ExxonMobil
Refining & Supply Company
3700 West 190th Street
Torrance, California 90504-2929

August 23, 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Philip M. Fine, Ph.D.
Planning and Rules Manager
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765-4178

AB 2588 Air Toxics "Hot Spots" Health Risk Assessment Revision
ExxonMobil Torrance Refinery, Facility ID: 800089

Dear Dr. Fine:

Enclosed are three (3) copies of a comprehensive, revised AB 2588 health risk assessment (HRA) completed for the ExxonMobil Torrance Refinery (ExxonMobil or Torrance Refinery), based on emissions from the fiscal year 2006-2007 Annual Emissions Report (AER). This revised assessment was prepared in response to a written request from Mr. Naveen Berry dated April 12, 2011. The original HRA was submitted on October 16, 2009.

Along with Mr. Berry's written request for a revised HRA, AQMD included a 3-page list of comments and questions. The Torrance Refinery prepared written responses to those comments and questions, and they are attached to this cover letter (8 pages).

In addition to addressing AQMD's written comments for this revised HRA, other changes were incorporated to reflect 1) improved emission estimates based on updated calculation methodologies, 2) new data based on site-specific sampling / testing, and 3) permanent operational changes to reduce emissions. A detailed explanation of these changes is included in Section 3.0 of this revised HRA. Torrance Refinery requests review of these changes by the South Coast Air Quality Management District.

Also enclosed are two (2) copies of a DVD containing the entire HRA report in PDF format and all computer modeling files requested in Appendix C of AQMD’s *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics “Hot Spots” Information and Assessment Act (AB 2588).* Per Mr. Berry’s request, the DVDs also include a Standard Report Set of electronic files extracted from the HARP model.

If you have any questions, please contact Jun H. Kim at (310) 212-1816 or by email at jun.h.kim@exxonmobil.com.

Sincerely,

Craig T. Sakamoto
Env. Section Supervisor, Air/Title V

Attachments
- Written responses to AQMD comments and questions provided on 4/12/11
- HRA report (3 copies)
- DVD (2 copies)

Comments on the Health Risk Assessment (HRA) of FY 2006-2007

1. Emission Factors

Please provide calculation methods and substantiate the maximum hourly (lbs/hr) and annual average (lbs/yr) emissions rates or provide source test reports for the following toxic air contaminants (TACs) emitted from the following sources:

AAE = Annual Average Emissions
MHE = Max Hourly Emissions

a. Ammonia (CAS No. 7664417)

i. 02F_7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.a.i.	Ammonia	7664-41-7	02F_7	118,766.37	13.56	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	Mass balance, plus stoicheometry for consumption of NH3 in SCR					
AAE Equation:	AAE = NH3 injection (ESP, SCR) - NH3 consumption in SCR					
Emission Factor (EF):	NA					
AAE Calculation:	AAE = 306,511 lb injected - 187,745 lb consumed (RY2010 data used in HRA)					
Comments:	RY2010 was the refinery's first full year of compliance with Rule 1105.1					

b. Arsenic (CAS No. 7440382)

i. 24F_1

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.b.i.	Arsenic	7440-38-2	24F_1	10.25	0.0012	8,760
Op Hours Description:	Heater 24F-1 is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Fuel Use x HHV x EF					
Emission Factor (EF):	7.20E-07 lb/mmbtu Literature: 1998 API / WSPA					
AAE Calculation:	AAE = 14,193.43 mmscf x 1,002.75 btu/mmscf x 7.20E-07 lb/mmbtu					
Comments:	Heater 24F-1 burns both natural gas and PSA waste gas					

c. Benzene (CAS No. 71432)

i. 400x13

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.c.i.	Benzene	71-43-2	400x13	43.85	0.0050	8,760
Op Hours Description:	Tank 400x13 is a continuous operating source					
Emission Est. Method:	TANKS 4.0; TVP and speciation data representative of Gas Oil					
AAE Equation:	AAE = VOC x Wt% Benzene					
Emission Factor (EF):	NA					
AAE Calculation:	AAE = 4,892.61 lb VOC x 0.896 wt% Benzene					
Comments:	TVP for Gas Oil in Tank 400x13 was changed to 0.1 psia for the HRA					

ii. 24F_1

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.c.ii.	Benzene	71-43-2	24F_1	853.95	0.0975	8,760
Op Hours Description:	Heater 24F-1 is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Fuel Use x HHV x EF					
Emission Factor (EF):	6.00E-05 lb/mmbtu		Literature: 1998 API / WSPA			
AAE Calculation:	AAE = 14,193.43 mmscf x 1,002.75 btu/mmscf x 6.00E-05 lb/mmbtu					
Comments:	Heater 24F-1 burns both natural gas and PSA waste gas					

iii. Vactrucks

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.c.iii.	Benzene	71-43-2	Vacuum Trucks	778.71	0.3744	2,080
Op Hours Description:	Vacuum Truck activities occur 5 days / wk x 8 hr / day x 52 wk / yr					
Emission Est. Method:	Mass balance, vapor displacement					
AAE Equation:	AAE = VOC x Wt% Benzene					
Emission Factor (EF):	NA					
AAE Calculation:	AAE = 132,599.15 lb VOC x 0.587 wt% Benzene					
Comments:	Vacuum Truck emissions are estimated from multiple displacement events					

d. Cadmium (CAS No. 7440439)

i. 24F_1

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.d.i.	Cadmium	7440-43-9	24F_1	21.35	0.0024	8,760
Op Hours Description:	Heater 24F-1 is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Fuel Use x HHV x EF					
Emission Factor (EF):	1.50E-06 lb/mmbtu		Literature: 1998 API / WSPA			
AAE Calculation:	AAE = 14,193.43 mmscf x 1,002.75 btu/mmscf x 1.50E-06 lb/mmbtu					
Comments:	Heater 24F-1 burns both natural gas and PSA waste gas					

e. Diesel Exhaust PM (CAS No. 9901)

i. ICE_D (West)

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.e.i.	Diesel PM Exhaust	9901	ICE_D (West)	126.92	0.4615	275
Op Hours Description:	This source is a group of west, centrally located rental ICEs; average op hrs					
Emission Est. Method:	Combined use of ARB / EPA Off-Road Tier emission factors					
AAE Equation:	AAE = Σ (Brake H.P. x Hrs x EF x Load Factor x PM Filter Control Eff)					
Emission Factor (EF):	Various EFs g/bhp-hr		ARB / EPA Off-Road ICE Tier EFs			
AAE Calculation:	AAE = 128 bhp x 595.4 hrs x 0.22 g/bhp-hr x 74% x (1-85%)					
Comments:	http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls					

ii. ICE D (API)

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.e.ii.	Diesel PM Exhaust	9901	ICE_D (API)	35.69	0.0110	3,241
Op Hours Description:	This source is a rental pump ICE used near the API; actual op hrs					
Emission Est. Method:	ARB / EPA Off-Road Tier emission factor					
AAE Equation:	AAE = Brake H.P. x Hrs x EF x Load Factor x PM Filter Control Eff					
Emission Factor (EF):	0.45 g/bhp-hr ARB / EPA Off-Road ICE Tier EFs					
AAE Calculation:	AAE = 100 bhp x 3,241.3 hrs x 0.45 g/bhp-hr x 74% x (1-85%)					
Comments:	http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls					

iii. ICE_D (East)

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.e.iii.	Diesel PM Exhaust	9901	ICE_D (East)	91.89	0.3341	275
Op Hours Description:	This source is a group of east, centrally located rental ICEs; average op hrs					
Emission Est. Method:	Combined use of ARB / EPA Off-Road Tier emission factors					
AAE Equation:	AAE = Σ (Brake H.P. x Hrs x EF x Load Factor x PM Filter Control Eff)					
Emission Factor (EF):	Various EFs g/bhp-hr ARB / EPA Off-Road ICE Tier EFs					
AAE Calculation:	AAE = 128 bhp x 595.4 hrs x 0.22 g/bhp-hr x 74% x (1-85%)					
Comments:	http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls					

Please submit EPA certified Tier 1, 2 or 3 emission factors to substantiate the above diesel exhaust PM emission factors.

Diesel ICE PM emissions were calculated using:

- ARB/ EPA Off-Road tier factors (see ARB web site address stated above)
- EPA load factors (pumps 74%, generators 74%, compressors 48%, cranes 32%)
- PM control efficiency for pumps based on an ARB verified PM filter system

f. Hexavalent chromium (CAS No. 18540299)

i. 02F_7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.f.i.	Chromium +6	18540-29-9	02F_7	0.38	0.000044	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Coke Burn x EF					
Emission Factor (EF):	7.97E-07 lb/mlb coke Literature: CATEF					
AAE Calculation:	AAE = 481,800 mlb coke x 7.97E-07 lb/mlb coke					
Comments:	CATEF = California Air Toxics Emission Factor Database					

g. Hydrochloric acid (CAS No. 7647010)

i. 02F_7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.g.i.	Hydrochloric Acid	7647-01-0	02F_7	51,070.80	5.83	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Coke Burn x EF					
Emission Factor (EF):	1.06E-01 lb/mlb coke	Literature: 1998 API / WSPA				
AAE Calculation:	AAE = 481,800 mlb coke x 1.06E-01 lb/mlb coke					
Comments:	None					

h. Lead (CAS No. 7439921)

i. 02F_7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.h.i.	Lead	7439-92-1	02F_7	22.95	0.0026	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	Emission factor from site-specific stack test					
AAE Equation:	AAE = Stack Flow Rate x EF					
Emission Factor (EF):	2.56E-04 lb/mmscf	Stack Test: Almega '90				
AAE Calculation:	AAE = 89,654 mmscf x 2.56E-04 lb/mmscf					
Comments:	Stack test was part of 1990 WSPA pooled source test program					

i. Nickel (CAS No. 7440020)

i. 02F_ 7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.i.i.	Nickel	7440-02-0	02F_7	47.34	0.0054	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	Emission factor from site-specific stack test					
AAE Equation:	AAE = Stack Flow Rate x EF					
Emission Factor (EF):	5.28E-04 lb/mmscf	Stack Test: Almega '90				
AAE Calculation:	AAE = 89,654 mmscf x 5.28E-04 lb/mmscf					
Comments:	Stack test was part of 1990 WSPA pooled source test program					

j. PAHs (CAS No.1151)

i. CT_ HDT

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.j.i.	Benzo(a)anthracene	56-55-3	CT_HDT	0.35	0.000040	8,760
Op Hours Description:	The HDT Cooling Tower is a continuous operating source					
Emission Est. Method:	Emission factor from literature; PAH speciation from 2008 sampling					
AAE Equation:	AAE = Circulation Rate x Drift Factor x Concentration					
Emission Factor (EF):	1.7 lb/mgal	AP-42, Table 13.4-1				
AAE Calculation:	AAE = 40,997 mmgal x 1,700 lb/mmgal x 0.005 ppm <- Benzo(a)anthracene					
Comments:	PAHs were speciated for the HRA revision					

ii. 24J_ 1

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.j.ii.	PAHs	1151	24J_1	1.16	0.000133	8,760
Op Hours Description:	Gas Turbine 24J-1 is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Fuel Use x HHV x EF					
Emission Factor (EF):	9.10E-07 lb/mmbtu		Literature: 1998 API / WSPA			
AAE Calculation:	AAE = 1,273.26 mmscf x 1,002.75 btu/mmscf x 9.10E-07 lb/mmbtu					
Comments:	Gas Turbine 24J-1 burns natural gas					

iii. Flare_65

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.j.iii.	PAHs	1151	Flare_65	1.05	0.00012	8,760
Op Hours Description:	Flare 65 is a continuous operating source					
Emission Est. Method:	Emission factor from literature					
AAE Equation:	AAE = Fuel Use x EF					
Emission Factor (EF):	3.00E-03 lb/mmscf		Literature: VCAPCD, 5/01			
AAE Calculation:	AAE = 351.33 mmscf x 3.00E-03 lb/mmscf					
Comments:	Flare 65 consists of two co-located, elevated flares (aggregated in HRA)					

The PAHs (CAS #1151) and naphthalene (CAS #91203) were both reported from each PAHs emission source without using SCAQMD default emission values. Please clarify whether naphthalene is also included in PAHs (CAS # 1151) for each PAHs emission source.

Naphthalene is not included in PAHs reported using CAS No. 1151.

In the AER of 2006-2007, 51 lbs of PAHs (CAS #1151) were reported. In the HRA, 14 lbs of PAHs (CAS #1151) were reported. On page 4 of the HRA, the explanations for the discrepancies are not sufficient. Please provide more information or documents to explain the discrepancies.

See Section 3.0 of the revised HRA for additional explanation of discrepancies between emissions reported in the 2006-2007 AER and emissions modeled in the revised HRA.

k. Sulfuric acid (CAS No. 7664939)

i. 01F_1/2

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.k.i.	Sulfuric Acid	7664-93-9	01F_1/2	5,594.88	0.6387	8,760
Op Hours Description:	Heaters 1F-1 and 1F-2 are continuous operating sources; share stack					
Emission Est. Method:	H2SO4 is formed in combustion stacks from SO2 in presence of moisture					
AAE Equation:	AAE = SO2->SO3 = 5.0%, SO3->H2SO4 = 99.1%					
Emission Factor (EF):	NA		TRI Guidance: SO2->SO3->H2SO4, Temp, %H2O			
AAE Calculation:	AAE = 73,757 lb SO2 x 5.0% x 80 / 64 x 99.1% x 98 / 80					
Comments:	SO2->SO3 and SO3->H2SO4 percentages are specific to the facility					

ii. 02F_7

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.k.ii.	Sulfuric Acid	7664-93-9	02F_7	6,817.55	0.7783	8,760
Op Hours Description:	The FCC is a continuous operating source					
Emission Est. Method:	H2SO4 is formed in combustion stacks from SO2 in presence of moisture					
AAE Equation:	AAE = SO2->SO3 = 2.4%, SO3->H2SO4 = 93.0%					
Emission Factor (EF):	NA TRI Guidance: SO2->SO3->H2SO4, Temp, %H2O					
AAE Calculation:	AAE = 127,010 lb SO2 x 2.4% x 80 / 64 x 93.0% x 98 / 80					
Comments:	SO2->SO3 and SO3->H2SO4 percentages are specific to the facility					

iii. 29F_5

Item	Chemical	CAS No.	Source	AAE (lb/yr)	MHE (lb/hr)	Op Hrs
1.k.iii.	Sulfuric Acid	7664-93-9	~~29F_5~~ 29F_4	2,417.78	0.2760	8,760
Op Hours Description:	Incinerator 29F-4 is a continuous operating source; 29F-5 is out-of-service					
Emission Est. Method:	H2SO4 is formed in combustion stacks from SO2 in presence of moisture					
AAE Equation:	AAE = SO2->SO3 = 2.0%, SO3->H2SO4 = 43.3%					
Emission Factor (EF):	NA TRI Guidance: SO2->SO3->H2SO4, Temp, %H2O					
AAE Calculation:	AAE = 182,187 lb SO2 x 2.0% x 80 / 64 x 43.3% x 98 / 80					
Comments:	SO2->SO3 and SO3->H2SO4 percentages are specific to the facility					

l. Please submit the recent stack source test reports for the five metal compounds (copper, lead, mercury, nickel and zinc) associated with the emissions from the Gas Turbine Generator. The source test reports should have been reviewed and approved by the Source Testing Group of SCAQMD before being used in the HRA.

The report for a stack test conducted January 10-11, 2008 on 24F-1 was mailed to Mr. Wing Ko of the AQMD on July 26, 2011

2. Facility and Receptor Data of the transaction files

a. The latest version of HARP software (i.e., version l.4d) and latest HARP Health Database (February 2011) should be used.

HARP Version 1.4d, Build 23.09.07, was used to conduct the revised HRA, along with the February 2011 version of the HARP health database (health.mdb)

b. The elevations must be provided for all emission sources, receptors and buildings. The elevations must conform with the DEM (Digital Elevation Model) files from the United States Geological Survey (USGS).

Downwash building elevations were added in the revised HRA.

c. The coordinate system should be changed to the NAD83 datum. The property boundary and the street map should be properly aligned.

NAD27 datum was confirmed to be acceptable by Mr. Tom Chico of AQMD, in an emailed dated July 26, 2011.

d. Diesel PM is the surrogate for all the TACs. All other TACs from diesel engines should be excluded for HRA.

All toxics other than Diesel PM were removed from diesel ICEs in the revised HRA.

e. The locations of some Sensitive Receptors were incorrectly marked in the HARP Coarse Grid file and Figure E-1, Appendix E of the HRA Report.

In Figure E-1 and Appendix E of the revised HRA, the previous sequential numbering of receptors has been replaced with actual HARP coarse grid receptor numbers.

f. The Receptor ID Nos. of the Sensitive Receptors in HARP transaction files are not consistent with the Receptor Nos. of the Sensitive Receptors in Appendix E of HRA.

See previous response.

g. Please explain the area source emissions of COKER-NO (North Coker), COKER-SO (South Coker), FUG21 (Component fugitives, North Coker Unit) and FUG22 (Component fugitives, South Coker Unit). If the Coke Drum emissions are included in these area sources, please provide calculation methods and substantiate the Coke Drum emissions.

Coke drum venting emissions were split equally between the North Coker and South Coker (sources COKER-NO and COKER-SO). Coke drum venting VOC emissions were estimated using a March 13, 2003 site-specific test value equivalent to 0.11 lb/hr/event. Sources FUG21 and FUG22 represent component fugitive emissions associated with the North Coker and South Coker process unit areas, respectively.

3. Risk Assessment

a. Prepare two HRA Summary Forms; one form includes and the other form excludes the risks from emergency diesel engines.

Two (2) HRA Summary Forms were completed for the revised HRA.

b. On page 14 of the HRA Report, the Point of Maximum Impact (PMI) of the cancer risk can be at the facility site boundary.

In the revised HRA, boundary receptors were considered to identify PMI risks.

c. The GLC adjustment factor should have been set to "1" for cancer risk modeling of worker receptors. For the non-cancer chronic risk modeling of worker receptors, the GLC adjustment factor is not needed.

GLC adjustment factor settings were determined to be correct in the original HRA.

d. From your submitted "No emergency ICEs" text files, project(worker).sit was incorrectly applied to resident risk modeling in two files.

Site-specific parameters were carefully assigned for each modeling run in the revised HRA.

e. The HRA should follow the "SCAQMD Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), July 2005". http://www.agmd.gov/prdas/AB25 8 *8/pdf/* AB2588 Guidelines. pdf.

To the best of our knowledge, both the original HRA and revised HRA followed the July 2005 SCAQMD supplemental guidelines.

4. Health Risk Assessment (HRA) Report

a. The Standard Report Set (excluding 30 year, 9 year cancer risk modeling) from HARP should be submitted on a CD. For the detailed information about this Standard Report Set, please refer to item 10.6.5.9 Standard Report Set on page 10-29 of the HARP User Guide, Air Resources Board *(12/2003).*
http://www.arb.ca.gov/toxics/harp/harpug.htm
We are that the submittal of a Standard Report Set is not noted in our Supplemental Guidelines. We are working on correcting this oversight.

Electronic files associated with the HARP Standard Report Set have been included on the submission CD for the revised HRA.

b. Source descriptions should be provided in the Appendix of the HRA Report. This information should be consistent with the HARP transaction files and Appendix B of the HRA Report.

Previous formatting errors in Appendix B of the original HRA have been corrected in Appendix B of the revised HRA.

ExxonMobil Oil Corporation
Torrance Refinery
Facility ID 800089

AB 2588 HRA
FY 2006-2007

HRA Revision

August 23, 2011

Davenport Engineering, Inc.
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ExxonMobil Oil Corporation
Torrance Refinery

AB 2588 Air Toxics "Hot Spots"

Health Risk Assessment

FY 2006-2007

HRA Revision

Prepared for:

ExxonMobil Oil Corporation
Torrance Refinery
3700 West 190th Street
Torrance, CA 90509-2929

Prepared by:

Davenport Engineering, Inc.
2461 West 208th Street, Suite 200
Torrance, CA 90501

August 23, 2011

DAVENPORT ENGINEERING, INC.
Davenport
ENVIRONMENTAL SERVICES

LIMITATIONS

The results of this modeling analysis represent tools to be used in determination of health risk. Actual air sampling and analysis at a receptor site may yield different results from those predicted using a computer model. Moreover, the assessment uses emission, meteorological, and receptor data from a preceding year as proxies to estimate or predict likely exposure levels in the future. Actual meteorological conditions, emissions, emission vectors, or demographics may be different from the assumed values used in the model.

There is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in this health risk assessment are designed to err on the side of health protection to avoid underestimation of risk to the public. Sources of uncertainty, which may overestimate risk, include: (1) extrapolation of toxicity data in animals to humans, (2) estimation of emissions, (3) the air dispersion models, and (4) exposure estimates. Thus, risk estimates generated by a health risk assessment should not be interpreted as the expected rates of cancer in the exposed population, but rather as conservative estimates of potential risk based on current knowledge and a number of assumptions. Additionally, the uncertainty factors integrated within the estimates of non-cancer reference exposure levels (RELs) are meant to err on the side of public health protection to avoid underestimation of risk.

The opinions, findings, and recommendations contained herein are based upon the data that were reviewed and documented in this report. They are relevant to the dates of emission estimates and should not be relied upon to represent conditions at later dates.

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

AB2588 AIR TOXICS DOCUMENT CERTIFICATION & APPLICATION FORM

Please check the appropriate boxes for purpose of submittal:

	AIR TOXICS INVENTORY REPORT (ATIR)	**INVENTORY YEAR** _____
[ ]	**FIRST YEAR'S ATIR**	
[ ]	**UPDATE ATIR**	
	HEALTH RISK ASSESSMENT (HRA)	**INVENTORY YEAR** FY0607
[ ]	**INITIAL HRA**	
[X]	**REVISED HRA**	

Facility name
ExxonMobil Torrance Refinery

Company name
ExxonMobil Oil Corporation

Facility address
3700 West 190th Street
Torrance, CA 90509

Mailing address
3700 West 190th Street
Torrance, CA 90509

SCAQMD Facility ID#
800089

Facility SIC #
2911

Contact Person (Company Official)
Jun H. Kim

Telephone (Contact Person)
(310) 212-1816

Preparer (if different from above)

Name: Neal Davenport

Title: Principal Engineer

Company: Davenport Engineering, Inc.

Telephone: (310) 787-4600 x15

I SWEAR UNDER PENALTY OF PERJURY THAT THE DATA SUBMITTED WITH THIS DOCUMENT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, AND CONFORM WITH THE INFORMATION REQUESTED BY THE SCAQMD. I FURTHER ACKNOWLEDGE THAT FAILURE TO SUBMIT THE REQUIRED INFORMATION OR KNOWINGLY SUPPLY FALSE INFORMATION IS SUBJECT TO CIVIL PENALTIES PURSUANT TO THE CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 44381(a) AND 44381(b).

Signature Of Responsible Company Official

Date

Name Of Responsible Company Official (please print)
Craig T. Sakamoto

Title
Env Sec Supervisor, Air/Title V

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

HRA Revision
August 23, 2011
Risks Including Emergency Diesel ICEs

HEALTH RISK ASSESSMENT SUMMARY FORM

(Required in Executive Summary of HRA)

Facility Name : ExxonMobil Torrance Refinery

Facility Address: 3700 West 190th Street

Torrance, CA 90509

Type of Business: Petroleum Refining

SCAQMD ID No.: 800089

A. Cancer Risk*

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over 70 years)

1. Inventory Reporting Year : FY 2006-2007
2. Maximum Cancer Risk to Receptors :
   a. Offsite 44.7 in a million Location: 378161E, 3746473N (fine grid, rec 1097)
   b. Residence 7.7 in a million Location: 377236E, 3747123N (fine grid, rec 416)
   c. Worker 3.5 in a million Location: 378236E, 3746523N (fine grid, rec 624)
3. Substances Accounting for 90% of Cancer Risk: Diesel PM, Arsenic, Benzene, Cadmium

   Processes Accounting for 90% of Cancer Risk: ICE_D(D957),ICE_D(West),ICE_D(961),24F_1,02F_4
4. Estimated Population Exposed to Specific Risk Levels
   a. 1 to <10 in a million 91,824
   b. 10 to <100 in a million 0
   c. 100 to <1000 in a million 0
   d. >=1000 in a million 0
   e. Total >= 1 in a million 91,824
5. Cancer Burden: 0.15

   Cancer Burden = (cancer risk) x (no. of people exposed to specific cancer risk)
6. Maximum Distance to Edge of 1 x 10^{-6} Cancer Risk Isopleth (meters) 5,300 meters

B. Hazard Indices*

[Long Term Effects(chronic) and Short Term Effects (acute)]

(non-carcinogenic impacts are estimated by comparing calculated concentration to identified reference exposure levels, and expressing this comparison in terms of a "Hazard Index")

1. Maximum Chronic Hazard Indices:
   a. Residence HI: 0.42 Location: 378236E, 3747123N toxicological endpoint: Central Nervous Sys
   b. Worker HI : 0.47 Location: 377536E, 3747123N toxicological endpoint: Respiratory Tract
2. Substances Accounting for 90% of Chronic Hazard Index: Arsenic, Mercury, Manganese
3. Maximum Acute Hazard Index:
   PMI: 0.21 Location: 376679E, 3747033N toxicological endpoint: Central Nervous Sys
4. Substances Accounting for 90% of Acute Hazard Index: Mercury, Hydrogen Sulfide, Arsenic

*Provide Tables listing contribution of each substance to Maximum Cancer Risk, Acute HI, and Chronic HI.

South Coast Air Quality Management District
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HRA Revision
August 23, 2011

Risks Excluding Emergency Diesel ICEs

HEALTH RISK ASSESSMENT SUMMARY FORM

(Required in Executive Summary of HRA)

Facility Name : ExxonMobil Torrance Refinery

Facility Address: 3700 West 190th Street

Torrance, CA 90509

Type of Business: Petroleum Refining

SCAQMD ID No.: 800089

A. Cancer Risk*

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over 70 years)

1. Inventory Reporting Year : FY 2006-2007
2. Maximum Cancer Risk to Receptors :
   a. Offsite 44.5 in a million Location: 378161E, 3746473N (fine grid, rec 1097)
   b. Residence 5.7 in a million Location: 378236E, 3747123N (fine grid, rec 426)
   c. Worker 3.4 in a million Location: 378236E, 3746523N (fine grid, rec 624)
3. Substances Accounting for 90% of Cancer Risk: Diesel PM, Arsenic, Cadmium, Benzene

   Processes Accounting for 90% of Cancer Risk: ICE_D(East),24F_1,02F_7,01F_1/2,ICE_D(West)
4. Estimated Population Exposed to Specific Risk Levels
   a. 1 to <10 in a million 85,437
   b. 10 to <100 in a million 0
   c. 100 to <1000 in a million 0
   d. >=1000 in a million 0
   e. Total >= 1 in a million 85,437
5. Cancer Burden: 0.14

   Cancer Burden = (cancer risk) x (no. of people exposed to specific cancer risk)
6. Maximum Distance to Edge of 1 x 10^{-6} Cancer Risk Isopleth (meters) < 5,300 meters

B. Hazard Indices*

[Long Term Effects(chronic) and Short Term Effects (acute)]

(non-carcinogenic impacts are estimated by comparing calculated concentration to identified reference exposure levels, and expressing this comparison in terms of a "Hazard Index")

1. Maximum Chronic Hazard Indices:
   a. Residence HI: 0.42 Location: 378236E, 3747123N toxicological endpoint: Central Nervous Sys
   b. Worker HI : 0.47 Location: 377536E, 3747123N toxicological endpoint: Respiratory Tract
2. Substances Accounting for 90% of Chronic Hazard Index: Arsenic, Mercury, Manganese
3. Maximum Acute Hazard Index:
   PMI: 0.21 Location: 376679E, 3747033N toxicological endpoint: Central Nervous Sys
4. Substances Accounting for 90% of Acute Hazard Index: Mercury, Hydrogen Sulfide, Arsenic

*Provide Tables listing contribution of each substance to Maximum Cancer Risk, Acute HI, and Chronic HI.

GLOSSARY OF TERMS

Assembly Bill 2588 (AB 2588): California's Air Toxics "Hot Spots" Information and Assessment Act of 1987 that requires the California Air Resources Board (ARB) to compile and maintain a list of substances that pose chronic or acute threats to public health when present in the air. Additionally, the "Hot Spots" program includes an emissions inventory, requirements for assessing health risks, and provisions for notifying the public about emissions of toxic air contaminants.

Action Risk Level: Maximum Individual Cancer Risk (MICR) of twenty-five in one million (25 x 10-6), cancer burden of 0.5, or a total acute or chronic HI of three (3.0) for any target organ system at any receptor location.

Acute Health Impact: Health effect that is characterized by sudden and severe exposure and rapid absorption of the substance (e.g., minutes or hours).

Air Quality Management District (AQMD): Air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties.

Air Resources Board (ARB): Established in 1967 by California's Legislature to: 1) attain and maintain healthy air quality, 2) conduct research into the causes of and solutions to air pollution, and 3) systematically attack the serious problems caused by motor vehicles, which are a major cause of air pollution in the State.

Annual Emissions Reporting (AER): Program that was developed by the South Coast Air Quality Management District (AQMD) to track emissions of air contaminants from permitted facilities.

Building Downwash: Phenomenon caused by eddies created by air movement around building obstacles. Buildings act as barriers triggering pollutant accumulation that will then increase concentration values.

Building Profile Input Program (BPIP): Software program designed to incorporate the concepts and procedures expressed in the Good Engineering Practice (GEP) technical support document, building downwash guidance, and other related references to calculate building heights and projected building widths for simple, multi-tiered, and groups of structures.

California Air Pollution Control Officers Association (CAPCOA): Association of Air Pollution Control Officers representing all thirty-five local air quality agencies throughout California.

Cancer Burden: Estimated increase in the occurrence of cancer cases in a population subject to a Maximum Individual Cancer Risk (MICR) of greater than or equal to one in one million (1 x 10-6) resulting from exposure to toxic air contaminants.

Cancer Risk: The theoretical probability of contracting cancer when continually exposed for a lifetime (70 years) to a given concentration of a substance.

Chronic Health Impact: Health effect that is characterized by prolonged or repeated exposures over many days, months, or years. Symptoms may not be immediately apparent.

Coarse Grid: Receptors laid out in a grid pattern surrounding a facility at 500 meter spacing. The purpose of the coarse grid is to identify the general locations of large ground-level concentrations.

Fine Grid: Receptors laid out in a grid pattern surrounding a facility at 100 meter spacing in order to look in more detail at areas where concentrations are high. The purpose of the fine grid is to identify the maximum ground-level concentration point and to identify local gradients in concentrations.

Hotspots Analysis and Reporting Program (HARP): Single integrated software package that combines the tools of emission inventory database, facility prioritization, air dispersion modeling, and risk assessment analysis.

Hazard Index (HI): The sum of individual acute or chronic hazard quotients for substances that affect the same target organ or organ system.

Health Risk Assessment (HRA): Comprehensive analysis of the dispersion of hazardous substances in the environment, their potential for human exposure, and a quantitative assessment of both individual and population-wide health risks associated with those levels exposed.

Industrial Source Complex Short Term (**ISCST3):** Steady-state Gaussian plume model which can be used to assess pollutant concentrations from a wide variety of sources associated with an industrial complex.

Maximum Exposed Individual Resident (MEIR): Location of an actual residence where a person resides or could reside for 70 years and has the highest estimated health impact. Primary exposure pathways include inhalation, ingestion of soils, dermal contact with soils, and ingestion of mother's milk as an infant.

Maximum Exposed Individual Worker (MEIW): Location of an area currently zoned or used for commercial or industrial purposes and has the highest estimated health impact. Exposure pathways include inhalation, soil ingestion, and dermal contact. Exposure durations for workers are typically 8 hours per day, 240 days per year, for 40 (or 46) years.

Maximum Individual Cancer Risk (MICR): Estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over a period of 70 years.

Non-Cancer Risk: Risk associated with acute or chronic health effects.

Office of Environmental Health Hazard Assessment (OEHHA): Specialized department within the cabinet-level California Environmental Protection Agency with responsibility for evaluating health risks from environmental chemical contaminants.

Point of Maximum Impact (PMI): Location of maximum estimated off-site health impact.

Sensitive Receptors: Location of specific sensitive sites where certain populations may exist, such as a school or nursing home.

Surfer®, Version 9: Contouring and 3D surface mapping software program developed by Golden Software, Inc.

Zone of Impact (ZOI): Area surrounding facility where receptors have a potential cancer risk greater than 1x10-6 (one in a million), or an acute or chronic hazard index of 0.5.

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6.0 APPENDIX A – Detailed Source Information

7.0 APPENDIX B – Detailed Air Emissions

8.0 APPENDIX C – Modeling Receptors

9.0 APPENDIX D – Cancer Burden

10.0 APPENDIX E – Sensitive Receptors

1.0 EXECUTIVE SUMMARY

ExxonMobil Oil Corporation (ExxonMobil) owns and operates a refinery in the city of Torrance, California. The facility refines crude oil to produce gasoline, diesel fuel, jet fuel, and other related petroleum products. Per California Assembly Bill 2588 (adopted in 1987), ExxonMobil is subject to emission and health risk reporting requirements imposed by the state. AB 2588 is the *Air Toxics "Hot Spots" Information and Assessment Act of 1987*.

This document presents results associated with a revised comprehensive AB 2588 health risk assessment completed for the facility, based on emissions from the fiscal year 2006-2007 Annual Emissions Report (AER). An initial assessment was performed and submitted on October 16, 2009. This revised assessment was performed in direct in response to a written request made by the South Coast Air Quality Management District (letter dated April 12, 2011).

HARP Version 1.4d, Build 23.09.07, was used to conduct this revised health risk assessment, along with the February 2011 version of the HARP health database (health.mdb).

