmitigated) | 635.60 | 847.65 | 6,703.66 | 15.13 | 1,252.88 | 280.82 | 1,555,002.09 |

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|-------------------------|-----------|-----------|----------------|-----------|-------------|--------------|
| Single family housing | 17,066.33 | 9.57 | dwelling units | 51,199.00 | 489,974.41 | 2,698,338.18 |
| Apartments mid rise | 137.53 | 5.76 | dwelling units | 5,226.00 | 30,101.76 | 165,773.41 |
| Strip mall | | 42.94 | 1000 sq ft | 20,753.00 | 891,133.79 | 4,300,611.84 |
| General office building | | 11.01 | 1000 sq ft | 4,492.00 | 49,456.92 | 259,896.12 |

| | | | | | |
|-----------|------|------------|-----------|--------------|--------------|
| Warehouse | 4.96 | 1000 sq ft | 22,013.00 | 109,184.48 | 526,924.32 |
| | | | | 1,569,851.36 | 7,951,543.87 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Auto | 41.2 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 14.4 | 0.0 | 99.3 | 0.7 |
| Light Truck 3751-5750 lbs | 20.9 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 10.7 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.1 | 0.0 | 81.0 | 19.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.1 | 0.0 | 18.2 | 81.8 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 3.7 | 0.0 | 2.7 | 97.3 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.0 | 0.0 | 0.0 | 0.0 |
| Motorcycle | 3.8 | 34.2 | 65.8 | 0.0 |
| School Bus | 0.2 | 0.0 | 0.0 | 100.0 |
| Motor Home | 0.9 | 0.0 | 88.9 | 11.1 |

Travel Conditions

| | Residential | | | Commute | Commercial | |
|---------------------------------------|-------------|-----------|------------|---------|------------|----------|
| | Home-Work | Home-Shop | Home-Other | | Non-Work | Customer |
| Urban Trip Length (miles) | 6.8 | 4.8 | 4.9 | 6.1 | 4.8 | 4.8 |
| 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 | | | |
| | | | | | | |
| % of Trips - Commercial (by land use) | | | | | | |
| Strip mall | | | | 2.0 | 1.0 | 97.0 |
| General office building | | | | 35.0 | 17.5 | 47.5 |
| Warehouse | | | | 2.0 | 1.0 | 97.0 |

Merced County 2010 Agriculture Emissions

Merced County's 2010 and 2030 agricultural emissions were estimated using the California Air Resources Board's OFFROAD2007 model.

| Equipment | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|-----------------------|-------|----------------|---------------|----------------|----------------|----------------|---------------|----------------|----------------|
