APPENDIX G

GENERATING STATION STATIONERY SOURCE AMBIENT AIR QUALITY IMPACT ANALYSIS

Commissioning Operations:

- **Emission Parameters**
- **Significant Change In Air Quality**
- **Ambient NO_2 Analysis**
- **Ambient CO Analysis**
- **Ambient PM_{10} Analysis**
- **Ambient $PM_{2.5}$ Analysis**
- **Ambient SO_2/Sulfate Analysis**
- **Summary of Air Quality Analysis**

Normal Operations:

- **Emission Parameters**
- **Significant Change In Air Quality**
- **Ambient NO_2 Analysis**
- **Ambient CO Analysis**
- **Ambient PM_{10} Analysis**
- **Ambient $PM_{2.5}$ Analysis**
- **Ambient SO_2/Sulfate Analysis**
- **Summary of Air Quality Analysis**

Fumigation Conditions:

- **Emission Parameters**
- **Ambient NO_2 Analysis**
- **Ambient PM_{10} Analysis**
- **Ambient SO_2/Sulfate Analysis**
- **Summary of Air Quality Analysis**

Air Quality Impact Analysis - Emission Parameters
GE Gas Turbines - Commission Operations
Riverside ERC

Equipment Information:

Equipment Type: Gas Turbines	Capacity: -	Fuel: Natural Gas
Manufacturer: GE	Output (MW): 100	HHV: 1050
Model: LM6000	# of Units: 2	

Emission Rates:

Pollutant	Per Unit Emission Rate (lbs/hr)	Total Emission Rate (lbs/hr)	Total Emission Rate (g/s)		Comments
NO_x	89.80	179.60	22.63	1-Hour	startup hour operation
NO_x	na	na	na	Annual	
CO	91.90	183.80	23.16	1-Hour	startup hour operation
CO	91.90	183.80	23.16	8-Hour	
PM_{10}	3.00	6.00	0.76	24-Hour	
PM_{10}	na	na	na	Annual	
$PM_{2.5}$	3.00	6.00	0.76	24-Hour	
$PM_{2.5}$	na	na	na	Annual	
SO_x	1.62	3.24	0.41	1 hour / 3-Hour	
SO_x	1.62	3.24	0.41	24-Hour	

Emission rates on this page exclude the cooling tower because PM pates are not normalized.
Cooling tower emissions are included in the PM worksheets.

Air Quality Impact Analysis - Significant Change In Air Quality
GE Gas Turbines - Commission Operations
Riverside ERC

Modeling Results:

1st Max =	5.63368	$(ug/m^{3})/(g/sec)$	1 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	5.58617	$(ug/m^{3})/(g/sec)$	3 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	3.93541	$(ug/m^{3})/(g/sec)$	8 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	2.29070	$(ug/m^{3})/(g/sec)$	24 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	0.21834	$(ug/m^{3})/(g/sec)$	Annual Average Concentration	(@ 1.0 g/s per turbine)

Air Quality Impacy Analysis:

Pollutant	Averaging Time	Emission Rate (g/sec)	Maximum Impact (ug/m^3)	SCAQMD Significant Change In Air Quality Threshold (ug/m^3)
NO_2	1 - Hour	22.63	**127.48**	**20.0**
NO_2	Annual	na	**na**	**1.0**
CO	1 - Hour	23.16	**130.46**	**1100.0**
CO	8 - Hour	23.16	**91.13**	**500.0**
PM	24 - Hour	na	**1.8164**	**2.5**
PM_{10}	Annual	na	**na**	**1.0**
$PM_{2.5}$	24 - Hour	0.76	**1.8164**	**N/A**
$PM_{2.5}$	Annual	na	**na**	**N/A**
Sulfate	24-Hour	0.41	**0.94**	**N/A**
SO2	1 - Hour	0.41	**2.30**	**N/A**
SO2	24-Hour	0.41	**0.94**	**N/A**

urce . Model input/output are not normalized

Note:

- X/Q Max values ($ug/m^3/g/sec$) are taken from the ISC 3 model.
- Impacts analysis utilized the standard stack release parameters.