Risks associated with this revised 2006-2007-based health risk assessment were found to be:

- Below levels adopted by AQMD for purposes of public notification pursuant to AB 2588
- Below action risk levels identified in current AQMD Rule 1402

Maximally Exposed Individual (MEI)	**Risk** With Emergency ICEs	**Risk** Without Emergency ICEs
Residential Cancer Risk	7.7×10^{-6}	5.7×10^{-6}
Worker Cancer Risk	3.5×10^{-6}	3.4×10^{-6}
Point of Maximum Impact (PMI)	44.7×10^{-6}	44.5×10^{-6}
Residential Chronic HI {CNS}	0.42	0.42
Worker Chronic HI {RESP}	0.47	0.47
PMI Chronic HI {RESP}	0.75	0.75
Residential Acute HI {CNS}	0.20	0.20
Worker Acute HI {CNS}	0.14	0.14
PMI Acute HI {CNS}	0.21	0.21
Cancer Burden [91,824 population]	0.15	0.14

2.0 INTRODUCTION

ExxonMobil Oil Corporation (ExxonMobil) owns and operates a petroleum refinery located at 3700 West 190th Street in Torrance, California. The facility operates on approximately 775 acres of land bounded by 190th Street, Van Ness Avenue, Del Amo Boulevard, and Prairie Avenue. Although considered continuous, ExxonMobil's property is divided by a section of Crenshaw Boulevard that lies just south of Interstate 405. Figures 1 and 2 show the location of the refinery relative to street boundaries, freeways, and nearby residential communities.

The facility refines crude oil into a variety of petroleum-based products and by-products including gasoline, diesel fuel, jet fuel, petroleum coke, propane, normal butane, and elemental sulfur. Principle equipment at the facility includes storage tanks, distillation columns, piping, combustion devices, reactor units, separation systems, cooling towers, rail cars, conveyors, maintenance equipment, and motor vehicles.

Within the South Coast Air District, the AB 2588 program is administered by the South Coast Air Quality Management District (AQMD). Since the program's inception, ExxonMobil has been required at different times to prepare an Air Toxic Inventory Report (ATIR) – calendar years 1989, 1991, and 1995. More recently, the state allowed AB 2588 air toxic emissions to be reported through the AQMD's Annual Emissions Reporting Program (AER) – fiscal years 2002-2003 and 2006-2007.

Additionally, ExxonMobil was required under AB 2588 to complete an initial health risk assessment based on reported 1989 ATIR emissions. That 1989-based health risk assessment was completed on June 7, 1991 (Radian Corporation), and later revised on February 14, 1992 (Radian Corporation). More recently, a 1995-based health risk assessment was completed on November 20, 2000, which resulted in AQMD approval of risks on January 30, 2001. No subsequent AB 2588 health risk assessment has been prepared for the facility until October 16, 2009.

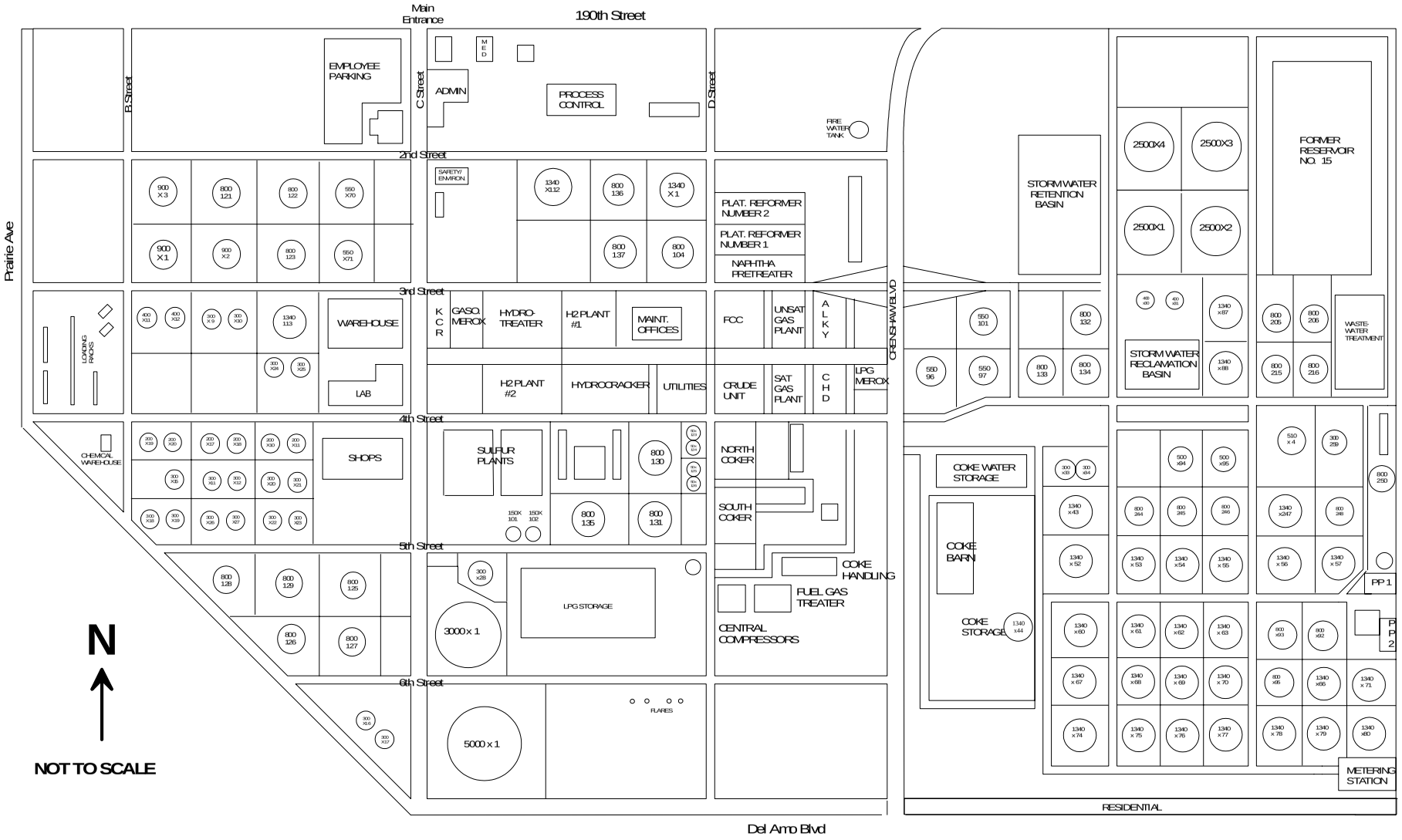
This revised health risk assessment is based on toxic emissions reported in the facility's fiscal year 2006-2007 Annual Emissions Report (AER). It also reflects permanent and verifiable emission reductions that have occurred since fiscal year 2006-2007. Emissions were estimated in accordance with current AQMD and AB 2588 guidelines, namely, the Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program (amended August 27, 2007).

The California Air Pollution Control Officers Association (CAPCOA), in conjunction with the California Air Resources Board (ARB) and California EPA Office of Environmental Health Hazard Assessment (OEHHA), has developed risk assessment guidelines and specific procedures to be used by local administering agencies to implement the health risk portion of AB 2588. By standardizing the risk assessment process, risks between different facilities can be compared evenly. However, it should be noted that following these guidelines may lead to worst-case (i.e., health-conservative) estimates of risk.

ARB and AQMD now require use of HARP ("Hot Spots" Analysis and Reporting Program) to conduct AB 2588 health risk assessments. HARP is ARB's database program that integrates the emissions inventory, air dispersion modeling, and risk analysis and mapping elements of a health risk assessment. The assessment should also be conducted in accordance with AQMD's July 2005 Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588).

HARP Version 1.4d, Build 23.09.07, was used to conduct this revised health risk assessment, along with the February 2011 version of the HARP health database (health.mdb).

The balance of this document is organized sequentially to 1) summarize emissions, 2) outline the approach for air dispersion modeling, and 3) present results associated with risk characterization. Other supporting documentation, as listed in the Table of Contents, is included in the appendices.



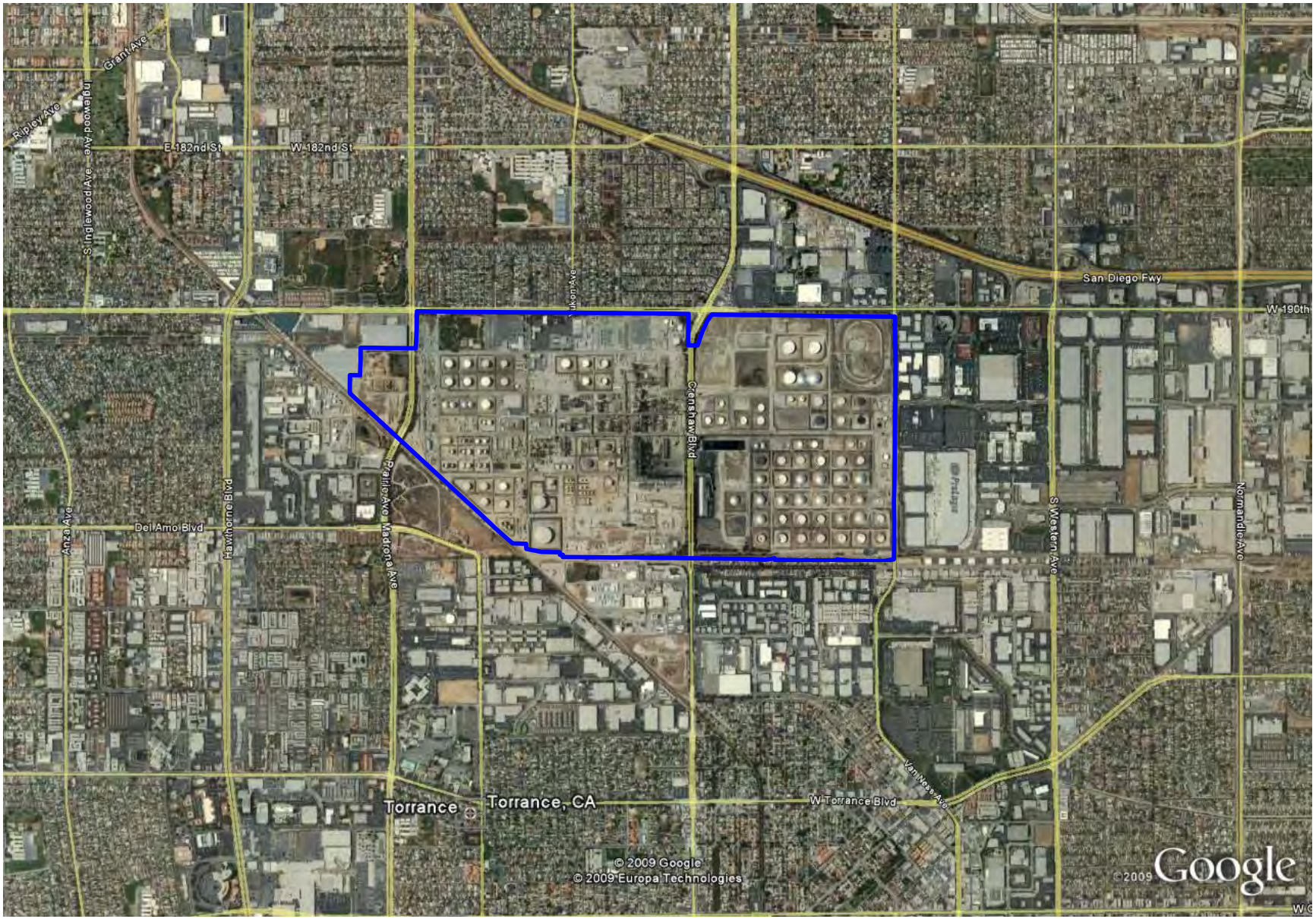
EXXONMOBIL PROPRIETARY

REFINERY PLOT PLAN

Figure 1. Facility Plot Plan ExxonMobil Torrance Refinery

ExxonMobil Torrance Refinery
2006-2007 AB 2588 HRA Revision

Figure 2
Facility and Surroundings



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3.0 AIR EMISSIONS

Table 1 presents facility-wide chemical emissions associated with this revised health risk assessment. Specifically, Table 1 summarizes all AB 2588 pollutants in Appendix A-I of the OEHHA guidelines that were emitted from the facility during fiscal year 2006-2007. A total of eighty-eight (88) emitted chemicals were identified for this health risk assessment, thirty-five (35) of which were also reported in the 2006-2007 AER.

There were a number of modifications made to the 2006-2007 AER emissions inventory for consideration in this revised health risk assessment:

Emission Methodology Changes

- AQMD's default PM emission factor for diesel ICEs (33.5 lb/mgal) was replaced with 1) ARB/EPA Off-Road Tier 1, 2, or 3 emission factors for certain rental equipment where engine manufacturers' information (i.e., model year, brake horsepower) was available in PERP registration documents, 2) emission factors cited directly from manufacturers' records for refinery-owned emergency fire water pumps and generators, and 3) an EPA default emission factor of 1 g/bhp-hr for the refinery-owned lab test engine and portable welding machines.
- EPA load factors were incorporated into PM emission calculations for diesel ICEs assuming 74% for pumps, generators, lab test engine, and portable welding machines; 48% for compressors; and 32% for cranes.
- Emissions associated with Gas Turbine Generator 24J-1 and Process Heater 24F-1, which share a common stack, were revised to reflect more recent 2008 stack test results for five (5) metal compounds: Copper, Lead, Mercury, Nickel, and Zinc.
- Individual PAH species emissions were cited for combustion sources (in place of CAS No. 1151), where available, to more accurately represent the toxicity of overall PAH emissions.
- Individual PAH species emissions were cited for cooling towers (in place of CAS No. 1151) to more accurately represent the toxicity of overall PAH emissions. Also, cooling water sampling data based on lower detection limits for individual PAH species was introduced into cooling tower calculations. PAH species were all non-detect; therefore, lower half-detection levels were cited in the revised PAH species calculations.

- Emissions associated with fifteen (15) gas oil storage tanks were revised to reflect more representative vapor pressure values originally over-estimated in the 2006-2007 AER.
- Emissions associated with two (2) gland oil vessels were removed because they are connected to vapor recovery. Previously, these gland oil vessels were incorrectly identified as Miscellaneous Process Vents that vented to atmosphere.
- All emissions of methyl tert-butyl ether (MTBE) were removed from this revised HRA. MTBE has not been used at the facility for nearly eight years, since the onset of CARB III gasoline standards. MTBE in 2006-2007 AER emission calculations stems from a conservative assumption that it is present in treated wastewater at half-detection levels (sample results were non-detect). This assumption is now considered no longer appropriate.

Emission Additions

- Emissions associated with contractor tank degassing activities were added.

Permanent and Verifiable Emission Reductions

- Emissions for ten (10) external floating roof storage tanks were re-calculated to account for dome roofs installed after the 2006-2007 AER reporting period to comply with AQMD Rule 1178 requirements.
- Ammonia emissions from the FCC stack (1,007,102 lb/yr in the 2006-2007 AER) were significantly reduced to account for the new FCC Electrostatic Precipitator (ESP) that began operating in 2009 to comply with recent AQMD Rule 1105.1 requirements.
- Emissions associated with two (2) diesel ICE rental pumps located at Coker Lake were removed because electric pumps have been installed as permanent replacements.
- For temporary diesel ICE rental pumps, ARB/EPA Off-Road Tier 3 and Interim Tier 4 emission factors were used in place of other PM factors to reflect a recent permanent operational change to use newer, cleaner burning rental ICEs at the facility.
- For temporary diesel ICE rental pumps and specific diesel-driven generators used for tank cleaning, an additional 85% control factor was used to reflect a recent permanent operational change to use PM filters on certain rental equipment at the facility.
- Emissions associated with heater 20F-4 were removed because this combustion source is now permanently out of service.

Emergency Diesel ICEs

- Emissions associated with diesel ICEs permitted for emergency use were excluded from certain HARP modeling scenarios. This effort to model and present risks both with and without emergency diesel ICEs is prescribed under AQMD Rules 1402/1470 and is consistent with ARB's guidance to present AB 2588 risks associated with "routine and predictable" facility emissions.

Summarized below are emission source types represented at the facility. Refer to Appendix A for a listing of individual emission sources, their respective modeling parameters, and plots, which identify their respective locations within the facility boundary. Chemical emissions for each modeled emission source are included in Appendix B.

- Heaters, Boilers & Gas Turbine Generator
- Fluid Catalytic Cracking
- Selective Catalytic Reduction Unit Ammonia Slip
- Flares
- Incinerators
- Internal Combustion Engines
- Process Vents
- Cooling Towers
- Storage Tanks
- Wastewater Treatment
- Component Fugitives
- Coke Handling
- Bulk Loading & Rail Car Loading
- Fuel Dispensing
- Maintenance Activities
- Painting & Use of Solvents
- Vacuum Trucks
- Asbestos Abatement
- Spills & Releases
- Welding
- Tank & Vessel Degassing

Table 1

2006-2007 Facility-Wide AB 2588 Quantifiable Emissions
[Emission Rates By Substance]

Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Annual Average (g/s)	Maximum Hourly (g/s)
1,1,2-Trichloroethane	79-00-5	0.01	0.0000	1.17E-07	1.17E-07
1,2,4-Trimethylbenzene	95-63-6	301.03	0.0690	4.33E-03	8.69E-03
1,3-Butadiene	106-99-0	28.30	0.0039	4.07E-04	4.92E-04
2,2,4-Trimethylpentane	540-84-1	3.72	0.0004	5.35E-05	5.35E-05
2,4-Dimethylphenol	105-67-9	18.72	0.0021	2.69E-04	2.69E-04
Acenaphthene	83-32-9	1.13	0.0001	1.63E-05	1.64E-05
Acenaphthylene	208-96-8	8.73	0.0010	1.26E-04	1.26E-04
Acetaldehyde	75-07-0	1,253.23	0.1472	1.80E-02	1.86E-02
Acrolein	107-02-8	616.48	0.0759	8.87E-03	9.56E-03
Ammonia	7664-41-7	170,680.31	19.4841	2.45E+00	2.45E+00
Anthracene	120-12-7	3.17	0.0004	4.56E-05	4.58E-05
Antimony compounds	7440-36-0	43.76	0.0052	6.29E-04	6.50E-04
Arsenic compounds	7440-38-2	25.28	0.0031	3.64E-04	3.93E-04
Asbestos	1332-21-4	0.04	0.0000	6.20E-07	2.61E-06
Barium compounds	7440-39-3	1,459.85	0.1667	2.10E-02	2.10E-02
Benzene	71-43-2	4,257.25	0.8003	6.12E-02	1.01E-01
Benzo(a)anthracene	56-55-3	1.85	0.0002	2.66E-05	2.74E-05
Benzo(a)pyrene	50-32-8	2.27	0.0003	3.27E-05	3.50E-05
Benzo(b)fluoranthene	205-99-2	1.39	0.0002	2.00E-05	2.11E-05
Benzo(e)pyrene	192-97-2	0.03	0.0000	4.25E-07	4.25E-07
Benzo(g,h,i)perylene	191-24-2	0.58	0.0001	8.31E-06	8.38E-06
Benzo(k)fluoranthene	207-08-9	1.07	0.0001	1.54E-05	1.61E-05
Beryllium compounds	7440-41-7	9.96	0.0012	1.43E-04	1.49E-04
Biphenyl	92-52-4	4.30	0.0005	6.18E-05	6.20E-05
Bromomethane	74-83-9	66.01	0.0075	9.49E-04	9.49E-04
Cadmium compounds	7440-43-9	60.48	0.0074	8.70E-04	9.30E-04
Carbon disulfide	75-15-0	117.09	0.0273	1.68E-03	3.44E-03
Carbonyl sulfide	463-58-1	293.63	0.0335	4.22E-03	4.22E-03
Chlorine	7782-50-5	622.29	0.0712	8.95E-03	8.97E-03
Chlorobenzene	108-90-7	0.01	0.0000	1.91E-07	1.91E-07
Chloroform	67-66-3	39.26	0.0045	5.65E-04	5.65E-04
Chromium compounds	7440-47-3	229.26	0.0282	3.30E-03	3.55E-03
Chromium, hexavalent	18540-29-9	0.39	0.0000	5.58E-06	5.75E-06
Chrysene	218-01-9	0.59	0.0001	8.50E-06	8.58E-06
Cobalt compounds	7440-48-4	21.37	0.0025	3.07E-04	3.09E-04
Copper compounds	7440-50-8	269.19	0.0322	3.87E-03	4.06E-03
Cresols (mixed isomers)	1319-77-3	60.51	0.0070	8.70E-04	8.77E-04

Table 1

2006-2007 Facility-Wide AB 2588 Quantifiable Emissions
[Emission Rates By Substance]

Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Annual Average (g/s)	Maximum Hourly (g/s)
Cumene	98-82-8	27.27	0.0059	3.92E-04	7.39E-04
Cyclohexane	110-82-7	812.77	0.1848	1.17E-02	2.33E-02
Di(2-ethylhexyl) phthalate	117-81-7	89.61	0.0102	1.29E-03	1.29E-03
Dibenz(a,h)anthracene	53-70-3	0.96	0.0001	1.38E-05	1.38E-05
Dibutyl phthalate	84-74-2	62.63	0.0072	9.01E-04	9.01E-04
Dichlorobenzenes (mixed isomers)	25321-22-6	36.43	0.0043	5.24E-04	5.43E-04
Diesel exhaust particulates	9901	332.63	3.3741	4.78E-03	4.25E-01
Diethanolamine	111-42-2	434.70	0.0496	6.25E-03	6.25E-03
Diethyl phthalate	84-66-2	8.87	0.0010	1.28E-04	1.28E-04
Ethylbenzene	100-41-4	1,414.28	0.2251	2.03E-02	2.84E-02
Ethylene	74-85-1	3,006.40	0.3432	4.32E-02	4.32E-02
Ethylene dibromide	106-93-4	0.29	0.0000	4.20E-06	4.20E-06
Ethylene glycol	107-21-1	0.00	0.0000	1.00E-08	1.00E-08
Fluoranthene	206-44-0	0.82	0.0001	1.18E-05	1.22E-05
Fluorene	86-73-7	2.58	0.0003	3.71E-05	3.91E-05
Formaldehyde	50-00-0	3,437.72	0.4105	4.94E-02	5.17E-02
Glycol ethers and their acetates	1115	151.80	0.0730	2.18E-03	9.19E-03
Hydrochloric acid	7647-01-0	51,070.80	5.8300	7.35E-01	7.35E-01
Hydrogen cyanide	74-90-8	1,110.93	0.1268	1.60E-02	1.60E-02
Hydrogen fluoride	7664-39-3	343.17	0.1650	4.94E-03	2.08E-02
Hydrogen sulfide	7783-06-4	5,763.14	0.6850	8.29E-02	8.63E-02
Indeno(1,2,3-cd)pyrene	193-39-5	2.77	0.0003	3.98E-05	4.27E-05
Lead compounds	7439-92-1	97.16	0.0123	1.40E-03	1.55E-03
Manganese compounds	7439-96-5	405.53	0.0514	5.83E-03	6.47E-03
Mercury compounds	7439-97-6	166.38	0.0191	2.39E-03	2.40E-03
Methanol	67-56-1	23,514.11	2.6855	3.38E-01	3.38E-01
Methyl chloroform	71-55-6	0.01	0.0000	8.93E-08	8.93E-08
Methyl ethyl ketone	78-93-3	2.01	0.0003	2.89E-05	3.23E-05
Methyl isobutyl ketone	108-10-1	39.22	0.0186	5.64E-04	2.34E-03
Methylene chloride	75-09-2	210.55	0.0240	3.03E-03	3.03E-03
Methylnaphthalene 2-	91-57-6	1.58	0.0002	2.28E-05	2.32E-05
Naphthalene	91-20-3	217.63	0.0259	3.13E-03	3.26E-03
n-Hexane	110-54-3	8,027.43	2.2803	1.15E-01	2.87E-01
Nickel compounds	7440-02-0	233.04	0.0290	3.35E-03	3.66E-03
PAHs, w/o individ. comp.	1151	2.31	0.0004	3.33E-05	5.38E-05
Phenanthrene	85-01-8	25.65	0.0030	3.69E-04	3.82E-04
Phenol	108-95-2	355.81	0.0421	5.12E-03	5.31E-03

Table 1

2006-2007 Facility-Wide AB 2588 Quantifiable Emissions
[Emission Rates By Substance]

Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Annual Average (g/s)	Maximum Hourly (g/s)
Propylene	115-07-1	12,432.47	1.5228	1.79E-01	1.92E-01
Pyrene	129-00-0	0.80	0.0001	1.16E-05	1.20E-05
Selenium compounds	7782-49-2	28.21	0.0035	4.06E-04	4.41E-04
Silver compounds	7440-22-4	53.86	0.0067	7.75E-04	8.39E-04
Styrene	100-42-5	194.19	0.0236	2.79E-03	2.98E-03
Sulfuric Acid	7664-93-9	26,862.95	3.0665	3.86E-01	3.86E-01
Tetrachloroethylene	127-18-4	96.55	0.0448	1.39E-03	5.64E-03
Toluene	108-88-3	8,147.65	1.3215	1.17E-01	1.67E-01
Trichlorofluoromethane	75-69-4	75.64	0.0086	1.09E-03	1.09E-03
Vanadium compounds	7440-62-2	71.03	0.0084	1.02E-03	1.06E-03
m-Xylene	108-38-3	8.27	0.0030	1.19E-04	3.73E-04
o-Xylene	95-47-6	2.88	0.0010	4.14E-05	1.30E-04
Xylenes (mixed isomers)	1330-20-7	3,861.23	0.6423	5.55E-02	8.09E-02
Zinc compounds	7440-66-6	1,975.10	0.2424	2.84E-02	3.05E-02

4.0 DISPERSION MODELING

Emissions from the facility are released into the atmosphere through point and area sources. Methods applied by the HARP database program to model toxic air pollutants from these sources are consistent with current procedures outlined by CAPCOA and steps commonly followed for other facility health risk assessments prepared in the South Coast Air District. Additionally, the modeling methodology meets U.S. Environmental Protection Agency (U.S. EPA) and ARB requirements for air quality modeling.

Model Selection

Terrain in the vicinity of the refinery is generally flat, hence lacking significant complex terrain. In addition, experience with AB 2588 modeling suggests that maximum off-site impacts are often attributed to near ground-level sources, and therefore not usually impacted by complex terrain. As a result, the appropriate dispersion model for use with this assessment is U.S. EPA's current Industrial Source Complex Short Term (ISCST3) model, which is an imbedded module of the HARP database program. Terrain elevation data was obtained in the format of DEM (Digital Elevation Model) files from the United States Geological Survey (USGS). This data was electronically referenced by the HARP database program, thereby simplifying the determination of source and receptor elevations, and eliminating steps of manual data entry.

To determine the effects of aerodynamic building wakes, the HARP database program applies imbedded algorithms where appropriate. Other HARP database program air dispersion modeling options selected include 1) final plume rise at all receptors, 2) stack-tip downwash, 3) buoyancy-induced dispersion, and 4) urban dispersion parameters. Per the instructions for using HARP, the calms processing option was not employed.

The CAPCOA guidelines and ARB recommend a default settling velocity of 2 centimeters per second for non-inhalation pathways. The 2 centimeters per second value is ideal for controlled sources and was used in HARP modeling since particulate matter sources are either controlled or result from gas-fired combustion sources which would lead to fine aerosol emissions more representative of the lower settling velocity.

The source-specific input requirements for the HARP database program air dispersion module are: 1) definition of sources, 2) release characteristics, 3) meteorological data, and 4) receptor

locations. Release characteristics for point sources include stack height, diameter, exit temperature, and velocity. The data requirements for area sources include release height and physical dimensions of the area.

Modeled Sources

A total of 232 individual emission sources were identified for modeling purposes. Unlike previous modeling for this facility, grouping of like sources in close proximity to each other (i.e., source aggregation) was generally not performed. The only exceptions to this were the flares. Source aggregation of the two upright flares in Unit 65 was chosen due of their close proximity and because their emissions are calculated in a combined manner.

Storage tanks, cooling towers, and other non-combustion emission sources were modeled as area sources, and stacks were modeled as point sources. A listing of individual sources, source coordinates, source types, and source groupings is provided in Appendix A.

Building Downwash

U.S. EPA's Building Profile Input Program (BPIP), also an imbedded module of the HARP database program, was used to identify point sources for which downwash calculations should be considered and to calculate direction-dependent downwash parameters for such sources. These data were produced by HARP in ISCST3-required input format and automatically inserted into the ISCST3 model input files. The ISCST3 building downwash algorithm was used to account for downwash effects on the dispersion of emissions from point sources.

Meteorological Data

AQMD requires all facilities to use a single year of local meteorological data from the year 1981. Weather conditions during this period represent poor dispersion conditions and, hence, should result in conservative estimates of downwind concentration.

Data collected at the King Harbor monitoring station were selected as most appropriate for the facility. This data set includes measurements of wind speed and direction, surface temperature, and stability. Upper air data from the Los Angeles International Airport were used for determining mixing height. Hourly mixing heights were generated by HARP which employs an interpolation scheme that is described in detail in the *Industrial Source Complex Dispersion Model User's Guide, Second Edition* (U.S. EPA, 1987).

Receptor Modeling Grids

Multiple air dispersion modeling grids (arrays of offsite receptor locations) were used in this health risk assessment. A coarse grid with receptor spacing of 500 meters was used to identify initial points where the maximum concentration of pollutants would likely occur. A fine grid with receptor spacing of 100 meters, and surrounding the entire facility and initial points of maximum impact from the coarse grid, was used to define the points of highest residential and worker exposure. Appendix C contains Surfer plots which collectively show the location of all coarse and fine grid receptors relative to the facility fenceline.

A third group of modeled receptors was used for the cancer burden analysis, and location of census tract centroids was automatically determined by the HARP database program. For each census tract within the zone of impact (i.e., 1×10^{-6} cancer risk isopleth), HARP identified and located a representative receptor. Risks were then determined for each census tract receptor. Appendix D includes a plot of the census tract centroids located within the zone of impact.

A fourth group of modeled receptors was used to estimate potential health risks at sensitive receptors – hospitals, schools, day care facilities, and convalescent homes. Appendix E includes a plot of the sensitive receptors located within the zone of impact.

5.0 RISK CHARACTERIZATION

Human exposure to toxic substances in the environment can occur through a variety of different mechanisms or exposure pathways. An exposure pathway is defined as any activity through which an individual receives some level of exposure to a substance. The first step in assessing exposure is to identify all relevant exposure pathways for the study area as well as the types of substances emitted. The second step is to quantify the daily intake rate of each substance through each potential pathway.

The CAPCOA guidelines for AB 2588 health risk assessments provide a detailed and specific framework to be used when calculating human exposure. The types of pathways considered, the mathematical equations for each pathway, and default data for the many assumptions are specified by CAPCOA and pre-programmed in the HARP database program. Default parameters and exposure equations are such that the end result of the exposure calculations is a worst-case estimate of the daily intake rate of each pollutant or substance.

Study Area

For the purposes of this health risk assessment, the study area (i.e., zone of impact) as defined in the CAPCOA guidelines is the geographical area represented by the calculated hypothetical individual excess lifetime cancer risk of 1×10^{-6} or greater. For this facility, the study area is shown in Figure 3.

Exposure Assessment

To identify potential exposure pathways for this health risk assessment, three things were considered: 1) the type of pollutants, 2) land use in the area, and 3) lifestyle (i.e., urban versus rural or agricultural). Exposure pathways considered include inhalation, soil ingestion, dermal contact, plant ingestion (vegetation), fish ingestion, drinking water ingestion, human milk ingestion, and dairy/beef/chicken/pork ingestion.

Fish ingestion, drinking water ingestion, and dairy/beef/chicken/pork ingestion were evaluated in the previous AB 2588 health risk assessment by identifying any sources of edible fish bearing waters, drinking water sources, and dairy/beef/chicken/pork production located within the study area which could be impacted by facility emissions and expose the human population. None of these sources of ingestion were identified within the study area. Hence these pathways were

excluded from further consideration in both past and present health risk assessments. While it is recognized that the fish ingestion pathway could apply because the study area reaches the Santa Monica Bay near Redondo Beach King Harbor, it is assumed from general experience with AB 2588 that general population risks associated with this pathway are insignificant.

Activities that may lead to exposure are different for workers and residents in the vicinity of the facility. Off-site workers might reasonably be expected to be exposed via inhalation, dermal contact, and soil ingestion. Other exposure pathways, while reasonable for residential populations, are not likely for worker populations and so could reasonably be excluded from the evaluation. An example of this is plant ingestion. This pathway was excluded from worker exposure calculations because crops are not grown and subsequently consumed by on-site workers in the industrial areas surrounding the facility.

Dose Response

The human response to any given level of an exposure is measured with a dose-response assessment. A dose-response assessment produces three factors for use in evaluating potential adverse health effects: cancer potency factors (CPFs) for carcinogens, chronic non-cancer reference exposure levels (RELs) for substances not considered to be carcinogenic or for the noncarcinogenic toxicity of carcinogens, and acute noncancer reference exposure levels (acute RELs) for acutely toxic compounds.

This health risk assessment is based on current CAPCOA guidelines. Specifically, the HARP database program used to estimate potential health risks associated with exposure to toxic air emissions contains the algorithms and toxicity factors laid out in the CAPCOA guidelines.

Risk Characterization

Risk characterization is the final step in the risk assessment process where the results of the exposure and dose-response assessments are combined to determine the potential for health risk. Health effects evaluated include:

- An estimate of the lifetime incremental risk of developing cancer
- Increased number of cancer cases in the exposed population (burden)
- Potential for chronic or long-term noncancer effects, and
- Potential for acute or short-term noncancer effects.

CAPCOA requires risk assessments to include the exposure and risk calculations for a hypothetical residential maximally exposed individual, or residential MEI. This individual is assumed to live at the point of highest concentration of facility emissions, in a residentially zoned area, for 24 hours per day, 365 days per year, for 70 continuous years. The MEI concept ensures that exposure will not be underestimated because time spent at work, on vacation, commuting locally, or moving from one residence to another would otherwise reduce the actual exposure to emissions.