| 2-Wheel Tractors | 5 | 5.91E-04 | 9.35E-03 | 2.67E-04 | 2.45E-02 | 8.47E-07 | 8.00E-06 | 3.64E-05 | 3.36E-05 |
| 2-Wheel Tractors | 15 | 1.83E-03 | 6.95E-02 | 1.36E-03 | 1.18E-01 | 3.38E-06 | 9.93E-04 | 1.31E-04 | 1.04E-04 |
| 2-Wheel Tractors | 25 | 1.04E-04 | 3.96E-03 | 6.75E-05 | 6.36E-03 | 1.61E-07 | 5.33E-05 | 4.87E-06 | 5.89E-06 |
| Agricultural Tractors | 120 | 5.67E-03 | 9.21E-02 | 1.56E-02 | 1.38E+00 | 1.33E-05 | 1.07E-04 | 3.58E-04 | 3.22E-04 |
| Agricultural Tractors | 175 | 5.22E-04 | 1.01E-02 | 3.68E-03 | 2.80E-01 | 2.78E-06 | 2.23E-05 | 6.54E-05 | 2.96E-05 |
| Combines | 120 | 1.77E-04 | 3.66E-03 | 7.02E-04 | 1.18E-01 | 1.14E-06 | 9.11E-06 | 1.63E-05 | 1.01E-05 |
| Combines | 175 | 9.15E-05 | 3.20E-03 | 6.83E-04 | 1.01E-01 | 1.00E-06 | 8.06E-06 | 1.22E-05 | 5.20E-06 |
| Combines | 250 | 1.60E-05 | 7.00E-04 | 1.32E-04 | 2.15E-02 | 2.19E-07 | 1.76E-06 | 2.55E-06 | 9.12E-07 |
| Balers | 50 | 9.06E-04 | 2.45E-02 | 1.77E-03 | 2.38E-01 | 2.89E-06 | 1.82E-05 | 7.86E-05 | 5.15E-05 |
| Balers | 120 | 5.62E-04 | 9.82E-03 | 2.37E-03 | 2.20E-01 | 2.13E-06 | 1.71E-05 | 6.52E-05 | 3.19E-05 |
| Agricultural Mowers | 15 | 8.16E-04 | 2.75E-02 | 4.83E-04 | 4.44E-02 | 1.27E-06 | 3.70E-04 | 5.35E-05 | 4.64E-05 |
| Agricultural Mowers | 25 | 1.50E-03 | 5.27E-02 | 8.14E-04 | 8.17E-02 | 2.07E-06 | 6.82E-04 | 6.43E-05 | 8.54E-05 |
| Sprayers | 5 | 1.14E-03 | 1.86E-02 | 5.13E-04 | 4.77E-02 | 1.65E-06 | 1.56E-05 | 7.76E-05 | 6.46E-05 |
| Sprayers | 15 | 7.08E-04 | 1.87E-02 | 2.43E-04 | 2.60E-02 | 7.41E-07 | 1.96E-04 | 3.01E-05 | 4.02E-05 |
| Sprayers | 25 | 4.05E-03 | 1.17E-01 | 1.37E-03 | 1.63E-01 | 4.14E-06 | 1.23E-03 | 1.17E-04 | 2.30E-04 |
| Sprayers | 50 | 1.75E-04 | 4.72E-03 | 3.38E-04 | 4.52E-02 | 5.49E-07 | 3.46E-06 | 1.61E-05 | 9.93E-06 |
| Sprayers | 120 | 4.02E-04 | 7.01E-03 | 1.67E-03 | 1.55E-01 | 1.50E-06 | 1.20E-05 | 4.68E-05 | 2.29E-05 |
| Sprayers | 175 | 1.07E-04 | 2.18E-03 | 8.52E-04 | 7.01E-02 | 6.96E-07 | 5.58E-06 | 1.63E-05 | 6.08E-06 |
| Tillers | 15 | 7.11E-02 | 2.03E+00 | 2.62E-02 | 2.93E+00 | 8.34E-05 | 1.53E-03 | 2.81E-03 | 4.04E-03 |
| Swathers | 120 | 2.11E-03 | 3.68E-02 | 8.64E-03 | 8.01E-01 | 7.74E-06 | 6.21E-05 | 2.10E-04 | 1.20E-04 |
| Swathers | 175 | 1.35E-03 | 2.73E-02 | 1.07E-02 | 8.76E-01 | 8.70E-06 | 6.98E-05 | 2.08E-04 | 7.65E-05 |
| Hydro Power Units | 5 | 1.75E-04 | 2.69E-03 | 7.92E-05 | 7.19E-03 | 2.48E-07 | 2.34E-06 | 1.01E-05 | 9.97E-06 |
| Hydro Power Units | 15 | 9.68E-04 | 3.58E-02 | 7.20E-04 | 6.09E-02 | 1.74E-06 | 5.11E-04 | 7.17E-05 | 5.50E-05 |
