# APPENDIX C

Air Quality and Climate Change Data

**9/21/2009 1:12:46 PM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout area sources.urb924

Project Name: Live Oak 1994 GP Buildout

Project Location: Feather River AQMD

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

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 436.74 | 102.40 | 310.92 | 0.01 | 0.88 | 0.87 | 125,289.34 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 436.74 | 102.40 | 310.92 | 0.01 | 0.88 | 0.87 | 125,289.34 |

**9/21/2009 1:12:46 PM**

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 7.55 | 99.48 | 53.81 | 0.00 | 0.19 | 0.19 | 124,874.54 |
| Hearth - No Summer Emissions | | | | | | | |
| Landscape | 45.53 | 2.92 | 257.11 | 0.01 | 0.69 | 0.68 | 414.80 |
| Consumer Products | 285.96 | | | | | | |
| Architectural Coatings | 97.70 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 436.74 | 102.40 | 310.92 | 0.01 | 0.88 | 0.87 | 125,289.34 |

Area Source Changes to Defaults

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

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

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

**9/23/2009 1:21:03 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout area sources.urb924

Project Name: Live Oak 1994 GP Buildout

Project Location: Feather River AQMD

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

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 75.56 | 18.44 | 32.97 | 0.00 | 0.09 | 0.09 | 22,857.36 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 75.56 | 18.44 | 32.97 | 0.00 | 0.09 | 0.09 | 22,857.36 |

**9/23/2009 1:21:03 PM**

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 1.38 | 18.16 | 9.82 | 0.00 | 0.03 | 0.03 | 22,789.60 |
| Hearth | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 30.43 |
| Landscape | 4.10 | 0.26 | 23.14 | 0.00 | 0.06 | 0.06 | 37.33 |
| Consumer Products | 52.19 | | | | | | |
| Architectural Coatings | 17.83 | | | | | | |
| TOTALS (tons/year, unmitigated) | 75.56 | 18.44 | 32.97 | 0.00 | 0.09 | 0.09 | 22,857.36 |

Area Source Changes to Defaults

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

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

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

**9/21/2009 1:43:54 PM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout mobile sources.urb924

Project Name: Live Oak Operational Emissions

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 259.48 | 285.41 | 2,977.44 | 8.29 | 1,413.78 | 266.32 | 856,444.51 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 259.48 | 285.41 | 2,977.44 | 8.29 | 1,413.78 | 266.32 | 856,444.51 |

**9/21/2009 1:43:54 PM**

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Live Oak 1994 GP Buildout | 259.48 | 285.41 | 2,977.44 | 8.29 | 1,413.78 | 266.32 | 856,444.51 |
| TOTALS (lbs/day, unmitigated) | 259.48 | 285.41 | 2,977.44 | 8.29 | 1,413.78 | 266.32 | 856,444.51 |

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---|---|---|---|---|---|---|
| Live Oak 1994 GP Buildout | | 75,005.00 | 1000 sq ft | 1.00 | 75,005.00 | 825,055.00 |
| | | | | | 75,005.00 | 825,055.00 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 39.9 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 19.1 | 0.0 | 99.0 | 1.0 |
| Light Truck 3751-5750 lbs | 19.7 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 9.3 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.5 | 0.0 | 80.0 | 20.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |

**9/21/2009 1:43:54 PM**

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 0.0 | 18.8 | 81.2 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 1.6 | 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 | 4.0 | 32.5 | 67.5 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.2 | 0.0 | 91.7 | 8.3 |

Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| 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) | | | | | | |
| Live Oak 1994 GP Buildout | | | | 2.0 | 1.0 | 97.0 |

**9/21/2009 1:50:38 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout mobile sources.urb924

Project Name: Live Oak Operational Emissions

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 50.78 | 60.11 | 551.23 | 1.46 | 258.01 | 48.60 | 149,548.98 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 50.78 | 60.11 | 551.23 | 1.46 | 258.01 | 48.60 | 149,548.98 |

**9/21/2009 1:50:38 PM**

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Live Oak 1994 GP Buildout | 50.78 | 60.11 | 551.23 | 1.46 | 258.01 | 48.60 | 149,548.98 |
| TOTALS (tons/year, unmitigated) | 50.78 | 60.11 | 551.23 | 1.46 | 258.01 | 48.60 | 149,548.98 |

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 |
|---|---|---|---|---|---|---|
| Live Oak 1994 GP Buildout | | 75,005.00 | 1000 sq ft | 1.00 | 75,005.00 | 825,055.00 |
| | | | | | 75,005.00 | 825,055.00 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 39.9 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 19.1 | 0.0 | 99.0 | 1.0 |
| Light Truck 3751-5750 lbs | 19.7 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 9.3 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.5 | 0.0 | 80.0 | 20.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |

**9/21/2009 1:50:38 PM**

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 0.0 | 18.8 | 81.2 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 1.6 | 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 | 4.0 | 32.5 | 67.5 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.2 | 0.0 | 91.7 | 8.3 |

Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| 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) | | | | | | |
| Live Oak 1994 GP Buildout | | | | 2.0 | 1.0 | 97.0 |

**9/21/2009 12:54:32 PM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU area sources.urb924

Project Name: Live Oak Area Source Emissions

Project Location: Feather River AQMD

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

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 1,117.75 | 229.05 | 690.90 | 0.03 | 1.96 | 1.95 | 281,912.99 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 1,117.75 | 229.05 | 690.90 | 0.03 | 1.96 | 1.95 | 281,912.99 |

**9/21/2009 12:54:32 PM**

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 17.00 | 222.50 | 111.28 | 0.00 | 0.42 | 0.42 | 280,980.02 |
| Hearth - No Summer Emissions | | | | | | | |
| Landscape | 103.66 | 6.55 | 579.62 | 0.03 | 1.54 | 1.53 | 932.97 |
| Consumer Products | 771.32 | | | | | | |
| Architectural Coatings | 225.77 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 1,117.75 | 229.05 | 690.90 | 0.03 | 1.96 | 1.95 | 281,912.99 |