Air Quality Impact Analysis - Ambient NO_2 Analysis
GE Gas Turbines - Commission Operations
Riverside ERC

1-Hour NO_2 Analysis:

1. Convert NO2 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Hour $\mu g/m^3$:	127.5	OLM Ratio	1.00
NO2 MW:	46.0	(Valid only for consruction impacts)	
Conversion:	0.0245		

So:

ppm NO2= 0.0679

2. Add NO2 1-hour background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): 0.068
Ambient background data (ppm): 0.15 Station 4144 - Rubidoux - Year 2001

So:

Project + Background (ppm): 0.22
Most Stringent NO2 1-Hour Standard (ppm): 0.25

Annual NO_2 Analysis:

1. Convert annual project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Annual $\mu g/m^3$:	na	OLM Ratio	0.59
NO2 MW:	46.0		
Conversion:	0.0245		

So:

ppm NO2 = #VALUE!

2. Add NO2 annual background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): #VALUE!
Ambient background data (ppm): 0.0262 Station 4144 - Rubidoux - Year 1999

So:

Project + Background (ppm): #VALUE!
Most Stringent NO2 Annual Standard (ppm): 0.0534

Air Quality Impact Analysis - Ambient CO Analysis
GE Gas Turbines - Commission Operations
Riverside ERC

1-Hour CO Analysis:

1. Convert CO 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm CO = ($\mu g/m^3$) (0.0245/CO MW)

Where:

CO 1-Hour $\mu g/m^3$:	130.5
CO MW:	28.0
Conversion:	0.0245

So:

ppm CO =	0.1142

2. Add CO 1-hour background ambient data to projects modeling impacts.

ppm CO = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm):	0.114	
Ambient background data (ppm):	11.0	Station 4146 - Riverside- Magnolia - 1997

So:

Project + Background (ppm):	11.11
Most Stringent CO 1-Hour Standard (ppm):	20.0

8-Hour CO Analysis:

1. Convert annual project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm CO = ($\mu g/m^3$) (0.0245/CO MW)

Where:

CO 8-Hour $\mu g/m^3$:	91.1
CO MW:	28.0
Conversion:	0.0245

So:

ppm CO=	0.080

2. Add CO 8-Hour background ambient data to projects modeling impacts.

ppm CO = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm):	0.080	
Ambient background data (ppm):	5.8	Station 4144 - Rubidoux - 1997

So:

Project + Background (ppm):	5.88
Most Stringent CO 8-Hour Standard (ppm):	9.0

Air Quality Impact Analysis - Ambient PM_{10} Analysis
GE Gas Turbines - Commission Operations
Riverside ERC

24-Hour PM_{10} Analysis:

1. Add PM_{10} 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$):	1.816	
Ambient background data ($\mu g/m^3$):	164.0	Station 4144 - Rubidoux - 2003

So:

Project + Background ($\mu g/m^3$):	165.8
Most Stringent PM_{10} 24-Hour Standard ($\mu g/m^3$):	50.0

Annual PM_{10} Analysis:

1. Add PM_{10} Annual background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$):	na	
Ambient background data ($\mu g/m^3$):	72.3	Station 4144 - Rubidoux - 1999

So:

Project + Background ($\mu g/m^3$):	#VALUE!
Most Stringent PM_{10} Annual Standard ($\mu g/m^3$):	30.0

Air Quality Impact Analysis - Ambient $PM_{2.5}$ Analysis
GE Gas Turbines - Commission Operations
Riverside ERC

24-Hour $PM_{2.5}$ Analysis:

1. Add $PM_{2.5}$ 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 1.82

Ambient background data ($\mu g/m^3$): 119.6 Station 4144 - Rubidoux - Year 2000

So:

Project + Background ($\mu g/m^3$): 121.4

Most Stringent $PM_{2.5}$ 24-Hour Standard ($\mu g/m^3$): 50.0

Annual $PM_{2.5}$ Analysis:

1. Add $PM_{2.5}$ Annual background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): na

Ambient background data ($\mu g/m^3$): 31.1 Station 4144 - Rubidoux - Year 2001

So:

Project + Background ($\mu g/m^3$): #VALUE!