| Hydro Power Units | 25 | 8.28E-04 | 3.08E-02 | 5.39E-04 | 4.93E-02 | 1.25E-06 | 4.14E-04 | 3.92E-05 | 4.71E-05 |
| Hydro Power Units | 50 | 2.55E-05 | 1.57E-03 | 4.23E-05 | 1.63E-02 | 1.99E-07 | 1.25E-06 | 3.01E-06 | 1.45E-06 |
| Hydro Power Units | 120 | 1.65E-06 | 7.35E-05 | 4.09E-06 | 3.51E-03 | 3.39E-08 | 2.72E-07 | 3.36E-07 | 9.40E-08 |

| Equipment | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|------------------------------|-------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|
| Other Agricultural Equipment | 5 | 7.73E-05 | 1.28E-03 | 3.49E-05 | 3.26E-03 | 1.13E-07 | 1.06E-06 | 5.07E-06 | 4.40E-06 |
| Other Agricultural Equipment | 15 | 1.42E-04 | 4.56E-03 | 7.44E-05 | 7.14E-03 | 2.03E-07 | 5.90E-05 | 7.11E-06 | 8.10E-06 |
| Other Agricultural Equipment | 25 | 8.85E-05 | 3.00E-03 | 4.31E-05 | 4.55E-03 | 1.15E-07 | 3.76E-05 | 2.80E-06 | 5.03E-06 |
| Other Agricultural Equipment | 50 | 4.56E-05 | 1.22E-03 | 8.50E-05 | 1.12E-02 | 1.36E-07 | 8.56E-07 | 4.08E-06 | 2.59E-06 |
| Other Agricultural Equipment | 120 | 4.06E-04 | 7.03E-03 | 1.61E-03 | 1.48E-01 | 1.43E-06 | 1.15E-05 | 4.29E-05 | 2.31E-05 |
| Other Agricultural Equipment | 175 | 5.24E-05 | 1.06E-03 | 4.09E-04 | 3.33E-02 | 3.31E-07 | 2.65E-06 | 7.50E-06 | 2.98E-06 |
| Other Agricultural Equipment | 250 | 3.02E-05 | 7.10E-04 | 2.37E-04 | 2.17E-02 | 2.22E-07 | 1.78E-06 | 3.64E-06 | 1.72E-06 |
| Agricultural Tractors | 15 | 5.88E-03 | 3.09E-02 | 3.68E-02 | 5.05E+00 | 7.86E-05 | 1.51E-03 | 0.00E+00 | 5.31E-04 |
| Agricultural Tractors | 25 | 1.47E-02 | 4.93E-02 | 9.42E-02 | 1.19E+01 | 1.52E-04 | 4.84E-03 | 0.00E+00 | 1.33E-03 |
| Agricultural Tractors | 50 | 1.80E-01 | 4.53E-01 | 4.37E-01 | 4.22E+01 | 5.45E-04 | 4.33E-02 | 0.00E+00 | 1.62E-02 |
| Agricultural Tractors | 120 | 1.98E-01 | 6.98E-01 | 1.27E+00 | 1.04E+02 | 1.22E-03 | 1.03E-01 | 0.00E+00 | 1.79E-02 |
| Agricultural Tractors | 175 | 1.26E-01 | 5.47E-01 | 1.08E+00 | 1.00E+02 | 1.13E-03 | 5.52E-02 | 0.00E+00 | 1.14E-02 |
| Agricultural Tractors | 250 | 7.82E-02 | 2.36E-01 | 9.34E-01 | 9.23E+01 | 1.04E-03 | 3.02E-02 | 0.00E+00 | 7.06E-03 |
| Agricultural Tractors | 500 | 2.30E-02 | 8.90E-02 | 2.77E-01 | 3.00E+01 | 2.94E-04 | 9.12E-03 | 0.00E+00 | 2.07E-03 |
| Combines | 120 | 1.44E-03 | 5.57E-03 | 1.02E-02 | 9.00E-01 | 1.06E-05 | 7.12E-04 | 0.00E+00 | 1.30E-04 |
| Combines | 175 | 1.84E-03 | 8.85E-03 | 1.75E-02 | 1.76E+00 | 1.98E-05 | 7.76E-04 | 0.00E+00 | 1.66E-04 |