Area Source Changes to Defaults

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

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

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

**9/23/2009 1:23:24 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU area sources.urb924

Project Name: Live Oak Area Source Emissions

Project Location: Feather River AQMD

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

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 194.82 | 41.26 | 72.51 | 0.00 | 0.22 | 0.22 | 51,440.95 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 194.82 | 41.26 | 72.51 | 0.00 | 0.22 | 0.22 | 51,440.95 |

**9/23/2009 1:23:24 PM**

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 3.10 | 40.61 | 20.31 | 0.00 | 0.08 | 0.08 | 51,278.85 |
| Hearth | 0.42 | 0.06 | 0.03 | 0.00 | 0.00 | 0.00 | 78.13 |
| Landscape | 9.33 | 0.59 | 52.17 | 0.00 | 0.14 | 0.14 | 83.97 |
| Consumer Products | 140.77 | | | | | | |
| Architectural Coatings | 41.20 | | | | | | |
| TOTALS (tons/year, unmitigated) | 194.82 | 41.26 | 72.51 | 0.00 | 0.22 | 0.22 | 51,440.95 |

Area Source Changes to Defaults

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

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

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

**9/21/2009 1:56:45 PM**

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU Buildout mobile sources.urb924

Project Name: Live Oak Mobile Sources

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Live Oak 2030 GPU Buildout | 272.18 | 280.29 | 2,919.31 | 7.73 | 1,311.04 | 247.54 | 800,702.20 |
| TOTALS (lbs/day, unmitigated) | 272.18 | 280.29 | 2,919.31 | 7.73 | 1,311.04 | 247.54 | 800,702.20 |

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---|---|---|---|---|---|---|
| Live Oak 2030 GPU Buildout | | 12,137.20 | 1000 sq ft | 10.00 | 121,372.00 | 764,643.64 |
| | | | | | 121,372.00 | 764,643.64 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 39.9 | 0.0 | 100.0 | 0.0 |

**9/21/2009 1:56:45 PM**

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Truck < 3750 lbs | 19.1 | 0.0 | 99.0 | 1.0 |
| Light Truck 3751-5750 lbs | 19.7 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 9.3 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.5 | 0.0 | 80.0 | 20.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 0.0 | 18.8 | 81.2 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 1.6 | 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 | 4.0 | 32.5 | 67.5 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.2 | 0.0 | 91.7 | 8.3 |

Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 |
| 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)

**9/21/2009 1:56:45 PM**

Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Live Oak 2030 GPU Buildout | | | | 2.0 | 1.0 | 97.0 |

Operational Changes to Defaults

Home-based work urban trip length changed from 10.8 miles to 6.3 miles

Home-based shop urban trip length changed from 7.3 miles to 6.3 miles

Home-based other urban trip length changed from 7.5 miles to 6.3 miles

Commercial-based commute urban trip length changed from 9.5 miles to 6.3 miles

Commercial-based non-work urban trip length changed from 7.35 miles to 6.3 miles

Commercial-based customer urban trip length changed from 7.35 miles to 6.3 miles

**9/21/2009 1:57:40 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU Buildout mobile sources.urb924

Project Name: Live Oak Mobile Sources

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 52.82 | 58.89 | 549.57 | 1.36 | 239.26 | 45.18 | 139,870.40 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (tons/year, unmitigated) | 52.82 | 58.89 | 549.57 | 1.36 | 239.26 | 45.18 | 139,870.40 |

**9/21/2009 1:57:40 PM**

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Live Oak 2030 GPU Buildout | 52.82 | 58.89 | 549.57 | 1.36 | 239.26 | 45.18 | 139,870.40 |
| TOTALS (tons/year, unmitigated) | 52.82 | 58.89 | 549.57 | 1.36 | 239.26 | 45.18 | 139,870.40 |

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 |
|---|---|---|---|---|---|---|
| Live Oak 2030 GPU Buildout | | 12,137.20 | 1000 sq ft | 10.00 | 121,372.00 | 764,643.64 |
| | | | | | 121,372.00 | 764,643.64 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 39.9 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 19.1 | 0.0 | 99.0 | 1.0 |
| Light Truck 3751-5750 lbs | 19.7 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 9.3 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.5 | 0.0 | 80.0 | 20.0 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |

**9/21/2009 1:57:40 PM**

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 0.0 | 18.8 | 81.2 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 1.6 | 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 | 4.0 | 32.5 | 67.5 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.2 | 0.0 | 91.7 | 8.3 |

Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 |
| 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) | | | | | | |
| Live Oak 2030 GPU Buildout | | | | 2.0 | 1.0 | 97.0 |

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

JOB: Live Oak GPU
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

| | | | | | |
|---|---|---|---|---|---|
| U= | .5 M/S | Z0= | 100. CM | ALT= | 0. (M) |
| BRG= | WORST CASE | VD= | .0 CM/S | | |
| CLAS= | 7 (G) | VS= | .0 CM/S | | |
| MIXH= | 1000. M | AMB= | .0 PPM | | |
| SIGTH= | 5. DEGREES | TEMP= | 7.2 DEGREE (C) | | |

II. LINK VARIABLES

| LINK DESCRIPTION | * | LINK COORDINATES (M) X1 | Y1 | X2 | Y2 | * TYPE | VPH | EF (G/MI) | H (M) | W (M) |
|---|---|---|---|---|---|---|---|---|---|---|
| A. SB Apr | * | -5 | 7 | -5 | 148 | * AG | 1594 | 2.1 | .0 | 32.4 |
| B. NB Dep | * | 9 | 7 | 9 | 148 | * AG | 1926 | 2.1 | .0 | 32.4 |
| C. WB Apr | * | 14 | 4 | 148 | 4 | * AG | 379 | 2.1 | .0 | 18.0 |
| D. EB Dep | * | 14 | -4 | 148 | -4 | * AG | 205 | 2.1 | .0 | 18.0 |
| E. NB Apr | * | 5 | -7 | 5 | -148 | * AG | 1810 | 2.2 | .0 | 32.4 |
| F. SB Dep | * | -9 | -7 | -9 | -148 | * AG | 1715 | 2.1 | .0 | 32.4 |
| G. EB Apr | * | -14 | -4 | -148 | -4 | * AG | 657 | 2.1 | .0 | 18.0 |
| H. WB Dep | * | -14 | 4 | -148 | 4 | * AG | 594 | 2.1 | .0 | 18.0 |