Most Stringent $PM_{2.5}$ Annual Standard ($\mu g/m^3$): 30.0

Air Quality Impact Analysis - Ambient SO_2 / Sulfate
GE Gas Turbines - Commission Operations
Riverside ERC

24-Hour Particulate Sulfate Analysis:

1. Add SOx 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 0.94
Ambient background data ($\mu g/m^3$): 11.7 Station 4144 - Rubidoux - Year 2002

So:

Project + Background ($\mu g/m^3$): 12.64
Most Stringent SO_2 24-Hour Standard ($\mu g/m^3$): 25.0

1-Hour SO_2 Analysis:

1. Convert SO2 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm SO2 = ($\mu g/m^3$) (0.0245/SO2 MW)

Where:

SO2 1-Hour $\mu g/m^3$:	2.300
SO2 MW:	64.0
Conversion:	0.0245

So:

ppm SO2=	0.000880

2. Add SOx 1-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts (ppm): 0.000880
Ambient background data (ppm): 0.11 Station 4144 - Rubidoux - Year 2000

So:

Project + Background (ppm): 0.11
Most Stringent SO_2 24-Hour Standard (ppm): 0.25

24-Hour SO_2 Analysis:

1. Convert SO2 24-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm SO2 = ($\mu g/m^3$) (0.0245/SO2 MW)

Where:

SO2 24-Hour $\mu g/m^3$:	0.935
SO2 MW:	64.0
Conversion:	0.0245

So:

ppm SO2=	0.000358

1. Add SOx 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts (ppm): 0.00036
Ambient background data (ppm): 0.041 Station 4144 - Rubidoux - Year 2000

So:

Project + Background (ppm): 0.041
Most Stringent SO_2 24-Hour Standard (ppm): 0.040

Air Quality Impact Analysis - Summary of Ambient Air Quality Analysis
GE Gas Turbines - Commission Operations
Riverside ERC

Ambient Air Quality Analysis:

Pollutant	Averaging Time	Project Impacts	Ambient Background	Year of Maximum Background	Total Impacts (Project + Ambient)	Ambient Standard
NO_x	1 - Hour (ppm)	0.068	0.15	2001, Rubidoux	0.218	0.25
NO_x	Annual (ppm)	#VALUE!	0.03	1999, Rubidoux	na	0.0534
CO	1 - Hour (ppm)	0.114	11.0	1997, Riverside Magnolia	11.1	20.0
CO	8 - Hour (ppm)	0.080	5.8	1997, Rubidoux	5.9	9.0
PM	24 - Hour ($\mu g/m^3$)	1.82	164.0	2003, Rubidoux	**165.8**	**50.0**
PM_{10}	Annual ($\mu g/m^3$)	na	72.30	1999, Rubidoux	**na**	**20.0**
$PM_{2.5}$	24 - Hour ($\mu g/m^3$)	1.82	119.6	2000, Rubidoux	**121.4**	**65.0**
$PM_{2.5}$	Annual ($\mu g/m^3$)	na	31.10	2001, Rubidoux	**na**	**12.0**
Sulfate	24 - Hour ($\mu g/m^3$)	0.94	11.700	2002, Rubidoux	12.64	25.00
SO_2	1-hour (ppm)	0.00088	0.110	2000, Rubidoux	0.11	0.25
SO_2	24-hour (ppm)	0.0004	0.041	2000, Rubidoux	**0.04**	**0.04**

Air Quality Impact Analysis - Emission Parameters
GE Gas Turbines - Normal Year Operations
Riverside ERC

Equipment Information:

Equipment Type: Gas Turbines	Capacity: -	Fuel: Natural Gas
Manufacturer: GE	Output (MW): 100	HHV: 1050
Model: LM6000	# of Units: 2	

Emission Rates:

Pollutant	Per Unit Emission Rate (lbs/hr)	Total Emission Rate (lbs/hr)	Total Emission Rate (g/s)		Comments
NO_x	32.90	65.80	8.29	1-Hour	startup hour operation
NO_x	1.10	2.20	0.28	Annual	annual emissions averaged over 8760 hours
CO	26.40	52.80	6.65	1-Hour	startup hour operation
CO	24.38	48.75	6.14	8-Hour	average of 4 start and 4 shutdown hours
PM_{10}	3.00	6.00	0.76	24-Hour	
PM_{10}	0.90	1.80	0.23	Annual	annual emissions averaged over 8760 hours
$PM_{2.5}$	3.00	6.00	0.76	24-Hour	
$PM_{2.5}$	0.90	1.80	0.23	Annual	annual emissions averaged over 8760 hours
SO_x	1.62	3.24	0.41	1 hour / 3-Hour	
SO_x	1.62	3.24	0.41	24-Hour	

Emission rates on this page exclude the cooling tower because PM pates are not normalized.
Cooling tower emissions are included in the PM worksheets.

Air Quality Impact Analysis - Significant Change In Air Quality
GE Gas Turbines - Normal Year Operations
Riverside ERC

Modeling Results:

1st Max =	5.63368	(ug/m$^{3)}$/(g/sec)	1 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	5.58617	(ug/m$^{3)}$/(g/sec)	3 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	3.93541	(ug/m$^{3)}$/(g/sec)	8 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	2.29070	(ug/m$^{3)}$/(g/sec)	24 - Hour Average Concentration	(@ 1.0 g/s per turbine)
1st Max =	0.21834	(ug/m$^{3)}$/(g/sec)	Annual Average Concentration	(@ 1.0 g/s per turbine)

Air Quality Impacy Analysis:

Pollutant	Averaging Time	Emission Rate (g/sec)	Maximum Impact (ug/m^3)	SCAQMD Significant Change In Air Quality Threshold (ug/m^3)
NO_2	1 - Hour	8.29	**46.70**	**20.0**
NO_2	Annual	0.28	**0.06**	**1.0**
CO	1 - Hour	6.65	**37.48**	**1100.0**
CO	8 - Hour	6.14	**24.17**	**500.0**
PM	24 - Hour	0.23	**1.8164**	**2.5**
PM_{10}	Annual	0.23	**0.0497**	**1.0**
$PM_{2.5}$	24 - Hour	0.76	**1.8164**	**N/A**
$PM_{2.5}$	Annual	0.23	**0.0497**	**N/A**
Sulfate	24-Hour	0.41	**0.94**	**N/A**
SO2	1 - Hour	0.41	**2.30**	**N/A**
SO2	24-Hour	0.41	**0.94**	**N/A**

urce . Model input/output are not normalized

Note:

- X/Q Max values (ug/m^3/g/sec) are taken from the ISC 3 model.
- Impacts analysis utilized the standard stack release parameters.

Air Quality Impact Analysis - Ambient NO_2 Analysis
GE Gas Turbines - Normal Year Operations
Riverside ERC

1-Hour NO_2 Analysis:

1. Convert NO2 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Hour $\mu g/m^3$:	46.7	OLM Ratio	1.00
NO2 MW:	46.0	(Valid only for consruction impacts)	
Conversion:	0.0245		

So:

ppm NO2= 0.0249

2. Add NO2 1-hour background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): 0.025
Ambient background data (ppm): 0.15 Station 4144 - Rubidoux - Year 2001

So:

Project + Background (ppm): 0.17
Most Stringent NO2 1-Hour Standard (ppm): 0.25

Annual NO_2 Analysis:

1. Convert annual project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Annual $\mu g/m^3$:	0.06	OLM Ratio	0.59
NO2 MW:	46.0		
Conversion:	0.0245		

So:

ppm NO2 = 0.00002

2. Add NO2 annual background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): 0.00002
Ambient background data (ppm): 0.0262 Station 4144 - Rubidoux - Year 1999

So:

Project + Background (ppm): 0.0262
Most Stringent NO2 Annual Standard (ppm): 0.0534