| Combines | 250 | 1.83E-03 | 6.11E-03 | 2.47E-02 | 2.64E+00 | 2.98E-05 | 7.00E-04 | 0.00E+00 | 1.65E-04 |
| Combines | 500 | 9.21E-05 | 3.55E-04 | 1.26E-03 | 1.45E-01 | 1.43E-06 | 3.68E-05 | 0.00E+00 | 8.31E-06 |
| Balers | 50 | 1.12E-06 | 3.18E-06 | 4.02E-06 | 4.14E-04 | 5.35E-09 | 3.20E-07 | 0.00E+00 | 1.01E-07 |
| Balers | 120 | 6.77E-04 | 2.67E-03 | 4.87E-03 | 4.37E-01 | 5.13E-06 | 3.31E-04 | 0.00E+00 | 6.11E-05 |
| Agricultural Mowers | 120 | 9.08E-05 | 3.29E-04 | 6.00E-04 | 5.03E-02 | 5.90E-07 | 4.64E-05 | 0.00E+00 | 8.19E-06 |
| Sprayers | 25 | 5.71E-05 | 1.47E-04 | 2.36E-04 | 2.43E-02 | 3.09E-07 | 1.70E-05 | 0.00E+00 | 5.15E-06 |
| Sprayers | 50 | 2.30E-05 | 6.52E-05 | 8.27E-05 | 8.52E-03 | 1.10E-07 | 6.57E-06 | 0.00E+00 | 2.07E-06 |
| Sprayers | 120 | 3.18E-04 | 1.26E-03 | 2.29E-03 | 2.06E-01 | 2.42E-06 | 1.56E-04 | 0.00E+00 | 2.87E-05 |
| Sprayers | 175 | 1.45E-04 | 7.14E-04 | 1.41E-03 | 1.44E-01 | 1.62E-06 | 6.06E-05 | 0.00E+00 | 1.31E-05 |
| | | | | | | | | | |

| Equipment | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|---------------------------------|--------------------|----------------|---------------|----------------|----------------|----------------|---------------|----------------|----------------|
| Sprayers | 500 | 1.67E-05 | 6.44E-05 | 2.36E-04 | 2.75E-02 | 2.70E-07 | 6.70E-06 | 0.00E+00 | 1.51E-06 |
| Tillers | 15 | 8.23E-07 | 4.61E-06 | 5.79E-06 | 7.55E-04 | 1.17E-08 | 3.18E-07 | 0.00E+00 | 7.43E-08 |
| Tillers | 250 | 1.73E-06 | 5.74E-06 | 2.31E-05 | 2.47E-03 | 2.78E-08 | 6.64E-07 | 0.00E+00 | 1.56E-07 |
| Tillers | 500 | 8.49E-06 | 3.28E-05 | 1.15E-04 | 1.32E-02 | 1.30E-07 | 3.39E-06 | 0.00E+00 | 7.66E-07 |
| Swathers | 120 | 4.22E-03 | 1.65E-02 | 3.02E-02 | 2.70E+00 | 3.16E-05 | 2.07E-03 | 0.00E+00 | 3.81E-04 |
| Swathers | 175 | 4.74E-05 | 2.31E-04 | 4.57E-04 | 4.63E-02 | 5.21E-07 | 1.98E-05 | 0.00E+00 | 4.28E-06 |
| Hydro Power Units | 15 | 1.98E-05 | 1.04E-04 | 1.24E-04 | 1.70E-02 | 2.65E-07 | 5.10E-06 | 0.00E+00 | 1.79E-06 |
| Hydro Power Units | 25 | 1.20E-04 | 4.03E-04 | 7.70E-04 | 9.76E-02 | 1.24E-06 | 3.95E-05 | 0.00E+00 | 1.08E-05 |
| Hydro Power Units | 50 | 1.03E-03 | 2.49E-03 | 2.11E-03 | 1.95E-01 | 2.53E-06 | 2.33E-04 | 0.00E+00 | 9.29E-05 |
| Hydro Power Units | 120 | 7.68E-05 | 2.56E-04 | 4.64E-04 | 3.59E-02 | 4.21E-07 | 4.09E-05 | 0.00E+00 | 6.93E-06 |
| Other Agricultural Equipment | 15 | 5.15E-05 | 2.65E-04 | 3.26E-04 | 4.35E-02 | 6.76E-07 | 1.72E-05 | 0.00E+00 | 4.64E-06 |