III. RECEPTOR LOCATIONS

| RECEPTOR | * | COORDINATES (M) X | Y | Z |
|---|---|---|---|---|
| 1. Recpt 1 | * | 17 | 10 | 1.8 |
| 2. Recpt 2 | * | 17 | -10 | 1.8 |
| 3. Recpt 3 | * | -17 | -10 | 1.8 |
| 4. Recpt 4 | * | -17 | 10 | 1.8 |
| 5. Recpt 5 | * | 21 | 14 | 1.8 |
| 6. Recpt 6 | * | 21 | -14 | 1.8 |
| 7. Recpt 7 | * | -21 | -14 | 1.8 |
| 8. Recpt 8 | * | -21 | 14 | 1.8 |

JOB: Live Oak GPU
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

| RECEPTOR | BRG (DEG) | PRED CONC (PPM) | CONC/LINK (PPM) A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Recpt 1 | 348. | .5 | .2 | .3 | .0 | .0 | .0 | .0 | .0 | .0 |
| 2. Recpt 2 | 351. | .5 | .2 | .3 | .0 | .0 | .0 | .0 | .0 | .0 |
| 3. Recpt 3 | 11. | .5 | .2 | .2 | .0 | .0 | .0 | .0 | .0 | .0 |
| 4. Recpt 4 | 171. | .6 | .0 | .0 | .0 | .0 | .2 | .2 | .0 | .0 |
| 5. Recpt 5 | 193. | .5 | .0 | .0 | .0 | .0 | .2 | .1 | .0 | .0 |
| 6. Recpt 6 | 349. | .5 | .1 | .3 | .0 | .0 | .0 | .0 | .0 | .0 |
| 7. Recpt 7 | 14. | .5 | .2 | .2 | .0 | .0 | .0 | .0 | .0 | .0 |
| 8. Recpt 8 | 168. | .6 | .0 | .0 | .0 | .0 | .2 | .2 | .0 | .0 |

**Appendix** **Live Oak GHG Calculations - Existing 1994 GP Buildout**

| URBEMIS Output Summary | | | Conversion Factors | | Total CO2 Emissions | | | % of Total CO2 Emissions |
|---|---|---|---|---|---|---|---|---|
| **Construction Emissions** | | | | | | | | |
| 2010 | 6272 | tons/yr | 0.907 | metric ton/english ton | 5,690 | Metric tons/year | | |
| | | | | | **113,795** | Metric tons | *assumes plan area builds out ~5%/year over 20 years. | |
| Area-Source Emissions | | | | | | | | |
| Operational Year 2030 | 22,857 | tons/yr | 0.907 | metric ton/english ton | 20,736 | Metric tons/year | | 11% |
| Mobile-Source Emissions | | | | | | | | |
| Operational Year 2030 | 149,549 | tons/yr | 0.907 | metric ton/english ton | 135,669 | Metric tons/year | | 73% |
| | | | | **Total Direct Operational Emissions** | **156,404** | Metric tons/year | | |

**Indirect Emissions from Electricity Consumption**

| KWh/du/year | # du | | KWh/ksf/year | # ksf Commercial | Total KWh | MWh | Region | Emission Factor (lb CO2/MWh) | GWP | Emission Factor (lb CH4/MWh) | GWP | Emission Factor (lb N2O/MWh) | GWP | Total CO2e (Metric Tons/year) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,000 | | 5845 | 16,750 | 2866 | 88,917,053 | 88,917 | CALI | 626.0784 | 1 | 0.005213818 | 23 | 0.00287927 | 296 | **25,290** | 14% |

**Indirect Emissions from Groundwater Use (includes pumping and distribution)**

| KWh/million gallons/year | KWh/acre-ft/year | | Acre-ft/yr | Total KWh | MWh | Region | Emission Factor (lb CO2/MWh) | GWP | Emission Factor (lb CH4/MWh) | GWP | Emission Factor (lb N2O/MWh) | GWP | Total CO2e (Metric Tons/year) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,824 | 594 | | 5,624 | 10,258,176 | 10,258 | CALI | 626.0784 | 1 | 0.005213818 | 23 | 0.00287927 | 296 | **2,918** | 2% |
| | | | | | | | | | | | | | | 100% |

| | | |
|---|---|---|
| **Total Indirect Emissions** | **28,208** | Metric tons/year |
| **Total Direct & Indirect Emissions** | **184,612** | Metric tons/year |
| **GHG Emissions/capita** | **9.1** | Metric tons/year |
| **GHG Emissions/SP** | **5.1** | Metric tons/year |

Assumptions:
3.069 acre-ft = 1 Million gallon
population = 20,216
jobs = 16,119
Service Population (jobs + population) = 36,335

Sources:

California Energy Commission [CEC] 2000. California Energy Demand Staff Report P200-00-002
California Climate Action Registry [CCAR] General Reporting Protocol v 3.1 January 2009
California Energy Commission [CEC] 2005. California Energy - Water Relationship Staff Report CEC-700-2005-011-SF
Electric Power Research Institute [EPRI] 2002. Water & Sustainability (Volume 4): U.S. Electricity Consumption for Water Supply & Treatment. Technical Report 1006787. Page 1-4


| | Acre-ft/yr |
|---|---|
| Existing (on-the-ground) water demand (annual avg) | 1440 |
| 1994 GP Buildout water demand (annual avg) | 7064 |
| Water demand from new growth | **5624** |