Also calculated in this risk assessment is the exposure and risk to a hypothetical occupational maximally exposed individual, or worker MEI. This individual is assumed to work at the point of highest impact in nonresidential areas, for 8 hours per day, 240 days per year, for 40 years.

Following is a discussion of summary risks associated with this revised assessment. All summary risks include emission contributions from emergency diesel ICEs.

Cancer Risk

Carcinogenic risks in this 2006-2007-based health risk assessment were determined for the residential MEI, worker MEI, and a Point of Maximum Impact (PMI). MEIs and the PMI were identified from a dense set of fine grid model receptors, but excluded those receptors located on the facility boundary.

The lifetime risk of developing cancer at the residential MEI was estimated to be 7.7 in one million (7.7×10^{-6}). The residential MEI is located north of the facility at UTM coordinates 377236E, 3747123N. Table 2 presents cancer risk at the residential MEI by substance and exposure pathway. Diesel PM exhaust, arsenic, benzene, and cadmium account for the majority of cancer risk at the residential MEI. Diesel ICEs, 24F-1, and 2F-4 account for approximately 44% of the residential MEI cancer risk (Table 3).

The lifetime risk of developing cancer at the worker MEI was estimated to be 3.5 in one million (3.5×10^{-6}). The worker MEI is located east of the facility at UTM coordinates 378236E, 3746523N. Table 4 presents cancer risk at the worker MEI by substance and exposure pathway. Diesel PM exhaust, benzene, arsenic, and cadmium account for the majority of cancer risk at the worker MEI. Diesel ICEs, 24F-1, and 1F-1/2 account for approximately 73% of the worker MEI cancer risk (Table 5).

Estimated residential and worker cancer risks at other locations surrounding the facility will be lower than risks identified at the respective MEIs. The distance from the facility to the farthest edge of the $1x10^{-6}$ cancer risk isopleth is an estimated 5,300 meters in a northeastern direction from the refinery, into the city of Compton.

Figure 3 at the end of this section presents the 1 in one million ($1x10^{-6}$) cancer risk isopleth (i.e., zone of impact). Figures 4 and 5 show distinct locations of the cancer risk residential MEI, the cancer risk worker MEI, and the cancer risk PMI. Figure 6 displays cancer risk isopleths as required by ARB and AQMD.

Cancer Burden

In addition to the individual cancer risks for the residential MEI, the maximum increased number of cancer cases that might be expected to occur within the zone of impact was evaluated (called cancer burden or population risk). Census tract boundaries and population data for each census tract located within the zone of impact is contained within the HARP database program. Total cancer burden for the facility was estimated to be 0.15. This suggests less than one additional cancer case is estimated from among the exposed population, assuming that all inhabitants within the zone of impact will reside there for a continuous 70-year period. Appendix D includes details associated with the cancer burden analysis.

Sensitive Receptors

Sensitive receptors were also identified within the zone of impact and consisted of schools, day care centers, convalescent homes, and hospitals. These receptors were identified by reviewing data collected for the previous health risk assessment, as well as by searching various internet resources.

Chronic Noncancer Effects

Residential and worker chronic noncancer hazard indices for each target organ or system are summarized in Table 6 and Table 7, respectively. As shown in the tables, the chronic noncancer hazard index value for each target organ or system is below 1.0, which indicates that chronic noncancer effects from exposure to facility emissions are unlikely. The highest residential chronic hazard index (HI) is 0.42 (central nervous system), and the highest worker chronic HI is 0.47 (respiratory tract). The maximum residential chronic HI is located northeast of the facility at

UTM coordinates 378236E, 3747123N. The maximum worker chronic HI is located north of the facility at UTM coordinates 377536E, 3747123N. Figures 7 and 8 show distinct locations of the chronic HI residential MEI, the chronic HI worker MEI, and the chronic HI PMI. Figure 9 displays the non-cancer chronic HI isopleth as required by ARB and AQMD.

Acute Effects

Results of the acute analysis, which compares acceptable ambient concentrations with maximum one-hour concentrations from facility emissions, are shown in Table 8 and Table 9. The maximum residential acute HI was determined to be 0.20. The maximum residential acute HI is located north of the facility at UTM coordinates 376636E, 3747123N. The maximum worker acute HI was determined to be 0.14. The maximum worker acute HI is located north of the facility at UTM coordinates 376536E, 3747423N. Figures 10 and 11 show distinct locations of the acute HI residential MEI, the acute HI worker MEI, and the acute HI PMI. Figure 12 displays the non-cancer acute HI isopleths as required by ARB and AQMD.

Table 2

Cancer Risk at the Residential MEI
[With Emergency ICEs]

Substance	Inhalation	Soil Ingestion	Plant Ingestion	Dermal Absorption	Mother's Milk [1]	Total
Diesel PM	3.25E-06					3.25E-06
Arsenic	2.80E-07	3.27E-07	6.00E-08	6.71E-07		1.34E-06
Benzene	1.10E-06					1.10E-06
Cadmium	7.87E-07					7.87E-07
Benzo[a]pyrene	7.07E-09	1.41E-08	1.19E-07	9.40E-08		2.34E-07
Nickel	2.33E-07					2.33E-07
Naphthalene	1.47E-07					1.47E-07
Chromium, hexavalent	1.09E-07					1.09E-07
PAHs, w/o individ. comp.	2.93E-09	5.84E-09	4.95E-08	3.90E-08		9.73E-08
Beryllium	5.83E-08					5.83E-08
Formaldehyde	5.28E-08					5.28E-08
Other Carcinogens	1.39E-07	1.73E-08	7.72E-08	5.45E-08		2.88E-07
Total	**6.17E-06**	**3.64E-07**	**3.06E-07**	**8.59E-07**		**7.70E-06**

[1] No carcinogens emitted to trigger this pathway

Table 3

Top 25 Sources Contributing to Risk at the Residential MEI
[With Emergency ICEs]

Modeling Source No.	Rank	Percent of Total Risk	Cancer Risk	Source Description
50	1	11.13%	8.56E-07	ICE_D (D957)
43	2	11.02%	8.47E-07	ICE_D (West)
52	3	10.20%	7.84E-07	ICE_D (D961)
21	4	6.27%	4.82E-07	24F_1
3	5	5.62%	4.32E-07	02F_4
53	6	5.33%	4.10E-07	ICE_D (D1500)
4	7	4.57%	3.51E-07	02F_7
196	8	4.27%	3.28E-07	VACTRUCKS
210	9	3.82%	2.94E-07	FUG19
26	10	3.30%	2.54E-07	30F_2
25	11	3.29%	2.53E-07	30F_1
11	12	2.15%	1.65E-07	19F_1
8	13	2.08%	1.60E-07	04F_1W
7	14	2.06%	1.58E-07	04F_1E
1	15	1.87%	1.44E-07	01F_1/2
58	16	1.83%	1.41E-07	ICE_D (East)
6	17	1.73%	1.33E-07	03F_3/4
48	18	1.37%	1.05E-07	ICE_D (API)
12	19	1.19%	9.14E-08	20F_1
18	20	1.09%	8.38E-08	22F_1
197	21	1.01%	7.78E-08	MISC
36	22	0.94%	7.22E-08	CT_NO
49	23	0.88%	6.78E-08	ICE_D (D955)
20	24	0.86%	6.64E-08	22F_3
19	25	0.85%	6.52E-08	22F_2

Table 4

Cancer Risk at the Worker MEI
[With Emergency ICEs]

Substance	Inhalation	Soil Ingestion	Plant Ingestion [1]	Dermal Absorption	Mother's Milk [1]	Total
Diesel PM	2.42E-06					2.42E-06
Benzene	3.72E-07					3.72E-07
Arsenic	4.26E-08	8.28E-08		1.96E-07		3.22E-07
Cadmium	1.21E-07					1.21E-07
PAHs, w/o individ. comp.	1.81E-09	5.40E-09		4.16E-08		4.88E-08
Nickel	3.40E-08					3.40E-08
Benzo[a]pyrene	1.18E-09	3.52E-09		2.71E-08		3.18E-08
Naphthalene	2.76E-08					2.76E-08
Chromium, hexavalent	1.45E-08					1.45E-08
Dibenz[a,h]anthracene	1.22E-09	1.19E-09		9.12E-09		1.15E-08
Formaldehyde	1.06E-08					1.06E-08
Other Carcinogens	3.66E-08	3.48E-09		1.13E-08		5.13E-08
Total	**3.08E-06**	**9.64E-08**		**2.85E-07**		**3.47E-06**

[1] The Plant Ingestion and Mother's Milk pathways are not considered for work exposure and risk

Table 5

Top 25 Sources Contributing to Risk at the Worker MEI
[With Emergency ICEs]

Modeling Source No.	Rank	Percent of Total Risk	Cancer Risk [1]	Source Description
48	1	59.54%	2.06E-06	ICE_D (API)
58	2	7.60%	2.63E-07	ICE_D (East)
21	3	3.70%	1.28E-07	24F_1
1	4	1.93%	6.66E-08	01F_1/2
167	5	1.72%	5.94E-08	800x216
43	6	1.60%	5.55E-08	ICE_D (West)
4	7	1.42%	4.91E-08	02F_7
28	8	1.13%	3.92E-08	72F_2
26	9	0.94%	3.24E-08	30F_2
165	10	0.90%	3.13E-08	800x206
228	11	0.90%	3.11E-08	FUG56G
25	12	0.89%	3.08E-08	30F_1
170	13	0.83%	2.88E-08	800x248
3	14	0.80%	2.77E-08	02F_4
66	15	0.80%	2.76E-08	1340x247
6	16	0.76%	2.62E-08	03F_3/4
41	17	0.69%	2.38E-08	FLARE_55
196	18	0.66%	2.27E-08	VACTRUCKS
18	19	0.62%	2.13E-08	22F_1
11	20	0.61%	2.10E-08	19F_1
20	21	0.59%	2.03E-08	22F_3
42	22	0.58%	1.99E-08	FLARE_65
7	23	0.57%	1.97E-08	04F_1E
8	24	0.57%	1.96E-08	04F_1W
19	25	0.52%	1.80E-08	22F_2

[1] The Plant Ingestion and Mother's Milk pathways are not considered for work exposure and risk

Table 6

Chronic HIs By Target Organ at the Residential MEI
[With Emergency ICEs]

Target Organ/System	Substance	Organ-Specific Hazard Index
Cardiovascular System	Arsenic	2.19E-01
	Diethanolamine	1.09E-03
	Hydrocyanic acid	2.64E-04
	Phenol	1.05E-05
	Selenium	4.73E-06
	Methylene chloride	1.13E-06
	Total	**2.20E-01**
Central Nervous System	Arsenic	2.19E-01
	Mercury	1.86E-01
	Manganese	1.25E-02
	Diethanolamine	1.09E-03
	Benzene	4.66E-04
	Hydrocyanic acid	2.64E-04
	Toluene	1.71E-04
	Xylenes (mixed)	4.13E-05
	Methyl bromide	2.83E-05
	Phenol	1.05E-05
	Hexane	9.55E-06
	Selenium	4.73E-06
	Styrene	1.35E-06
	Methylene chloride	1.13E-06
	Carbon disulfide	9.22E-07
	Cresols (mixtures of)	6.51E-07
	m-Xylene	1.95E-07
	o-Xylene	6.79E-08
	Methyl chloroform	8.36E-11
	Total	**4.20E-01**
Developmental	Arsenic	2.19E-01
	Mercury	1.86E-01
	Benzene	4.66E-04
	Toluene	1.71E-04
	Methanol	4.16E-05
	Methyl bromide	2.83E-05
	Ethyl benzene	3.39E-06
	Chloroform	1.14E-06
	Ethylene glycol	4.54E-11
	Total	**4.06E-01**

Table 6
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Bone	Hydrogen fluoride	3.67E-04
	Total	**3.67E-04**
Endocrine System	Hydrocyanic acid	2.64E-04
	Ethyl benzene	3.39E-06
	Total	**2.67E-04**
Gastrointestinal Liver	Nickel	2.16E-04
	Beryllium	6.26E-05
	Tetrachloroethene {Perc}	4.04E-05
	Phenol	1.05E-05
	Selenium	4.73E-06
	Ethyl benzene	3.39E-06
	Chloroform	1.14E-06
	Chlorobenzene	1.27E-10
	Total	**3.39E-04**
Immune System	Beryllium	3.77E-03
	Total	**3.77E-03**
Kidney	Mercury	1.86E-01
	Cadmium	1.40E-02
	Tetrachloroethene {Perc}	4.04E-05
	Phenol	1.05E-05
	Ethyl benzene	3.39E-06
	Chloroform	1.14E-06
	Chlorobenzene	1.27E-10
	Ethylene glycol	4.54E-11
	Total	**2.00E-01**
Reproductive System	Ethylene dibromide {EDB}	9.51E-06
	1,3-Butadiene	7.84E-06
	Carbon disulfide	9.22E-07
	Chlorobenzene	1.27E-10
	Total	**1.83E-05**

Table 6
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Respiratory System	Arsenic	2.19E-01
	Sulfuric acid	9.65E-02
	Nickel	1.73E-02
	Hydrochloric acid	1.22E-02
	Cadmium	9.36E-03
	Chlorine	6.72E-03
	Acrolein	6.00E-03
	Beryllium	3.77E-03
	Ammonia	2.32E-03
	Hydrogen sulfide	1.83E-03
	Diesel PM	1.15E-03
	Formaldehyde	1.10E-03
	Hydrogen fluoride	3.67E-04
	Naphthalene	2.34E-04
	Toluene	1.71E-04
	Xylenes (mixed)	4.13E-05
	Methyl bromide	2.83E-05
	Acetaldehyde	2.30E-05
	Propylene	1.71E-05
	Chromium, hexavalent	4.40E-06
	m-Xylene	1.95E-07
	o-Xylene	6.79E-08
	Ethylene glycol	4.54E-11
	Total	**3.78E-01**
Skin	Arsenic	2.19E-01
	Total	**2.19E-01**
Circulatory System	Nickel	1.73E-02
	Benzene	4.66E-04
	Chromium, hexavalent	2.08E-07
	Total	**1.78E-02**

Table 7

Chronic HIs By Target Organ at the Worker MEI
[With Emergency ICEs]

Target Organ/System	Substance	Organ-Specific Hazard Index
Cardiovascular System	Arsenic	2.52E-01
	Diethanolamine	1.06E-03
	Hydrocyanic acid	3.37E-04
	Phenol	1.27E-05
	Selenium	6.35E-06
	Methylene chloride	1.44E-06
	Total	**2.53E-01**
Central Nervous System	Arsenic	2.52E-01
	Mercury	1.47E-01
	Manganese	1.56E-02
	Diethanolamine	1.06E-03
	Benzene	5.31E-04
	Hydrocyanic acid	3.37E-04
	Toluene	2.47E-04
	Xylenes (mixed)	6.69E-05
	Methyl bromide	3.61E-05
	Phenol	1.27E-05
	Hexane	1.20E-05
	Selenium	6.35E-06
	Styrene	2.02E-06
	Methylene chloride	1.44E-06
	Carbon disulfide	9.19E-07
	Cresols (mixtures of)	9.04E-07
	m-Xylene	1.30E-07
	o-Xylene	4.51E-08
	Methyl chloroform	2.66E-10
	Total	**4.17E-01**
Developmental	Arsenic	2.52E-01
	Mercury	1.47E-01
	Benzene	5.31E-04
	Toluene	2.47E-04
	Methanol	8.37E-05
	Methyl bromide	3.61E-05
	Ethyl benzene	3.51E-06
	Chloroform	2.20E-06
	Ethylene glycol	1.81E-11
	Total	**4.00E-01**

Table 7
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Bone	Hydrogen fluoride	5.03E-04
	Total	**5.03E-04**
Endocrine System	Hydrocyanic acid	3.37E-04
	Ethyl benzene	3.51E-06
	Total	**3.41E-04**
Gastrointestinal Liver	Nickel	1.88E-04
	Beryllium	6.38E-05
	Tetrachloroethene {Perc}	5.57E-05
	Phenol	1.27E-05
	Selenium	6.35E-06
	Ethyl benzene	3.51E-06
	Chloroform	2.20E-06
	Chlorobenzene	1.41E-10
	Total	**3.32E-04**
Immune System	Beryllium	4.94E-03
	Total	**4.94E-03**
Kidney	Mercury	1.47E-01
	Cadmium	1.36E-02
	Tetrachloroethene {Perc}	5.57E-05
	Phenol	1.27E-05
	Ethyl benzene	3.51E-06
	Chloroform	2.20E-06
	Chlorobenzene	1.41E-10
	Ethylene glycol	1.81E-11
	Total	**1.61E-01**
Reproductive System	1,3-Butadiene	1.03E-05
	Ethylene dibromide {EDB}	3.80E-06
	Carbon disulfide	9.19E-07
	Chlorobenzene	1.41E-10
	Total	**1.50E-05**

Table 7
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Respiratory System	Arsenic	2.52E-01
	Sulfuric acid	1.33E-01
	Nickel	2.41E-02
	Hydrochloric acid	1.55E-02
	Cadmium	1.24E-02
	Chlorine	8.54E-03
	Acrolein	8.02E-03
	Beryllium	4.94E-03
	Ammonia	3.09E-03
	Hydrogen sulfide	2.26E-03
	Diesel PM	1.37E-03
	Formaldehyde	1.33E-03
	Hydrogen fluoride	5.03E-04
	Naphthalene	3.73E-04
	Toluene	2.47E-04
	Xylenes (mixed)	6.69E-05
	Methyl bromide	3.61E-05
	Acetaldehyde	2.95E-05
	Propylene	2.55E-05
	Chromium, hexavalent	5.64E-06
	m-Xylene	1.30E-07
	o-Xylene	4.51E-08
	Ethylene glycol	1.81E-11
	Total	**4.68E-01**
Skin	Arsenic	2.52E-01
	Total	**2.52E-01**
Circulatory System	Nickel	2.41E-02
	Benzene	5.31E-04
	Chromium, hexavalent	2.08E-07
	Total	**2.46E-02**

Table 8

Acute HIs By Target Organ at the Residential MEI
[With Emergency ICEs]

Target Organ/System	Substance	Organ-Specific Hazard Index
Cardiovascular System	Arsenic	1.64E-02
	Total	**1.64E-02**
Central Nervous System	Mercury	1.59E-01
	Hydrogen sulfide	1.98E-02
	Arsenic	1.64E-02
	Methanol	8.39E-04
	Toluene	2.14E-04
	Chloroform	4.91E-05
	Carbon disulfide	3.38E-05
	Hydrocyanic acid	2.28E-05
	Tetrachloroethene {Perc}	4.69E-06
	Methyl bromide	1.18E-07
	Methylene chloride	1.05E-07
	Methyl chloroform	1.89E-10
	Total	**1.96E-01**
Developmental	Mercury	1.59E-01
	Arsenic	1.64E-02
	Benzene	4.25E-03
	Toluene	2.14E-04
	Chloroform	4.91E-05
	Carbon disulfide	3.38E-05
	Methyl bromide	1.18E-07
	Total	**1.80E-01**
Immune System	Nickel	6.35E-03
	Benzene	4.25E-03
	Total	**1.06E-02**
Reproductive System	Benzene	4.25E-03
	Toluene	2.14E-04
	Chloroform	4.91E-05
	Carbon disulfide	3.38E-05
	Methyl bromide	1.18E-07
	Total	**4.55E-03**
Circulatory System	Benzene	4.25E-03
	Total	**4.25E-03**

Table 8
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Eye	Acrolein	3.97E-02
	Formaldehyde	5.65E-03
	Ammonia	2.15E-03
	Hydrogen fluoride	1.44E-03
	Vanadium (fume or dust)	3.36E-04
	Toluene	2.14E-04
	Xylenes (mixed)	1.98E-04
	Hydrochloric acid	1.70E-04
	Acetaldehyde	1.48E-04
	Chlorine	3.29E-05
	Phenol	2.01E-05
	Styrene	6.82E-06
	Tetrachloroethene	4.69E-06
	m-Xylene	1.26E-06
	o-Xylene	4.40E-07
	Methyl ethyl ketone	9.81E-08
	Total	**5.01E-02**
Respiratory System	Acrolein	3.97E-02
	Sulfuric acid	2.98E-02
	Nickel	6.35E-03
	Ammonia	2.15E-03
	Hydrogen fluoride	1.44E-03
	Vanadium (fume or dust)	3.36E-04
	Copper	2.31E-04
	Toluene	2.14E-04
	Xylenes (mixed)	1.98E-04
	Hydrochloric acid	1.70E-04
	Acetaldehyde	1.48E-04
	Chlorine	3.29E-05
	Phenol	2.01E-05
	Styrene	6.82E-06
	Tetrachloroethene {Perc}	4.69E-06
	m-Xylene	1.26E-06
	o-Xylene	4.40E-07
	Methyl bromide	1.18E-07
	Methyl ethyl ketone	9.81E-08
	Total	**8.08E-02**

Table 9

Acute HIs By Target Organ at the Worker MEI
[With Emergency ICEs]

Target Organ/System	Substance	Organ-Specific Hazard Index
Cardiovascular System	Arsenic	1.41E-02
	Total	**1.41E-02**
Central Nervous System	Mercury	1.09E-01
	Hydrogen sulfide	1.55E-02
	Arsenic	1.41E-02
	Methanol	5.39E-04
	Toluene	1.46E-04
	Chloroform	4.79E-05
	Hydrocyanic acid	3.36E-05
	Carbon disulfide	2.52E-05
	Tetrachloroethene {Perc}	3.54E-06
	Methyl bromide	1.74E-07
	Methylene chloride	1.54E-07
	Methyl chloroform	9.61E-11
	Total	**1.39E-01**
Developmental	Mercury	1.09E-01
	Arsenic	1.41E-02
	Benzene	3.07E-03
	Toluene	1.46E-04
	Chloroform	4.79E-05
	Carbon disulfide	2.52E-05
	Methyl bromide	1.74E-07
	Total	**1.26E-01**
Immune System	Nickel	5.33E-03
	Benzene	3.07E-03
	Total	**8.40E-03**
Reproductive System	Benzene	3.07E-03
	Toluene	1.46E-04
	Chloroform	4.79E-05
	Carbon disulfide	2.52E-05
	Methyl bromide	1.74E-07
	Total	**3.29E-03**
Circulatory System	Benzene	3.07E-03
	Total	**3.07E-03**

Table 9
(Continued)

Target Organ/System	Substance	Organ-Specific Hazard Index
Eye	Acrolein	3.26E-02
	Formaldehyde	4.94E-03
	Ammonia	2.19E-03
	Hydrogen fluoride	1.09E-03
	Vanadium (fume or dust)	2.78E-04
	Hydrochloric acid	2.50E-04
	Toluene	1.46E-04
	Acetaldehyde	1.32E-04
	Xylenes (mixed)	1.28E-04
	Chlorine	3.86E-05
	Phenol	1.53E-05
	Styrene	4.97E-06
	Tetrachloroethene {Perc}	3.54E-06
	m-Xylene	8.47E-07
	o-Xylene	2.95E-07
	Methyl ethyl ketone	7.72E-08
	Total	**4.18E-02**
Respiratory System	Acrolein	3.26E-02
	Sulfuric acid	2.45E-02
	Nickel	5.33E-03
	Ammonia	2.19E-03
	Hydrogen fluoride	1.09E-03
	Vanadium (fume or dust)	2.78E-04
	Hydrochloric acid	2.50E-04
	Copper	2.03E-04
	Toluene	1.46E-04
	Acetaldehyde	1.32E-04
	Xylenes (mixed)	1.28E-04
	Chlorine	3.86E-05
	Phenol	1.53E-05
	Styrene	4.97E-06
	Tetrachloroethene {Perc}	3.54E-06
	m-Xylene	8.47E-07
	o-xylene	2.95E-07
	Methyl bromide	1.74E-07
	Methyl ethyl ketone	7.72E-08
	Total	**6.69E-02**

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Figure 3
Zone of Impact (1 x 10-6 Cancer Risk Isopleth)

*Isopleth plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 1x10-6 cancer risk.

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Figure 4
Location of Cancer Risk Residential MEI and PMI

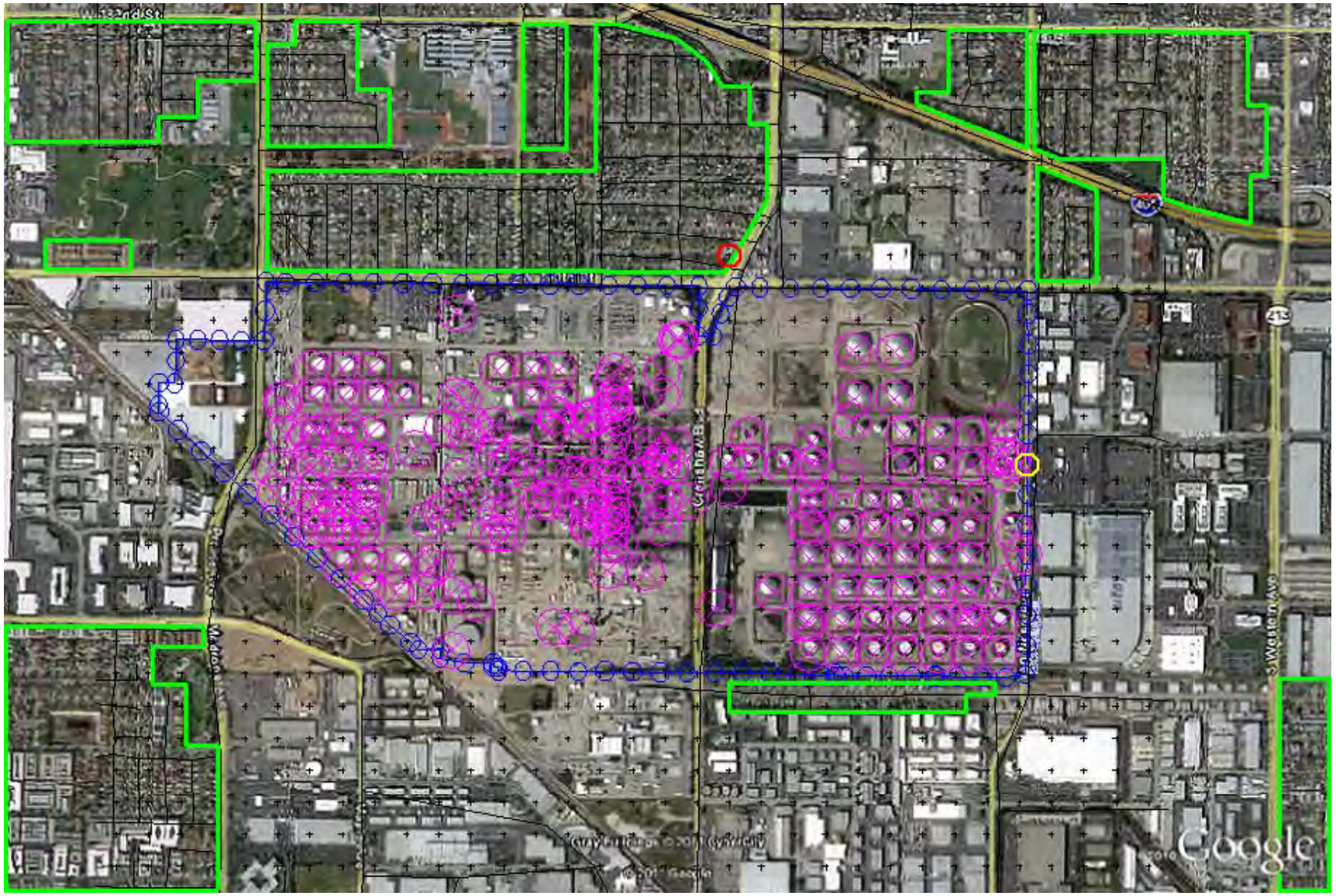

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Figure 5
Location of Cancer Risk Worker MEI

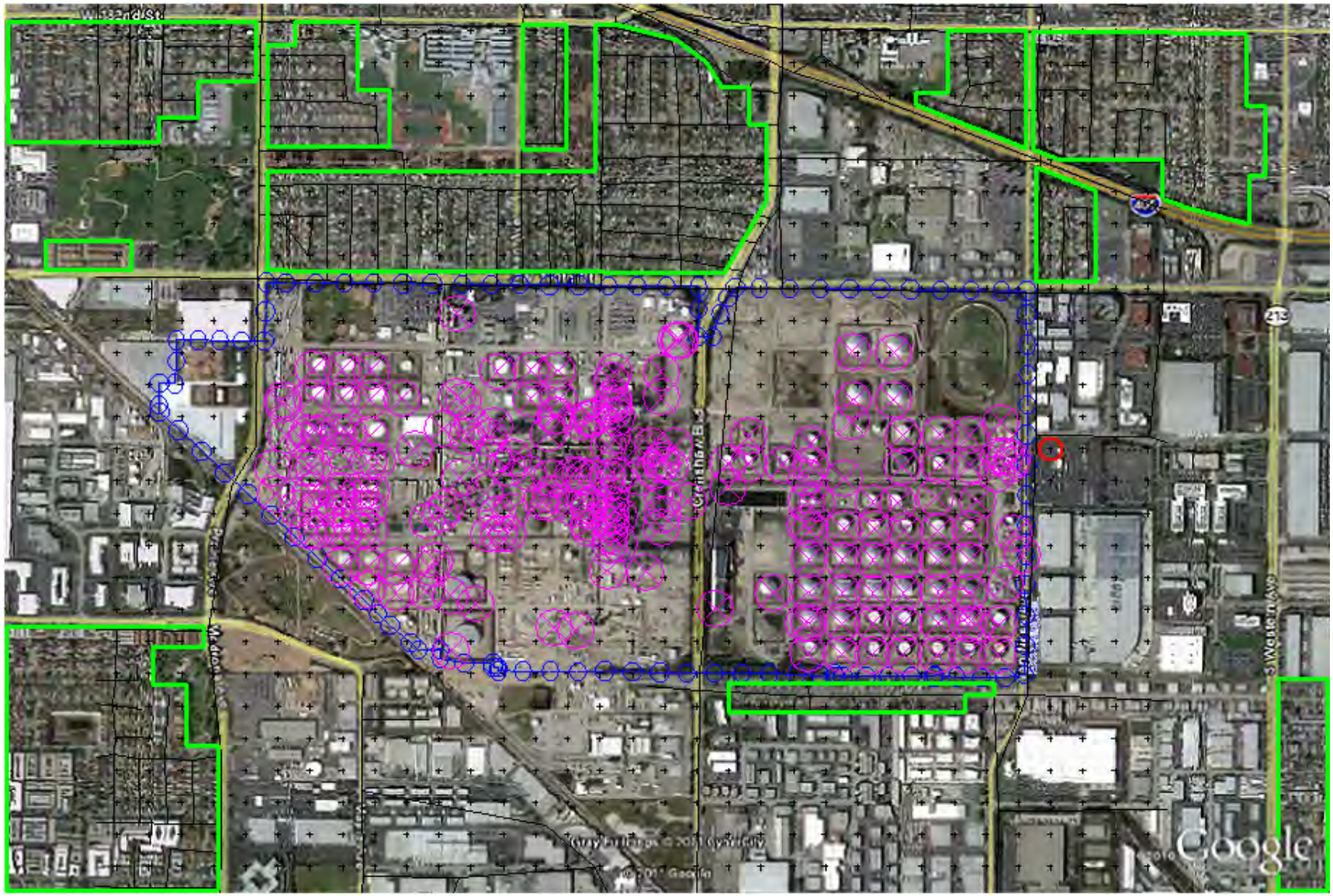

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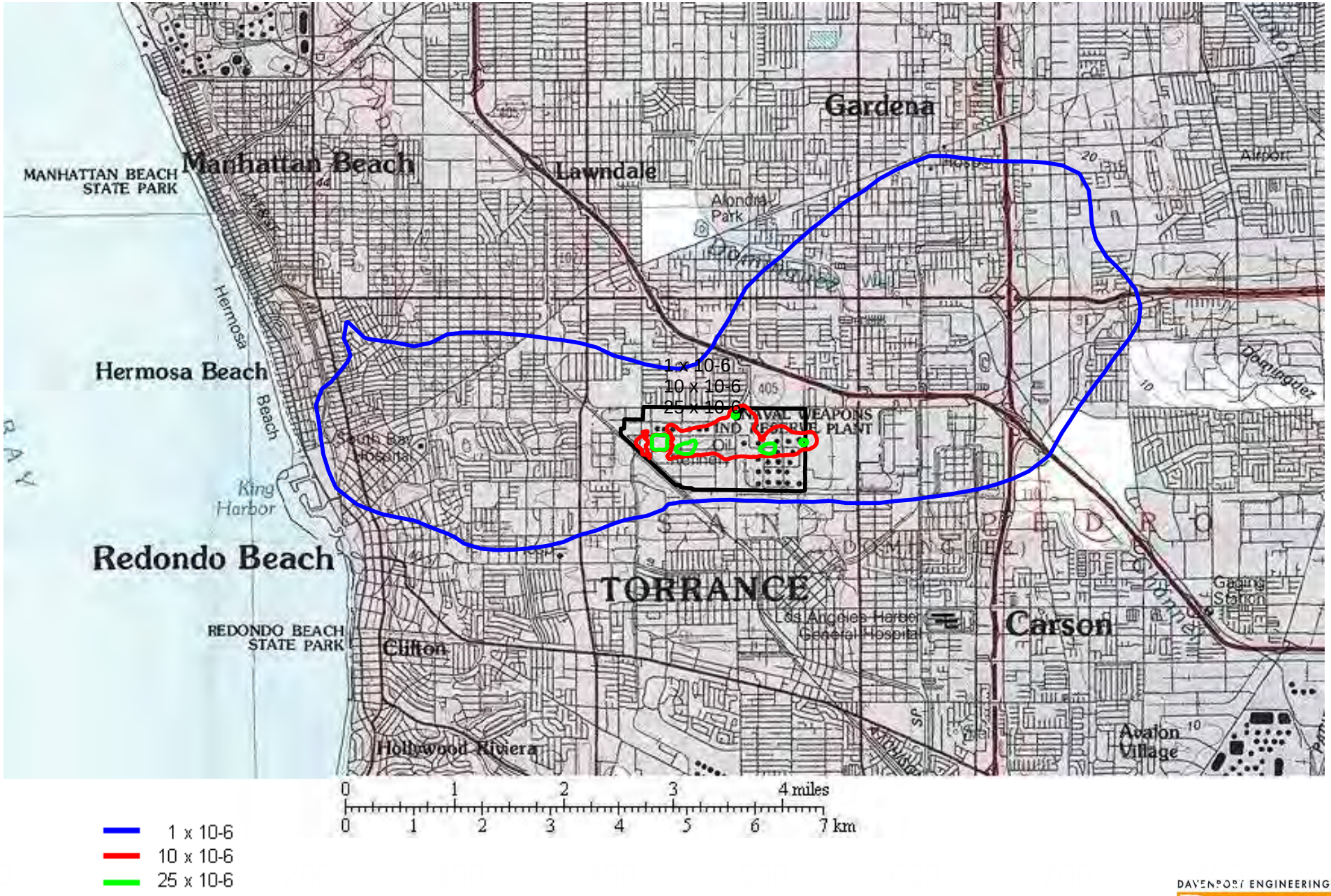
Figure 6
Cancer Isopleths (1 x 10-6, 10 x 10-6, and 25 x 10-6 Cancer Risk)



*Isopleths plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 1x10-6, 10x10-6, and 25x10-6 cancer risk.