| Other Agricultural Equipment | 25 | 3.60E-04 | 1.05E-03 | 1.96E-03 | 2.22E-01 | 2.81E-06 | 1.18E-04 | 0.00E+00 | 3.24E-05 |
| Other Agricultural Equipment | 50 | 1.17E-03 | 3.01E-03 | 3.07E-03 | 3.01E-01 | 3.89E-06 | 2.91E-04 | 0.00E+00 | 1.06E-04 |
| Other Agricultural Equipment | 120 | 3.71E-03 | 1.34E-02 | 2.44E-02 | 2.03E+00 | 2.39E-05 | 1.90E-03 | 0.00E+00 | 3.35E-04 |
| Other Agricultural Equipment | 175 | 3.69E-04 | 1.64E-03 | 3.25E-03 | 3.07E-01 | 3.45E-06 | 1.60E-04 | 0.00E+00 | 3.33E-05 |
| Other Agricultural Equipment | 250 | 3.57E-04 | 1.10E-03 | 4.39E-03 | 4.44E-01 | 5.00E-06 | 1.38E-04 | 0.00E+00 | 3.22E-05 |
| Other Agricultural Equipment | 500 | 1.12E-04 | 4.38E-04 | 1.40E-03 | 1.54E-01 | 1.51E-06 | 4.47E-05 | 0.00E+00 | 1.01E-05 |
| | Tons per day -> | 0.7 | 4.8 | 4.4 | 368.8 | 0.0 | 0.3 | 0.0 | 0.1 |
| | Tons per year-> | 270.7 | 1,764.5 | 1,588.3 | 134,620.7 | 1.7 | 95.4 | 1.5 | 21.1 |

MERCED COUNTY 2030 AGRICULTURE EMISSIONS

| Equipment | Fuel | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|-----------------------|------|-------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|
| 2-Wheel Tractors | G4 | 5 | 5.65E-04 | 8.94E-03 | 2.55E-04 | 2.34E-02 | 8.09E-07 | 7.64E-06 | 3.47E-05 | 3.21E-05 |
| 2-Wheel Tractors | G4 | 15 | 1.75E-03 | 6.65E-02 | 1.30E-03 | 1.13E-01 | 3.23E-06 | 9.49E-04 | 1.25E-04 | 9.94E-05 |
| 2-Wheel Tractors | G4 | 25 | 9.90E-05 | 3.79E-03 | 6.45E-05 | 6.07E-03 | 1.54E-07 | 5.09E-05 | 4.66E-06 | 5.63E-06 |
| Agricultural Tractors | G4 | 120 | 1.35E-03 | 7.65E-02 | 3.13E-03 | 1.32E+00 | 1.27E-05 | 1.02E-04 | 1.54E-04 | 7.69E-05 |
| Agricultural Tractors | G4 | 175 | 2.61E-04 | 1.01E-02 | 6.73E-04 | 2.67E-01 | 2.66E-06 | 2.13E-05 | 2.67E-05 | 1.48E-05 |
| Combines | G4 | 120 | 4.95E-05 | 2.08E-03 | 1.14E-04 | 1.12E-01 | 1.09E-06 | 8.70E-06 | 7.20E-06 | 2.82E-06 |
| Combines | G4 | 175 | 3.16E-05 | 3.08E-03 | 1.08E-04 | 9.67E-02 | 9.60E-07 | 7.70E-06 | 5.32E-06 | 1.80E-06 |
| Combines | G4 | 250 | 5.73E-06 | 6.72E-04 | 6.16E-05 | 2.05E-02 | 2.10E-07 | 1.68E-06 | 1.80E-06 | 3.26E-07 |
| Balers | G4 | 50 | 2.77E-04 | 1.68E-02 | 4.33E-04 | 2.28E-01 | 2.77E-06 | 1.74E-05 | 3.80E-05 | 1.58E-05 |
| Balers | G4 | 120 | 1.03E-04 | 3.97E-03 | 2.63E-04 | 2.10E-01 | 2.03E-06 | 1.63E-05 | 2.04E-05 | 5.88E-06 |
| Agricultural Mowers | G4 | 15 | 6.53E-04 | 2.49E-02 | 4.86E-04 | 4.24E-02 | 1.21E-06 | 3.56E-04 | 5.27E-05 | 3.72E-05 |
| Agricultural Mowers | G4 | 25 | 1.27E-03 | 4.86E-02 | 8.28E-04 | 7.81E-02 | 1.98E-06 | 6.54E-04 | 6.37E-05 | 7.22E-05 |