**Electricity Portfolio**

| | PG&E Grid Average [1] | California Statewide Average [1] | |
|---|---|---|---|
| Eligible Renewable | 13% | 11% | |
| Coal | 3% | 16% | |
| Large Hydroelectric | 19% | 19% | |
| Natural Gas | 42% | 42% | |
| Nuclear | 23% | 13% | |
| Other | <1% | <1% | |
| TOTAL | 100% | 100% | |
| | | | |
| Zero-emission sources | 55% | 43% | |
| Fossil Fuel sources | 45% | 57% | |
| | | | |
| Scaled Emission Factors [2] | 626.0784 | 804.54 | lb CO2/MWH |
| | 0.0052 | 0.0067 | lb CH4/MWH |
| | 0.0029 | 0.0037 | lb N2O/MWH |

Sources of Information

1 California Energy Commission. 2006. California Major Utilities' Resource Mix for 2006. http://energyalmanac.ca.gov/electricity/electricity_resource_mix_pie_charts/index.html

2 California Climate Action Registry [CCAR] General Reporting Protocol v 3.1 January 2009

**Appendix** **Live Oak GHG Calculations - 2030 GPU Buildout**

| URBEMIS Output Summary | | | Conversion Factors | | Total CO2 Emissions | | | % of Total CO2 Emissions |
|---|---|---|---|---|---|---|---|---|
| **Construction Emissions** | | | | | | | | |
| 2010 | 13024 | tons/yr | 0.907 | metric ton/english ton | 11,815 | Metric tons/year | | |
| | | | | | **236,304** | Metric tons | *assumes plan area builds out ~5%/year over 20 years with 22 construction days per | |
| Area-Source Emissions | | | | | | | | |
| Operational Year 2030 | 51,441 | tons/yr | 0.907 | metric ton/english ton | 46,666 | Metric tons/year | | 20.3% |
| Mobile-Source Emissions | | | | | | | | |
| Operational Year 2030 | 139,870 | tons/yr | 0.907 | metric ton/english ton | 126,888 | Metric tons/year | | 55.2% |
| | | | | **Total Direct Operational Emissions** | **173,555** | Metric tons/year | | |

**Indirect Emissions from Electricity Consumption**

| KWh/du/year | # du | KWh/ksf/year | # ksf Commercial | Total KWh | MWh | Region | Emission Factor (lb CO2/MWh) | GWP | Emission Factor (lb CH4/MWh) | GWP | Emission Factor (lb N2O/MWh) | GWP | Total CO2e (Metric Tons/year) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,000 | 15767 | 16,750 | 4142 | 179,743,904 | 179,744 | CALI | 626.0784 | 1 | 0.005213818 | 23 | 0.00287927 | 296 | **51,124** | 22.2% |

**Indirect Emissions from Groundwater Use (includes pumping and distribution)**

| KWh/million gallons/year | KWh/acre-ft/year | Mgal/year | Total KWh | MWh | Region | Emission Factor (lb CO2/MWh) | GWP | Emission Factor (lb CH4/MWh) | GWP | Emission Factor (lb N2O/MWh) | GWP | Total CO2e (Metric Tons/year) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,824 | 594 | 10,321.0 | 18,825,504 | 18,826 | CALI | 626.0784 | 1 | 0.005213818 | 23 | 0.00287927 | 296 | **5,354** | 2.3% |
| | | | | | | | | | | | | | 100% |

Assumptions:
3.069 acre-ft = 1 Million gallon
population = 39,605
jobs = 15,258
Service Population (jobs + population) = 54,863

| | |
|---|---|
| **Total Indirect Emissions** | **56,478** |
| **Total Direct & Indirect Emissions** | **230,033** |
| **GHG Emissions/capita** | **5.8** |
| **GHG Emissions/SP** | **4.2** |

Sources:
California Energy Commission [CEC] 2000. California Energy Demand Staff Report P200-00-002
California Climate Action Registry [CCAR] General Reporting Protocol v 3.1 January 2009
California Energy Commission [CEC] 2005. California Energy - Water Relationship Staff Report CEC-700-2005-011-SF
Electric Power Research Institute [EPRI] 2002. Water & Sustainability (Volume 4): U.S. Electricity Consumption for Water Supply & Treatment. Technical Report 1006787. Page 1-4

| | Acre-ft/yr |
|---|---|
| Existing (on-the-ground) water demand (annual avg) | 1440 |
| 2030 GP Buildout water demand (annual avg) | 11761 |
| Water demand from new growth | **10321** |

month

## California GHG Emissions Inventory and Forecast for Emissions Sectors Applicable to Land Use Development Projects

References:

http://www.arb.ca.gov/cc/inventory/data/tables/arb_ghg_inventory_forecast_2008_06_26.xls

California Energy Commission [CEC] 2007. Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Building

*(Forecast last updated: June 26, 2008)*

| | Emissions (MMTCO2E) | | | | |
|---|---|---|---|---|---|
| **Inventory Summary for Scoping Plan** | **1990 Levels** | **2002-2004 Average** | **2020 Forecast** | **2030 Interpolation** | **2050 (S-3-05) Target** |
| **Transportation** | **137.992** | **168.657** | **209.101** | | |
| - Passenger Vehicles | 108.945 | 133.947 | 160.783 | | |
| - Heavy Duty Trucks | 29.047 | 34.710 | 48.318 | | |
| | | | | | |
| **Electric Power** | **95.385** | **88.970** | **107.401** | | |
| ***In-State Generation*** | ***33.808*** | ***32.152*** | ***55.039*** | | |
| ***Imported Electricity*** | ***61.577*** | ***56.818*** | ***52.362*** | | |
| | | | | | |
| **Commercial and Residential** | **44.220** | **41.579** | **47.970** | | |
| ***Residential Fuel Use*** | ***29.657*** | ***28.515*** | ***32.100*** | | |
| ***Commercial Fuel Use*** | ***13.462*** | ***11.704*** | ***13.755*** | | |
| ***CHP*** | ***1.101*** | ***1.360*** | ***2.115*** | | |
| | | | | | |
| **Recycling and Waste** | **2.833** | **3.390** | **4.190** | | |
| ***Waste Water Treatment*** | ***2.833*** | ***3.390*** | ***4.190*** | | |
| -Domestic | 2.833 | 3.390 | 4.190 | | |
| | | | | | |
| **TOTAL GROSS EMISSIONS** | **280.430** | **302.596** | **368.662** | **264.470** | **56.086** |
| | | | | | |
| **80% below 1990 by 2050** | 56.086 | | | | |
| **emission reduction per year** | 10.419 | | | | |