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Figure 7
Location of Chronic HI Residential MEI and PMI

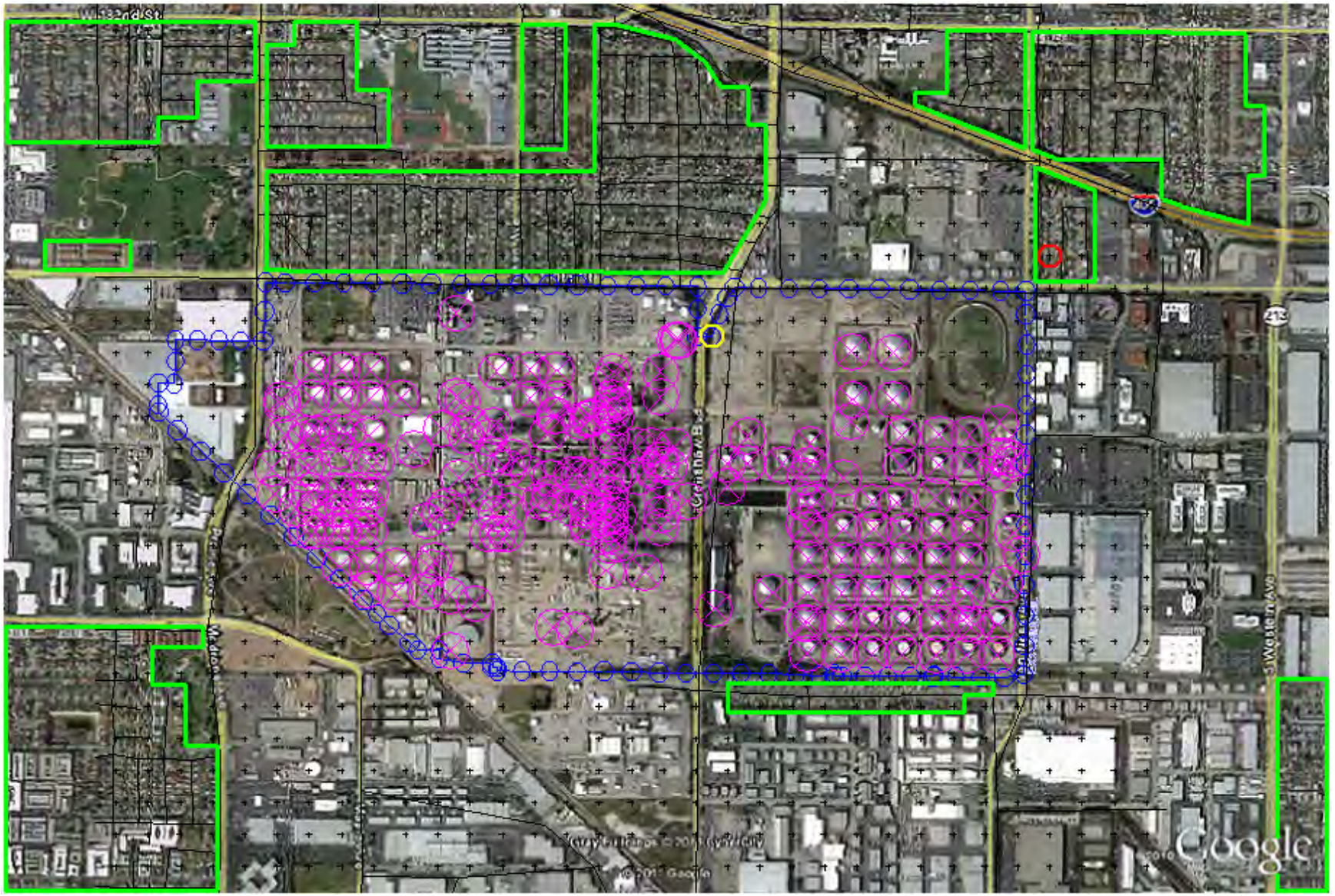

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Figure 8
Location of Chronic HI Worker MEI

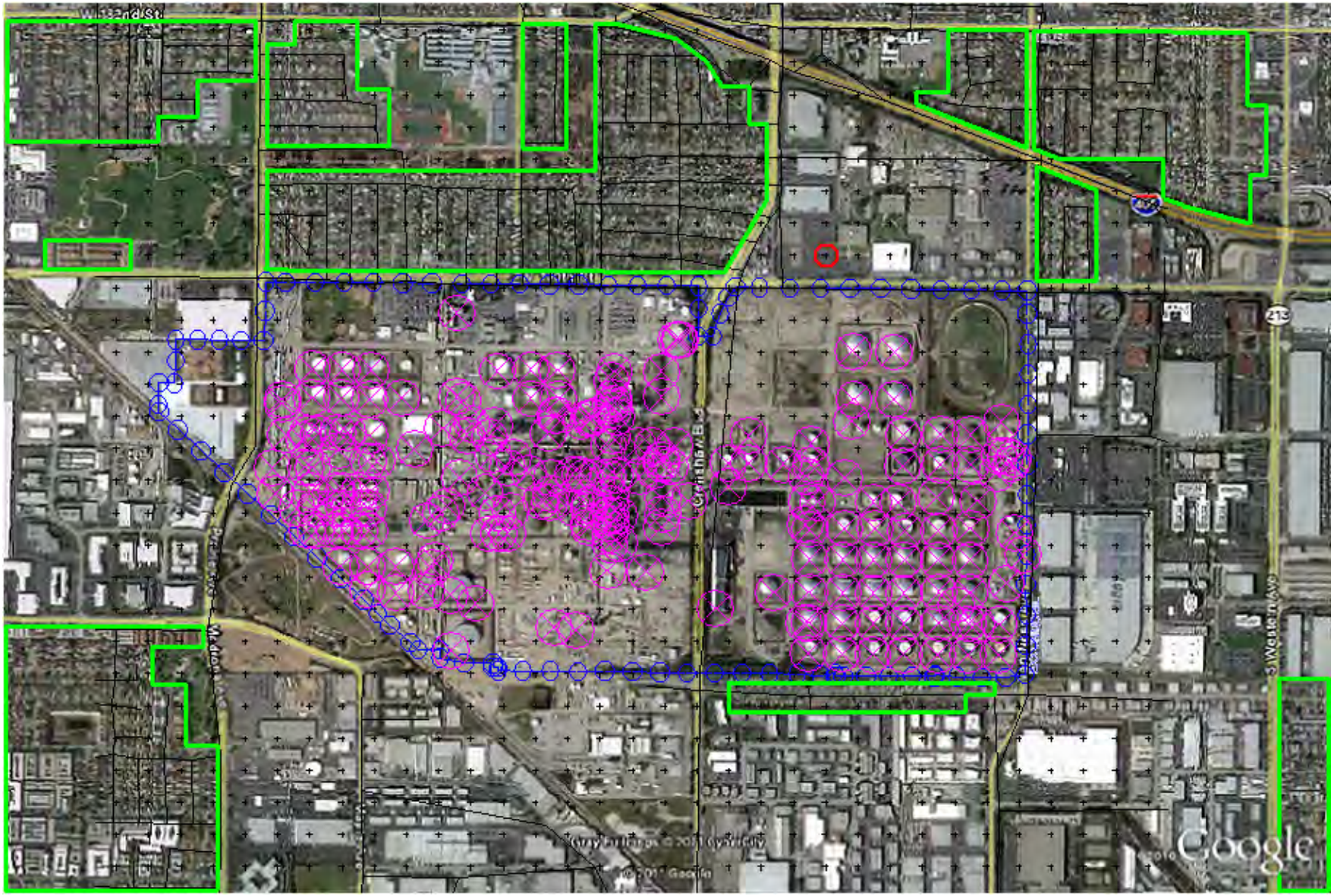

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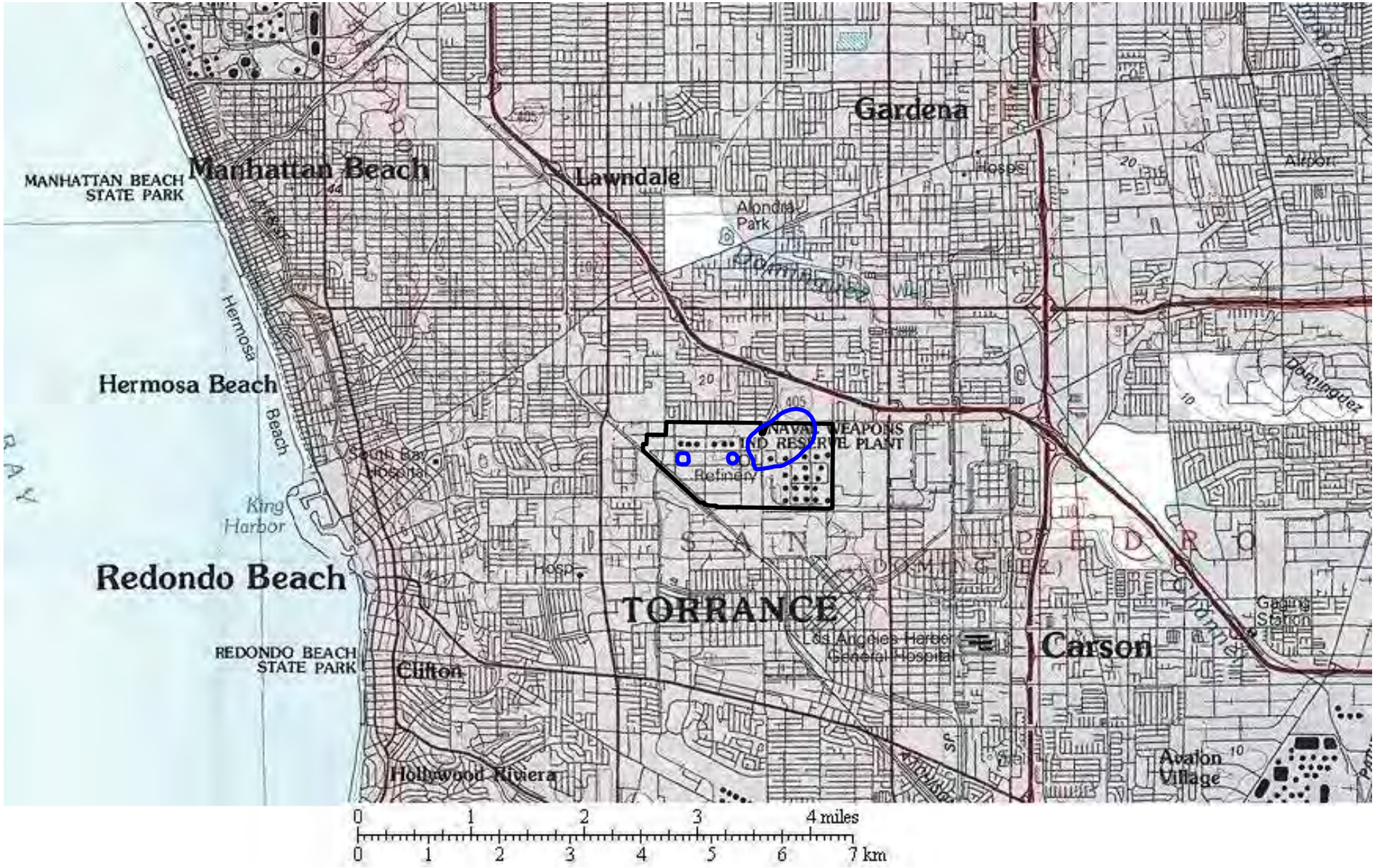
Figure 9
Non-Cancer Chronic HI Isopleth (0.5 HI)



*Isopleths plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 0.5 non-cancer chronic HI.

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Figure 10
Location of Acute HI Residential MEI and PMI

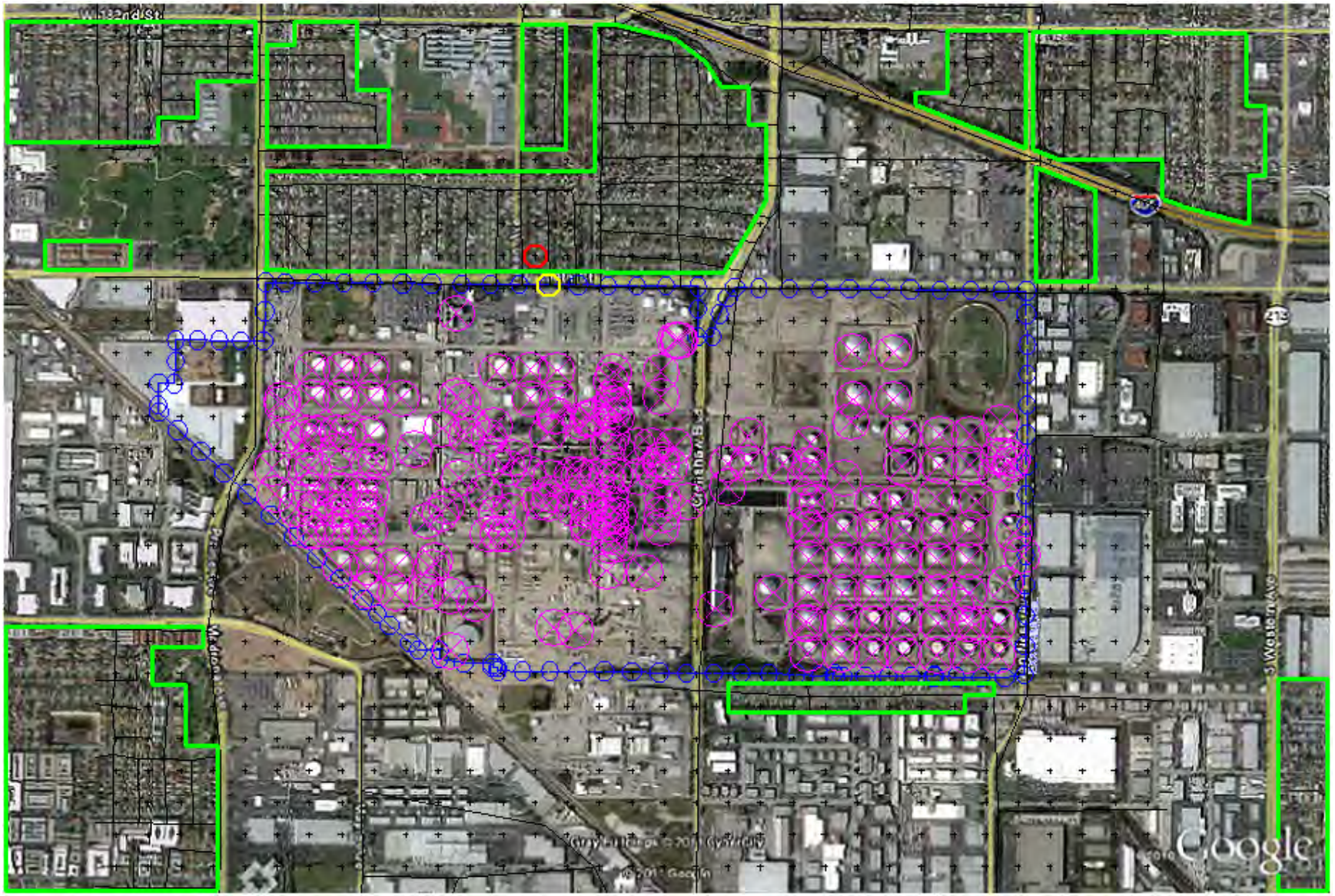

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Figure 11
Location of Acute HI Worker MEI

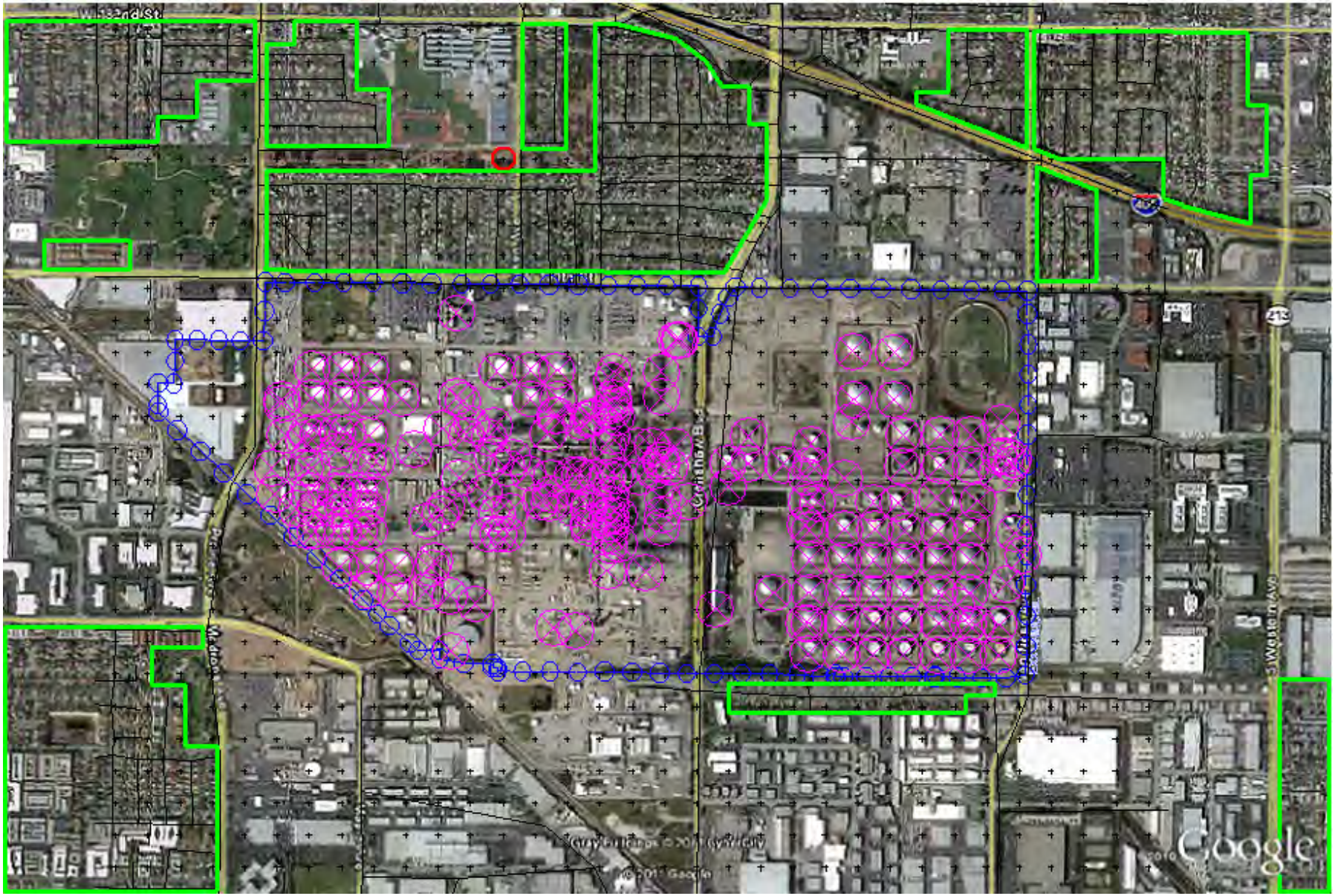

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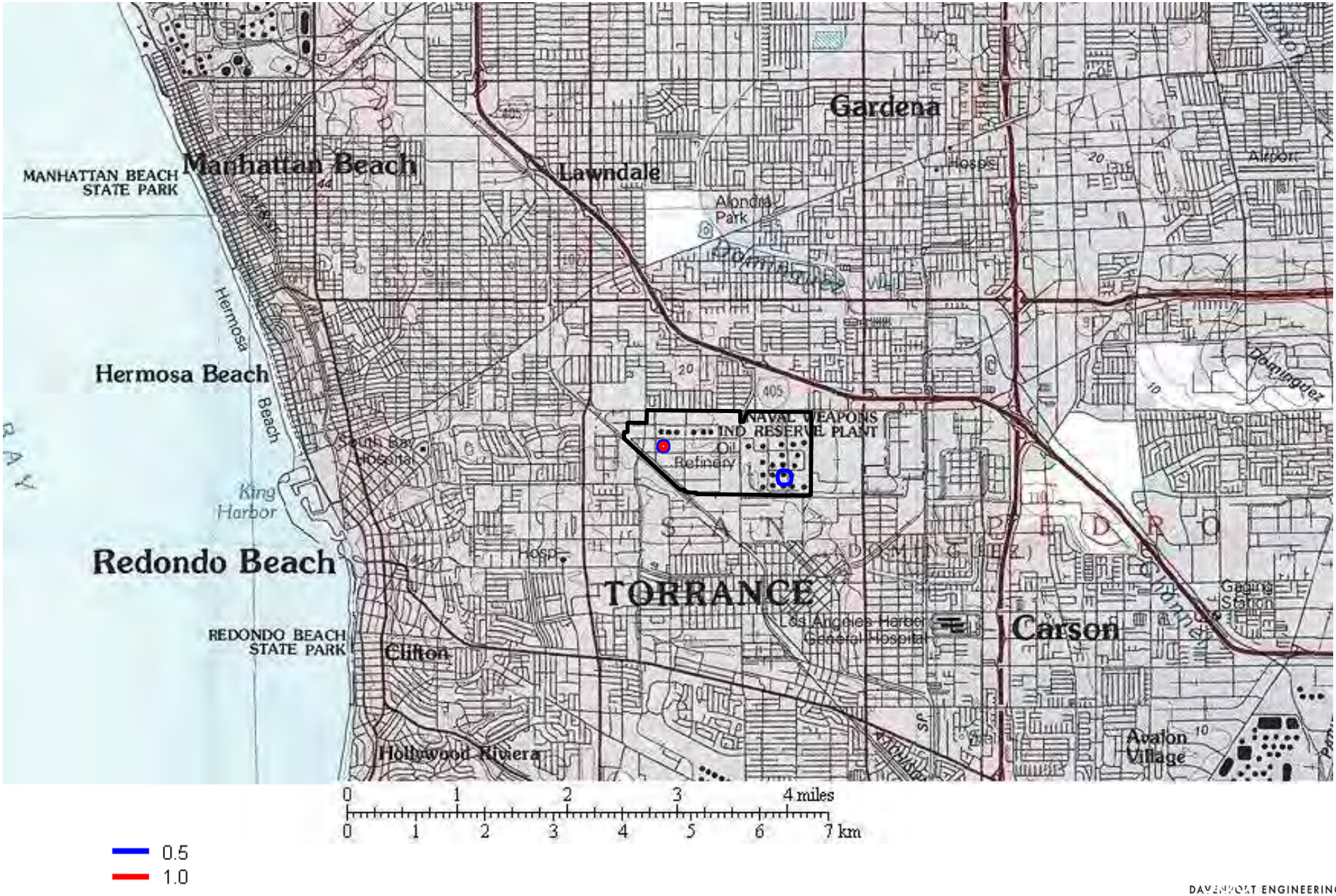
Figure 12
Non-Cancer Acute HI Isopleths (0.5 and 1.0 HIs)



*Isopleths plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 0.5 and 1.0 non-cancer acute HIs.

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Appendix A
Detailed Source Information

ExxonMobil Torrance Refinery
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Figure A-1
Point Sources, Building Downwash

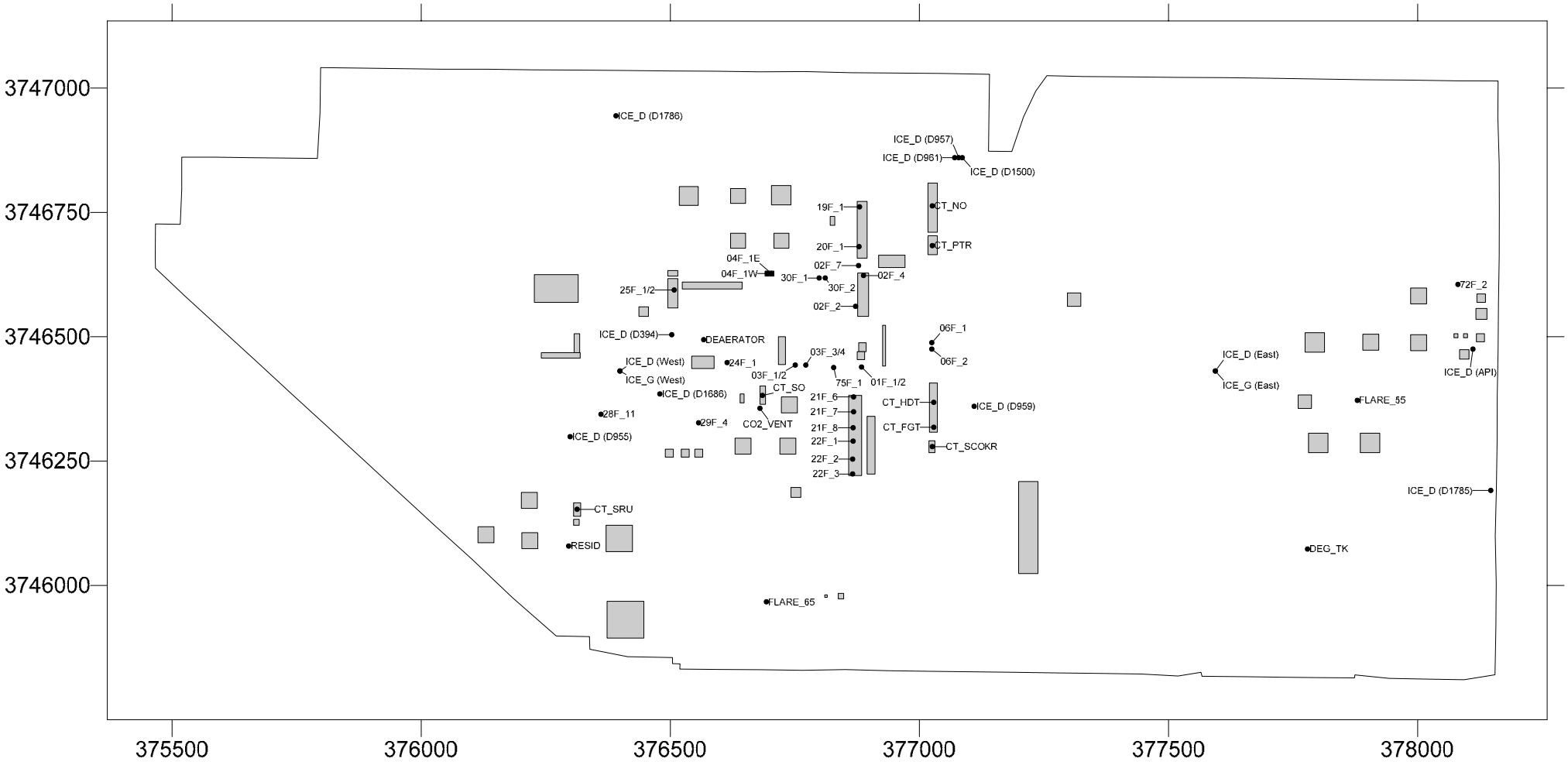

Table A-1 - Point Source Parameters
ExxonMobil Torrance Refinery
2006-2007 AB 2588 HRA Revision

Description	Release Type	HARP Source ID	Center Point Coordinates		Stack Ht. (ft)	Stack Dia. (ft)	Stack Temp. (F)	Stack Exit Vel. (FPM)
			UTM E	UTM N				
01F_1/2	POINT	1	376884	3746439	100	8.8	429	3,353
02F_2	POINT	2	376872	3746561	120	7.3	669	982
02F_4	POINT	3	376888	3746623	75	6.5	417	3,182
02F_7	POINT	4	376878	3746643	90	11.0	544	5,454
03F_1/2	POINT	5	376751	3746443	120	5.7	652	2,183
03F_3/4	POINT	6	376772	3746443	163	5.6	250	1,887
04F_1E	POINT	7	376703	3746627	94	5.4	466	3,937
04F_1W	POINT	8	376695	3746627	94	5.4	466	3,937
06F_1	POINT	9	377025	3746488	70	4.0	678	1,625
06F_2	POINT	10	377025	3746475	65	5.0	627	1,281
19F_1	POINT	11	376880	3746761	100	10.4	645	1,036
20F_1	POINT	12	376879	3746681	119	6.3	604	1,076
21F_6	POINT	15	376868	3746379	130	4.6	601	1,752
21F_7	POINT	16	376868	3746349	130	4.6	522	1,746
21F_8	POINT	17	376867	3746317	130	4.6	408	1,146
22F_1	POINT	18	376867	3746290	129	6.5	583	1,043
22F_2	POINT	19	376866	3746254	130	4.9	612	1,801
22F_3	POINT	20	376866	3746224	130	4.9	612	2,065
24F_1	POINT	21	376614	3746448	100	12.2	474	4,271
25F_1/2	POINT	22	376508	3746594	150	5.3	338	1,871
28F_11	POINT	23	376361	3746344	150	6.4	1,209	566
29F_5	POINT	24	376557	3746327	150	7.5	729	1,666
30F_1	POINT	25	376799	3746618	100	5.8	369	1,564
30F_2	POINT	26	376811	3746618	100	5.8	392	1,609
72F_2	POINT	28	378081	3746605	24	3.0	1,286	240
75F_1	POINT	29	376828	3746438	55	7.4	498	1,457
CT_FGT	POINT	33	377029	3746318	47	28.0	100	565
CT_HDT	POINT	34	377029	3746368	67	28.0	90	1,320
CT_NO	POINT	36	377026	3746763	53	16.0	90	1,560
CT_PTR	POINT	37	377026	3746683	53	16.0	100	840
CT_SCOKR	POINT	38	377026	3746279	46	16.0	90	1,320
CT_SO	POINT	39	376685	3746382	53	16.0	105	1,920
CT_SRU	POINT	40	376313	3746153	51	18.0	95	1,320
FLARE_55	POINT	41	377879	3746372	100	0.8	1,832	3,937
FLARE_65	POINT	42	376693	3745967	200	4.0	1,832	3,937
ICE_D (West)	POINT	43	376399	3746431	10	0.3	700	3,000
ICE_G (West)	POINT	44	376399	3746431	20	0.3	350	2,852
RESID	POINT	45	376296	3746079	18	3.0	1,500	71
CO2_VENT	POINT	46	376680	3746356	65	1.5	62	3,444
DEAERATOR	POINT	47	376567	3746494	75	0.7	212	10,492
ICE_D (API)	POINT	48	378111	3746475	0	0.3	700	3,000
ICE_D (D955)	POINT	49	376299	3746299	8	0.7	900	6,881
ICE_D (D957)	POINT	50	377079	3746860	10	0.7	900	6,878
ICE_D (D959)	POINT	51	377110	3746360	20	0.7	900	3,973
ICE_D (D961)	POINT	52	377071	3746860	10	0.7	900	6,881
ICE_D (D1500)	POINT	53	377086	3746860	10	0.3	900	24,687

Table A-1 - Point Source Parameters
ExxonMobil Torrance Refinery
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Description	Release Type	HARP Source ID	Center Point Coordinates		Stack Ht. (ft)	Stack Dia. (ft)	Stack Temp. (F)	Stack Exit Vel. (FPM)
			UTM E	UTM N				
ICE_D (D1785)	POINT	54	378147	3746191	15	0.7	900	7,315
ICE_D (D394)	POINT	55	376503	3746504	8	0.3	900	29,850
ICE_D (D1686)	POINT	56	376479	3746385	8	0.3	900	18,137
ICE_D (D1786)	POINT	57	376391	3746944	6	0.2	900	22,186
ICE_D (East)	POINT	58	377594	3746431	10	0.3	700	3,000
ICE_G (East)	POINT	59	377594	3746431	20	0.3	350	2,852
DEG-TK	POINT	60	377779	3746073	10	0.3	700	3,000

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Figure A-2
Component Fugitive Area Sources