| Sprayers | G4 | 5 | 1.09E-03 | 1.78E-02 | 4.90E-04 | 4.56E-02 | 1.58E-06 | 1.49E-05 | 7.42E-05 | 6.18E-05 |
| Sprayers | G4 | 15 | 3.80E-04 | 1.46E-02 | 2.81E-04 | 2.48E-02 | 7.08E-07 | 2.08E-04 | 3.20E-05 | 2.16E-05 |
| Sprayers | G4 | 25 | 2.52E-03 | 9.73E-02 | 1.63E-03 | 1.56E-01 | 3.96E-06 | 1.31E-03 | 1.28E-04 | 1.43E-04 |
| Sprayers | G4 | 50 | 5.38E-05 | 3.33E-03 | 8.31E-05 | 4.32E-02 | 5.25E-07 | 3.31E-06 | 7.81E-06 | 3.06E-06 |
| Sprayers | G4 | 120 | 7.48E-05 | 2.95E-03 | 1.90E-04 | 1.48E-01 | 1.43E-06 | 1.15E-05 | 1.48E-05 | 4.26E-06 |
| Sprayers | G4 | 175 | 2.45E-05 | 2.14E-03 | 9.52E-05 | 6.70E-02 | 6.65E-07 | 5.33E-06 | 5.11E-06 | 1.39E-06 |
| Tillers | G4 | 15 | 2.91E-02 | 1.64E+00 | 2.10E-02 | 2.80E+00 | 7.97E-05 | 1.42E-03 | 2.45E-03 | 1.65E-03 |
| Swathers | G4 | 120 | 3.99E-04 | 1.61E-02 | 1.01E-03 | 7.66E-01 | 7.40E-06 | 5.93E-05 | 6.77E-05 | 2.27E-05 |
| Swathers | G4 | 175 | 3.23E-04 | 2.69E-02 | 1.22E-03 | 8.37E-01 | 8.32E-06 | 6.67E-05 | 6.61E-05 | 1.84E-05 |
| Hydro Power Units | G4 | 5 | 1.68E-04 | 2.57E-03 | 7.57E-05 | 6.87E-03 | 2.37E-07 | 2.24E-06 | 9.69E-06 | 9.53E-06 |
| Hydro Power Units | G4 | 15 | 9.25E-04 | 3.42E-02 | 6.88E-04 | 5.82E-02 | 1.66E-06 | 4.88E-04 | 6.85E-05 | 5.26E-05 |
| Hydro Power Units | G4 | 25 | 7.91E-04 | 2.94E-02 | 5.15E-04 | 4.72E-02 | 1.20E-06 | 3.95E-04 | 3.74E-05 | 4.50E-05 |
| Hydro Power Units | G4 | 50 | 2.08E-05 | 1.50E-03 | 2.94E-05 | 1.56E-02 | 1.90E-07 | 1.20E-06 | 2.52E-06 | 1.18E-06 |
| Hydro Power Units | G4 | 120 | 1.57E-06 | 7.03E-05 | 3.62E-06 | 3.35E-03 | 3.24E-08 | 2.60E-07 | 3.12E-07 | 8.95E-08 |
| Other Agricultural | G4 | 5 | 7.39E-05 | 1.23E-03 | 3.34E-05 | 3.12E-03 | 1.08E-07 | 1.02E-06 | 4.84E-06 | 4.20E-06 |

| Equipment | Fuel | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|------------------------------|------|-------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|
| Other Agricultural Equipment | G4 | 15 | 1.04E-04 | 4.00E-03 | 7.75E-05 | 6.82E-03 | 1.94E-07 | 5.72E-05 | 7.13E-06 | 5.92E-06 |
| Other Agricultural Equipment | G4 | 25 | 7.01E-05 | 2.71E-03 | 4.57E-05 | 4.35E-03 | 1.10E-07 | 3.64E-05 | 2.84E-06 | 3.99E-06 |
| Other Agricultural Equipment | G4 | 50 | 1.30E-05 | 8.69E-04 | 1.92E-05 | 1.07E-02 | 1.30E-07 | 8.19E-07 | 1.92E-06 | 7.38E-07 |
| Other Agricultural Equipment | G4 | 120 | 6.60E-05 | 2.93E-03 | 1.52E-04 | 1.41E-01 | 1.37E-06 | 1.10E-05 | 1.31E-05 | 3.75E-06 |