## California GHG Emissions Inventory and Forecast for all Sectors

References:
http://www.arb.ca.gov/cc/inventory/data/tables/arb_ghg_inventory_forecast_2008_06_26.xls

*(Forecast last updated: June 26, 2008)*

| IPCC Category | Inventory Summary for Scoping Plan | Emissions (MMTCO2E) 1990 Levels | 2002-2004 Average | 2020 Forecast | % of Total |
|---|---|---|---|---|---|
| | **Transportation** | **150.670** | **179.311** | **225.399** | 38% |
| 1A3b | ***On Road*** | ***137.992*** | ***168.657*** | ***209.101*** | |
| | - Passenger Vehicles | 108.945 | 133.947 | 160.783 | |
| | - Heavy Duty Trucks | 29.047 | 34.710 | 48.318 | |
| 1A3dii | ***Ships & Commercial Boats*** | ***2.210*** | ***3.258*** | ***6.347*** | |
| 1A3aii | ***Aviation (Intrastate)*** | ***5.132*** | ***3.177*** | ***4.841*** | |
| 1A3c | ***Rail*** | ***2.331*** | ***3.005*** | ***3.757*** | |
| 1A3 | ***Unspecified*** | ***3.006*** | ***1.215*** | ***1.353*** | |
| | **Electric Power** | **95.385** | **88.970** | **107.401** | 18% |
| | ***In-State Generation*** | ***33.808*** | ***32.152*** | ***55.039*** | 9% |
| 1A1ai | - Merchant Owned | 2.329 | 26.014 | 44.600 | |
| 1A1ai | - Utility Owned | 29.918 | 5.451 | 9.751 | |
| 2G1b | - Transmissions and Distribution | 1.561 | 0.688 | 0.688 | |
| | ***Imported Electricity*** | ***61.577*** | ***56.818*** | ***52.362*** | |
| 1A1ai | - Unspecified Imports | 30.956 | 24.304 | 26.130 | |
| 1A1ai | - Specified Imports | 29.605 | 32.170 | 25.888 | |
| 2G1b | - Transmissions and Distribution | 1.016 | 0.344 | 0.344 | |
| | **Commercial and Residential** | **44.785** | **41.761** | **48.184** | 8% |
| 1A4b | ***Residential Fuel Use*** | ***29.657*** | ***28.515*** | ***32.100*** | |
| 1A4b | - Natural Gas | 27.734 | 26.873 | 30.573 | |
| 1A4b | - Other Fuels | 1.923 | 1.642 | 1.527 | |
| | ***Commercial Fuel Use*** | ***13.462*** | ***11.704*** | ***13.755*** | |
| 1A4a | - Natural Gas | 7.547 | 7.946 | 9.344 | |
| 1A4a | - Domestic Utilities | 0.339 | 0.496 | 0.583 | |
| 1A4a | - Not specified | 5.577 | 3.262 | 3.827 | |
| 1A1aii | ***CHP*** | ***1.101*** | ***1.360*** | ***2.115*** | |
| 1A4a | ***National Security*** | ***0.564*** | ***0.182*** | ***0.214*** | |
| | **Industrial** | **108.141** | **109.868** | **124.841** | 21% |
| 1A1b | ***Refineries*** | ***32.833*** | ***35.031*** | ***36.723*** | |
| 1A2 | ***Manufacturing*** | ***31.979*** | ***27.268*** | ***28.918*** | |
| 1A1 | ***Oil & Gas Extraction*** | ***14.646*** | ***14.189*** | ***14.194*** | |
| 1A1cii | ***Pipelines*** | ***1.632*** | ***1.448*** | ***1.786*** | |
| 1A5 | ***Flaring*** | ***0.150*** | ***0.114*** | ***0.108*** | |
| 1A2i | ***Mining*** | ***0.028*** | ***0.245*** | ***0.194*** | |
| 1A1aii | ***CHP*** | ***24.240*** | ***29.473*** | ***40.649*** | |
| 2D, 2G | ***Nonspecified*** | ***2.633*** | ***2.101*** | ***2.269*** | |
| 4 | **Recycling and Waste** | **12.260** | **12.815** | **16.566** | 3% |
| 4D1 | ***Landfills*** | ***6.260*** | ***5.640*** | ***7.660*** | |
| 4D2 | ***Waste Water Treatment*** | ***6.000*** | ***7.175*** | ***8.906*** | |
| | -Domestic | 2.833 | 3.390 | 4.190 | |
| | -Industrial | 3.167 | 3.785 | 4.716 | |
| | **High GWP/Other** | **1.267** | **16.211** | **48.189** | 8% |
| 2F | ***Ozone Depleting Substance Substitutes*** | ***0.036*** | ***12.870*** | ***44.986*** | |
| 1A5 | ***Not Specified*** | ***1.231*** | ***3.341*** | ***3.203*** | |
| 3 | **Agriculture** | **23.247** | **27.578** | **29.671** | 5% |
| | ***Livestock*** | ***11.668*** | ***13.902*** | ***16.163*** | |
| 3A1aii | - Enteric Fermentation (Digestive Process) | 6.668 | 7.026 | 8.168 | |
| 3A2ai | - Manure Management | 5.000 | 6.876 | 7.994 | |
| | ***Crop Growing & Harvesting*** | ***7.074*** | ***9.044*** | ***9.041*** | |
| 3C4, 3C5 | - Soil Management | 6.540 | 8.401 | 8.401 | |
| 3C1b | - Crop Residue Burning | 0.124 | 0.082 | 0.078 | |
| 3C7 | - Rice Cultivation | 0.410 | 0.562 | 0.562 | |
| 1A4c | ***General Fuel Use*** | ***4.505*** | ***4.631*** | ***4.467*** | |
| | **Forestry and Range Management** | **0.190** | **0.190** | **0.190** | 0% |
| 3B1 | ***Fire*** | ***0.190*** | ***0.188*** | ***0.194*** | **% Reduction** |
| | **TOTAL GROSS EMISSIONS** | **435.945** | **476.704** | **600.441** | 27% |
| | | high (433.29) | high (473.5) | high (596.40) | |
| 3B | ***Forestry Net Emissions*** | ***-6.690*** | ***-4.674*** | ***0.000*** | |
| | **TOTAL NET EMISSIONS** | **429.255** | **472.030** | **596.400** | **28%** |
| | | high (426.601) | high (468.778) | = (596.401) | |