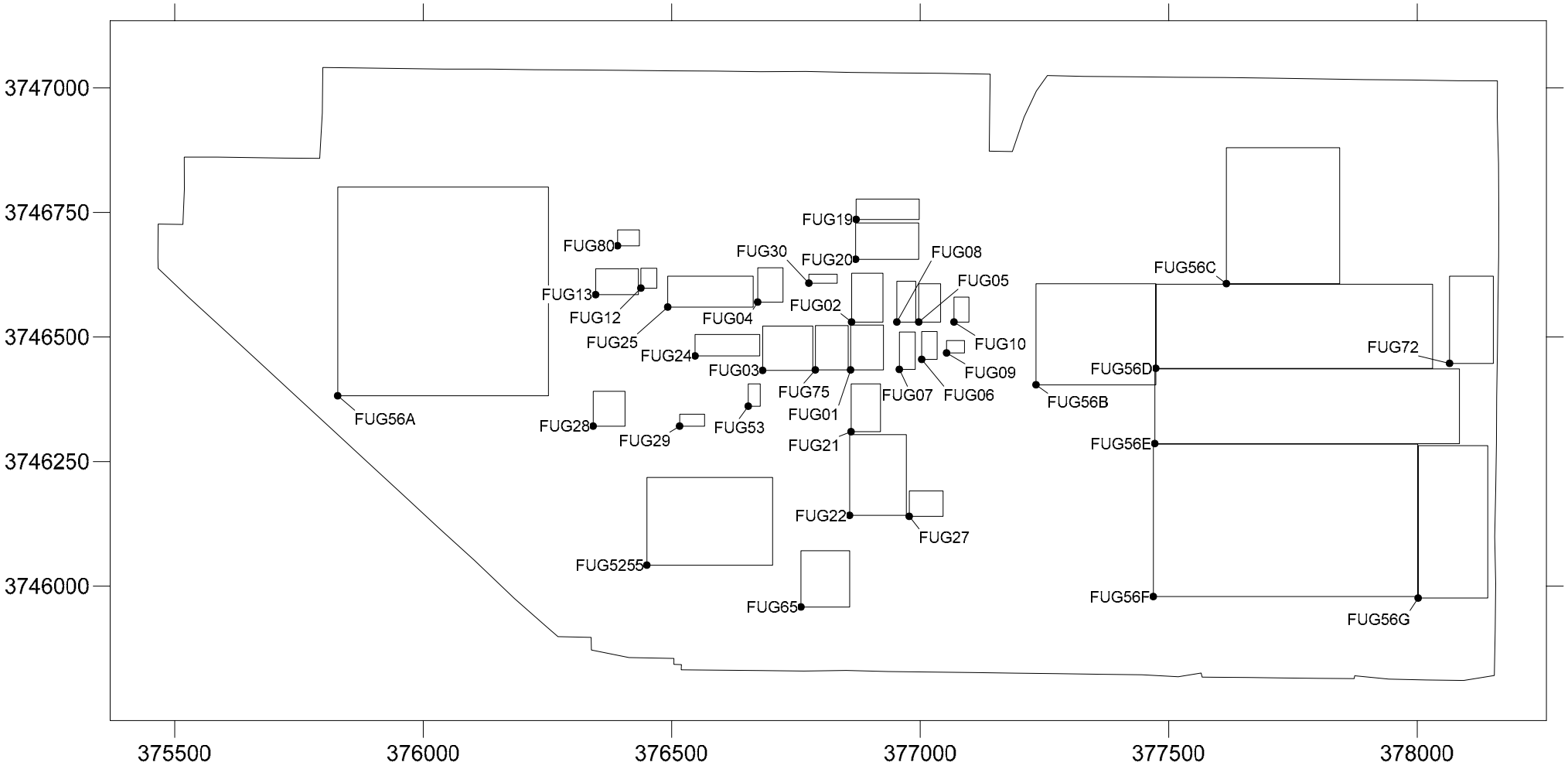

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Table A-2 - Component Fugitive Area Source Parameters
ExxonMobil Torrance Refinery
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Description	Release Type	HARP Source ID	SW Coordinates		Ht. (ft)	yL (ft)	xL (ft)	Fugitive Area (ft^2)	Aspect Ratio (L:W)
			UTM E	UTM N					
FUG01	AREA	198	376860	3746434	6	293	215	62,888	1.36
FUG02	AREA	199	376862	3746530	6	323	206	66,354	1.57
FUG03	AREA	200	376683	3746433	6	293	332	97,037	1.13
FUG04	AREA	201	376673	3746570	6	228	167	37,962	1.37
FUG05	AREA	202	376997	3746530	6	251	145	36,368	1.74
FUG06	AREA	203	377003	3746455	6	183	100	18,254	1.83
FUG07	AREA	204	376958	3746435	6	249	103	25,471	2.42
FUG08	AREA	205	376953	3746530	6	271	126	33,948	2.16
FUG09	AREA	206	377053	3746468	6	85	119	10,064	1.40
FUG10	AREA	207	377068	3746530	6	164	101	16,482	1.63
FUG12	AREA	208	376438	3746598	6	134	104	13,903	1.29
FUG13	AREA	209	376347	3746585	6	172	281	48,375	1.64
FUG19	AREA	210	376871	3746736	6	134	416	55,640	3.11
FUG20	AREA	211	376870	3746656	6	240	416	99,840	1.73
FUG21	AREA	212	376861	3746310	6	318	195	61,754	1.63
FUG22	AREA	213	376858	3746142	6	533	375	199,554	1.42
FUG24	AREA	214	376547	3746462	6	142	428	60,562	3.02
FUG25	AREA	215	376492	3746560	6	204	567	115,424	2.78
FUG27	AREA	216	376978	3746140	6	168	223	37,464	1.33
FUG28	AREA	217	376342	3746321	6	230	208	47,788	1.10
FUG29	AREA	218	376516	3746321	6	78	164	12,792	2.10
FUG30	AREA	219	376776	3746608	6	58	189	10,995	3.24
FUG5255	AREA	220	376450	3746042	6	577	830	478,495	1.44
FUG53	AREA	221	376654	3746361	6	151	81	12,115	1.87
FUG56A	AREA	222	375828	3746382	6	1,375	1,391	1,911,938	1.01
FUG56B	AREA	223	377233	3746404	6	667	789	525,702	1.18
FUG56C	AREA	224	377616	3746607	6	896	748	669,573	1.20
FUG56D	AREA	225	377474	3746437	6	556	1,827	1,016,269	3.28
FUG56E	AREA	226	377472	3746286	6	490	2,011	984,887	4.11
FUG56F	AREA	227	377469	3745979	6	1,003	1,746	1,750,365	1.74
FUG56G	AREA	228	378002	3745976	6	1,003	460	460,649	2.18
FUG65	AREA	229	376760	3745958	6	371	321	118,931	1.15
FUG72	AREA	230	378065	3746447	6	572	291	166,668	1.96
FUG75	AREA	231	376789	3746434	6	293	215	62,961	1.36
FUG80	AREA	232	376391	3746683	6	105	146	15,205	1.39

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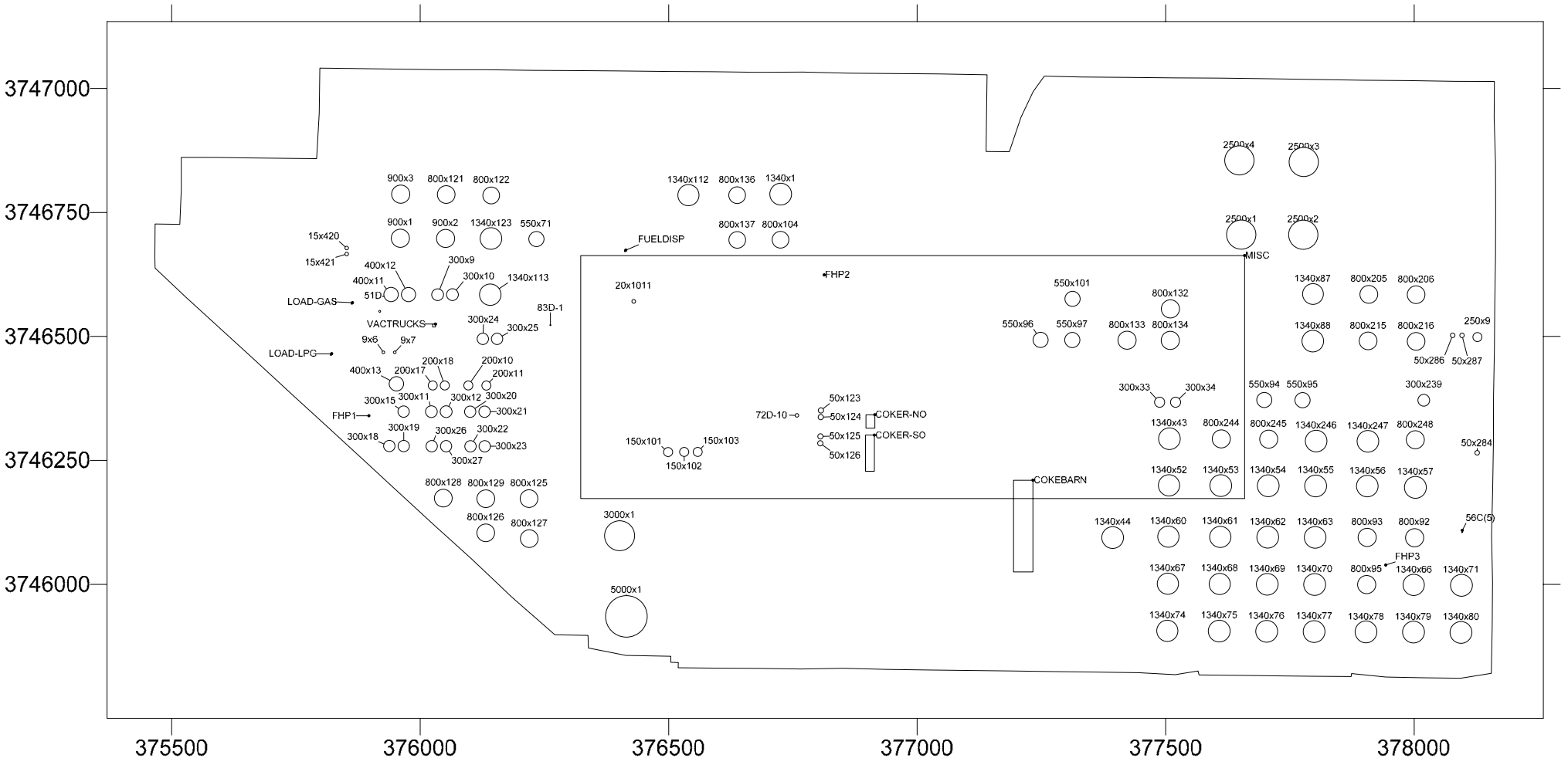
Figure A-3
Storage Tanks, Other Area Sources



= Other Area Sources

MISC = Spills, Painting, Asbestos, Welding, Bldg HVAC, and Vessel Degassing

DAVENPORT ENGINEERING, INC.
Davenport
ENVIRONMENTAL SERVICES

Table A-3 - Storage Tanks and Other Area Source Parameters
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Description	Release Type	HARP Source ID	Center Point Coordinates		Ht. (ft)	Dia. (ft)	Equiv. Width (ft)	Square Area (ft^2)	yL (ft)	xL (ft)	SW Coordinates	
			UTM E	UTM N							UTM E	UTM N
1340x1	AREA	61	376725	3746787	50	144	128	16,286			376703	3746765
1340x112	AREA	62	376540	3746785	46	140	124	15,394			376518	3746764
1340x113	AREA	63	376141	3746584	48	142	126	15,837			376119	3746563
1340x123	AREA	64	376142	3746697	48	143	127	16,061			376121	3746676
1340x246	AREA	65	377803	3746289	48	143	127	16,061			377781	3746267
1340x247	AREA	66	377907	3746289	48	143	127	16,061			377885	3746267
1340x43	AREA	67	377508	3746294	48	143	127	16,061			377486	3746272
1340x44	AREA	68	377375	3746097	48	143	127	16,061			377353	3746075
1340x52	AREA	69	377507	3746200	48	140	124	15,394			377485	3746178
1340x53	AREA	70	377611	3746199	46	144	128	16,286			377589	3746177
1340x54	AREA	71	377706	3746199	46	144	128	16,286			377684	3746177
1340x55	AREA	72	377802	3746198	46	144	128	16,286			377780	3746177
1340x56	AREA	73	377906	3746198	52	142	126	15,904			377884	3746176
1340x57	AREA	74	377375	3746097	50	144	128	16,286			377353	3746075
1340x60	AREA	75	377506	3746096	48	140	124	15,394			377484	3746075
1340x61	AREA	76	377610	3746096	48	140	124	15,394			377589	3746074
1340x62	AREA	77	377705	3746095	46	144	128	16,286			377683	3746073
1340x63	AREA	78	377801	3746095	52	143	127	16,061			377779	3746073
1340x66	AREA	79	377999	3745999	48	140	124	15,394			377978	3745978
1340x67	AREA	80	377504	3746001	48	140	124	15,394			377483	3745980
1340x68	AREA	81	377609	3746001	48	140	124	15,394			377587	3745979
1340x69	AREA	82	377704	3746000	48	143	127	16,061			377683	3745978
1340x70	AREA	83	377800	3746000	46	144	128	16,286			377778	3745978
1340x71	AREA	84	378095	3745998	46	144	128	16,286			378073	3745976
1340x74	AREA	85	377503	3745906	48	140	124	15,394			377482	3745885
1340x75	AREA	86	377608	3745906	50	144	128	16,286			377586	3745884
1340x76	AREA	87	377703	3745905	46	144	128	16,286			377681	3745883
1340x77	AREA	88	377799	3745905	46	144	128	16,286			377777	3745883
1340x78	AREA	89	377903	3745904	46	144	128	16,286			377881	3745882
1340x79	AREA	90	377999	3745904	46	144	128	16,286			377977	3745882
1340x80	AREA	91	378094	3745903	46	144	128	16,286			378072	3745881
1340x87	AREA	92	377796	3746586	51	137	121	14,741			377776	3746565

Table A-3 - Storage Tanks and Other Area Source Parameters
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Description	Release Type	HARP Source ID	Center Point Coordinates		Ht. (ft)	Dia. (ft)	Equiv. Width (ft)	Square Area (ft^2)	yL (ft)	xL (ft)	SW Coordinates	
			UTM E	UTM N							UTM E	UTM N
1340x88	AREA	93	377796	3746491	48	143	127	16,061			377774	3746469
150x101	AREA	94	376499	3746267	30	60	53	2,827			376490	3746258
150x102	AREA	95	376531	3746267	30	60	53	2,827			376522	3746258
150x103	AREA	96	376558	3746267	30	60	53	2,827			376549	3746258
15x420	AREA	97	375852	3746678	18	24	21	452			375848.8	3746675
15x421	AREA	98	375852	3746666	18	24	21	452			375848.8	3746663
200x10	AREA	100	376097	3746401	41	60	53	2,827			376088	3746392
200x11	AREA	101	376133	3746401	41	60	53	2,827			376124	3746392
200x17	AREA	102	376025	3746401	41	60	53	2,827			376016	3746392
200x18	AREA	103	376050	3746401	41	60	53	2,827			376040	3746392
20x1011	AREA	104	376474	3746552	24	25	22	491			376470.6	3746549
2500x1	AREA	106	377652	3746705	53	193	171	29,255			377623	3746676
2500x2	AREA	107	377777	3746705	53	193	171	29,255			377747	3746676
2500x3	AREA	108	377778	3746852	53	193	171	29,255			377748	3746822
2500x4	AREA	109	377648	3746855	53	193	171	29,255			377619	3746826
250x9	AREA	110	378127	3746499	48	60	53	2,827			378118	3746490
3000x1	AREA	111	376401	3746098	56	198	175	30,791			376371	3746068
300x10	AREA	112	376065	3746584	38	78	69	4,778			376053	3746572
300x11	AREA	113	376023	3746348	38	78	69	4,778			376011	3746336
300x12	AREA	114	376052	3746348	38	78	69	4,778			376040	3746336
300x15	AREA	115	375967	3746348	42	75	66	4,418			375955	3746337
300x18	AREA	116	375938	3746279	42	75	66	4,418			375926	3746268
300x19	AREA	117	375967	3746279	42	75	66	4,418			375955	3746267
300x20	AREA	118	376101	3746348	42	75	66	4,418			376089	3746337
300x21	AREA	119	376129	3746348	42	75	66	4,418			376118	3746337
300x22	AREA	120	376101	3746278	42	75	66	4,418			376090	3746267
300x23	AREA	121	376130	3746278	42	75	66	4,418			376119	3746267
300x239	AREA	122	378019	3746371	42	78	69	4,778			378007	3746359
300x24	AREA	123	376126	3746495	44	75	66	4,418			376115	3746484
300x25	AREA	124	376155	3746495	44	75	66	4,418			376143	3746484
300x26	AREA	125	376023	3746279	42	75	66	4,418			376012	3746267
300x27	AREA	126	376052	3746279	41	75	66	4,418			376041	3746267

Table A-3 - Storage Tanks and Other Area Source Parameters
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Description	Release Type	HARP Source ID	Center Point Coordinates		Ht. (ft)	Dia. (ft)	Equiv. Width (ft)	Square Area (ft^2)	yL (ft)	xL (ft)	SW Coordinates	
			UTM E	UTM N							UTM E	UTM N
300x33	AREA	128	377488	3746367	48	67	59	3,526			377478	3746357
300x34	AREA	129	377520	3746367	48	67	59	3,526			377510	3746357
300x9	AREA	130	376035	3746584	38	78	69	4,778			376023	3746572
400x11	AREA	131	375941	3746585	32	95	85	7,148			375927	3746570
400x12	AREA	132	375977	3746584	32	94	83	6,955			375962	3746570
400x13	AREA	133	375952	3746404	32	95	84	7,088			375938	3746390
5000x1	AREA	134	376415	3745936	48	275	244	59,396			376373	3745894
50x123	AREA	135	376806	3746351	30	35	31	962			376801	3746345
50x124	AREA	136	376806	3746337	30	35	31	962			376801	3746332
50x125	AREA	137	376805	3746298	30	35	31	962			376800	3746293
50x126	AREA	138	376805	3746285	30	35	31	962			376800	3746279
50x284	AREA	139	378127	3746265	40	30	27	712			378122	3746261
50x286	AREA	140	378077	3746502	40	30	27	712			378073	3746498
50x287	AREA	141	378096	3746502	40	30	27	712			378092	3746498
550x101	AREA	142	377313	3746576	42	100	89	7,854			377297	3746561
550x71	AREA	144	376234	3746696	40	100	89	7,854			376219	3746681
550x94	AREA	145	377698	3746372	39	100	89	7,854			377683	3746357
550x95	AREA	146	377775	3746371	39	100	89	7,854			377760	3746356
550x96	AREA	147	377248	3746493	42	100	89	7,854			377233	3746478
550x97	AREA	148	377312	3746493	42	100	89	7,854			377297	3746478
72D-10	AREA	149	376758	3746341	24	70	62	3,848			376754	3746337
800x104	AREA	150	376725	3746695	48	110	97	9,503			376708	3746678
800x121	AREA	151	376052	3746786	42	117	104	10,751			376035	3746768
800x122	AREA	152	376143	3746784	49	111	98	9,590			376126	3746767
800x125	AREA	153	376219	3746173	39	117	104	10,751			376201	3746155

Table A-3 - Storage Tanks and Other Area Source Parameters
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Description	Release Type	HARP Source ID	Center Point Coordinates		Ht. (ft)	Dia. (ft)	Equiv. Width (ft)	Square Area (ft^2)	yL (ft)	xL (ft)	SW Coordinates	
			UTM E	UTM N							UTM E	UTM N
800x126	AREA	154	376132	3746104	39	117	104	10,751			376114	3746086
800x127	AREA	155	376219	3746092	40	117	104	10,751			376202	3746074
800x128	AREA	156	376046	3746174	39	117	104	10,751			376029	3746156
800x129	AREA	157	376132	3746173	39	117	104	10,751			376114	3746155
800x132	AREA	159	377510	3746556	40	120	106	11,310			377491	3746537
800x133	AREA	160	377422	3746492	40	120	106	11,310			377404	3746474
800x134	AREA	161	377509	3746492	40	120	106	11,310			377491	3746474
800x136	AREA	162	376638	3746785	48	110	97	9,503			376621	3746768
800x137	AREA	163	376638	3746695	48	110	97	9,503			376621	3746678
800x205	AREA	164	377909	3746585	41	117	104	10,788			377891	3746567
800x206	AREA	165	378004	3746584	39	117	104	10,751			377986	3746566
800x215	AREA	166	377907	3746491	42	117	104	10,751			377890	3746473
800x216	AREA	167	378004	3746490	41	117	104	10,751			377986	3746472
800x244	AREA	168	377612	3746293	40	119	105	11,122			377594	3746275
800x245	AREA	169	377707	3746293	40	119	105	11,122			377689	3746275
800x248	AREA	170	378002	3746292	40	119	105	11,122			377984	3746273
800x92	AREA	172	378001	3746094	42	120	106	11,310			377983	3746076
800x93	AREA	173	377905	3746095	41	120	106	11,310			377887	3746077
800x95	AREA	174	377904	3746000	40	120	106	11,310			377886	3745981
83D-1	AREA	175			5	6	5	28			376255	3746517
900x1	AREA	176	375960	3746698	44	120	106	11,310			375942	3746680
900x2	AREA	177	376051	3746698	44	120	106	11,310			376033	3746679
900x3	AREA	178	375961	3746787	44	120	106	11,310			375943	3746769
51D-10	AREA	179	375919	3746551	12	12	10	104			375917.4	3746549
56C(5)	AREA	180			7	3	3	7			378094	3746102
9x6	AREA	181	376050	3746454	20	18	16	254			376047.6	3746452
9x7	AREA	182	376058	3746454	20	18	16	254			376055.6	3746452
FHP1	AREA	183			2	3	3	7			375930	3746240
FHP2	AREA	184			2	3	3	7			376776	3746329
FHP3	AREA	185			2	3	3	7			377847	3746143

Table A-3 - Storage Tanks and Other Area Source Parameters
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Description	Release Type	HARP Source ID	Center Point Coordinates		Ht. (ft)	Dia. (ft)	Equiv. Width (ft)	Square Area (ft^2)	yL (ft)	xL (ft)	SW Coordinates	
			UTM E	UTM N							UTM E	UTM N
COKER-NO	AREA	188			6				90	60	376897	3746315
COKER-SO	AREA	189			6				240	60	376896	3746228
LOAD-GAS	AREA	192			10				10	10	375861	3746565
LOAD-LPG	AREA	193			12				10	10	375819	3746462
COKEBARN	AREA	194			60				607	128	377194	3746025
FUELDISP	AREA	195			4				10	10	376411	3746671
VACTRUCKS	AREA	196			6				20	20	376025	3746519
MISC	AREA	197			4				1608	4383	376323	3746173

Appendix B
Detailed Air Emissions

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
1	01F_1/2	Acenaphthene	83-32-9	0.0105	0.000001	8,760	1.51E-07	1.51E-07
1	01F_1/2	Acenaphthylene	208-96-8	0.0283	0.000003	8,760	4.08E-07	4.08E-07
1	01F_1/2	Acetaldehyde	75-07-0	52.3254	0.005973	8,760	7.53E-04	7.53E-04
1	01F_1/2	Acrolein	107-02-8	74.1277	0.008462	8,760	1.07E-03	1.07E-03
1	01F_1/2	Ammonia	7664-41-7	6,378.1099	0.728095	8,760	9.17E-02	9.17E-02
1	01F_1/2	Anthracene	120-12-7	0.0205	0.000002	8,760	2.95E-07	2.95E-07
1	01F_1/2	Antimony compounds	7440-36-0	2.2674	0.000259	8,760	3.26E-05	3.26E-05
1	01F_1/2	Arsenic compounds	7440-38-2	3.1395	0.000358	8,760	4.52E-05	4.52E-05
1	01F_1/2	Benzene	71-43-2	261.6272	0.029866	8,760	3.76E-03	3.76E-03
1	01F_1/2	Benzo(a)anthracene	56-55-3	0.0959	0.000011	8,760	1.38E-06	1.38E-06
1	01F_1/2	Benzo(a)pyrene	50-32-8	0.2485	0.000028	8,760	3.57E-06	3.57E-06
1	01F_1/2	Benzo(b)fluoranthene	205-99-2	0.1177	0.000013	8,760	1.69E-06	1.69E-06
1	01F_1/2	Benzo(g,h,i)perylene	191-24-2	0.0057	0.000001	8,760	8.15E-08	8.15E-08
1	01F_1/2	Benzo(k)fluoranthene	207-08-9	0.0741	0.000008	8,760	1.07E-06	1.07E-06
1	01F_1/2	Beryllium compounds	7440-41-7	0.5669	0.000065	8,760	8.15E-06	8.15E-06
1	01F_1/2	Cadmium compounds	7440-43-9	6.5407	0.000747	8,760	9.41E-05	9.41E-05
1	01F_1/2	Chromium compounds	7440-47-3	24.8546	0.002837	8,760	3.57E-04	3.57E-04
1	01F_1/2	Chrysene	218-01-9	0.0070	0.000001	8,760	1.00E-07	1.00E-07
1	01F_1/2	Cobalt compounds	7440-48-4	0.3113	0.000036	8,760	4.48E-06	4.48E-06
1	01F_1/2	Copper compounds	7440-50-8	20.4941	0.002340	8,760	2.95E-04	2.95E-04
1	01F_1/2	Dichlorobenzenes (mixed isomers)	25321-22-6	4.4470	0.000508	8,760	6.40E-05	6.40E-05
1	01F_1/2	Ethylbenzene	100-41-4	69.7672	0.007964	8,760	1.00E-03	1.00E-03
1	01F_1/2	Fluoranthene	206-44-0	0.0379	0.000004	8,760	5.46E-07	5.46E-07
1	01F_1/2	Fluorene	86-73-7	0.2093	0.000024	8,760	3.01E-06	3.01E-06
1	01F_1/2	Formaldehyde	50-00-0	226.7436	0.025884	8,760	3.26E-03	3.26E-03
1	01F_1/2	Hydrogen sulfide	7783-06-4	370.6385	0.042310	8,760	5.33E-03	5.33E-03
1	01F_1/2	Indeno(1,2,3-cd)pyrene	193-39-5	0.3096	0.000035	8,760	4.45E-06	4.45E-06
1	01F_1/2	Lead compounds	7439-92-1	16.5697	0.001892	8,760	2.38E-04	2.38E-04
1	01F_1/2	Manganese compounds	7439-96-5	21.3662	0.002439	8,760	3.07E-04	3.07E-04
1	01F_1/2	Mercury compounds	7439-97-6	0.7849	0.000090	8,760	1.13E-05	1.13E-05
1	01F_1/2	Methylnaphthalene 2-	91-57-6	0.0889	0.000010	8,760	1.28E-06	1.28E-06
1	01F_1/2	Naphthalene	91-20-3	1.7006	0.000194	8,760	2.45E-05	2.45E-05
1	01F_1/2	n-Hexane	110-54-3	7.4081	0.000846	8,760	1.07E-04	1.07E-04
1	01F_1/2	Nickel compounds	7440-02-0	32.7034	0.003733	8,760	4.70E-04	4.70E-04
1	01F_1/2	Phenanthrene	85-01-8	0.1395	0.000016	8,760	2.01E-06	2.01E-06
1	01F_1/2	Phenol	108-95-2	17.4418	0.001991	8,760	2.51E-04	2.51E-04
1	01F_1/2	Propylene	115-07-1	654.0680	0.074665	8,760	9.41E-03	9.41E-03
1	01F_1/2	Pyrene	129-00-0	0.0427	0.000005	8,760	6.15E-07	6.15E-07
1	01F_1/2	Selenium compounds	7782-49-2	3.8372	0.000438	8,760	5.52E-05	5.52E-05
1	01F_1/2	Silver compounds	7440-22-4	6.9767	0.000796	8,760	1.00E-04	1.00E-04
1	01F_1/2	Sulfuric Acid	7664-93-9	5,594.8796	0.638685	8,760	8.05E-02	8.05E-02
1	01F_1/2	Toluene	108-88-3	654.0680	0.074665	8,760	9.41E-03	9.41E-03
1	01F_1/2	Vanadium compounds	7440-62-2	8.5234	0.000973	8,760	1.23E-04	1.23E-04
1	01F_1/2	Xylenes (mixed isomers)	1330-20-7	109.0113	0.012444	8,760	1.57E-03	1.57E-03
1	01F_1/2	Zinc compounds	7440-66-6	231.1040	0.026382	8,760	3.32E-03	3.32E-03
2	02F_2	Acenaphthene	83-32-9	0.0006	0.000000	8,760	9.05E-09	9.05E-09
2	02F_2	Acenaphthylene	208-96-8	0.0017	0.000000	8,760	2.45E-08	2.45E-08
2	02F_2	Acetaldehyde	75-07-0	3.1456	0.000359	8,760	4.52E-05	4.52E-05
2	02F_2	Acrolein	107-02-8	4.4563	0.000509	8,760	6.41E-05	6.41E-05
2	02F_2	Anthracene	120-12-7	0.0012	0.000000	8,760	1.77E-08	1.77E-08
2	02F_2	Antimony compounds	7440-36-0	0.1363	0.000016	8,760	1.96E-06	1.96E-06
2	02F_2	Arsenic compounds	7440-38-2	0.1887	0.000022	8,760	2.71E-06	2.71E-06
2	02F_2	Benzene	71-43-2	15.7280	0.001795	8,760	2.26E-04	2.26E-04
2	02F_2	Benzo(a)anthracene	56-55-3	0.0058	0.000001	8,760	8.29E-08	8.29E-08
2	02F_2	Benzo(a)pyrene	50-32-8	0.0149	0.000002	8,760	2.15E-07	2.15E-07
2	02F_2	Benzo(b)fluoranthene	205-99-2	0.0071	0.000001	8,760	1.02E-07	1.02E-07
2	02F_2	Benzo(g,h,i)perylene	191-24-2	0.0003	0.000000	8,760	4.90E-09	4.90E-09
2	02F_2	Benzo(k)fluoranthene	207-08-9	0.0045	0.000001	8,760	6.41E-08	6.41E-08
2	02F_2	Beryllium compounds	7440-41-7	0.0341	0.000004	8,760	4.90E-07	4.90E-07
2	02F_2	Cadmium compounds	7440-43-9	0.3932	0.000045	8,760	5.66E-06	5.66E-06
2	02F_2	Chromium compounds	7440-47-3	1.4942	0.000171	8,760	2.15E-05	2.15E-05
2	02F_2	Chrysene	218-01-9	0.0004	0.000000	8,760	6.03E-09	6.03E-09
2	02F_2	Cobalt compounds	7440-48-4	0.0187	0.000002	8,760	2.69E-07	2.69E-07
2	02F_2	Copper compounds	7440-50-8	1.2320	0.000141	8,760	1.77E-05	1.77E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
2	02F_2	Dichlorobenzenes (mixed isomers)	25321-22-6	0.2673	0.000031	8,760	3.85E-06	3.85E-06
2	02F_2	Ethylbenzene	100-41-4	4.1941	0.000479	8,760	6.03E-05	6.03E-05
2	02F_2	Fluoranthene	206-44-0	0.0023	0.000000	8,760	3.28E-08	3.28E-08
2	02F_2	Fluorene	86-73-7	0.0126	0.000001	8,760	1.81E-07	1.81E-07
2	02F_2	Formaldehyde	50-00-0	13.6310	0.001556	8,760	1.96E-04	1.96E-04
2	02F_2	Hydrogen sulfide	7783-06-4	22.2814	0.002544	8,760	3.20E-04	3.20E-04
2	02F_2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0186	0.000002	8,760	2.68E-07	2.68E-07
2	02F_2	Lead compounds	7439-92-1	0.9961	0.000114	8,760	1.43E-05	1.43E-05
2	02F_2	Manganese compounds	7439-96-5	1.2845	0.000147	8,760	1.85E-05	1.85E-05
2	02F_2	Mercury compounds	7439-97-6	0.0472	0.000005	8,760	6.79E-07	6.79E-07
2	02F_2	Methylnaphthalene 2-	91-57-6	0.0053	0.000001	8,760	7.69E-08	7.69E-08
2	02F_2	Naphthalene	91-20-3	0.1022	0.000012	8,760	1.47E-06	1.47E-06
2	02F_2	n-Hexane	110-54-3	0.4453	0.000051	8,760	6.41E-06	6.41E-06
2	02F_2	Nickel compounds	7440-02-0	1.9660	0.000224	8,760	2.83E-05	2.83E-05
2	02F_2	Phenanthrene	85-01-8	0.0084	0.000001	8,760	1.21E-07	1.21E-07
2	02F_2	Phenol	108-95-2	1.0485	0.000120	8,760	1.51E-05	1.51E-05
2	02F_2	Propylene	115-07-1	39.3201	0.004489	8,760	5.66E-04	5.66E-04
2	02F_2	Pyrene	129-00-0	0.0026	0.000000	8,760	3.69E-08	3.69E-08
2	02F_2	Selenium compounds	7782-49-2	0.2307	0.000026	8,760	3.32E-06	3.32E-06
2	02F_2	Silver compounds	7440-22-4	0.4194	0.000048	8,760	6.03E-06	6.03E-06
2	02F_2	Sulfuric Acid	7664-93-9	149.8768	0.017109	8,760	2.16E-03	2.16E-03
2	02F_2	Toluene	108-88-3	39.3201	0.004489	8,760	5.66E-04	5.66E-04
2	02F_2	Vanadium compounds	7440-62-2	0.5124	0.000058	8,760	7.37E-06	7.37E-06
2	02F_2	Xylenes (mixed isomers)	1330-20-7	6.5534	0.000748	8,760	9.43E-05	9.43E-05
2	02F_2	Zinc compounds	7440-66-6	13.8931	0.001586	8,760	2.00E-04	2.00E-04
3	02F_4	Acenaphthene	83-32-9	0.0031	0.000000	8,760	4.44E-08	4.44E-08
3	02F_4	Acenaphthylene	208-96-8	0.0084	0.000001	8,760	1.20E-07	1.20E-07
3	02F_4	Acetaldehyde	75-07-0	15.4489	0.001764	8,760	2.22E-04	2.22E-04
3	02F_4	Acrolein	107-02-8	21.8859	0.002498	8,760	3.15E-04	3.15E-04
3	02F_4	Anthracene	120-12-7	0.0061	0.000001	8,760	8.70E-08	8.70E-08
3	02F_4	Antimony compounds	7440-36-0	0.6695	0.000076	8,760	9.63E-06	9.63E-06
3	02F_4	Arsenic compounds	7440-38-2	0.9269	0.000106	8,760	1.33E-05	1.33E-05
3	02F_4	Benzene	71-43-2	77.2445	0.008818	8,760	1.11E-03	1.11E-03
3	02F_4	Benzo(a)anthracene	56-55-3	0.0283	0.000003	8,760	4.07E-07	4.07E-07
3	02F_4	Benzo(a)pyrene	50-32-8	0.0734	0.000008	8,760	1.06E-06	1.06E-06
3	02F_4	Benzo(b)fluoranthene	205-99-2	0.0348	0.000004	8,760	5.00E-07	5.00E-07
3	02F_4	Benzo(g,h,i)perylene	191-24-2	0.0017	0.000000	8,760	2.41E-08	2.41E-08
3	02F_4	Benzo(k)fluoranthene	207-08-9	0.0219	0.000002	8,760	3.15E-07	3.15E-07
3	02F_4	Beryllium compounds	7440-41-7	0.1674	0.000019	8,760	2.41E-06	2.41E-06
3	02F_4	Cadmium compounds	7440-43-9	1.9311	0.000220	8,760	2.78E-05	2.78E-05
3	02F_4	Chromium compounds	7440-47-3	7.3382	0.000838	8,760	1.06E-04	1.06E-04
3	02F_4	Chrysene	218-01-9	0.0021	0.000000	8,760	2.96E-08	2.96E-08
3	02F_4	Cobalt compounds	7440-48-4	0.0919	0.000010	8,760	1.32E-06	1.32E-06
3	02F_4	Copper compounds	7440-50-8	6.0508	0.000691	8,760	8.70E-05	8.70E-05
3	02F_4	Dichlorobenzenes (mixed isomers)	25321-22-6	1.3130	0.000150	8,760	1.89E-05	1.89E-05
3	02F_4	Ethylbenzene	100-41-4	20.5985	0.002351	8,760	2.96E-04	2.96E-04
3	02F_4	Fluoranthene	206-44-0	0.0112	0.000001	8,760	1.61E-07	1.61E-07
3	02F_4	Fluorene	86-73-7	0.0618	0.000007	8,760	8.89E-07	8.89E-07
3	02F_4	Formaldehyde	50-00-0	66.9452	0.007642	8,760	9.63E-04	9.63E-04
3	02F_4	Hydrogen sulfide	7783-06-4	109.4297	0.012492	8,760	1.57E-03	1.57E-03
3	02F_4	Indeno(1,2,3-cd)pyrene	193-39-5	0.0914	0.000010	8,760	1.31E-06	1.31E-06
3	02F_4	Lead compounds	7439-92-1	4.8922	0.000558	8,760	7.04E-05	7.04E-05
3	02F_4	Manganese compounds	7439-96-5	6.3083	0.000720	8,760	9.07E-05	9.07E-05
3	02F_4	Mercury compounds	7439-97-6	0.2317	0.000026	8,760	3.33E-06	3.33E-06
3	02F_4	Methylnaphthalene 2-	91-57-6	0.0263	0.000003	8,760	3.78E-07	3.78E-07
3	02F_4	Naphthalene	91-20-3	0.5021	0.000057	8,760	7.22E-06	7.22E-06
3	02F_4	n-Hexane	110-54-3	1.3274	0.000152	8,760	1.91E-05	1.91E-05
3	02F_4	Nickel compounds	7440-02-0	9.6556	0.001102	8,760	1.39E-04	1.39E-04
3	02F_4	Phenanthrene	85-01-8	0.0412	0.000005	8,760	5.93E-07	5.93E-07
3	02F_4	Phenol	108-95-2	5.1496	0.000588	8,760	7.41E-05	7.41E-05
3	02F_4	Propylene	115-07-1	193.1112	0.022045	8,760	2.78E-03	2.78E-03
3	02F_4	Pyrene	129-00-0	0.0126	0.000001	8,760	1.81E-07	1.81E-07
3	02F_4	Selenium compounds	7782-49-2	1.1329	0.000129	8,760	1.63E-05	1.63E-05
3	02F_4	Silver compounds	7440-22-4	2.0599	0.000235	8,760	2.96E-05	2.96E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
3	02F_4	Sulfuric Acid	7664-93-9	959.4745	0.109529	8,760	1.38E-02	1.38E-02
3	02F_4	Toluene	108-88-3	193.1112	0.022045	8,760	2.78E-03	2.78E-03
3	02F_4	Vanadium compounds	7440-62-2	2.5165	0.000287	8,760	3.62E-05	3.62E-05
3	02F_4	Xylenes (mixed isomers)	1330-20-7	32.1852	0.003674	8,760	4.63E-04	4.63E-04
3	02F_4	Zinc compounds	7440-66-6	68.2326	0.007789	8,760	9.81E-04	9.81E-04
4	02F_7	1,3-Butadiene	106-99-0	0.6724	0.000077	8,760	9.67E-06	9.67E-06
4	02F_7	Acenaphthene	83-32-9	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Acenaphthylene	208-96-8	7.6266	0.000871	8,760	1.10E-04	1.10E-04
4	02F_7	Acetaldehyde	75-07-0	766.7509	0.087529	8,760	1.10E-02	1.10E-02
4	02F_7	Acrolein	107-02-8	31.8952	0.003641	8,760	4.59E-04	4.59E-04
4	02F_7	Ammonia	7664-41-7	118,766.37	13.557805	8,760	1.71E+00	1.71E+00
4	02F_7	Anthracene	120-12-7	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Antimony compounds	7440-36-0	26.2581	0.002998	8,760	3.78E-04	3.78E-04
4	02F_7	Arsenic compounds	7440-38-2	2.6299	0.000300	8,760	3.78E-05	3.78E-05
4	02F_7	Barium compounds	7440-39-3	1,459.8540	0.166650	8,760	2.10E-02	2.10E-02
4	02F_7	Benzene	71-43-2	369.0517	0.042129	8,760	5.31E-03	5.31E-03
4	02F_7	Benzo(a)anthracene	56-55-3	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Benzo(a)pyrene	50-32-8	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Benzo(b)fluoranthene	205-99-2	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Benzo(e)pyrene	192-97-2	0.0296	0.000003	8,760	4.25E-07	4.25E-07
4	02F_7	Benzo(g,h,i)perylene	191-24-2	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Benzo(k)fluoranthene	207-08-9	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Beryllium compounds	7440-41-7	5.8723	0.000670	8,760	8.45E-05	8.45E-05
4	02F_7	Bromomethane	74-83-9	66.0066	0.007535	8,760	9.49E-04	9.49E-04
4	02F_7	Cadmium compounds	7440-43-9	6.1413	0.000701	8,760	8.83E-05	8.83E-05
4	02F_7	Carbon disulfide	75-15-0	17.7302	0.002024	8,760	2.55E-04	2.55E-04
4	02F_7	Chlorine	7782-50-5	621.5220	0.070950	8,760	8.94E-03	8.94E-03
4	02F_7	Chromium compounds	7440-47-3	27.5537	0.003145	8,760	3.96E-04	3.96E-04
4	02F_7	Chromium, hexavalent	18540-29-9	0.3841	0.000044	8,760	5.52E-06	5.52E-06
4	02F_7	Chrysene	218-01-9	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Cobalt compounds	7440-48-4	18.7902	0.002145	8,760	2.70E-04	2.70E-04
4	02F_7	Copper compounds	7440-50-8	156.7451	0.017893	8,760	2.25E-03	2.25E-03
4	02F_7	Di(2-ethylhexyl) phthalate	117-81-7	89.6148	0.010230	8,760	1.29E-03	1.29E-03
4	02F_7	Dibenz(a,h)anthracene	53-70-3	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Dibutyl phthalate	84-74-2	62.6340	0.007150	8,760	9.01E-04	9.01E-04
4	02F_7	Diethyl phthalate	84-66-2	8.8651	0.001012	8,760	1.28E-04	1.28E-04
4	02F_7	Ethylbenzene	100-41-4	7.6124	0.000869	8,760	1.09E-04	1.09E-04
4	02F_7	Fluoranthene	206-44-0	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Fluorene	86-73-7	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Formaldehyde	50-00-0	617.6563	0.070509	8,760	8.88E-03	8.88E-03
4	02F_7	Hydrochloric acid	7647-01-0	51,070.80	5.830000	8,760	7.35E-01	7.35E-01
4	02F_7	Hydrogen cyanide	74-90-8	1,110.9326	0.126819	8,760	1.60E-02	1.60E-02
4	02F_7	Indeno(1,2,3-cd)pyrene	193-39-5	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Lead compounds	7439-92-1	22.9514	0.002620	8,760	3.30E-04	3.30E-04
4	02F_7	Manganese compounds	7439-96-5	71.6037	0.008174	8,760	1.03E-03	1.03E-03
4	02F_7	Mercury compounds	7439-97-6	2.4207	0.000276	8,760	3.48E-05	3.48E-05
4	02F_7	Methylene chloride (Dichloromethan	75-09-2	210.5466	0.024035	8,760	3.03E-03	3.03E-03
4	02F_7	Methylnaphthalene 2-	91-57-6	0.8480	0.000097	8,760	1.22E-05	1.22E-05
4	02F_7	Naphthalene	91-20-3	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Nickel compounds	7440-02-0	47.3373	0.005404	8,760	6.81E-04	6.81E-04
4	02F_7	Phenanthrene	85-01-8	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Phenol	108-95-2	32.8432	0.003749	8,760	4.72E-04	4.72E-04
4	02F_7	Pyrene	129-00-0	0.4662	0.000053	8,760	6.71E-06	6.71E-06
4	02F_7	Selenium compounds	7782-49-2	0.5230	0.000060	8,760	7.52E-06	7.52E-06
4	02F_7	Sulfuric Acid	7664-93-9	6,817.5492	0.778259	8,760	9.81E-02	9.81E-02
4	02F_7	Toluene	108-88-3	105.5142	0.012045	8,760	1.52E-03	1.52E-03
4	02F_7	Trichlorofluoromethane {Freon 11}	75-69-4	75.6426	0.008635	8,760	1.09E-03	1.09E-03
4	02F_7	Xylenes (mixed isomers)	1330-20-7	101.6598	0.011605	8,760	1.46E-03	1.46E-03
4	02F_7	Zinc compounds	7440-66-6	294.4237	0.033610	8,760	4.23E-03	4.23E-03
5	03F_1/2	Acenaphthene	83-32-9	0.0005	0.000000	8,760	7.83E-09	7.83E-09
5	03F_1/2	Acenaphthylene	208-96-8	0.0015	0.000000	8,760	2.12E-08	2.12E-08
5	03F_1/2	Acetaldehyde	75-07-0	2.7205	0.000311	8,760	3.91E-05	3.91E-05
5	03F_1/2	Acrolein	107-02-8	3.8540	0.000440	8,760	5.54E-05	5.54E-05
5	03F_1/2	Anthracene	120-12-7	0.0011	0.000000	8,760	1.53E-08	1.53E-08