| Other Agricultural Equipment | G4 | 175 | 1.15E-05 | 1.02E-03 | 3.75E-05 | 3.18E-02 | 3.16E-07 | 2.53E-06 | 2.26E-06 | 6.54E-07 |
| Other Agricultural Equipment | G4 | 250 | 6.10E-06 | 6.88E-04 | 6.29E-05 | 2.08E-02 | 2.12E-07 | 1.70E-06 | 1.88E-06 | 3.47E-07 |
| Agricultural Tractors | D | 15 | 5.62E-03 | 2.95E-02 | 3.52E-02 | 4.82E+00 | 7.51E-05 | 1.37E-03 | 0.00E+00 | 5.07E-04 |
| Agricultural Tractors | D | 25 | 1.38E-02 | 4.70E-02 | 8.69E-02 | 1.14E+01 | 1.45E-04 | 3.25E-03 | 0.00E+00 | 1.24E-03 |
| Agricultural Tractors | D | 50 | 2.74E-02 | 2.85E-01 | 2.28E-01 | 4.02E+01 | 5.20E-04 | 3.29E-03 | 0.00E+00 | 2.47E-03 |
| Agricultural Tractors | D | 120 | 3.70E-02 | 5.98E-01 | 2.98E-01 | 9.91E+01 | 1.16E-03 | 7.09E-03 | 0.00E+00 | 3.34E-03 |
| Agricultural Tractors | D | 175 | 2.65E-02 | 5.09E-01 | 1.10E-01 | 9.55E+01 | 1.07E-03 | 4.57E-03 | 0.00E+00 | 2.40E-03 |
| Agricultural Tractors | D | 250 | 2.25E-02 | 1.60E-01 | 8.46E-02 | 8.81E+01 | 9.92E-04 | 2.79E-03 | 0.00E+00 | 2.03E-03 |
| Agricultural Tractors | D | 500 | 7.27E-03 | 5.06E-02 | 2.59E-02 | 2.86E+01 | 2.81E-04 | 8.92E-04 | 0.00E+00 | 6.56E-04 |
| Combines | D | 120 | 2.07E-04 | 4.80E-03 | 2.46E-03 | 8.59E-01 | 1.01E-05 | 4.60E-05 | 0.00E+00 | 1.87E-05 |
| Combines | D | 175 | 2.96E-04 | 8.27E-03 | 1.81E-03 | 1.68E+00 | 1.89E-05 | 6.15E-05 | 0.00E+00 | 2.67E-05 |
| Combines | D | 250 | 4.08E-04 | 4.24E-03 | 2.26E-03 | 2.52E+00 | 2.84E-05 | 6.65E-05 | 0.00E+00 | 3.68E-05 |
| Combines | D | 500 | 2.21E-05 | 2.31E-04 | 1.18E-04 | 1.39E-01 | 1.36E-06 | 3.61E-06 | 0.00E+00 | 2.00E-06 |
| Balers | D | 50 | 1.33E-07 | 2.08E-06 | 2.07E-06 | 3.95E-04 | 5.11E-09 | 2.14E-08 | 0.00E+00 | 1.20E-08 |
| Balers | D | 120 | 9.11E-05 | 2.30E-03 | 1.18E-03 | 4.17E-01 | 4.89E-06 | 2.10E-05 | 0.00E+00 | 8.22E-06 |
| Agricultural Mowers | D | 120 | 1.58E-05 | 2.82E-04 | 1.42E-04 | 4.80E-02 | 5.63E-07 | 3.18E-06 | 0.00E+00 | 1.43E-06 |
| Sprayers | D | 25 | 2.81E-05 | 9.57E-05 | 1.78E-04 | 2.32E-02 | 2.95E-07 | 6.80E-06 | 0.00E+00 | 2.53E-06 |
| Sprayers | D | 50 | 2.69E-06 | 4.27E-05 | 4.26E-05 | 8.13E-03 | 1.05E-07 | 4.37E-07 | 0.00E+00 | 2.43E-07 |
| Sprayers | D | 120 | 4.25E-05 | 1.08E-03 | 5.57E-04 | 1.97E-01 | 2.31E-06 | 9.83E-06 | 0.00E+00 | 3.84E-06 |
| Sprayers | D | 175 | 2.16E-05 | 6.68E-04 | 1.46E-04 | 1.37E-01 | 1.55E-06 | 4.74E-06 | 0.00E+00 | 1.95E-06 |
| Sprayers | D | 250 | 2.03E-05 | 2.33E-04 | 1.24E-04 | 1.41E-01 | 1.58E-06 | 3.56E-06 | 0.00E+00 | 1.83E-06 |
