# APPENDIX D
# AIR QUALITY MODELING STUDY

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## DIRECT AIR QUALITY EMISSIONS

MOBILE SOURCES

| Equipment or Vehicle Type | Rate of Emissions | Number of Equipment/Vehicles | Number of Miles | Number of Days | Number of Hours | $NO_X$ Emission Factor | VOC Emission Factor | PM10 Emission Factor | Total $NO_x$ Emissions | Total VOC Emissions | Total PM10 Emissions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDGV | lb/mile | 0 | 0 | 0 | N/A | 0.007 | 0.021 | 0.0003 | 0.0000 | 0.0000 | 0.0000 |
| LDGT | lb/mile | 2 | 1,690 | 12 | N/A | 0.003 | 0.007 | 0.0002 | 0.0025 | 0.0059 | 0.0002 |
| LDDT | lb/mile | 2 | 1,690 | 12 | N/A | 0.004 | 0.002 | 0.001 | 0.0034 | 0.0017 | 0.0008 |
| HDGT | lb/mile | 6 | 5,069 | 12 | N/A | 0.010 | 0.006 | 0.0003 | 0.0253 | 0.0152 | 0.0008 |
| HDDT | lb/mile | 6 | 5,040 | 24 | N/A | 0.045 | 0.014 | 0.006 | 0.1134 | 0.0353 | 0.0151 |
| Track Tractor | lb/hour | 0 | NIA | 0 | 0 | 1.26 | 0.121 | 0.112 | 0.0000 | 0.0000 | 0.0000 |
| Wheeled Tractor | lb/hour | 0 | N/A | 0 | 0 | 1.269 | 0.188 | 0.136 | 0.0000 | 0.0000 | 0.0000 |
| Track Loader | lb/hour | 0 | N/A | 0 | 0 | 0.827 | 0.098 | 0.058 | 0.0000 | 0.0000 | 0.0000 |
| Wheeled Loader | lb/hour | 0 | N/A | 0 | 0 | 1.89 | 0.25 | 0.172 | 0.0000 | 0.0000 | 0.0000 |
| Misc. Wheeled | lb/hour | 2 | N/A | 4 | 64 | 1.691 | 0.152 | 0.139 | 0.0541 | 0.0049 | 0.0044 |
| Gas Forklift | lb/hour | 0 | N/A | 0 | 0 | 0.412 | 0.560 | 11.7 | 0.0000 | 0.0000 | 0.0000 |
| Diesel Forklift | lb/hour | 0 | N/A | 0 | 0 | 1.691 | 0.152 | 0.139 | 0.0000 | 0.0000 | 0.0000 |
| Shipping Truck | lb/hour | 2 | N/A | 2 | 20 | 1.691 | 0.152 | 0.139 | 0.0169 | 0.0015 | 0.0014 |
| Roller | lb/hour | 0 | N/A | 0 | 0 | 1.691 | 0.2 | 0.139 | 0.0000 | 0.0000 | 0.0000 |
| Backhoe Loader | lb/hour | 1 | N/A | 12 | 60 | 1.89 | 0.25 | 0.172 | 0.0567 | 0.0075 | 0.0052 |
| Excavator | lb/hour | 0 | N/A | 0 | 0 | 1.691 | 0.152 | 0.139 | 0.0000 | 0.0000 | 0.0000 |
| Bulldozer (tracked) | lb/hour | 1 | N/A | 12 | 60 | 24.5 | 2.9 | 12.9 | 0.7350 | 0.0870 | 0.3870 |
| Haul/Concrete Truck | lb/hour | 2 | N/A | 12 | 120 | 4.166 | 0.192 | 0.256 | 0.2500 | 0.0115 | 0.0154 |
| Haul/Concrete Truck | lb/hour | 3 | N/A | 12 | 144 | 4.166 | 0.192 | 0.256 | 0.3000 | 0.0138 | 0.0184 |
| Water Truck | lb/hour | 2 | N/A | 12 | 120 | 4.166 | 0.192 | 0.256 | 0.2500 | 0.0115 | 0.0154 |
| Soil Compactor | lb/hour | 1 | N/A | 12 | 60 | 1.691 | 0.2 | 0.139 | 0.0507 | 0.0046 | 0.0042 |
| Motor Grader | lb/hour | 2 | N/A | 12 | 120 | 0.713 | 0.04 | 0.061 | 0.0428 | 0.0024 | 0.0037 |
| Frontend Loader | lb/hour | 0 | N/A | 0 | 0 | 1.89 | 0.25 | 0.172 | 0.0000 | 0.0000 | 0.0000 |
| | | | | | | | | TOTAL: | 1.9008 | 0.2028 | 0.4719 |

STATIONARY SOURCES

| Equipment or Vehicle Type | Rate of Emissions | Number of Equipment/Vehicles | Number of Miles | Number of Days | Number of Hours | $NO_X$ Emission Factor | VOC Emission Factor | PM10 Emission Factor | Total $NO_x$ Emissions | Total VOC Emissions | Total PM10 Emissions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gas Engine | lb/hour | 0 | N/A | N/A | 0 | 0.017 | 0.052 | 0.001 | 0.0000 | 0.0000 | 0.0000 |
| Diesel Engine | lb/hour | 0 | NIA | N/A | 0 | 2.010 | 0.160 | 0.143 | 0.0000 | 0.0000 | 0.0000 |
| Natural Gas Engine | lb/hour | 0 | N/A | N/A | 0 | 0.017 | 0.052 | 0.001 | 0.0000 | 0.0000 | 0.0000 |
| Gasoline Welder | lb/hour | 0 | N/A | N/A | 0 | 0.017 | 0.052 | 0.001 | 0.0000 | 0.0000 | 0.0000 |
| Diesel Welder | lb/hour | 0 | N/A | N/A | 0 | 0.017 | 0.052 | 0.001 | 0.0000 | 0.0000 | 0.0000 |
| | | | | | | | | TOTAL: | 0.0000 | 0.0000 | 0.0000 |

Notes:

LDGV = light-duty gasoline vehicle
LDGT = light-duty gasoline truck
HDGT = heavy-duty gasoline truck
HDDT = heavy-duty diesel truck
VOC = volatile organic compounds
lb = pound
PM 10 = particulate matter equal to or below 10 microns

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