## California GHG-Efficiency Calculations per AB 32 and S-3-05

| **Demographic Data** | 1990 | 2002-2004 | 2007 | 2020 | 2030 (interpolated) | 2050 |
|---|---|---|---|---|---|---|
| CA Population | 29,758,213 | 36,199,342 | 37,559,440 | 44,135,923 | 49,240,891 | 59,507,876 |
| CA Employment | 14,294,100 | 16,413,400 | 17,208,900 | 20,194,661 | 22,592,387 | 27,303,018 |
| CA Service Population[1] | 44,052,313 | 52,612,742 | 54,768,340 | 64,330,584 | 71,833,278 | 86,810,894 |

[1] Service Population = Population + Employment

| **BAU GHG/capita** | | | | | | |
|---|---|---|---|---|---|---|
| GHG/Capita (sector-specific CA inventory) | 9.42 | 8.36 | - | 8.35 | | |
| GHG/SP (sector-specific CA inventory) | 6.37 | 5.75 | - | 5.73 | | |

| **AB 32 Goal GHG Efficiency** | | | | | | |
|---|---|---|---|---|---|---|
| GHG/Capita (sector-specific CA inventory) | 9.42 | 7.75 | - | 6.35 | 5.37 | 0.94 |
| GHG/SP (sector-specific CA inventory) | 6.37 | 5.33 | - | 4.36 | **3.68** | 0.65 |

| **Sources:** | |
|---|---|
| | Population data is from the California Department of Finance and U.S. Census Bureau. Total employment information for 1990 and 2000 is from the U.S. Census. Total civilian employment on an annual (seasonally adjusted basis is from the California Department of Finance). |
| 1990-2000 Population | State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. Sacramento, California, August 2007. |
| 2001-2007 Population | State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2007, with 2000 Benchmark. Sacramento, California, May 2007. |
| 2000-2050 Population | State of California, Department of Finance, Population Projections for California and Its Counties 2000-2050, Sacramento, California, July 2007. |
| 1990 - 2006 Employment | California Employment Development Department Labor Market Information Division, (916) 262–2162; U.S. Department of Labor, Bureau of Labor Statistics, (202) 606–6555. |
| 2007 - 2009 Employment | Economic Research Unit of the California Department of Finance. Economic Forecasts, U.S. and California. April 2007. |
| 2010 - 2050 Employment | Extrapolated as 46% of projected population (the average over last 15 years) |

**9/23/2009 12:29:31 PM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout construction.urb924

Project Name: Live Oak Construction

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 TOTALS (lbs/day unmitigated) | 173.90 | 243.33 | 377.99 | 0.37 | 395.80 | 11.55 | 407.35 | 82.88 | 10.56 | 93.45 | 48,060.40 |

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

**9/23/2009 12:29:31 PM**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/1/2010-12/31/2010<br>Active Days: 261 | **173.90** | **243.33** | **377.99** | **0.37** | **395.80** | **11.55** | **407.35** | **82.88** | **10.56** | **93.45** | **48,060.40** |
| Asphalt 01/01/2010-12/31/2010 | 3.16 | 17.87 | 11.44 | 0.00 | 0.01 | 1.53 | 1.54 | 0.00 | 1.40 | 1.41 | 1,490.00 |
| Paving Off-Gas | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 2.86 | 17.13 | 9.38 | 0.00 | 0.00 | 1.50 | 1.50 | 0.00 | 1.38 | 1.38 | 1,272.41 |
| Paving On Road Diesel | 0.04 | 0.63 | 0.19 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 90.13 |
| Paving Worker Trips | 0.07 | 0.11 | 1.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 127.46 |
| Building 01/01/2010-12/31/2010 | 21.90 | 163.79 | 328.12 | 0.36 | 1.57 | 6.62 | 8.19 | 0.55 | 6.02 | 6.57 | 40,443.73 |
| Building Off Road Diesel | 4.08 | 23.31 | 14.31 | 0.00 | 0.00 | 1.67 | 1.67 | 0.00 | 1.54 | 1.54 | 2,259.28 |
| Building Vendor Trips | 9.55 | 127.54 | 97.49 | 0.22 | 0.85 | 4.55 | 5.41 | 0.29 | 4.17 | 4.46 | 23,476.28 |
| Building Worker Trips | 8.28 | 12.94 | 216.31 | 0.14 | 0.72 | 0.39 | 1.11 | 0.26 | 0.32 | 0.58 | 14,708.17 |
| Coating 01/01/2010-12/31/2010 | 141.03 | 0.15 | 2.47 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 167.72 |
| Architectural Coating | 140.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.09 | 0.15 | 2.47 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 167.72 |
| Fine Grading 01/01/2010-12/31/2010 | 5.69 | 43.75 | 26.25 | 0.00 | 394.21 | 2.52 | 396.73 | 82.33 | 2.32 | 84.65 | 4,142.34 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 394.20 | 0.00 | 394.20 | 82.32 | 0.00 | 82.32 | 0.00 |
| Fine Grading Off Road Diesel | 5.59 | 43.59 | 23.62 | 0.00 | 0.00 | 2.52 | 2.52 | 0.00 | 2.32 | 2.32 | 3,963.89 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.10 | 0.16 | 2.62 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 178.45 |
| Trenching 01/01/2010-12/31/2010 | 2.12 | 17.78 | 9.72 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 1,816.61 |
| Trenching Off Road Diesel | 2.06 | 17.69 | 8.22 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 1,714.64 |
| Trenching Worker Trips | 0.06 | 0.09 | 1.50 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 101.97 |