| Sprayers | D | 500 | 3.72E-06 | 4.32E-05 | 2.20E-05 | 2.62E-02 | 2.57E-07 | 6.56E-07 | 0.00E+00 | 3.36E-07 |

| Equipment | Fuel | MaxHP | ROG Exhaust | CO Exhaust | NOX Exhaust | CO2 Exhaust | SO2 Exhaust | PM Exhaust | N2O Exhaust | CH4 Exhaust |
|------------------------------|------|-----------------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|
| Tillers | D | 15 | 7.47E-07 | 4.40E-06 | 5.25E-06 | 7.21E-04 | 1.12E-08 | 2.05E-07 | 0.00E+00 | 6.74E-08 |
| Tillers | D | 250 | 3.96E-07 | 3.98E-06 | 2.12E-06 | 2.36E-03 | 2.65E-08 | 6.29E-08 | 0.00E+00 | 3.57E-08 |
| Tillers | D | 500 | 2.09E-06 | 2.11E-05 | 1.07E-05 | 1.26E-02 | 1.24E-07 | 3.33E-07 | 0.00E+00 | 1.89E-07 |
| Swathers | D | 120 | 5.78E-04 | 1.42E-02 | 7.32E-03 | 2.58E+00 | 3.02E-05 | 1.32E-04 | 0.00E+00 | 5.22E-05 |
| Swathers | D | 175 | 7.25E-06 | 2.16E-04 | 4.72E-05 | 4.42E-02 | 4.98E-07 | 1.56E-06 | 0.00E+00 | 6.54E-07 |
| Hydro Power Units | D | 15 | 1.89E-05 | 9.92E-05 | 1.18E-04 | 1.62E-02 | 2.53E-07 | 4.63E-06 | 0.00E+00 | 1.71E-06 |
| Hydro Power Units | D | 25 | 1.12E-04 | 3.83E-04 | 7.10E-04 | 9.31E-02 | 1.18E-06 | 2.65E-05 | 0.00E+00 | 1.01E-05 |
| Hydro Power Units | D | 50 | 1.65E-04 | 1.54E-03 | 1.10E-03 | 1.86E-01 | 2.41E-06 | 1.65E-05 | 0.00E+00 | 1.49E-05 |
| Hydro Power Units | D | 120 | 1.60E-05 | 2.19E-04 | 1.06E-04 | 3.43E-02 | 4.02E-07 | 2.62E-06 | 0.00E+00 | 1.44E-06 |
| Other Agricultural Equipment | D | 15 | 4.83E-05 | 2.53E-04 | 3.02E-04 | 4.15E-02 | 6.46E-07 | 1.18E-05 | 0.00E+00 | 4.36E-06 |
| Other Agricultural Equipment | D | 25 | 2.55E-04 | 8.72E-04 | 1.61E-03 | 2.12E-01 | 2.69E-06 | 6.03E-05 | 0.00E+00 | 2.30E-05 |
| Other Agricultural Equipment | D | 50 | 1.73E-04 | 1.91E-03 | 1.60E-03 | 2.88E-01 | 3.72E-06 | 2.18E-05 | 0.00E+00 | 1.56E-05 |
| Other Agricultural Equipment | D | 120 | 6.54E-04 | 1.15E-02 | 5.77E-03 | 1.94E+00 | 2.28E-05 | 1.31E-04 | 0.00E+00 | 5.90E-05 |
| Other Agricultural Equipment | D | 175 | 7.31E-05 | 1.53E-03 | 3.33E-04 | 2.93E-01 | 3.30E-06 | 1.32E-05 | 0.00E+00 | 6.60E-06 |
| Other Agricultural Equipment | D | 250 | 9.70E-05 | 7.54E-04 | 4.00E-04 | 4.24E-01 | 4.77E-06 | 1.28E-05 | 0.00E+00 | 8.75E-06 |
| Other Agricultural Equipment | D | 500 | 3.34E-05 | 2.56E-04 | 1.31E-04 | 1.47E-01 | 1.45E-06 | 4.39E-06 | 0.00E+00 | 3.02E-06 |
| | | Tons per day -> | 0.2 | 3.9 | 0.9 | 352.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | Tons per year-> | 67.9 | 1,425.0 | 340.6 | 128,521.5 | 1.7 | 11.0 | 1.2 | 5.1 |