Air Quality Impact Analysis - Ambient CO Analysis
GE Gas Turbines - Normal Year Operations
Riverside ERC

1-Hour CO Analysis:

1. Convert CO 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm CO = ($\mu g/m^3$) (0.0245/CO MW)

Where:

CO 1-Hour $\mu g/m^3$:	37.5
CO MW:	28.0
Conversion:	0.0245

So:

ppm CO =	0.0328

2. Add CO 1-hour background ambient data to projects modeling impacts.

ppm CO = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm):	0.033	
Ambient background data (ppm):	11.0	Station 4146 - Riverside- Magnolia - 1997

So:

Project + Background (ppm):	11.03
Most Stringent CO 1-Hour Standard (ppm):	20.0

8-Hour CO Analysis:

1. Convert annual project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm CO = ($\mu g/m^3$) (0.0245/CO MW)

Where:

CO 8-Hour $\mu g/m^3$:	24.2
CO MW:	28.0
Conversion:	0.0245

So:

ppm CO=	0.021

2. Add CO 8-Hour background ambient data to projects modeling impacts.

ppm CO = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm):	0.021	
Ambient background data (ppm):	5.8	Station 4144 - Rubidoux - 1997

So:

Project + Background (ppm):	5.82
Most Stringent CO 8-Hour Standard (ppm):	9.0

Air Quality Impact Analysis - Ambient PM_{10} Analysis
GE Gas Turbines - Normal Year Operations
Riverside ERC

24-Hour PM_{10} Analysis:

1. Add PM_{10} 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 1.816

Ambient background data ($\mu g/m^3$): 164.0 Station 4144 - Rubidoux - 2003

So:

Project + Background ($\mu g/m^3$): 165.8

Most Stringent PM_{10} 24-Hour Standard ($\mu g/m^3$): 50.0

Annual PM_{10} Analysis:

1. Add PM_{10} Annual background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 0.050

Ambient background data ($\mu g/m^3$): 72.3 Station 4144 - Rubidoux - 1999

So:

Project + Background ($\mu g/m^3$): 72.35

Most Stringent PM_{10} Annual Standard ($\mu g/m^3$): 30.0

Air Quality Impact Analysis - Ambient $PM_{2.5}$ Analysis
GE Gas Turbines - Normal Year Operations
Riverside ERC

24-Hour $PM_{2.5}$ Analysis:

1. Add $PM_{2.5}$ 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 1.82

Ambient background data ($\mu g/m^3$): 119.6 Station 4144 - Rubidoux - Year 2000

So:

Project + Background ($\mu g/m^3$): 121.4

Most Stringent $PM_{2.5}$ 24-Hour Standard ($\mu g/m^3$): 50.0

Annual $PM_{2.5}$ Analysis:

1. Add $PM_{2.5}$ Annual background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 0.05

Ambient background data ($\mu g/m^3$): 31.1 Station 4144 - Rubidoux - Year 2001

So:

Project + Background ($\mu g/m^3$): 31.15

Most Stringent $PM_{2.5}$ Annual Standard ($\mu g/m^3$): 30.0

Air Quality Impact Analysis - Ambient SO_2 / Sulfate
GE Gas Turbines - Normal Year Operations
Riverside ERC

24-Hour Particulate Sulfate Analysis:

1. Add SOx 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): 0.94
Ambient background data ($\mu g/m^3$): 11.7 Station 4144 - Rubidoux - Year 2002

So:

Project + Background ($\mu g/m^3$): 12.64
Most Stringent SO_2 24-Hour Standard ($\mu g/m^3$): 25.0

1-Hour SO_2 Analysis:

1. Convert SO2 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm SO2 = ($\mu g/m^3$) (0.0245/SO2 MW)

Where:

SO2 1-Hour $\mu g/m^3$:	2.300
SO2 MW:	64.0
Conversion:	0.0245

So:

ppm SO2=	0.000880

2. Add SOx 1-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts (ppm): 0.000880
Ambient background data (ppm): 0.11 Station 4144 - Rubidoux - Year 2000