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/31/2010 - Default Fine Site Grading Description

**9/23/2009 12:29:31 PM**

Total Acres Disturbed: 78.84

Maximum Daily Acreage Disturbed: 19.71

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

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

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

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2010 - 12/31/2010 - Type Your Description Here

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 1/1/2010 - 12/31/2010 - Default Paving Description

Acres to be Paved: 19.71

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2010 - 12/31/2010 - Default Architectural Coating Description

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

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

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

**9/23/2009 12:38:30 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 1994 GP Buildout construction.urb924

Project Name: Live Oak Construction

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 TOTALS (tons/year unmitigated) | 22.69 | 31.75 | 49.33 | 0.05 | 51.65 | 1.51 | 53.16 | 10.82 | 1.38 | 12.19 | 6,271.88 |

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 | 22.69 | 31.75 | 49.33 | 0.05 | 51.65 | 1.51 | 53.16 | 10.82 | 1.38 | 12.19 | 6,271.88 |
| Asphalt 01/01/2010-12/31/2010 | 0.41 | 2.33 | 1.49 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.18 | 0.18 | 194.45 |
| Paving Off-Gas | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 0.37 | 2.24 | 1.22 | 0.00 | 0.00 | 0.20 | 0.20 | 0.00 | 0.18 | 0.18 | 166.05 |
| Paving On Road Diesel | 0.00 | 0.08 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.76 |
| Paving Worker Trips | 0.01 | 0.01 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.63 |
| Building 01/01/2010-12/31/2010 | 2.86 | 21.37 | 42.82 | 0.05 | 0.21 | 0.86 | 1.07 | 0.07 | 0.79 | 0.86 | 5,277.91 |
| Building Off Road Diesel | 0.53 | 3.04 | 1.87 | 0.00 | 0.00 | 0.22 | 0.22 | 0.00 | 0.20 | 0.20 | 294.84 |
| Building Vendor Trips | 1.25 | 16.64 | 12.72 | 0.03 | 0.11 | 0.59 | 0.71 | 0.04 | 0.54 | 0.58 | 3,063.65 |
| Building Worker Trips | 1.08 | 1.69 | 28.23 | 0.02 | 0.09 | 0.05 | 0.15 | 0.03 | 0.04 | 0.08 | 1,919.42 |
| Coating 01/01/2010-12/31/2010 | 18.40 | 0.02 | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21.89 |
| Architectural Coating | 18.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.01 | 0.02 | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21.89 |
| Fine Grading 01/01/2010-12/31/2010 | 0.74 | 5.71 | 3.43 | 0.00 | 51.44 | 0.33 | 51.77 | 10.74 | 0.30 | 11.05 | 540.58 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 51.44 | 0.00 | 51.44 | 10.74 | 0.00 | 10.74 | 0.00 |
| Fine Grading Off Road Diesel | 0.73 | 5.69 | 3.08 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.30 | 0.30 | 517.29 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.01 | 0.02 | 0.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 23.29 |
| Trenching 01/01/2010-12/31/2010 | 0.28 | 2.32 | 1.27 | 0.00 | 0.00 | 0.11 | 0.12 | 0.00 | 0.11 | 0.11 | 237.07 |
| Trenching Off Road Diesel | 0.27 | 2.31 | 1.07 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.11 | 0.11 | 223.76 |
| Trenching Worker Trips | 0.01 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.31 |

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/31/2010 - Default Fine Site Grading Description

**9/23/2009 12:38:30 PM**

Total Acres Disturbed: 78.84

Maximum Daily Acreage Disturbed: 19.71

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

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

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

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2010 - 12/31/2010 - Type Your Description Here

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 1/1/2010 - 12/31/2010 - Default Paving Description

Acres to be Paved: 19.71

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2010 - 12/31/2010 - Default Architectural Coating Description

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

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

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

**9/23/2009 12:26:23 PM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU Buildout construction.urb924

Project Name: Live Oak Construction

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 TOTALS (lbs/day unmitigated) | 372.90 | 468.75 | 787.14 | 0.81 | 875.93 | 19.91 | 895.84 | 183.42 | 18.18 | 201.60 | 99,801.09 |

