APPENDIX A

CaRFG2 REFINERY EMISSIONS

1990 Versus 1999

Appendix A:

CaRFG2 Refinery Emissions by Air District

SCAQMD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	8,939.1	10,977.5	4,037.2	4,767.5	2,057.2
1999	3,523.2	7,849.8	5,215.8	7,505.4	1,252.9
EMISSION CHANGES	**-5,415.9**	**-3,127.7**	**+1,178.6**	**+2,737.9**	**-804.3**

BAAQMD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	8,927.2	16,506.4	3,499.4	17,248.2	1,070.4
1999	6,859.5	12,919.3	2,352.6	14,218.4	928.1
EMISSION CHANGES	**-2.067.7**	**-3,587.1**	**-1,146.8**	**-3,029.8**	**-142.3**

SJVUAPCD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	642.3	1,993.7	305.4	790.5	40.4
1999	343.3	465.7	202.7	435.8	435.4
EMISSION CHANGES	**-299.0**	**-1,528.0**	**-102.7**	**-354.7**	**+395.0**

CaRFG2 Emissions for Each Refinery
SCAQMD

(Source: http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php)

SCAQMD 1990
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
ARCO (BP)	2,264.1	2,102.2	183.7	1,918.9	500.8
Chevron	2,546.5	3,036.8	2,414.3	832.3	613.3
Mobil (Exxon-Mobil)	1,061.0	1,740.5	559.4	255.7	274.7
Texaco (Equilon)	1,268.7	1,699.4	346.4	545.8	129.1
Ultramar	349.0	332.7	174.7	340.9	163.3
Unocal (Phillips) Wilmington/Carson* (*1993 data)	1,450.5	2,065.9	358.7	873.4	376.0
TOTAL	**8,939.1**	**10,977.5**	**4,037.2**	**4,767.5**	**2,057.2**

SCAQMD 1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
ARCO (BP)	472.0	1,484.0	1,595.0	2,315.0	310.5
Chevron	806.2	1,650.0	1,676.7	1,208.1	227.3
Mobil (Exxon-Mobil)	701.3	1,663.1	869.3	1,017.5	215.3
Texaco (Equilon)	536.4	1,018.7	175.7	952.9	130.5
Ultramar	208.3	329.2	85.3	619.6	152.6
Unocal (Phillips) Wilmington/Carson	799.0	1,704.8	813.8	1,392.3	216.7
TOTAL	**3,523.2**	**7,849.8**	**5,215.8**	**7,505.4**	**1,252.9**

SCAQMD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	8,939.1	10,977.5	4,037.2	4,767.5	2,057.2
1999	3,523.2	7,849.8	5,215.8	7,505.4	1,252.9
EMISSION CHANGES	**-5,415.9**	**-3,127.7**	**+1,178.6**	**+2,737.9**	**-804.3**

CaRFG2 Emissions for Each Refinery
BAAQMD

(Source: http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php)

BAAQMD 1990
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
Chevron	3,120.3	4,733.6	1,187.9	1,291.3	280.8
Exxon (Valero)	1,082.7	2,975.1	492.3	4,922.2	181.0
Shell (Equilon)	2,276.3	4,403.2	1,350.8	2,790.2	294.4
Tosco (Ultramar)	1,666.6	2,952.1	274.4	7,660.4	254.0
Unocal (Phillips)	781.3	1,442.4	194.0	584.1	60.2
TOTAL	**8,927.2**	**16,506.4**	**3,499.4**	**17,248.2**	**1,070.4**

BAAQMD 1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
Chevron	2,510.6	2,609.7	437.9	1,243.9	176.4
Exxon (Valero)	505.3	3,243.3	538.9	5,778.6	185.8
Shell (Equilon)	1,687.1	3,299.1	807.6	1,158.7	362.9
Tosco (Ultramar)	1,543.2	2,606.5	346.2	5,422.7	160.5
Unocal (Phillips)	613.3	1,160.7	222.0	614.5	42.5
TOTAL	**6,859.5**	**12,919.3**	**2,352.6**	**14,218.4**	**928.1**

BAAQMD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	8,927.2	16,506.4	3,499.4	17,248.2	1,070.4
1999	6,859.5	12,919.3	2,352.6	14,218.4	928.1
EMISSION CHANGES	**-2.067.7**	**-3,587.1**	**-1,146.8**	**-3,029.8**	**-142.3**

CaRFG2 Emissions for Each Refinery
SJVUAPCD

(Source: http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php)

SJVUAPCD 1990
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
Texaco (Equilon)	474.4	1,774.8	270.7	471.2	27.1
Kern Oil	167.9	218.9	34.7	319.3	13.3
TOTAL	**642.3**	**1,993.7**	**305.4**	**790.5**	**40.4**

SJVUAPCD 1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
Texaco (Equilon)	124.1	321.2	119.0	72.3	58.2
Kern Oil	219.2	144.5	83.7	363.5	377.2
TOTAL	**343.3**	**465.7**	**202.7**	**435.8**	**435.4**

SJVUAPCD 1990-1999
CaRFG2 Refinery Emissions

CaRFG2 Refineries	ROG (TPY)	NO_x (TPY)	CO (TPY)	SO_x (TPY)	PM_{10} (TPY)
1990	642.3	1,993.7	305.4	790.5	40.4
1999	343.3	465.7	202.7	435.8	435.4
EMISSION CHANGES	**-299.0**	**-1,528.0**	**-102.7**	**-354.7**	**+395.0**