So:

Project + Background (ppm): 0.11
Most Stringent SO_2 24-Hour Standard (ppm): 0.25

24-Hour SO_2 Analysis:

1. Convert SO2 24-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm SO2 = ($\mu g/m^3$) (0.0245/SO2 MW)

Where:

SO2 24-Hour $\mu g/m^3$:	0.935
SO2 MW:	64.0
Conversion:	0.0245

So:

ppm SO2=	0.000358

1. Add SOx 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts (ppm): 0.00036
Ambient background data (ppm): 0.041 Station 4144 - Rubidoux - Year 2000

So:

Project + Background (ppm): 0.041
Most Stringent SO_2 24-Hour Standard (ppm): 0.040

Air Quality Impact Analysis - Summary of Ambient Air Quality Analysis
GE Gas Turbines - Normal Year Operations
Riverside ERC

Ambient Air Quality Analysis:

Pollutant	Averaging Time	Project Impacts	Ambient Background	Year of Maximum Background	Total Impacts (Project + Ambient)	Ambient Standard
NO_x	1 - Hour (ppm)	0.025	0.15	2001, Rubidoux	0.175	0.25
NO_x	Annual (ppm)	0.00002	0.03	1999, Rubidoux	0.03	0.0534
CO	1 - Hour (ppm)	0.033	11.0	1997, Riverside Magnolia	11.0	20.0
CO	8 - Hour (ppm)	0.021	5.8	1997, Rubidoux	5.8	9.0
PM	24 - Hour ($\mu g/m^3$)	1.82	164.0	2003, Rubidoux	**165.8**	**50.0**
PM_{10}	Annual ($\mu g/m^3$)	0.05	72.30	1999, Rubidoux	**72.35**	**20.0**
$PM_{2.5}$	24 - Hour ($\mu g/m^3$)	1.82	119.6	2000, Rubidoux	**121.4**	**65.0**
$PM_{2.5}$	Annual ($\mu g/m^3$)	0.05	31.10	2001, Rubidoux	**31.15**	**12.0**
Sulfate	24 - Hour ($\mu g/m^3$)	0.94	11.700	2002, Rubidoux	12.64	25.00
SO_2	1-hour (ppm)	0.00088	0.110	2000, Rubidoux	0.11	0.25
SO_2	24-hour (ppm)	0.0004	0.041	2000, Rubidoux	**0.04**	**0.04**

Air Quality Impact Analysis - Emission Parameters
GE Gas Turbines - Fumigation Conditions
Riverside ERC

Equipment Information:

Equipment Type: Gas Turbines	Capacity: -	Fuel: Natural Gas
Manufacturer: GE	Output (MW): 100	HHV: 1050
Model: LM6000	# of Units: 2	

Emission Rates:

Pollutant	Per Unit Emission Rate (lbs/hr)	Total Emission Rate (lbs/hr)	Total Emission Rate (g/s)		Comments
NO_x	32.90	65.80	8.29	1-Hour	startup hour operation
NO_x	2.19	4.38	0.55	Annual	
CO	26.40	52.80	6.65	1-Hour	startup hour operation
CO	24.38	48.75	6.14	8-Hour	
PM_{10}	1.00	2.00	0.25	24-Hour	
PM_{10}	1.00	2.00	0.25	Annual	annual emissions averaged over 8760 hours
$PM_{2.5}$	1.00	2.00	0.25	24-Hour	
$PM_{2.5}$	1.00	2.00	0.25	Annual	annual emissions averaged over 8760 hours
SO_x	1.62	3.24	0.41	1 hour / 3-Hour	
SO_x	1.62	3.24	0.41	24-Hour	

Air Quality Impact Analysis - Ambient NO_2 Analysis
GE Gas Turbines - Fumigation Conditions
Riverside ERC

1-Hour NO_2 Analysis:

1. Convert NO2 1-hour project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Hour $\mu g/m^3$:	0.2	OLM Ratio	1.00
NO2 MW:	46.0	(Valid only for consruction impacts)	
Conversion:	0.0245		