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
5	03F_1/2	Antimony compounds	7440-36-0	0.1179	0.000013	8,760	1.70E-06	1.70E-06
5	03F_1/2	Arsenic compounds	7440-38-2	0.1632	0.000019	8,760	2.35E-06	2.35E-06
5	03F_1/2	Benzene	71-43-2	13.6023	0.001553	8,760	1.96E-04	1.96E-04
5	03F_1/2	Benzo(a)anthracene	56-55-3	0.0050	0.000001	8,760	7.17E-08	7.17E-08
5	03F_1/2	Benzo(a)pyrene	50-32-8	0.0129	0.000001	8,760	1.86E-07	1.86E-07
5	03F_1/2	Benzo(b)fluoranthene	205-99-2	0.0061	0.000001	8,760	8.80E-08	8.80E-08
5	03F_1/2	Benzo(g,h,i)perylene	191-24-2	0.0003	0.000000	8,760	4.24E-09	4.24E-09
5	03F_1/2	Benzo(k)fluoranthene	207-08-9	0.0039	0.000000	8,760	5.54E-08	5.54E-08
5	03F_1/2	Beryllium compounds	7440-41-7	0.0295	0.000003	8,760	4.24E-07	4.24E-07
5	03F_1/2	Cadmium compounds	7440-43-9	0.3401	0.000039	8,760	4.89E-06	4.89E-06
5	03F_1/2	Chromium compounds	7440-47-3	1.2922	0.000148	8,760	1.86E-05	1.86E-05
5	03F_1/2	Chrysene	218-01-9	0.0004	0.000000	8,760	5.22E-09	5.22E-09
5	03F_1/2	Cobalt compounds	7440-48-4	0.0162	0.000002	8,760	2.33E-07	2.33E-07
5	03F_1/2	Copper compounds	7440-50-8	1.0655	0.000122	8,760	1.53E-05	1.53E-05
5	03F_1/2	Dichlorobenzenes (mixed isomers)	25321-22-6	0.2312	0.000026	8,760	3.33E-06	3.33E-06
5	03F_1/2	Ethylbenzene	100-41-4	3.6273	0.000414	8,760	5.22E-05	5.22E-05
5	03F_1/2	Fluoranthene	206-44-0	0.0020	0.000000	8,760	2.84E-08	2.84E-08
5	03F_1/2	Fluorene	86-73-7	0.0109	0.000001	8,760	1.57E-07	1.57E-07
5	03F_1/2	Formaldehyde	50-00-0	11.7887	0.001346	8,760	1.70E-04	1.70E-04
5	03F_1/2	Hydrogen sulfide	7783-06-4	19.2699	0.002200	8,760	2.77E-04	2.77E-04
5	03F_1/2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0161	0.000002	8,760	2.32E-07	2.32E-07
5	03F_1/2	Lead compounds	7439-92-1	0.8615	0.000098	8,760	1.24E-05	1.24E-05
5	03F_1/2	Manganese compounds	7439-96-5	1.1109	0.000127	8,760	1.60E-05	1.60E-05
5	03F_1/2	Mercury compounds	7439-97-6	0.0408	0.000005	8,760	5.87E-07	5.87E-07
5	03F_1/2	Methylnaphthalene 2-	91-57-6	0.0046	0.000001	8,760	6.65E-08	6.65E-08
5	03F_1/2	Naphthalene	91-20-3	0.0884	0.000010	8,760	1.27E-06	1.27E-06
5	03F_1/2	n-Hexane	110-54-3	0.3852	0.000044	8,760	5.54E-06	5.54E-06
5	03F_1/2	Nickel compounds	7440-02-0	1.7003	0.000194	8,760	2.45E-05	2.45E-05
5	03F_1/2	Phenanthrene	85-01-8	0.0073	0.000001	8,760	1.04E-07	1.04E-07
5	03F_1/2	Phenol	108-95-2	0.9068	0.000104	8,760	1.30E-05	1.30E-05
5	03F_1/2	Propylene	115-07-1	34.0058	0.003882	8,760	4.89E-04	4.89E-04
5	03F_1/2	Pyrene	129-00-0	0.0022	0.000000	8,760	3.20E-08	3.20E-08
5	03F_1/2	Selenium compounds	7782-49-2	0.1995	0.000023	8,760	2.87E-06	2.87E-06
5	03F_1/2	Silver compounds	7440-22-4	0.3627	0.000041	8,760	5.22E-06	5.22E-06
5	03F_1/2	Sulfuric Acid	7664-93-9	70.2502	0.008019	8,760	1.01E-03	1.01E-03
5	03F_1/2	Toluene	108-88-3	34.0058	0.003882	8,760	4.89E-04	4.89E-04
5	03F_1/2	Vanadium compounds	7440-62-2	0.4431	0.000051	8,760	6.37E-06	6.37E-06
5	03F_1/2	Xylenes (mixed isomers)	1330-20-7	5.6676	0.000647	8,760	8.15E-05	8.15E-05
5	03F_1/2	Zinc compounds	7440-66-6	12.0154	0.001372	8,760	1.73E-04	1.73E-04
6	03F_3/4	Acenaphthene	83-32-9	0.0028	0.000000	8,760	4.08E-08	4.08E-08
6	03F_3/4	Acenaphthylene	208-96-8	0.0077	0.000001	8,760	1.11E-07	1.11E-07
6	03F_3/4	Acetaldehyde	75-07-0	14.1856	0.001619	8,760	2.04E-04	2.04E-04
6	03F_3/4	Acrolein	107-02-8	20.0963	0.002294	8,760	2.89E-04	2.89E-04
6	03F_3/4	Anthracene	120-12-7	0.0056	0.000001	8,760	7.99E-08	7.99E-08
6	03F_3/4	Antimony compounds	7440-36-0	0.6147	0.000070	8,760	8.84E-06	8.84E-06
6	03F_3/4	Arsenic compounds	7440-38-2	0.8511	0.000097	8,760	1.22E-05	1.22E-05
6	03F_3/4	Benzene	71-43-2	70.9280	0.008097	8,760	1.02E-03	1.02E-03
6	03F_3/4	Benzo(a)anthracene	56-55-3	0.0260	0.000003	8,760	3.74E-07	3.74E-07
6	03F_3/4	Benzo(a)pyrene	50-32-8	0.0674	0.000008	8,760	9.69E-07	9.69E-07
6	03F_3/4	Benzo(b)fluoranthene	205-99-2	0.0319	0.000004	8,760	4.59E-07	4.59E-07
6	03F_3/4	Benzo(g,h,i)perylene	191-24-2	0.0015	0.000000	8,760	2.21E-08	2.21E-08
6	03F_3/4	Benzo(k)fluoranthene	207-08-9	0.0201	0.000002	8,760	2.89E-07	2.89E-07
6	03F_3/4	Beryllium compounds	7440-41-7	0.1537	0.000018	8,760	2.21E-06	2.21E-06
6	03F_3/4	Cadmium compounds	7440-43-9	1.7732	0.000202	8,760	2.55E-05	2.55E-05
6	03F_3/4	Chromium compounds	7440-47-3	6.7382	0.000769	8,760	9.69E-05	9.69E-05
6	03F_3/4	Chrysene	218-01-9	0.0019	0.000000	8,760	2.72E-08	2.72E-08
6	03F_3/4	Cobalt compounds	7440-48-4	0.0844	0.000010	8,760	1.21E-06	1.21E-06
6	03F_3/4	Copper compounds	7440-50-8	5.5560	0.000634	8,760	7.99E-05	7.99E-05
6	03F_3/4	Dichlorobenzenes (mixed isomers)	25321-22-6	1.2056	0.000138	8,760	1.73E-05	1.73E-05
6	03F_3/4	Ethylbenzene	100-41-4	18.9141	0.002159	8,760	2.72E-04	2.72E-04
6	03F_3/4	Fluoranthene	206-44-0	0.0103	0.000001	8,760	1.48E-07	1.48E-07
6	03F_3/4	Fluorene	86-73-7	0.0567	0.000006	8,760	8.16E-07	8.16E-07
6	03F_3/4	Formaldehyde	50-00-0	61.4709	0.007017	8,760	8.84E-04	8.84E-04
6	03F_3/4	Hydrogen sulfide	7783-06-4	100.4813	0.011470	8,760	1.45E-03	1.45E-03

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
6	03F_3/4	Indeno(1,2,3-cd)pyrene	193-39-5	0.0839	0.000010	8,760	1.21E-06	1.21E-06
6	03F_3/4	Lead compounds	7439-92-1	4.4921	0.000513	8,760	6.46E-05	6.46E-05
6	03F_3/4	Manganese compounds	7439-96-5	5.7925	0.000661	8,760	8.33E-05	8.33E-05
6	03F_3/4	Mercury compounds	7439-97-6	0.2128	0.000024	8,760	3.06E-06	3.06E-06
6	03F_3/4	Methylnaphthalene 2-	91-57-6	0.0241	0.000003	8,760	3.47E-07	3.47E-07
6	03F_3/4	Naphthalene	91-20-3	0.4610	0.000053	8,760	6.63E-06	6.63E-06
6	03F_3/4	n-Hexane	110-54-3	2.0084	0.000229	8,760	2.89E-05	2.89E-05
6	03F_3/4	Nickel compounds	7440-02-0	8.8660	0.001012	8,760	1.28E-04	1.28E-04
6	03F_3/4	Phenanthrene	85-01-8	0.0378	0.000004	8,760	5.44E-07	5.44E-07
6	03F_3/4	Phenol	108-95-2	4.7285	0.000540	8,760	6.80E-05	6.80E-05
6	03F_3/4	Propylene	115-07-1	177.3200	0.020242	8,760	2.55E-03	2.55E-03
6	03F_3/4	Pyrene	129-00-0	0.0116	0.000001	8,760	1.67E-07	1.67E-07
6	03F_3/4	Selenium compounds	7782-49-2	1.0403	0.000119	8,760	1.50E-05	1.50E-05
6	03F_3/4	Silver compounds	7440-22-4	1.8914	0.000216	8,760	2.72E-05	2.72E-05
6	03F_3/4	Sulfuric Acid	7664-93-9	975.6895	0.111380	8,760	1.40E-02	1.40E-02
6	03F_3/4	Toluene	108-88-3	177.3200	0.020242	8,760	2.55E-03	2.55E-03
6	03F_3/4	Vanadium compounds	7440-62-2	2.3107	0.000264	8,760	3.32E-05	3.32E-05
6	03F_3/4	Xylenes (mixed isomers)	1330-20-7	29.5533	0.003374	8,760	4.25E-04	4.25E-04
6	03F_3/4	Zinc compounds	7440-66-6	62.6531	0.007152	8,760	9.01E-04	9.01E-04
7	04F_1E	Acenaphthene	83-32-9	0.0027	0.000000	8,760	3.83E-08	3.83E-08
7	04F_1E	Acenaphthylene	208-96-8	0.0072	0.000001	8,760	1.04E-07	1.04E-07
7	04F_1E	Acetaldehyde	75-07-0	13.3133	0.001520	8,760	1.91E-04	1.91E-04
7	04F_1E	Acrolein	107-02-8	18.8605	0.002153	8,760	2.71E-04	2.71E-04
7	04F_1E	Anthracene	120-12-7	0.0052	0.000001	8,760	7.50E-08	7.50E-08
7	04F_1E	Antimony compounds	7440-36-0	0.5769	0.000066	8,760	8.30E-06	8.30E-06
7	04F_1E	Arsenic compounds	7440-38-2	0.7988	0.000091	8,760	1.15E-05	1.15E-05
7	04F_1E	Benzene	71-43-2	66.5664	0.007599	8,760	9.57E-04	9.57E-04
7	04F_1E	Benzo(a)anthracene	56-55-3	0.0244	0.000003	8,760	3.51E-07	3.51E-07
7	04F_1E	Benzo(a)pyrene	50-32-8	0.0632	0.000007	8,760	9.10E-07	9.10E-07
7	04F_1E	Benzo(b)fluoranthene	205-99-2	0.0300	0.000003	8,760	4.31E-07	4.31E-07
7	04F_1E	Benzo(g,h,i)perylene	191-24-2	0.0014	0.000000	8,760	2.07E-08	2.07E-08
7	04F_1E	Benzo(k)fluoranthene	207-08-9	0.0189	0.000002	8,760	2.71E-07	2.71E-07
7	04F_1E	Beryllium compounds	7440-41-7	0.1442	0.000016	8,760	2.07E-06	2.07E-06
7	04F_1E	Cadmium compounds	7440-43-9	1.6642	0.000190	8,760	2.39E-05	2.39E-05
7	04F_1E	Chromium compounds	7440-47-3	6.3238	0.000722	8,760	9.10E-05	9.10E-05
7	04F_1E	Chrysene	218-01-9	0.0018	0.000000	8,760	2.55E-08	2.55E-08
7	04F_1E	Cobalt compounds	7440-48-4	0.0792	0.000009	8,760	1.14E-06	1.14E-06
7	04F_1E	Copper compounds	7440-50-8	5.2144	0.000595	8,760	7.50E-05	7.50E-05
7	04F_1E	Dichlorobenzenes (mixed isomers)	25321-22-6	1.1315	0.000129	8,760	1.63E-05	1.63E-05
7	04F_1E	Ethylbenzene	100-41-4	17.7510	0.002026	8,760	2.55E-04	2.55E-04
7	04F_1E	Fluoranthene	206-44-0	0.0097	0.000001	8,760	1.39E-07	1.39E-07
7	04F_1E	Fluorene	86-73-7	0.0533	0.000006	8,760	7.66E-07	7.66E-07
7	04F_1E	Formaldehyde	50-00-0	57.6909	0.006586	8,760	8.30E-04	8.30E-04
7	04F_1E	Hydrogen sulfide	7783-06-4	94.3024	0.010765	8,760	1.36E-03	1.36E-03
7	04F_1E	Indeno(1,2,3-cd)pyrene	193-39-5	0.0788	0.000009	8,760	1.13E-06	1.13E-06
7	04F_1E	Lead compounds	7439-92-1	4.2159	0.000481	8,760	6.06E-05	6.06E-05
7	04F_1E	Manganese compounds	7439-96-5	5.4363	0.000621	8,760	7.82E-05	7.82E-05
7	04F_1E	Mercury compounds	7439-97-6	0.1997	0.000023	8,760	2.87E-06	2.87E-06
7	04F_1E	Methylnaphthalene 2-	91-57-6	0.0226	0.000003	8,760	3.25E-07	3.25E-07
7	04F_1E	Naphthalene	91-20-3	0.4327	0.000049	8,760	6.22E-06	6.22E-06
7	04F_1E	n-Hexane	110-54-3	1.8849	0.000215	8,760	2.71E-05	2.71E-05
7	04F_1E	Nickel compounds	7440-02-0	8.3208	0.000950	8,760	1.20E-04	1.20E-04
7	04F_1E	Phenanthrene	85-01-8	0.0355	0.000004	8,760	5.11E-07	5.11E-07
7	04F_1E	Phenol	108-95-2	4.4378	0.000507	8,760	6.38E-05	6.38E-05
7	04F_1E	Propylene	115-07-1	166.4160	0.018997	8,760	2.39E-03	2.39E-03
7	04F_1E	Pyrene	129-00-0	0.0109	0.000001	8,760	1.56E-07	1.56E-07
7	04F_1E	Selenium compounds	7782-49-2	0.9763	0.000111	8,760	1.40E-05	1.40E-05
7	04F_1E	Silver compounds	7440-22-4	1.7751	0.000203	8,760	2.55E-05	2.55E-05
7	04F_1E	Sulfuric Acid	7664-93-9	1,364.6638	0.155784	8,760	1.96E-02	1.96E-02
7	04F_1E	Toluene	108-88-3	166.4160	0.018997	8,760	2.39E-03	2.39E-03
7	04F_1E	Vanadium compounds	7440-62-2	2.1686	0.000248	8,760	3.12E-05	3.12E-05
7	04F_1E	Xylenes (mixed isomers)	1330-20-7	27.7360	0.003166	8,760	3.99E-04	3.99E-04
7	04F_1E	Zinc compounds	7440-66-6	58.8003	0.006712	8,760	8.46E-04	8.46E-04
8	04F_1W	Acenaphthene	83-32-9	0.0027	0.000000	8,760	3.83E-08	3.83E-08

