

**Air
Quality**

APPENDIX B

Appendix B
Air Quality

URBEMIS 2002 For Windows 8.7.0

File Name: <NOT SAVED>
 Project Name: SBBG Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 *** TOTALS (lbs/day,unmitigated)	4.41	34.37	32.81	0.00	1.92	1.49	0.43
*** 2008 *** TOTALS (lbs/day,unmitigated)	4.28	29.02	34.41	0.00	17.15	1.15	16.00
*** 2009 *** TOTALS (lbs/day,unmitigated)	3.25	19.47	27.52	0.00	0.64	0.63	0.01
*** 2010 *** TOTALS (lbs/day,unmitigated)	8.27	32.21	47.37	0.00	0.96	0.94	0.02

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	0.64	0.35	1.07	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	0.51	0.00	0.00	0.00	0.00

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1.15	0.35	1.07	0.00	0.00

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
 Project Name: SBBG Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Summer)

Construction Start Month and Year: October, 2007
 Construction Duration: 36
 Total Land Use Area to be Developed: 0 acres
 Maximum Acreage Disturbed Per Day: 1.6 acres
 Single Family Units: 0 Multi-Family Units: 0
 Retail/Office/Institutional/Industrial Square Footage: 35357

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.42	-	0.42
Off-Road Diesel	4.31	32.86	31.87	-	1.46	1.46	0.00
On-Road Diesel	0.07	1.45	0.25	0.00	0.04	0.03	0.01
Worker Trips	0.03	0.06	0.69	0.00	0.00	0.00	0.00
Maximum lbs/day	4.41	34.37	32.81	0.00	1.92	1.49	0.43
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	4.41	34.37	32.81	0.00	1.92	1.49	0.43

*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	16.00	-	16.00
Off-Road Diesel	4.25	28.69	34.08	-	1.14	1.14	0.00
On-Road Diesel	0.01	0.32	0.06	0.00	0.01	0.01	0.00
Worker Trips	0.02	0.01	0.27	0.00	0.00	0.00	0.00
Maximum lbs/day	4.28	29.02	34.41	0.00	17.15	1.15	16.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	4.28	29.02	34.41	0.00	17.15	1.15	16.00

*** 2009***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	3.20	19.44	26.82	-	0.63	0.63	0.00
Bldg Const Worker Trips	0.06	0.03	0.70	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	3.25	19.47	27.52	0.00	0.64	0.63	0.01

Max lbs/day all phases 3.25 19.47 27.52 0.00 0.64 0.63 0.01

*** 2010***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	3.20	19.00	26.99	-	0.58	0.58	0.00
Bldg Const Worker Trips	0.05	0.03	0.64	0.00	0.01	0.00	0.01
Arch Coatings Off-Gas	2.64	-	-	-	-	-	-
Arch Coatings Worker Trips	0.05	0.03	0.64	0.00	0.01	0.00	0.01
Asphalt Off-Gas	0.08	-	-	-	-	-	-
Asphalt Off-Road Diesel	2.24	12.97	19.01	-	0.36	0.36	0.00
Asphalt On-Road Diesel	0.01	0.19	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.01	0.00	0.11	0.00	0.00	0.00	0.00
Maximum lbs/day	8.27	32.21	47.37	0.00	0.96	0.94	0.02

Max lbs/day all phases 8.27 32.21 47.37 0.00 0.96 0.94 0.02

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07
Phase 1 Duration: 3 months
Building Volume Total (cubic feet): 100000
Building Volume Daily (cubic feet): 1000
On-Road Truck Travel (VMT): 57
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Dozers	352	0.590	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Jan '08
Phase 2 Duration: 12 months
On-Road Truck Travel (VMT): 14
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Tractors	255	0.410	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.02	0.34	0.29	0	0.00
Hearth - No summer emissions					
Landscaping	0.12	0.00	0.78	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	0.50	-	-	-	-
TOTALS (lbs/day, unmitigated)	0.64	0.35	1.07	0.00	0.00

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '09

Phase 3 Duration: 21 months

Start Month/Year for SubPhase Building: Jan '09

SubPhase Building Duration: 21 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Rough Terrain Forklifts	94	0.475	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Jan '10

SubPhase Architectural Coatings Duration: 9 months

Start Month/Year for SubPhase Asphalt: Jul '10

SubPhase Asphalt Duration: 3 months

Acres to be Paved: 2

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Library	0.51	0.00	0.00	0.00	0.00
TOTAL EMISSIONS (lbs/day)	0.51	0.00	0.00	0.00	0.00

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

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Library		0.00 trips/1000 sq. ft.	35.36	0.00
		Sum of Total Trips		0.00
		Total Vehicle Miles Traveled		0.00

Vehicle Assumptions:

Fleet Mix:

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

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)				5.0	2.5	92.5
Library						

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0074

Changes made to the default values for Area

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Eotonic Garden
Project Location: Santa Barbara County
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

Operational Emissions Only

SUMMARY REPORT
(Pounds/Day - Summer)

OPERATIONAL (VEHICLE) EMISSION ESTIMATES	ROG	NOX	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	2.71	4.03	33.23	0.03	4.01

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Botanic Garden
Project Location: Santa Barbara County
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Dwelling units	0.45	0.65	5.23	0.00	0.65
Botanic Garden Expansion	2.26	3.38	28.00	0.02	3.36
TOTAL EMISSIONS (lbs/day)	2.71	4.03	33.23	0.03	4.01

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

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 75 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Dwelling units	2.67	4.75 trips/dwelling unit	8.00	38.00
Botanic Garden Expansion		215.00 trips/new trips	1.00	215.00
			Sum of Total Trips	253.00
			Total Vehicle Miles Traveled	2,630.06

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.5	9.6	11.3	12.5	10.2	10.2
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip Speeds (mph)	25.0	30.0	35.0	25.0	25.0	25.0
% of Trips - Residential	20.6	18.0	61.4			

% of Trips - Commercial (by land use)

Botanic Garden Expansion	2.0	1.0	97.0
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Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/2.67 to 4.75/2.67

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2008.

URBEMIS 2002 For Windows 8.7.0

File Name: <Not saved> *Area Source Only*
Project Name: Area Source
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day,unmitigated)	0.00	0.00	0.00	0.00	10.00	0.00	10.00

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008 ***							
TOTALS (lbs/day,unmitigated)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	1.26	0.38	1.35	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	10.35	13.63	141.49	0.09	14.09

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	11.61	14.01	142.85	0.10	14.10