So:

ppm NO2= 0.0001

2. Add NO2 1-hour background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): 0.000
Ambient background data (ppm): 0.15 Station 4144 - Rubidoux - Year 2001

So:

Project + Background (ppm): 0.15
Most Stringent NO2 1-Hour Standard (ppm): 0.25

Annual NO_2 Analysis:

1. Convert annual project modeling impact results to ppm for ambient analysis (ambient standards are in ppm).

ppm NO2 = ($\mu g/m^3$) (0.0245/NO2 MW)

Where:

NO2 1-Annual $\mu g/m^3$:	N/A	OLM Ratio	0.59
NO2 MW:	46.0		
Conversion:	0.0245		

So:

ppm NO2 = #VALUE!

2. Add NO2 annual background ambient data to projects modeling impacts.

ppm NO2 = (projects modeling impacts + background ambient data)

Where:

Projects modeling impacts (ppm): #VALUE!
Ambient background data (ppm): 0.0262 Station 4144 - Rubidoux - Year 1999

So:

Project + Background (ppm): #VALUE!
Most Stringent NO2 Annual Standard (ppm): 0.0534

Air Quality Impact Analysis - Ambient PM_{10} Analysis
GE Gas Turbines - Fumigation Conditions
Riverside ERC

24-Hour PM_{10} Analysis:

1. Add PM_{10} 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): N/A

Ambient background data ($\mu g/m^3$): 164.0 Station 4144 - Rubidoux - 2003

So:

Project + Background ($\mu g/m^3$): #VALUE!

Most Stringent PM_{10} 24-Hour Standard ($\mu g/m^3$): 50.0

Annual PM_{10} Analysis:

1. Add PM_{10} Annual background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): N/A

Ambient background data ($\mu g/m^3$): 72.3 Station 4144 - Rubidoux - 1999

So:

Project + Background ($\mu g/m^3$): #VALUE!

Most Stringent PM_{10} Annual Standard ($\mu g/m^3$): 30.0

Air Quality Impact Analysis - Ambient SO_2 / Sulfate
GE Gas Turbines - Fumigation Conditions
Riverside ERC

24-Hour Particulate Sulfate Analysis:

1. Add SOx 24-Hour background ambient data to projects modeling impacts.

Where:

Projects modeling impacts ($\mu g/m^3$): N/A

Ambient background data ($\mu g/m^3$): 11.7 Station 4144 - Rubidoux - Year 2002

So:

Project + Background ($\mu g/m^3$): #VALUE!

Most Stringent SO_2 24-Hour Standard ($\mu g/m^3$): 25.0

Air Quality Impact Analysis - Summary of Ambient Air Quality Analysis
GE Gas Turbines - Fumigation Conditions
Riverside ERC

Ambient Air Quality Analysis:

Pollutant	Averaging Time	Project Impacts	Ambient Background	Year of Maximum Background	Total Impacts (Project + Ambient)	Ambient Standard
NO_x	1 - Hour (ppm)	0.000	0.15	2001	0.150	0.25
NO_x	Annual (ppm)	#VALUE!	0.03	1999	N/A	0.0534
CO	1 - Hour (ppm)	0.000	11.0	1997	11.0	20.0
CO	8 - Hour (ppm)	#VALUE!	5.8	1997	N/A	9.0
PM	24 - Hour ($\mu g/m^3$)	N/A	164.0	2003	N/A	**50.0**
PM_{10}	Annual ($\mu g/m^3$)	N/A	72.30	1999	N/A	20.0
$PM_{2.5}$	24 - Hour ($\mu g/m^3$)	N/A	119.6	2000	N/A	0.0
$PM_{2.5}$	Annual ($\mu g/m^3$)	N/A	31.10	2001	N/A	0.0
Sulfate	24 - Hour ($\mu g/m^3$)	N/A	11.700	2000	N/A	25.00
SO_2	1-hour (ppm)	0.00000	0.110	2000	0.11	0.25
SO_2	24-hour (ppm)	#VALUE!	0.041	2000	N/A	0.04