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
8	04F_1W	Acenaphthylene	208-96-8	0.0072	0.000001	8,760	1.04E-07	1.04E-07
8	04F_1W	Acetaldehyde	75-07-0	13.3133	0.001520	8,760	1.91E-04	1.91E-04
8	04F_1W	Acrolein	107-02-8	18.8605	0.002153	8,760	2.71E-04	2.71E-04
8	04F_1W	Anthracene	120-12-7	0.0052	0.000001	8,760	7.50E-08	7.50E-08
8	04F_1W	Antimony compounds	7440-36-0	0.5769	0.000066	8,760	8.30E-06	8.30E-06
8	04F_1W	Arsenic compounds	7440-38-2	0.7988	0.000091	8,760	1.15E-05	1.15E-05
8	04F_1W	Benzene	71-43-2	66.5664	0.007599	8,760	9.57E-04	9.57E-04
8	04F_1W	Benzo(a)anthracene	56-55-3	0.0244	0.000003	8,760	3.51E-07	3.51E-07
8	04F_1W	Benzo(a)pyrene	50-32-8	0.0632	0.000007	8,760	9.10E-07	9.10E-07
8	04F_1W	Benzo(b)fluoranthene	205-99-2	0.0300	0.000003	8,760	4.31E-07	4.31E-07
8	04F_1W	Benzo(g,h,i)perylene	191-24-2	0.0014	0.000000	8,760	2.07E-08	2.07E-08
8	04F_1W	Benzo(k)fluoranthene	207-08-9	0.0189	0.000002	8,760	2.71E-07	2.71E-07
8	04F_1W	Beryllium compounds	7440-41-7	0.1442	0.000016	8,760	2.07E-06	2.07E-06
8	04F_1W	Cadmium compounds	7440-43-9	1.6642	0.000190	8,760	2.39E-05	2.39E-05
8	04F_1W	Chromium compounds	7440-47-3	6.3238	0.000722	8,760	9.10E-05	9.10E-05
8	04F_1W	Chrysene	218-01-9	0.0018	0.000000	8,760	2.55E-08	2.55E-08
8	04F_1W	Cobalt compounds	7440-48-4	0.0792	0.000009	8,760	1.14E-06	1.14E-06
8	04F_1W	Copper compounds	7440-50-8	5.2144	0.000595	8,760	7.50E-05	7.50E-05
8	04F_1W	Dichlorobenzenes (mixed isomers)	25321-22-6	1.1315	0.000129	8,760	1.63E-05	1.63E-05
8	04F_1W	Ethylbenzene	100-41-4	17.7510	0.002026	8,760	2.55E-04	2.55E-04
8	04F_1W	Fluoranthene	206-44-0	0.0097	0.000001	8,760	1.39E-07	1.39E-07
8	04F_1W	Fluorene	86-73-7	0.0533	0.000006	8,760	7.66E-07	7.66E-07
8	04F_1W	Formaldehyde	50-00-0	57.6909	0.006586	8,760	8.30E-04	8.30E-04
8	04F_1W	Hydrogen sulfide	7783-06-4	94.3024	0.010765	8,760	1.36E-03	1.36E-03
8	04F_1W	Indeno(1,2,3-cd)pyrene	193-39-5	0.0788	0.000009	8,760	1.13E-06	1.13E-06
8	04F_1W	Lead compounds	7439-92-1	4.2159	0.000481	8,760	6.06E-05	6.06E-05
8	04F_1W	Manganese compounds	7439-96-5	5.4363	0.000621	8,760	7.82E-05	7.82E-05
8	04F_1W	Mercury compounds	7439-97-6	0.1997	0.000023	8,760	2.87E-06	2.87E-06
8	04F_1W	Methylnaphthalene 2-	91-57-6	0.0226	0.000003	8,760	3.25E-07	3.25E-07
8	04F_1W	Naphthalene	91-20-3	0.4327	0.000049	8,760	6.22E-06	6.22E-06
8	04F_1W	n-Hexane	110-54-3	1.8849	0.000215	8,760	2.71E-05	2.71E-05
8	04F_1W	Nickel compounds	7440-02-0	8.3208	0.000950	8,760	1.20E-04	1.20E-04
8	04F_1W	Phenanthrene	85-01-8	0.0355	0.000004	8,760	5.11E-07	5.11E-07
8	04F_1W	Phenol	108-95-2	4.4378	0.000507	8,760	6.38E-05	6.38E-05
8	04F_1W	Propylene	115-07-1	166.4160	0.018997	8,760	2.39E-03	2.39E-03
8	04F_1W	Pyrene	129-00-0	0.0109	0.000001	8,760	1.56E-07	1.56E-07
8	04F_1W	Selenium compounds	7782-49-2	0.9763	0.000111	8,760	1.40E-05	1.40E-05
8	04F_1W	Silver compounds	7440-22-4	1.7751	0.000203	8,760	2.55E-05	2.55E-05
8	04F_1W	Sulfuric Acid	7664-93-9	1,364.6638	0.155784	8,760	1.96E-02	1.96E-02
8	04F_1W	Toluene	108-88-3	166.4160	0.018997	8,760	2.39E-03	2.39E-03
8	04F_1W	Vanadium compounds	7440-62-2	2.1686	0.000248	8,760	3.12E-05	3.12E-05
8	04F_1W	Xylenes (mixed isomers)	1330-20-7	27.7360	0.003166	8,760	3.99E-04	3.99E-04
8	04F_1W	Zinc compounds	7440-66-6	58.8003	0.006712	8,760	8.46E-04	8.46E-04
9	06F_1	Acenaphthene	83-32-9	0.0003	0.000000	8,760	4.75E-09	4.75E-09
9	06F_1	Acenaphthylene	208-96-8	0.0009	0.000000	8,760	1.29E-08	1.29E-08
9	06F_1	Acetaldehyde	75-07-0	1.6524	0.000189	8,760	2.38E-05	2.38E-05
9	06F_1	Acrolein	107-02-8	2.3410	0.000267	8,760	3.37E-05	3.37E-05
9	06F_1	Anthracene	120-12-7	0.0006	0.000000	8,760	9.31E-09	9.31E-09
9	06F_1	Antimony compounds	7440-36-0	0.0716	0.000008	8,760	1.03E-06	1.03E-06
9	06F_1	Arsenic compounds	7440-38-2	0.0991	0.000011	8,760	1.43E-06	1.43E-06
9	06F_1	Benzene	71-43-2	8.2622	0.000943	8,760	1.19E-04	1.19E-04
9	06F_1	Benzo(a)anthracene	56-55-3	0.0030	0.000000	8,760	4.36E-08	4.36E-08
9	06F_1	Benzo(a)pyrene	50-32-8	0.0078	0.000001	8,760	1.13E-07	1.13E-07
9	06F_1	Benzo(b)fluoranthene	205-99-2	0.0037	0.000000	8,760	5.35E-08	5.35E-08
9	06F_1	Benzo(g,h,i)perylene	191-24-2	0.0002	0.000000	8,760	2.57E-09	2.57E-09
9	06F_1	Benzo(k)fluoranthene	207-08-9	0.0023	0.000000	8,760	3.37E-08	3.37E-08
9	06F_1	Beryllium compounds	7440-41-7	0.0179	0.000002	8,760	2.57E-07	2.57E-07
9	06F_1	Cadmium compounds	7440-43-9	0.2066	0.000024	8,760	2.97E-06	2.97E-06
9	06F_1	Chromium compounds	7440-47-3	0.7849	0.000090	8,760	1.13E-05	1.13E-05
9	06F_1	Chrysene	218-01-9	0.0002	0.000000	8,760	3.17E-09	3.17E-09
9	06F_1	Cobalt compounds	7440-48-4	0.0098	0.000001	8,760	1.41E-07	1.41E-07
9	06F_1	Copper compounds	7440-50-8	0.6472	0.000074	8,760	9.31E-06	9.31E-06
9	06F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	0.1404	0.000016	8,760	2.02E-06	2.02E-06
9	06F_1	Ethylbenzene	100-41-4	2.2033	0.000252	8,760	3.17E-05	3.17E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
9	06F_1	Fluoranthene	206-44-0	0.0012	0.000000	8,760	1.72E-08	1.72E-08
9	06F_1	Fluorene	86-73-7	0.0066	0.000001	8,760	9.51E-08	9.51E-08
9	06F_1	Formaldehyde	50-00-0	7.1606	0.000817	8,760	1.03E-04	1.03E-04
9	06F_1	Hydrogen sulfide	7783-06-4	11.7048	0.001336	8,760	1.68E-04	1.68E-04
9	06F_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.0098	0.000001	8,760	1.41E-07	1.41E-07
9	06F_1	Lead compounds	7439-92-1	0.5233	0.000060	8,760	7.53E-06	7.53E-06
9	06F_1	Manganese compounds	7439-96-5	0.6747	0.000077	8,760	9.71E-06	9.71E-06
9	06F_1	Mercury compounds	7439-97-6	0.0248	0.000003	8,760	3.57E-07	3.57E-07
9	06F_1	Methylnaphthalene 2-	91-57-6	0.0028	0.000000	8,760	4.04E-08	4.04E-08
9	06F_1	Naphthalene	91-20-3	0.0537	0.000006	8,760	7.72E-07	7.72E-07
9	06F_1	n-Hexane	110-54-3	0.2339	0.000027	8,760	3.36E-06	3.36E-06
9	06F_1	Nickel compounds	7440-02-0	1.0328	0.000118	8,760	1.49E-05	1.49E-05
9	06F_1	Phenanthrene	85-01-8	0.0044	0.000001	8,760	6.34E-08	6.34E-08
9	06F_1	Phenol	108-95-2	0.5508	0.000063	8,760	7.92E-06	7.92E-06
9	06F_1	Propylene	115-07-1	20.6555	0.002358	8,760	2.97E-04	2.97E-04
9	06F_1	Pyrene	129-00-0	0.0013	0.000000	8,760	1.94E-08	1.94E-08
9	06F_1	Selenium compounds	7782-49-2	0.1212	0.000014	8,760	1.74E-06	1.74E-06
9	06F_1	Silver compounds	7440-22-4	0.2203	0.000025	8,760	3.17E-06	3.17E-06
9	06F_1	Sulfuric Acid	7664-93-9	67.3275	0.007686	8,760	9.68E-04	9.68E-04
9	06F_1	Toluene	108-88-3	20.6555	0.002358	8,760	2.97E-04	2.97E-04
9	06F_1	Vanadium compounds	7440-62-2	0.2692	0.000031	8,760	3.87E-06	3.87E-06
9	06F_1	Xylenes (mixed isomers)	1330-20-7	3.4426	0.000393	8,760	4.95E-05	4.95E-05
9	06F_1	Zinc compounds	7440-66-6	7.2983	0.000833	8,760	1.05E-04	1.05E-04
10	06F_2	Acenaphthene	83-32-9	0.0004	0.000000	8,760	5.73E-09	5.73E-09
10	06F_2	Acenaphthylene	208-96-8	0.0011	0.000000	8,760	1.55E-08	1.55E-08
10	06F_2	Acetaldehyde	75-07-0	1.9932	0.000228	8,760	2.87E-05	2.87E-05
10	06F_2	Acrolein	107-02-8	2.8236	0.000322	8,760	4.06E-05	4.06E-05
10	06F_2	Anthracene	120-12-7	0.0008	0.000000	8,760	1.12E-08	1.12E-08
10	06F_2	Antimony compounds	7440-36-0	0.0864	0.000010	8,760	1.24E-06	1.24E-06
10	06F_2	Arsenic compounds	7440-38-2	0.1196	0.000014	8,760	1.72E-06	1.72E-06
10	06F_2	Benzene	71-43-2	9.9658	0.001138	8,760	1.43E-04	1.43E-04
10	06F_2	Benzo(a)anthracene	56-55-3	0.0037	0.000000	8,760	5.26E-08	5.26E-08
10	06F_2	Benzo(a)pyrene	50-32-8	0.0095	0.000001	8,760	1.36E-07	1.36E-07
10	06F_2	Benzo(b)fluoranthene	205-99-2	0.0045	0.000001	8,760	6.45E-08	6.45E-08
10	06F_2	Benzo(g,h,i)perylene	191-24-2	0.0002	0.000000	8,760	3.11E-09	3.10E-09
10	06F_2	Benzo(k)fluoranthene	207-08-9	0.0028	0.000000	8,760	4.06E-08	4.06E-08
10	06F_2	Beryllium compounds	7440-41-7	0.0216	0.000002	8,760	3.11E-07	3.11E-07
10	06F_2	Cadmium compounds	7440-43-9	0.2491	0.000028	8,760	3.58E-06	3.58E-06
10	06F_2	Chromium compounds	7440-47-3	0.9467	0.000108	8,760	1.36E-05	1.36E-05
10	06F_2	Chrysene	218-01-9	0.0003	0.000000	8,760	3.82E-09	3.82E-09
10	06F_2	Cobalt compounds	7440-48-4	0.0119	0.000001	8,760	1.71E-07	1.71E-07
10	06F_2	Copper compounds	7440-50-8	0.7807	0.000089	8,760	1.12E-05	1.12E-05
10	06F_2	Dichlorobenzenes (mixed isomers)	25321-22-6	0.1694	0.000019	8,760	2.44E-06	2.44E-06
10	06F_2	Ethylbenzene	100-41-4	2.6575	0.000303	8,760	3.82E-05	3.82E-05
10	06F_2	Fluoranthene	206-44-0	0.0014	0.000000	8,760	2.08E-08	2.08E-08
10	06F_2	Fluorene	86-73-7	0.0080	0.000001	8,760	1.15E-07	1.15E-07
10	06F_2	Formaldehyde	50-00-0	8.6370	0.000986	8,760	1.24E-04	1.24E-04
10	06F_2	Hydrogen sulfide	7783-06-4	14.1182	0.001612	8,760	2.03E-04	2.03E-04
10	06F_2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0118	0.000001	8,760	1.70E-07	1.70E-07
10	06F_2	Lead compounds	7439-92-1	0.6312	0.000072	8,760	9.08E-06	9.08E-06
10	06F_2	Manganese compounds	7439-96-5	0.8139	0.000093	8,760	1.17E-05	1.17E-05
10	06F_2	Mercury compounds	7439-97-6	0.0299	0.000003	8,760	4.30E-07	4.30E-07
10	06F_2	Methylnaphthalene 2-	91-57-6	0.0034	0.000000	8,760	4.87E-08	4.87E-08
10	06F_2	Naphthalene	91-20-3	0.0648	0.000007	8,760	9.32E-07	9.32E-07
10	06F_2	n-Hexane	110-54-3	0.2822	0.000032	8,760	4.06E-06	4.06E-06
10	06F_2	Nickel compounds	7440-02-0	1.2457	0.000142	8,760	1.79E-05	1.79E-05
10	06F_2	Phenanthrene	85-01-8	0.0053	0.000001	8,760	7.64E-08	7.64E-08
10	06F_2	Phenol	108-95-2	0.6644	0.000076	8,760	9.56E-06	9.56E-06
10	06F_2	Propylene	115-07-1	24.9144	0.002844	8,760	3.58E-04	3.58E-04
10	06F_2	Pyrene	129-00-0	0.0016	0.000000	8,760	2.34E-08	2.34E-08
10	06F_2	Selenium compounds	7782-49-2	0.1462	0.000017	8,760	2.10E-06	2.10E-06
10	06F_2	Silver compounds	7440-22-4	0.2658	0.000030	8,760	3.82E-06	3.82E-06
10	06F_2	Sulfuric Acid	7664-93-9	111.6997	0.012751	8,760	1.61E-03	1.61E-03
10	06F_2	Toluene	108-88-3	24.9144	0.002844	8,760	3.58E-04	3.58E-04

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
10	06F_2	Vanadium compounds	7440-62-2	0.3247	0.000037	8,760	4.67E-06	4.67E-06
10	06F_2	Xylenes (mixed isomers)	1330-20-7	4.1524	0.000474	8,760	5.97E-05	5.97E-05
10	06F_2	Zinc compounds	7440-66-6	8.8031	0.001005	8,760	1.27E-04	1.27E-04
11	19F_1	Acenaphthene	83-32-9	0.0036	0.000000	8,760	5.16E-08	5.16E-08
11	19F_1	Acenaphthylene	208-96-8	0.0097	0.000001	8,760	1.40E-07	1.40E-07
11	19F_1	Acetaldehyde	75-07-0	17.9533	0.002049	8,760	2.58E-04	2.58E-04
11	19F_1	Acrolein	107-02-8	25.4339	0.002903	8,760	3.66E-04	3.66E-04
11	19F_1	Ammonia	7664-41-7	5,601.2263	0.639409	8,760	8.06E-02	8.06E-02
11	19F_1	Anthracene	120-12-7	0.0070	0.000001	8,760	1.01E-07	1.01E-07
11	19F_1	Antimony compounds	7440-36-0	0.7780	0.000089	8,760	1.12E-05	1.12E-05
11	19F_1	Arsenic compounds	7440-38-2	1.0772	0.000123	8,760	1.55E-05	1.55E-05
11	19F_1	Benzene	71-43-2	89.7666	0.010247	8,760	1.29E-03	1.29E-03
11	19F_1	Benzo(a)anthracene	56-55-3	0.0329	0.000004	8,760	4.73E-07	4.73E-07
11	19F_1	Benzo(a)pyrene	50-32-8	0.0853	0.000010	8,760	1.23E-06	1.23E-06
11	19F_1	Benzo(b)fluoranthene	205-99-2	0.0404	0.000005	8,760	5.81E-07	5.81E-07
11	19F_1	Benzo(g,h,i)perylene	191-24-2	0.0019	0.000000	8,760	2.80E-08	2.80E-08
11	19F_1	Benzo(k)fluoranthene	207-08-9	0.0254	0.000003	8,760	3.66E-07	3.66E-07
11	19F_1	Beryllium compounds	7440-41-7	0.1945	0.000022	8,760	2.80E-06	2.80E-06
11	19F_1	Cadmium compounds	7440-43-9	2.2442	0.000256	8,760	3.23E-05	3.23E-05
11	19F_1	Chromium compounds	7440-47-3	8.5278	0.000973	8,760	1.23E-04	1.23E-04
11	19F_1	Chrysene	218-01-9	0.0024	0.000000	8,760	3.44E-08	3.44E-08
11	19F_1	Cobalt compounds	7440-48-4	0.1068	0.000012	8,760	1.54E-06	1.54E-06
11	19F_1	Copper compounds	7440-50-8	7.0317	0.000803	8,760	1.01E-04	1.01E-04
11	19F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	1.5258	0.000174	8,760	2.19E-05	2.19E-05
11	19F_1	Ethylbenzene	100-41-4	23.9378	0.002733	8,760	3.44E-04	3.44E-04
11	19F_1	Fluoranthene	206-44-0	0.0130	0.000001	8,760	1.87E-07	1.87E-07
11	19F_1	Fluorene	86-73-7	0.0718	0.000008	8,760	1.03E-06	1.03E-06
11	19F_1	Formaldehyde	50-00-0	77.7977	0.008881	8,760	1.12E-03	1.12E-03
11	19F_1	Hydrogen sulfide	7783-06-4	127.1694	0.014517	8,760	1.83E-03	1.83E-03
11	19F_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.1062	0.000012	8,760	1.53E-06	1.53E-06
11	19F_1	Lead compounds	7439-92-1	5.6852	0.000649	8,760	8.18E-05	8.18E-05
11	19F_1	Manganese compounds	7439-96-5	7.3309	0.000837	8,760	1.05E-04	1.05E-04
11	19F_1	Mercury compounds	7439-97-6	0.2693	0.000031	8,760	3.87E-06	3.87E-06
11	19F_1	Methylnaphthalene 2-	91-57-6	0.0305	0.000003	8,760	4.39E-07	4.39E-07
11	19F_1	Naphthalene	91-20-3	0.5835	0.000067	8,760	8.39E-06	8.39E-06
11	19F_1	n-Hexane	110-54-3	2.5418	0.000290	8,760	3.66E-05	3.66E-05
11	19F_1	Nickel compounds	7440-02-0	11.2208	0.001281	8,760	1.61E-04	1.61E-04
11	19F_1	Phenanthrene	85-01-8	0.0479	0.000005	8,760	6.89E-07	6.89E-07
11	19F_1	Phenol	108-95-2	5.9844	0.000683	8,760	8.61E-05	8.61E-05
11	19F_1	Propylene	115-07-1	224.4166	0.025618	8,760	3.23E-03	3.23E-03
11	19F_1	Pyrene	129-00-0	0.0147	0.000002	8,760	2.11E-07	2.11E-07
11	19F_1	Selenium compounds	7782-49-2	1.3166	0.000150	8,760	1.89E-05	1.89E-05
11	19F_1	Silver compounds	7440-22-4	2.3938	0.000273	8,760	3.44E-05	3.44E-05
11	19F_1	Sulfuric Acid	7664-93-9	1,039.9772	0.118719	8,760	1.50E-02	1.50E-02
11	19F_1	Toluene	108-88-3	224.4166	0.025618	8,760	3.23E-03	3.23E-03
11	19F_1	Vanadium compounds	7440-62-2	2.9245	0.000334	8,760	4.21E-05	4.21E-05
11	19F_1	Xylenes (mixed isomers)	1330-20-7	37.4028	0.004270	8,760	5.38E-04	5.38E-04
11	19F_1	Zinc compounds	7440-66-6	79.2939	0.009052	8,760	1.14E-03	1.14E-03
12	20F_1	Acenaphthene	83-32-9	0.0012	0.000000	8,760	1.77E-08	1.77E-08
12	20F_1	Acenaphthylene	208-96-8	0.0033	0.000000	8,760	4.80E-08	4.80E-08
12	20F_1	Acetaldehyde	75-07-0	6.1644	0.000704	8,760	8.87E-05	8.87E-05
12	20F_1	Acrolein	107-02-8	8.7329	0.000997	8,760	1.26E-04	1.26E-04
12	20F_1	Anthracene	120-12-7	0.0024	0.000000	8,760	3.47E-08	3.47E-08
12	20F_1	Antimony compounds	7440-36-0	0.2671	0.000030	8,760	3.84E-06	3.84E-06
12	20F_1	Arsenic compounds	7440-38-2	0.3699	0.000042	8,760	5.32E-06	5.32E-06
12	20F_1	Benzene	71-43-2	30.8221	0.003519	8,760	4.43E-04	4.43E-04
12	20F_1	Benzo(a)anthracene	56-55-3	0.0113	0.000001	8,760	1.63E-07	1.63E-07
12	20F_1	Benzo(a)pyrene	50-32-8	0.0293	0.000003	8,760	4.21E-07	4.21E-07
12	20F_1	Benzo(b)fluoranthene	205-99-2	0.0139	0.000002	8,760	1.99E-07	1.99E-07
12	20F_1	Benzo(g,h,i)perylene	191-24-2	0.0007	0.000000	8,760	9.61E-09	9.60E-09
12	20F_1	Benzo(k)fluoranthene	207-08-9	0.0087	0.000001	8,760	1.26E-07	1.26E-07
12	20F_1	Beryllium compounds	7440-41-7	0.0668	0.000008	8,760	9.61E-07	9.61E-07
12	20F_1	Cadmium compounds	7440-43-9	0.7706	0.000088	8,760	1.11E-05	1.11E-05
12	20F_1	Chromium compounds	7440-47-3	2.9281	0.000334	8,760	4.21E-05	4.21E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
12	20F_1	Chrysene	218-01-9	0.0008	0.000000	8,760	1.18E-08	1.18E-08
12	20F_1	Cobalt compounds	7440-48-4	0.0367	0.000004	8,760	5.27E-07	5.27E-07
12	20F_1	Copper compounds	7440-50-8	2.4144	0.000276	8,760	3.47E-05	3.47E-05
12	20F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	0.5239	0.000060	8,760	7.54E-06	7.54E-06
12	20F_1	Ethylbenzene	100-41-4	8.2192	0.000938	8,760	1.18E-04	1.18E-04
12	20F_1	Fluoranthene	206-44-0	0.0045	0.000001	8,760	6.43E-08	6.43E-08
12	20F_1	Fluorene	86-73-7	0.0247	0.000003	8,760	3.55E-07	3.55E-07
12	20F_1	Formaldehyde	50-00-0	26.7125	0.003049	8,760	3.84E-04	3.84E-04
12	20F_1	Hydrogen sulfide	7783-06-4	43.6647	0.004985	8,760	6.28E-04	6.28E-04
12	20F_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.0365	0.000004	8,760	5.25E-07	5.25E-07
12	20F_1	Lead compounds	7439-92-1	1.9521	0.000223	8,760	2.81E-05	2.81E-05
12	20F_1	Manganese compounds	7439-96-5	2.5171	0.000287	8,760	3.62E-05	3.62E-05
12	20F_1	Mercury compounds	7439-97-6	0.0925	0.000011	8,760	1.33E-06	1.33E-06
12	20F_1	Methylnaphthalene 2-	91-57-6	0.0105	0.000001	8,760	1.51E-07	1.51E-07
12	20F_1	Naphthalene	91-20-3	0.2003	0.000023	8,760	2.88E-06	2.88E-06
12	20F_1	n-Hexane	110-54-3	0.8727	0.000100	8,760	1.26E-05	1.26E-05
12	20F_1	Nickel compounds	7440-02-0	3.8528	0.000440	8,760	5.54E-05	5.54E-05
12	20F_1	Phenanthrene	85-01-8	0.0164	0.000002	8,760	2.36E-07	2.36E-07
12	20F_1	Phenol	108-95-2	2.0548	0.000235	8,760	2.96E-05	2.96E-05
12	20F_1	Propylene	115-07-1	77.0553	0.008796	8,760	1.11E-03	1.11E-03
12	20F_1	Pyrene	129-00-0	0.0050	0.000001	8,760	7.24E-08	7.24E-08
12	20F_1	Selenium compounds	7782-49-2	0.4521	0.000052	8,760	6.50E-06	6.50E-06
12	20F_1	Silver compounds	7440-22-4	0.8219	0.000094	8,760	1.18E-05	1.18E-05
12	20F_1	Sulfuric Acid	7664-93-9	326.4907	0.037271	8,760	4.70E-03	4.70E-03
12	20F_1	Toluene	108-88-3	77.0553	0.008796	8,760	1.11E-03	1.11E-03
12	20F_1	Vanadium compounds	7440-62-2	1.0041	0.000115	8,760	1.44E-05	1.44E-05
12	20F_1	Xylenes (mixed isomers)	1330-20-7	12.8425	0.001466	8,760	1.85E-04	1.85E-04
12	20F_1	Zinc compounds	7440-66-6	27.2262	0.003108	8,760	3.92E-04	3.92E-04
15	21F_6	Acenaphthene	83-32-9	0.0008	0.000000	8,760	1.20E-08	1.20E-08
15	21F_6	Acenaphthylene	208-96-8	0.0023	0.000000	8,760	3.25E-08	3.25E-08
15	21F_6	Acetaldehyde	75-07-0	4.1700	0.000476	8,760	6.00E-05	6.00E-05
15	21F_6	Acrolein	107-02-8	5.9075	0.000674	8,760	8.50E-05	8.50E-05
15	21F_6	Anthracene	120-12-7	0.0016	0.000000	8,760	2.35E-08	2.35E-08
15	21F_6	Antimony compounds	7440-36-0	0.1807	0.000021	8,760	2.60E-06	2.60E-06
15	21F_6	Arsenic compounds	7440-38-2	0.2502	0.000029	8,760	3.60E-06	3.60E-06
15	21F_6	Benzene	71-43-2	20.8500	0.002380	8,760	3.00E-04	3.00E-04
15	21F_6	Benzo(a)anthracene	56-55-3	0.0076	0.000001	8,760	1.10E-07	1.10E-07
15	21F_6	Benzo(a)pyrene	50-32-8	0.0198	0.000002	8,760	2.85E-07	2.85E-07
15	21F_6	Benzo(b)fluoranthene	205-99-2	0.0094	0.000001	8,760	1.35E-07	1.35E-07
15	21F_6	Benzo(g,h,i)perylene	191-24-2	0.0005	0.000000	8,760	6.50E-09	6.50E-09
15	21F_6	Benzo(k)fluoranthene	207-08-9	0.0059	0.000001	8,760	8.50E-08	8.50E-08
15	21F_6	Beryllium compounds	7440-41-7	0.0452	0.000005	8,760	6.50E-07	6.50E-07
15	21F_6	Cadmium compounds	7440-43-9	0.5213	0.000060	8,760	7.50E-06	7.50E-06
15	21F_6	Chromium compounds	7440-47-3	1.9808	0.000226	8,760	2.85E-05	2.85E-05
15	21F_6	Chrysene	218-01-9	0.0006	0.000000	8,760	8.00E-09	8.00E-09
15	21F_6	Cobalt compounds	7440-48-4	0.0248	0.000003	8,760	3.57E-07	3.57E-07
15	21F_6	Copper compounds	7440-50-8	1.6333	0.000186	8,760	2.35E-05	2.35E-05
15	21F_6	Dichlorobenzenes (mixed isomers)	25321-22-6	0.3544	0.000040	8,760	5.10E-06	5.10E-06
15	21F_6	Ethylbenzene	100-41-4	5.5600	0.000635	8,760	8.00E-05	8.00E-05
15	21F_6	Fluoranthene	206-44-0	0.0030	0.000000	8,760	4.35E-08	4.35E-08
15	21F_6	Fluorene	86-73-7	0.0167	0.000002	8,760	2.40E-07	2.40E-07
15	21F_6	Formaldehyde	50-00-0	18.0700	0.002063	8,760	2.60E-04	2.60E-04
15	21F_6	Hydrogen sulfide	7783-06-4	29.5375	0.003372	8,760	4.25E-04	4.25E-04
15	21F_6	Indeno(1,2,3-cd)pyrene	193-39-5	0.0247	0.000003	8,760	3.55E-07	3.55E-07
15	21F_6	Lead compounds	7439-92-1	1.3205	0.000151	8,760	1.90E-05	1.90E-05
15	21F_6	Manganese compounds	7439-96-5	1.7028	0.000194	8,760	2.45E-05	2.45E-05
15	21F_6	Mercury compounds	7439-97-6	0.0626	0.000007	8,760	9.00E-07	9.00E-07
15	21F_6	Methylnaphthalene 2-	91-57-6	0.0071	0.000001	8,760	1.02E-07	1.02E-07
15	21F_6	Naphthalene	91-20-3	0.1355	0.000015	8,760	1.95E-06	1.95E-06
15	21F_6	n-Hexane	110-54-3	0.5904	0.000067	8,760	8.49E-06	8.49E-06
15	21F_6	Nickel compounds	7440-02-0	2.6063	0.000298	8,760	3.75E-05	3.75E-05
15	21F_6	Phenanthrene	85-01-8	0.0111	0.000001	8,760	1.60E-07	1.60E-07
15	21F_6	Phenol	108-95-2	1.3900	0.000159	8,760	2.00E-05	2.00E-05
15	21F_6	Propylene	115-07-1	52.1250	0.005950	8,760	7.50E-04	7.50E-04

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
15	21F_6	Pyrene	129-00-0	0.0034	0.000000	8,760	4.90E-08	4.90E-08
15	21F_6	Selenium compounds	7782-49-2	0.3058	0.000035	8,760	4.40E-06	4.40E-06
15	21F_6	Silver compounds	7440-22-4	0.5560	0.000063	8,760	8.00E-06	8.00E-06
15	21F_6	Sulfuric Acid	7664-93-9	228.6497	0.026102	8,760	3.29E-03	3.29E-03
15	21F_6	Toluene	108-88-3	52.1250	0.005950	8,760	7.50E-04	7.50E-04
15	21F_6	Vanadium compounds	7440-62-2	0.6793	0.000078	8,760	9.77E-06	9.77E-06
15	21F_6	Xylenes (mixed isomers)	1330-20-7	8.6875	0.000992	8,760	1.25E-04	1.25E-04
15	21F_6	Zinc compounds	7440-66-6	18.4175	0.002102	8,760	2.65E-04	2.65E-04
16	21F_7	Acenaphthene	83-32-9	0.0007	0.000000	8,760	9.50E-09	9.50E-09
16	21F_7	Acenaphthylene	208-96-8	0.0018	0.000000	8,760	2.57E-08	2.57E-08
16	21F_7	Acetaldehyde	75-07-0	3.3014	0.000377	8,760	4.75E-05	4.75E-05
16	21F_7	Acrolein	107-02-8	4.6769	0.000534	8,760	6.73E-05	6.73E-05
16	21F_7	Anthracene	120-12-7	0.0013	0.000000	8,760	1.86E-08	1.86E-08
16	21F_7	Antimony compounds	7440-36-0	0.1431	0.000016	8,760	2.06E-06	2.06E-06
16	21F_7	Arsenic compounds	7440-38-2	0.1981	0.000023	8,760	2.85E-06	2.85E-06
16	21F_7	Benzene	71-43-2	16.5068	0.001884	8,760	2.37E-04	2.37E-04
16	21F_7	Benzo(a)anthracene	56-55-3	0.0061	0.000001	8,760	8.71E-08	8.71E-08
16	21F_7	Benzo(a)pyrene	50-32-8	0.0157	0.000002	8,760	2.26E-07	2.26E-07
16	21F_7	Benzo(b)fluoranthene	205-99-2	0.0074	0.000001	8,760	1.07E-07	1.07E-07
16	21F_7	Benzo(g,h,i)perylene	191-24-2	0.0004	0.000000	8,760	5.14E-09	5.14E-09
16	21F_7	Benzo(k)fluoranthene	207-08-9	0.0047	0.000001	8,760	6.73E-08	6.73E-08
16	21F_7	Beryllium compounds	7440-41-7	0.0358	0.000004	8,760	5.14E-07	5.14E-07
16	21F_7	Cadmium compounds	7440-43-9	0.4127	0.000047	8,760	5.94E-06	5.94E-06
16	21F_7	Chromium compounds	7440-47-3	1.5681	0.000179	8,760	2.26E-05	2.26E-05
16	21F_7	Chrysene	218-01-9	0.0004	0.000000	8,760	6.33E-09	6.33E-09
16	21F_7	Cobalt compounds	7440-48-4	0.0196	0.000002	8,760	2.82E-07	2.82E-07
16	21F_7	Copper compounds	7440-50-8	1.2930	0.000148	8,760	1.86E-05	1.86E-05
16	21F_7	Dichlorobenzenes (mixed isomers)	25321-22-6	0.2806	0.000032	8,760	4.04E-06	4.04E-06
16	21F_7	Ethylbenzene	100-41-4	4.4018	0.000502	8,760	6.33E-05	6.33E-05
16	21F_7	Fluoranthene	206-44-0	0.0024	0.000000	8,760	3.44E-08	3.44E-08
16	21F_7	Fluorene	86-73-7	0.0132	0.000002	8,760	1.90E-07	1.90E-07
16	21F_7	Formaldehyde	50-00-0	14.3059	0.001633	8,760	2.06E-04	2.06E-04
16	21F_7	Hydrogen sulfide	7783-06-4	23.3846	0.002669	8,760	3.36E-04	3.36E-04
16	21F_7	Indeno(1,2,3-cd)pyrene	193-39-5	0.0195	0.000002	8,760	2.81E-07	2.81E-07
16	21F_7	Lead compounds	7439-92-1	1.0454	0.000119	8,760	1.50E-05	1.50E-05
16	21F_7	Manganese compounds	7439-96-5	1.3481	0.000154	8,760	1.94E-05	1.94E-05
16	21F_7	Mercury compounds	7439-97-6	0.0495	0.000006	8,760	7.12E-07	7.12E-07
16	21F_7	Methylnaphthalene 2-	91-57-6	0.0056	0.000001	8,760	8.07E-08	8.07E-08
16	21F_7	Naphthalene	91-20-3	0.1073	0.000012	8,760	1.54E-06	1.54E-06
16	21F_7	n-Hexane	110-54-3	0.4674	0.000053	8,760	6.72E-06	6.72E-06
16	21F_7	Nickel compounds	7440-02-0	2.0633	0.000236	8,760	2.97E-05	2.97E-05
16	21F_7	Phenanthrene	85-01-8	0.0088	0.000001	8,760	1.27E-07	1.27E-07
16	21F_7	Phenol	108-95-2	1.1005	0.000126	8,760	1.58E-05	1.58E-05
16	21F_7	Propylene	115-07-1	41.2669	0.004711	8,760	5.94E-04	5.94E-04
16	21F_7	Pyrene	129-00-0	0.0027	0.000000	8,760	3.88E-08	3.88E-08
16	21F_7	Selenium compounds	7782-49-2	0.2421	0.000028	8,760	3.48E-06	3.48E-06
16	21F_7	Silver compounds	7440-22-4	0.4402	0.000050	8,760	6.33E-06	6.33E-06
16	21F_7	Sulfuric Acid	7664-93-9	235.7815	0.026916	8,760	3.39E-03	3.39E-03
16	21F_7	Toluene	108-88-3	41.2669	0.004711	8,760	5.94E-04	5.94E-04
16	21F_7	Vanadium compounds	7440-62-2	0.5378	0.000061	8,760	7.73E-06	7.73E-06
16	21F_7	Xylenes (mixed isomers)	1330-20-7	6.8778	0.000785	8,760	9.89E-05	9.89E-05
16	21F_7	Zinc compounds	7440-66-6	14.5810	0.001664	8,760	2.10E-04	2.10E-04
17	21F_8	Acenaphthene	83-32-9	0.0008	0.000000	8,760	1.13E-08	1.13E-08
17	21F_8	Acenaphthylene	208-96-8	0.0021	0.000000	8,760	3.06E-08	3.06E-08
17	21F_8	Acetaldehyde	75-07-0	3.9312	0.000449	8,760	5.65E-05	5.65E-05
17	21F_8	Acrolein	107-02-8	5.5692	0.000636	8,760	8.01E-05	8.01E-05
17	21F_8	Anthracene	120-12-7	0.0015	0.000000	8,760	2.21E-08	2.21E-08
17	21F_8	Antimony compounds	7440-36-0	0.1704	0.000019	8,760	2.45E-06	2.45E-06
17	21F_8	Arsenic compounds	7440-38-2	0.2359	0.000027	8,760	3.39E-06	3.39E-06
17	21F_8	Benzene	71-43-2	19.6562	0.002244	8,760	2.83E-04	2.83E-04
17	21F_8	Benzo(a)anthracene	56-55-3	0.0072	0.000001	8,760	1.04E-07	1.04E-07
17	21F_8	Benzo(a)pyrene	50-32-8	0.0187	0.000002	8,760	2.69E-07	2.69E-07
17	21F_8	Benzo(b)fluoranthene	205-99-2	0.0088	0.000001	8,760	1.27E-07	1.27E-07
17	21F_8	Benzo(g,h,i)perylene	191-24-2	0.0004	0.000000	8,760	6.13E-09	6.12E-09