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

**9/23/2009 12:26:23 PM**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/1/2010-12/31/2010<br>Active Days: 261 | **372.90** | **468.75** | **787.14** | **0.81** | **875.93** | **19.91** | **895.84** | **183.42** | **18.18** | **201.60** | **99,801.09** |
| Asphalt 01/01/2010-12/31/2010 | 3.79 | 20.67 | 12.78 | 0.00 | 0.01 | 1.73 | 1.75 | 0.00 | 1.59 | 1.60 | 1,745.74 |
| Paving Off-Gas | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.20 | 19.17 | 10.47 | 0.00 | 0.00 | 1.68 | 1.68 | 0.00 | 1.55 | 1.55 | 1,418.81 |
| Paving On Road Diesel | 0.08 | 1.39 | 0.43 | 0.00 | 0.01 | 0.05 | 0.06 | 0.00 | 0.05 | 0.05 | 199.47 |
| Paving Worker Trips | 0.07 | 0.11 | 1.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 127.46 |
| Building 01/01/2010-12/31/2010 | 43.53 | 334.22 | 708.83 | 0.80 | 3.48 | 12.62 | 16.10 | 1.21 | 11.47 | 12.68 | 86,769.75 |
| Building Off Road Diesel | 4.08 | 23.31 | 14.31 | 0.00 | 0.00 | 1.67 | 1.67 | 0.00 | 1.54 | 1.54 | 2,259.28 |
| Building Vendor Trips | 21.13 | 282.27 | 215.77 | 0.48 | 1.89 | 10.08 | 11.96 | 0.64 | 9.23 | 9.87 | 51,958.09 |
| Building Worker Trips | 18.32 | 28.64 | 478.74 | 0.32 | 1.59 | 0.87 | 2.47 | 0.58 | 0.70 | 1.28 | 32,552.38 |
| Coating 01/01/2010-12/31/2010 | 312.12 | 0.33 | 5.46 | 0.00 | 0.02 | 0.01 | 0.03 | 0.01 | 0.01 | 0.01 | 371.20 |
| Architectural Coating | 311.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.21 | 0.33 | 5.46 | 0.00 | 0.02 | 0.01 | 0.03 | 0.01 | 0.01 | 0.01 | 371.20 |
| Fine Grading 01/01/2010-12/31/2010 | 11.34 | 95.76 | 50.36 | 0.00 | 872.41 | 4.67 | 877.08 | 182.20 | 4.30 | 186.49 | 9,097.79 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 872.40 | 0.00 | 872.40 | 182.19 | 0.00 | 182.19 | 0.00 |
| Fine Grading Off Road Diesel | 11.19 | 95.53 | 46.62 | 0.00 | 0.00 | 4.66 | 4.66 | 0.00 | 4.29 | 4.29 | 8,842.87 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.14 | 0.22 | 3.75 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.01 | 0.01 | 254.93 |
| Trenching 01/01/2010-12/31/2010 | 2.12 | 17.78 | 9.72 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 1,816.61 |
| Trenching Off Road Diesel | 2.06 | 17.69 | 8.22 | 0.00 | 0.00 | 0.88 | 0.88 | 0.00 | 0.81 | 0.81 | 1,714.64 |
| Trenching Worker Trips | 0.06 | 0.09 | 1.50 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 101.97 |

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/31/2010 - Default Fine Site Grading Description

**9/23/2009 12:26:23 PM**

Total Acres Disturbed: 174.49

Maximum Daily Acreage Disturbed: 43.62

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

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

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

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

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2010 - 12/31/2010 - Type Your Description Here

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 1/1/2010 - 12/31/2010 - Default Paving Description

Acres to be Paved: 43.62

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2010 - 12/31/2010 - Default Architectural Coating Description

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

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

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

**9/23/2009 12:28:11 PM**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\phillipsh\Application Data\Urbemis\Version9a\Projects\Live Oak\Live Oak 2030 GPU Buildout construction.urb924

Project Name: Live Oak Construction

Project Location: Feather River AQMD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 TOTALS (tons/year unmitigated) | 48.66 | 61.17 | 102.72 | 0.11 | 114.31 | 2.60 | 116.91 | 23.94 | 2.37 | 26.31 | 13,024.04 |

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2010 | 48.66 | 61.17 | 102.72 | 0.11 | 114.31 | 2.60 | 116.91 | 23.94 | 2.37 | 26.31 | 13,024.04 |
| Asphalt 01/01/2010-12/31/2010 | 0.49 | 2.70 | 1.67 | 0.00 | 0.00 | 0.23 | 0.23 | 0.00 | 0.21 | 0.21 | 227.82 |
| Paving Off-Gas | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 0.42 | 2.50 | 1.37 | 0.00 | 0.00 | 0.22 | 0.22 | 0.00 | 0.20 | 0.20 | 185.16 |
| Paving On Road Diesel | 0.01 | 0.18 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 26.03 |
| Paving Worker Trips | 0.01 | 0.01 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.63 |
| Building 01/01/2010-12/31/2010 | 5.68 | 43.62 | 92.50 | 0.10 | 0.45 | 1.65 | 2.10 | 0.16 | 1.50 | 1.65 | 11,323.45 |
| Building Off Road Diesel | 0.53 | 3.04 | 1.87 | 0.00 | 0.00 | 0.22 | 0.22 | 0.00 | 0.20 | 0.20 | 294.84 |
| Building Vendor Trips | 2.76 | 36.84 | 28.16 | 0.06 | 0.25 | 1.31 | 1.56 | 0.08 | 1.20 | 1.29 | 6,780.53 |
| Building Worker Trips | 2.39 | 3.74 | 62.48 | 0.04 | 0.21 | 0.11 | 0.32 | 0.08 | 0.09 | 0.17 | 4,248.09 |
| Coating 01/01/2010-12/31/2010 | 40.73 | 0.04 | 0.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 48.44 |
| Architectural Coating | 40.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.03 | 0.04 | 0.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 48.44 |
| Fine Grading 01/01/2010-12/31/2010 | 1.48 | 12.50 | 6.57 | 0.00 | 113.85 | 0.61 | 114.46 | 23.78 | 0.56 | 24.34 | 1,187.26 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 113.85 | 0.00 | 113.85 | 23.78 | 0.00 | 23.78 | 0.00 |
| Fine Grading Off Road Diesel | 1.46 | 12.47 | 6.08 | 0.00 | 0.00 | 0.61 | 0.61 | 0.00 | 0.56 | 0.56 | 1,153.99 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.02 | 0.03 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 33.27 |
| Trenching 01/01/2010-12/31/2010 | 0.28 | 2.32 | 1.27 | 0.00 | 0.00 | 0.11 | 0.12 | 0.00 | 0.11 | 0.11 | 237.07 |
| Trenching Off Road Diesel | 0.27 | 2.31 | 1.07 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.11 | 0.11 | 223.76 |
| Trenching Worker Trips | 0.01 | 0.01 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.31 |

Phase Assumptions

Phase: Fine Grading 1/1/2010 - 12/31/2010 - Default Fine Site Grading Description

**9/23/2009 12:28:11 PM**

Total Acres Disturbed: 174.49

Maximum Daily Acreage Disturbed: 43.62

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

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

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

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

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 1/1/2010 - 12/31/2010 - Type Your Description Here

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 1/1/2010 - 12/31/2010 - Default Paving Description

Acres to be Paved: 43.62

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2010 - 12/31/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2010 - 12/31/2010 - Default Architectural Coating Description

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

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

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