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
17	21F_8	Benzo(k)fluoranthene	207-08-9	0.0056	0.000001	8,760	8.01E-08	8.01E-08
17	21F_8	Beryllium compounds	7440-41-7	0.0426	0.000005	8,760	6.13E-07	6.13E-07
17	21F_8	Cadmium compounds	7440-43-9	0.4914	0.000056	8,760	7.07E-06	7.07E-06
17	21F_8	Chromium compounds	7440-47-3	1.8673	0.000213	8,760	2.69E-05	2.69E-05
17	21F_8	Chrysene	218-01-9	0.0005	0.000000	8,760	7.54E-09	7.54E-09
17	21F_8	Cobalt compounds	7440-48-4	0.0234	0.000003	8,760	3.36E-07	3.36E-07
17	21F_8	Copper compounds	7440-50-8	1.5397	0.000176	8,760	2.21E-05	2.21E-05
17	21F_8	Dichlorobenzenes (mixed isomers)	25321-22-6	0.3341	0.000038	8,760	4.81E-06	4.81E-06
17	21F_8	Ethylbenzene	100-41-4	5.2416	0.000598	8,760	7.54E-05	7.54E-05
17	21F_8	Fluoranthene	206-44-0	0.0029	0.000000	8,760	4.10E-08	4.10E-08
17	21F_8	Fluorene	86-73-7	0.0157	0.000002	8,760	2.26E-07	2.26E-07
17	21F_8	Formaldehyde	50-00-0	17.0354	0.001945	8,760	2.45E-04	2.45E-04
17	21F_8	Hydrogen sulfide	7783-06-4	27.8462	0.003179	8,760	4.01E-04	4.01E-04
17	21F_8	Indeno(1,2,3-cd)pyrene	193-39-5	0.0233	0.000003	8,760	3.35E-07	3.35E-07
17	21F_8	Lead compounds	7439-92-1	1.2449	0.000142	8,760	1.79E-05	1.79E-05
17	21F_8	Manganese compounds	7439-96-5	1.6053	0.000183	8,760	2.31E-05	2.31E-05
17	21F_8	Mercury compounds	7439-97-6	0.0590	0.000007	8,760	8.48E-07	8.48E-07
17	21F_8	Methylnaphthalene 2-	91-57-6	0.0067	0.000001	8,760	9.61E-08	9.61E-08
17	21F_8	Naphthalene	91-20-3	0.1278	0.000015	8,760	1.84E-06	1.84E-06
17	21F_8	n-Hexane	110-54-3	0.5566	0.000064	8,760	8.01E-06	8.01E-06
17	21F_8	Nickel compounds	7440-02-0	2.4570	0.000280	8,760	3.53E-05	3.53E-05
17	21F_8	Phenanthrene	85-01-8	0.0105	0.000001	8,760	1.51E-07	1.51E-07
17	21F_8	Phenol	108-95-2	1.3104	0.000150	8,760	1.88E-05	1.88E-05
17	21F_8	Propylene	115-07-1	49.1404	0.005610	8,760	7.07E-04	7.07E-04
17	21F_8	Pyrene	129-00-0	0.0032	0.000000	8,760	4.62E-08	4.62E-08
17	21F_8	Selenium compounds	7782-49-2	0.2883	0.000033	8,760	4.15E-06	4.15E-06
17	21F_8	Silver compounds	7440-22-4	0.5242	0.000060	8,760	7.54E-06	7.54E-06
17	21F_8	Sulfuric Acid	7664-93-9	280.1161	0.031977	8,760	4.03E-03	4.03E-03
17	21F_8	Toluene	108-88-3	49.1404	0.005610	8,760	7.07E-04	7.07E-04
17	21F_8	Vanadium compounds	7440-62-2	0.6404	0.000073	8,760	9.21E-06	9.21E-06
17	21F_8	Xylenes (mixed isomers)	1330-20-7	8.1901	0.000935	8,760	1.18E-04	1.18E-04
17	21F_8	Zinc compounds	7440-66-6	17.3630	0.001982	8,760	2.50E-04	2.50E-04
18	22F_1	Acenaphthene	83-32-9	0.0013	0.000000	8,760	1.81E-08	1.81E-08
18	22F_1	Acenaphthylene	208-96-8	0.0034	0.000000	8,760	4.91E-08	4.91E-08
18	22F_1	Acetaldehyde	75-07-0	6.2980	0.000719	8,760	9.06E-05	9.06E-05
18	22F_1	Acrolein	107-02-8	8.9222	0.001019	8,760	1.28E-04	1.28E-04
18	22F_1	Anthracene	120-12-7	0.0025	0.000000	8,760	3.55E-08	3.55E-08
18	22F_1	Antimony compounds	7440-36-0	0.2729	0.000031	8,760	3.93E-06	3.93E-06
18	22F_1	Arsenic compounds	7440-38-2	0.3779	0.000043	8,760	5.44E-06	5.44E-06
18	22F_1	Benzene	71-43-2	31.4900	0.003595	8,760	4.53E-04	4.53E-04
18	22F_1	Benzo(a)anthracene	56-55-3	0.0115	0.000001	8,760	1.66E-07	1.66E-07
18	22F_1	Benzo(a)pyrene	50-32-8	0.0299	0.000003	8,760	4.30E-07	4.30E-07
18	22F_1	Benzo(b)fluoranthene	205-99-2	0.0142	0.000002	8,760	2.04E-07	2.04E-07
18	22F_1	Benzo(g,h,i)perylene	191-24-2	0.0007	0.000000	8,760	9.81E-09	9.81E-09
18	22F_1	Benzo(k)fluoranthene	207-08-9	0.0089	0.000001	8,760	1.28E-07	1.28E-07
18	22F_1	Beryllium compounds	7440-41-7	0.0682	0.000008	8,760	9.81E-07	9.81E-07
18	22F_1	Cadmium compounds	7440-43-9	0.7872	0.000090	8,760	1.13E-05	1.13E-05
18	22F_1	Chromium compounds	7440-47-3	2.9915	0.000342	8,760	4.30E-05	4.30E-05
18	22F_1	Chrysene	218-01-9	0.0008	0.000000	8,760	1.21E-08	1.21E-08
18	22F_1	Cobalt compounds	7440-48-4	0.0375	0.000004	8,760	5.39E-07	5.39E-07
18	22F_1	Copper compounds	7440-50-8	2.4667	0.000282	8,760	3.55E-05	3.55E-05
18	22F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	0.5352	0.000061	8,760	7.70E-06	7.70E-06
18	22F_1	Ethylbenzene	100-41-4	8.3973	0.000959	8,760	1.21E-04	1.21E-04
18	22F_1	Fluoranthene	206-44-0	0.0046	0.000001	8,760	6.57E-08	6.57E-08
18	22F_1	Fluorene	86-73-7	0.0252	0.000003	8,760	3.62E-07	3.62E-07
18	22F_1	Formaldehyde	50-00-0	27.2913	0.003115	8,760	3.93E-04	3.93E-04
18	22F_1	Hydrogen sulfide	7783-06-4	44.6108	0.005093	8,760	6.42E-04	6.42E-04
18	22F_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.0373	0.000004	8,760	5.36E-07	5.36E-07
18	22F_1	Lead compounds	7439-92-1	1.9944	0.000228	8,760	2.87E-05	2.87E-05
18	22F_1	Manganese compounds	7439-96-5	2.5717	0.000294	8,760	3.70E-05	3.70E-05
18	22F_1	Mercury compounds	7439-97-6	0.0945	0.000011	8,760	1.36E-06	1.36E-06
18	22F_1	Methylnaphthalene 2-	91-57-6	0.0107	0.000001	8,760	1.54E-07	1.54E-07
18	22F_1	Naphthalene	91-20-3	0.2047	0.000023	8,760	2.94E-06	2.94E-06
18	22F_1	n-Hexane	110-54-3	0.8917	0.000102	8,760	1.28E-05	1.28E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
18	22F_1	Nickel compounds	7440-02-0	3.9362	0.000449	8,760	5.66E-05	5.66E-05
18	22F_1	Phenanthrene	85-01-8	0.0168	0.000002	8,760	2.42E-07	2.42E-07
18	22F_1	Phenol	108-95-2	2.0993	0.000240	8,760	3.02E-05	3.02E-05
18	22F_1	Propylene	115-07-1	78.7249	0.008987	8,760	1.13E-03	1.13E-03
18	22F_1	Pyrene	129-00-0	0.0051	0.000001	8,760	7.40E-08	7.40E-08
18	22F_1	Selenium compounds	7782-49-2	0.4619	0.000053	8,760	6.64E-06	6.64E-06
18	22F_1	Silver compounds	7440-22-4	0.8397	0.000096	8,760	1.21E-05	1.21E-05
18	22F_1	Sulfuric Acid	7664-93-9	740.1430	0.084491	8,760	1.06E-02	1.06E-02
18	22F_1	Toluene	108-88-3	78.7249	0.008987	8,760	1.13E-03	1.13E-03
18	22F_1	Vanadium compounds	7440-62-2	1.0259	0.000117	8,760	1.48E-05	1.48E-05
18	22F_1	Xylenes (mixed isomers)	1330-20-7	13.1208	0.001498	8,760	1.89E-04	1.89E-04
18	22F_1	Zinc compounds	7440-66-6	27.8161	0.003175	8,760	4.00E-04	4.00E-04
19	22F_2	Acenaphthene	83-32-9	0.0011	0.000000	8,760	1.54E-08	1.54E-08
19	22F_2	Acenaphthylene	208-96-8	0.0029	0.000000	8,760	4.18E-08	4.18E-08
19	22F_2	Acetaldehyde	75-07-0	5.3635	0.000612	8,760	7.71E-05	7.71E-05
19	22F_2	Acrolein	107-02-8	7.5984	0.000867	8,760	1.09E-04	1.09E-04
19	22F_2	Anthracene	120-12-7	0.0021	0.000000	8,760	3.02E-08	3.02E-08
19	22F_2	Antimony compounds	7440-36-0	0.2324	0.000027	8,760	3.34E-06	3.34E-06
19	22F_2	Arsenic compounds	7440-38-2	0.3218	0.000037	8,760	4.63E-06	4.63E-06
19	22F_2	Benzene	71-43-2	26.8177	0.003061	8,760	3.86E-04	3.86E-04
19	22F_2	Benzo(a)anthracene	56-55-3	0.0098	0.000001	8,760	1.41E-07	1.41E-07
19	22F_2	Benzo(a)pyrene	50-32-8	0.0255	0.000003	8,760	3.66E-07	3.66E-07
19	22F_2	Benzo(b)fluoranthene	205-99-2	0.0121	0.000001	8,760	1.74E-07	1.74E-07
19	22F_2	Benzo(g,h,i)perylene	191-24-2	0.0006	0.000000	8,760	8.36E-09	8.36E-09
19	22F_2	Benzo(k)fluoranthene	207-08-9	0.0076	0.000001	8,760	1.09E-07	1.09E-07
19	22F_2	Beryllium compounds	7440-41-7	0.0581	0.000007	8,760	8.36E-07	8.36E-07
19	22F_2	Cadmium compounds	7440-43-9	0.6704	0.000077	8,760	9.64E-06	9.64E-06
19	22F_2	Chromium compounds	7440-47-3	2.5477	0.000291	8,760	3.66E-05	3.66E-05
19	22F_2	Chrysene	218-01-9	0.0007	0.000000	8,760	1.03E-08	1.03E-08
19	22F_2	Cobalt compounds	7440-48-4	0.0319	0.000004	8,760	4.59E-07	4.59E-07
19	22F_2	Copper compounds	7440-50-8	2.1007	0.000240	8,760	3.02E-05	3.02E-05
19	22F_2	Dichlorobenzenes (mixed isomers)	25321-22-6	0.4558	0.000052	8,760	6.56E-06	6.56E-06
19	22F_2	Ethylbenzene	100-41-4	7.1514	0.000816	8,760	1.03E-04	1.03E-04
19	22F_2	Fluoranthene	206-44-0	0.0039	0.000000	8,760	5.59E-08	5.59E-08
19	22F_2	Fluorene	86-73-7	0.0215	0.000002	8,760	3.09E-07	3.09E-07
19	22F_2	Formaldehyde	50-00-0	23.2420	0.002653	8,760	3.34E-04	3.34E-04
19	22F_2	Hydrogen sulfide	7783-06-4	37.9918	0.004337	8,760	5.46E-04	5.46E-04
19	22F_2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0317	0.000004	8,760	4.56E-07	4.56E-07
19	22F_2	Lead compounds	7439-92-1	1.6985	0.000194	8,760	2.44E-05	2.44E-05
19	22F_2	Manganese compounds	7439-96-5	2.1901	0.000250	8,760	3.15E-05	3.15E-05
19	22F_2	Mercury compounds	7439-97-6	0.0805	0.000009	8,760	1.16E-06	1.16E-06
19	22F_2	Methylnaphthalene 2-	91-57-6	0.0091	0.000001	8,760	1.31E-07	1.31E-07
19	22F_2	Naphthalene	91-20-3	0.1743	0.000020	8,760	2.51E-06	2.51E-06
19	22F_2	n-Hexane	110-54-3	0.7594	0.000087	8,760	1.09E-05	1.09E-05
19	22F_2	Nickel compounds	7440-02-0	3.3522	0.000383	8,760	4.82E-05	4.82E-05
19	22F_2	Phenanthrene	85-01-8	0.0143	0.000002	8,760	2.06E-07	2.06E-07
19	22F_2	Phenol	108-95-2	1.7878	0.000204	8,760	2.57E-05	2.57E-05
19	22F_2	Propylene	115-07-1	67.0443	0.007653	8,760	9.64E-04	9.64E-04
19	22F_2	Pyrene	129-00-0	0.0044	0.000001	8,760	6.30E-08	6.30E-08
19	22F_2	Selenium compounds	7782-49-2	0.3933	0.000045	8,760	5.66E-06	5.66E-06
19	22F_2	Silver compounds	7440-22-4	0.7151	0.000082	8,760	1.03E-05	1.03E-05
19	22F_2	Sulfuric Acid	7664-93-9	21.0127	0.002399	8,760	3.02E-04	3.02E-04
19	22F_2	Toluene	108-88-3	67.0443	0.007653	8,760	9.64E-04	9.64E-04
19	22F_2	Vanadium compounds	7440-62-2	0.8737	0.000100	8,760	1.26E-05	1.26E-05
19	22F_2	Xylenes (mixed isomers)	1330-20-7	11.1741	0.001276	8,760	1.61E-04	1.61E-04
19	22F_2	Zinc compounds	7440-66-6	23.6890	0.002704	8,760	3.41E-04	3.41E-04
20	22F_3	Acenaphthene	83-32-9	0.0012	0.000000	8,760	1.75E-08	1.75E-08
20	22F_3	Acenaphthylene	208-96-8	0.0033	0.000000	8,760	4.75E-08	4.75E-08
20	22F_3	Acetaldehyde	75-07-0	6.0958	0.000696	8,760	8.77E-05	8.77E-05
20	22F_3	Acrolein	107-02-8	8.6357	0.000986	8,760	1.24E-04	1.24E-04
20	22F_3	Anthracene	120-12-7	0.0024	0.000000	8,760	3.43E-08	3.43E-08
20	22F_3	Antimony compounds	7440-36-0	0.2642	0.000030	8,760	3.80E-06	3.80E-06
20	22F_3	Arsenic compounds	7440-38-2	0.3657	0.000042	8,760	5.26E-06	5.26E-06
20	22F_3	Benzene	71-43-2	30.4790	0.003479	8,760	4.38E-04	4.38E-04

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
20	22F_3	Benzo(a)anthracene	56-55-3	0.0112	0.000001	8,760	1.61E-07	1.61E-07
20	22F_3	Benzo(a)pyrene	50-32-8	0.0290	0.000003	8,760	4.16E-07	4.16E-07
20	22F_3	Benzo(b)fluoranthene	205-99-2	0.0137	0.000002	8,760	1.97E-07	1.97E-07
20	22F_3	Benzo(g,h,i)perylene	191-24-2	0.0007	0.000000	8,760	9.50E-09	9.50E-09
20	22F_3	Benzo(k)fluoranthene	207-08-9	0.0086	0.000001	8,760	1.24E-07	1.24E-07
20	22F_3	Beryllium compounds	7440-41-7	0.0660	0.000008	8,760	9.50E-07	9.50E-07
20	22F_3	Cadmium compounds	7440-43-9	0.7620	0.000087	8,760	1.10E-05	1.10E-05
20	22F_3	Chromium compounds	7440-47-3	2.8955	0.000331	8,760	4.16E-05	4.16E-05
20	22F_3	Chrysene	218-01-9	0.0008	0.000000	8,760	1.17E-08	1.17E-08
20	22F_3	Cobalt compounds	7440-48-4	0.0363	0.000004	8,760	5.22E-07	5.22E-07
20	22F_3	Copper compounds	7440-50-8	2.3875	0.000273	8,760	3.43E-05	3.43E-05
20	22F_3	Dichlorobenzenes (mixed isomers)	25321-22-6	0.5181	0.000059	8,760	7.45E-06	7.45E-06
20	22F_3	Ethylbenzene	100-41-4	8.1277	0.000928	8,760	1.17E-04	1.17E-04
20	22F_3	Fluoranthene	206-44-0	0.0044	0.000001	8,760	6.36E-08	6.36E-08
20	22F_3	Fluorene	86-73-7	0.0244	0.000003	8,760	3.51E-07	3.51E-07
20	22F_3	Formaldehyde	50-00-0	26.4151	0.003015	8,760	3.80E-04	3.80E-04
20	22F_3	Hydrogen sulfide	7783-06-4	43.1786	0.004929	8,760	6.21E-04	6.21E-04
20	22F_3	Indeno(1,2,3-cd)pyrene	193-39-5	0.0361	0.000004	8,760	5.19E-07	5.19E-07
20	22F_3	Lead compounds	7439-92-1	1.9303	0.000220	8,760	2.78E-05	2.78E-05
20	22F_3	Manganese compounds	7439-96-5	2.4891	0.000284	8,760	3.58E-05	3.58E-05
20	22F_3	Mercury compounds	7439-97-6	0.0914	0.000010	8,760	1.32E-06	1.32E-06
20	22F_3	Methylnaphthalene 2-	91-57-6	0.0104	0.000001	8,760	1.49E-07	1.49E-07
20	22F_3	Naphthalene	91-20-3	0.1981	0.000023	8,760	2.85E-06	2.85E-06
20	22F_3	n-Hexane	110-54-3	0.8630	0.000099	8,760	1.24E-05	1.24E-05
20	22F_3	Nickel compounds	7440-02-0	3.8099	0.000435	8,760	5.48E-05	5.48E-05
20	22F_3	Phenanthrene	85-01-8	0.0163	0.000002	8,760	2.34E-07	2.34E-07
20	22F_3	Phenol	108-95-2	2.0319	0.000232	8,760	2.92E-05	2.92E-05
20	22F_3	Propylene	115-07-1	76.1975	0.008698	8,760	1.10E-03	1.10E-03
20	22F_3	Pyrene	129-00-0	0.0050	0.000001	8,760	7.16E-08	7.16E-08
20	22F_3	Selenium compounds	7782-49-2	0.4470	0.000051	8,760	6.43E-06	6.43E-06
20	22F_3	Silver compounds	7440-22-4	0.8128	0.000093	8,760	1.17E-05	1.17E-05
20	22F_3	Sulfuric Acid	7664-93-9	58.3596	0.006662	8,760	8.39E-04	8.39E-04
20	22F_3	Toluene	108-88-3	76.1975	0.008698	8,760	1.10E-03	1.10E-03
20	22F_3	Vanadium compounds	7440-62-2	0.9930	0.000113	8,760	1.43E-05	1.43E-05
20	22F_3	Xylenes (mixed isomers)	1330-20-7	12.6996	0.001450	8,760	1.83E-04	1.83E-04
20	22F_3	Zinc compounds	7440-66-6	26.9231	0.003073	8,760	3.87E-04	3.87E-04
21	24F_1	Acenaphthene	83-32-9	0.0342	0.000004	8,760	4.91E-07	4.91E-07
21	24F_1	Acenaphthylene	208-96-8	0.0925	0.000011	8,760	1.33E-06	1.33E-06
21	24F_1	Acetaldehyde	75-07-0	170.7895	0.019497	8,760	2.46E-03	2.46E-03
21	24F_1	Acrolein	107-02-8	241.9519	0.027620	8,760	3.48E-03	3.48E-03
21	24F_1	Ammonia	7664-41-7	15,173.44	1.732128	8,760	2.18E-01	2.18E-01
21	24F_1	Anthracene	120-12-7	0.0669	0.000008	8,760	9.62E-07	9.62E-07
21	24F_1	Antimony compounds	7440-36-0	7.4009	0.000845	8,760	1.06E-04	1.06E-04
21	24F_1	Arsenic compounds	7440-38-2	10.2474	0.001170	8,760	1.47E-04	1.47E-04
21	24F_1	Benzene	71-43-2	853.9477	0.097483	8,760	1.23E-02	1.23E-02
21	24F_1	Benzo(a)anthracene	56-55-3	0.3131	0.000036	8,760	4.50E-06	4.50E-06
21	24F_1	Benzo(a)pyrene	50-32-8	0.8113	0.000093	8,760	1.17E-05	1.17E-05
21	24F_1	Benzo(b)fluoranthene	205-99-2	0.3843	0.000044	8,760	5.53E-06	5.53E-06
21	24F_1	Benzo(g,h,i)perylene	191-24-2	0.0185	0.000002	8,760	2.66E-07	2.66E-07
21	24F_1	Benzo(k)fluoranthene	207-08-9	0.2420	0.000028	8,760	3.48E-06	3.48E-06
21	24F_1	Beryllium compounds	7440-41-7	1.8502	0.000211	8,760	2.66E-05	2.66E-05
21	24F_1	Cadmium compounds	7440-43-9	21.3487	0.002437	8,760	3.07E-04	3.07E-04
21	24F_1	Chromium compounds	7440-47-3	81.1250	0.009261	8,760	1.17E-03	1.17E-03
21	24F_1	Chrysene	218-01-9	0.0228	0.000003	8,760	3.28E-07	3.28E-07
21	24F_1	Cobalt compounds	7440-48-4	1.1922	0.000136	8,760	1.71E-05	1.71E-05
21	24F_1	Copper compounds	7440-50-8	20.9200	0.002388	8,760	3.01E-04	3.01E-04
21	24F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	17.0321	0.001944	8,760	2.45E-04	2.45E-04
21	24F_1	Ethylbenzene	100-41-4	227.7194	0.025995	8,760	3.28E-03	3.28E-03
21	24F_1	Fluoranthene	206-44-0	0.1238	0.000014	8,760	1.78E-06	1.78E-06
21	24F_1	Fluorene	86-73-7	0.6832	0.000078	8,760	9.83E-06	9.83E-06
21	24F_1	Formaldehyde	50-00-0	740.0880	0.084485	8,760	1.06E-02	1.06E-02
21	24F_1	Hydrogen sulfide	7783-06-4	1,209.7593	0.138100	8,760	1.74E-02	1.74E-02
21	24F_1	Indeno(1,2,3-cd)pyrene	193-39-5	1.0105	0.000115	8,760	1.45E-05	1.45E-05
21	24F_1	Lead compounds	7439-92-1	5.4900	0.000627	8,760	7.90E-05	7.90E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
21	24F_1	Manganese compounds	7439-96-5	69.7391	0.007961	8,760	1.00E-03	1.00E-03
21	24F_1	Mercury compounds	7439-97-6	22.6300	0.002583	8,760	3.25E-04	3.25E-04
21	24F_1	Methylnaphthalene 2-	91-57-6	0.3406	0.000039	8,760	4.90E-06	4.90E-06
21	24F_1	Naphthalene	91-20-3	5.5507	0.000634	8,760	7.98E-05	7.98E-05
21	24F_1	n-Hexane	110-54-3	24.1800	0.002760	8,760	3.48E-04	3.48E-04
21	24F_1	Nickel compounds	7440-02-0	38.1400	0.004354	8,760	5.49E-04	5.49E-04
21	24F_1	Phenanthrene	85-01-8	0.4554	0.000052	8,760	6.55E-06	6.55E-06
21	24F_1	Phenol	108-95-2	56.9298	0.006499	8,760	8.19E-04	8.19E-04
21	24F_1	Propylene	115-07-1	2,134.8693	0.243707	8,760	3.07E-02	3.07E-02
21	24F_1	Pyrene	129-00-0	0.1395	0.000016	8,760	2.01E-06	2.01E-06
21	24F_1	Selenium compounds	7782-49-2	12.5246	0.001430	8,760	1.80E-04	1.80E-04
21	24F_1	Silver compounds	7440-22-4	22.7719	0.002600	8,760	3.28E-04	3.28E-04
21	24F_1	Sulfuric Acid	7664-93-9	1,007.2910	0.114988	8,760	1.45E-02	1.45E-02
21	24F_1	Toluene	108-88-3	2,134.8693	0.243707	8,760	3.07E-02	3.07E-02
21	24F_1	Vanadium compounds	7440-62-2	32.6449	0.003727	8,760	4.70E-04	4.70E-04
21	24F_1	Xylenes (mixed isomers)	1330-20-7	355.8115	0.040618	8,760	5.12E-03	5.12E-03
21	24F_1	Zinc compounds	7440-66-6	103.8900	0.011860	8,760	1.49E-03	1.49E-03
21b	24J_1	Acenaphthene	83-32-9	0.0042	0.000000	8,760	6.06E-08	6.06E-08
21b	24J_1	Acenaphthylene	208-96-8	0.0037	0.000000	8,760	5.33E-08	5.33E-08
21b	24J_1	Acetaldehyde	75-07-0	34.4726	0.003935	8,760	4.96E-04	4.96E-04
21b	24J_1	Acrolein	107-02-8	8.1713	0.000933	8,760	1.18E-04	1.18E-04
21b	24J_1	Anthracene	120-12-7	0.0434	0.000005	8,760	6.24E-07	6.24E-07
21b	24J_1	Benzene	71-43-2	15.3211	0.001749	8,760	2.20E-04	2.20E-04
21b	24J_1	Benzo(a)anthracene	56-55-3	0.0036	0.000000	8,760	5.14E-08	5.14E-08
21b	24J_1	Benzo(b)fluoranthene	205-99-2	0.0042	0.000000	8,760	6.06E-08	6.06E-08
21b	24J_1	Benzo(g,h,i)perylene	191-24-2	0.0024	0.000000	8,760	3.49E-08	3.49E-08
21b	24J_1	Benzo(k)fluoranthene	207-08-9	0.0029	0.000000	8,760	4.22E-08	4.22E-08
21b	24J_1	Cadmium compounds	7440-43-9	6.7668	0.000772	8,760	9.73E-05	9.73E-05
21b	24J_1	Chromium compounds	7440-47-3	16.5979	0.001895	8,760	2.39E-04	2.39E-04
21b	24J_1	Chrysene	218-01-9	0.0063	0.000001	8,760	9.00E-08	9.00E-08
21b	24J_1	Copper compounds	7440-50-8	4.7400	0.000541	8,760	6.82E-05	6.82E-05
21b	24J_1	Ethylbenzene	100-41-4	40.8564	0.004664	8,760	5.88E-04	5.88E-04
21b	24J_1	Fluoranthene	206-44-0	0.0153	0.000002	8,760	2.20E-07	2.20E-07
21b	24J_1	Fluorene	86-73-7	0.0192	0.000002	8,760	2.75E-07	2.75E-07
21b	24J_1	Formaldehyde	50-00-0	395.7961	0.045182	8,760	5.69E-03	5.69E-03
21b	24J_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.0023	0.000000	8,760	3.31E-08	3.31E-08
21b	24J_1	Lead compounds	7439-92-1	1.2400	0.000142	8,760	1.78E-05	1.78E-05
21b	24J_1	Manganese compounds	7439-96-5	165.9790	0.018947	8,760	2.39E-03	2.39E-03
21b	24J_1	Mercury compounds	7439-97-6	5.0900	0.000581	8,760	7.32E-05	7.32E-05
21b	24J_1	Naphthalene	91-20-3	0.9320	0.000106	8,760	1.34E-05	1.34E-05
21b	24J_1	Nickel compounds	7440-02-0	8.5900	0.000981	8,760	1.24E-04	1.24E-04
21b	24J_1	PAHs, total	1151	1.1619	0.000133	8,760	1.67E-05	1.67E-05
21b	24J_1	Phenanthrene	85-01-8	0.0830	0.000009	8,760	1.19E-06	1.19E-06
21b	24J_1	Phenol	108-95-2	8.5543	0.000977	8,760	1.23E-04	1.23E-04
21b	24J_1	Propylene	115-07-1	2,042.8183	0.233198	8,760	2.94E-02	2.94E-02
21b	24J_1	Pyrene	129-00-0	0.0294	0.000003	8,760	4.22E-07	4.22E-07
21b	24J_1	Toluene	108-88-3	395.7961	0.045182	8,760	5.69E-03	5.69E-03
21b	24J_1	Xylenes (mixed isomers)	1330-20-7	983.1063	0.112227	8,760	1.41E-02	1.41E-02
21b	24J_1	Zinc compounds	7440-66-6	23.4900	0.002682	8,760	3.38E-04	3.38E-04
22	25F_1/2	Acetaldehyde	75-07-0	3.5715	0.000408	8,760	5.14E-05	5.14E-05
22	25F_1/2	Acrolein	107-02-8	9.7929	0.001118	8,760	1.41E-04	1.41E-04
22	25F_1/2	Ammonia	7664-41-7	5,616.1390	0.641112	8,760	8.08E-02	8.08E-02
22	25F_1/2	Antimony compounds	7440-36-0	0.2995	0.000034	8,760	4.31E-06	4.31E-06
22	25F_1/2	Cadmium compounds	7440-43-9	0.0346	0.000004	8,760	4.97E-07	4.97E-07
22	25F_1/2	Cobalt compounds	7440-48-4	0.0411	0.000005	8,760	5.91E-07	5.91E-07
22	25F_1/2	Copper compounds	7440-50-8	0.2189	0.000025	8,760	3.15E-06	3.15E-06
22	25F_1/2	Dichlorobenzenes (mixed isomers)	25321-22-6	0.5875	0.000067	8,760	8.45E-06	8.45E-06
22	25F_1/2	Ethylbenzene	100-41-4	9.2168	0.001052	8,760	1.33E-04	1.33E-04
22	25F_1/2	Formaldehyde	50-00-0	0.6337	0.000072	8,760	9.11E-06	9.11E-06
22	25F_1/2	Manganese compounds	7439-96-5	1.2673	0.000145	8,760	1.82E-05	1.82E-05
22	25F_1/2	Mercury compounds	7439-97-6	0.1152	0.000013	8,760	1.66E-06	1.66E-06
22	25F_1/2	Methylnaphthalene 2-	91-57-6	0.0117	0.000001	8,760	1.69E-07	1.69E-07
22	25F_1/2	Naphthalene	91-20-3	2.9379	0.000335	8,760	4.23E-05	4.23E-05
22	25F_1/2	n-Hexane	110-54-3	2.1017	0.000240	8,760	3.02E-05	3.02E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
22	25F_1/2	Nickel compounds	7440-02-0	0.6913	0.000079	8,760	9.94E-06	9.94E-06
22	25F_1/2	Phenol	108-95-2	9.4127	0.001075	8,760	1.35E-04	1.35E-04
22	25F_1/2	Propylene	115-07-1	86.4079	0.009864	8,760	1.24E-03	1.24E-03
22	25F_1/2	Silver compounds	7440-22-4	0.9217	0.000105	8,760	1.33E-05	1.33E-05
22	25F_1/2	Sulfuric Acid	7664-93-9	491.9696	0.056161	8,760	7.08E-03	7.08E-03
22	25F_1/2	Vanadium compounds	7440-62-2	1.1260	0.000129	8,760	1.62E-05	1.62E-05
22	25F_1/2	Xylenes (mixed isomers)	1330-20-7	14.4013	0.001644	8,760	2.07E-04	2.07E-04
22	25F_1/2	Zinc compounds	7440-66-6	2.9379	0.000335	8,760	4.23E-05	4.23E-05
23	28F_11	Acenaphthene	83-32-9	0.0004	0.000000	8,760	5.91E-09	5.91E-09
23	28F_11	Acenaphthylene	208-96-8	0.0011	0.000000	8,760	1.60E-08	1.60E-08
23	28F_11	Acetaldehyde	75-07-0	1.3476	0.000154	8,760	1.94E-05	1.94E-05
23	28F_11	Acrolein	107-02-8	2.9084	0.000332	8,760	4.18E-05	4.18E-05
23	28F_11	Anthracene	120-12-7	0.0008	0.000000	8,760	1.16E-08	1.16E-08
23	28F_11	Antimony compounds	7440-36-0	0.0890	0.000010	8,760	1.28E-06	1.28E-06
23	28F_11	Arsenic compounds	7440-38-2	0.1232	0.000014	8,760	1.77E-06	1.77E-06
23	28F_11	Benzene	71-43-2	10.2651	0.001172	8,760	1.48E-04	1.48E-04
23	28F_11	Benzo(a)anthracene	56-55-3	0.0038	0.000000	8,760	5.41E-08	5.41E-08
23	28F_11	Benzo(a)pyrene	50-32-8	0.0098	0.000001	8,760	1.40E-07	1.40E-07
23	28F_11	Benzo(b)fluoranthene	205-99-2	0.0046	0.000001	8,760	6.64E-08	6.64E-08
23	28F_11	Benzo(g,h,i)perylene	191-24-2	0.0002	0.000000	8,760	3.20E-09	3.20E-09
23	28F_11	Benzo(k)fluoranthene	207-08-9	0.0029	0.000000	8,760	4.18E-08	4.18E-08
23	28F_11	Beryllium compounds	7440-41-7	0.0222	0.000003	8,760	3.20E-07	3.20E-07
23	28F_11	Cadmium compounds	7440-43-9	0.2566	0.000029	8,760	3.69E-06	3.69E-06
23	28F_11	Carbon disulfide	75-15-0	1.4321	0.000163	8,760	2.06E-05	2.06E-05
23	28F_11	Carbonyl sulfide	463-58-1	10.6080	0.001211	8,760	1.53E-04	1.53E-04
23	28F_11	Chromium compounds	7440-47-3	0.9752	0.000111	8,760	1.40E-05	1.40E-05
23	28F_11	Chrysene	218-01-9	0.0003	0.000000	8,760	3.94E-09	3.94E-09
23	28F_11	Cobalt compounds	7440-48-4	0.0122	0.000001	8,760	1.76E-07	1.76E-07
23	28F_11	Copper compounds	7440-50-8	0.8041	0.000092	8,760	1.16E-05	1.16E-05
23	28F_11	Dibenz(a,h)anthracene	53-70-3	0.1745	0.000020	8,760	2.51E-06	2.51E-06
23	28F_11	Ethylbenzene	100-41-4	2.7374	0.000312	8,760	3.94E-05	3.94E-05
23	28F_11	Fluoranthene	206-44-0	0.0015	0.000000	8,760	2.14E-08	2.14E-08
23	28F_11	Fluorene	86-73-7	0.0082	0.000001	8,760	1.18E-07	1.18E-07
23	28F_11	Formaldehyde	50-00-0	8.2624	0.000943	8,760	1.19E-04	1.19E-04
23	28F_11	Hydrogen sulfide	7783-06-4	14.5422	0.001660	8,760	2.09E-04	2.09E-04
23	28F_11	Indeno(1,2,3-cd)pyrene	193-39-5	0.0121	0.000001	8,760	1.75E-07	1.75E-07
23	28F_11	Lead compounds	7439-92-1	0.6501	0.000074	8,760	9.35E-06	9.35E-06
23	28F_11	Manganese compounds	7439-96-5	0.8383	0.000096	8,760	1.21E-05	1.21E-05
23	28F_11	Mercury compounds	7439-97-6	0.0308	0.000004	8,760	4.43E-07	4.43E-07
23	28F_11	Methylnaphthalene 2-	91-57-6	0.0035	0.000000	8,760	5.02E-08	5.02E-08
23	28F_11	Naphthalene	91-20-3	0.0667	0.000008	8,760	9.60E-07	9.60E-07
23	28F_11	n-Hexane	110-54-3	0.2907	0.000033	8,760	4.18E-06	4.18E-06
23	28F_11	Nickel compounds	7440-02-0	1.2831	0.000146	8,760	1.85E-05	1.85E-05
23	28F_11	Phenanthrene	85-01-8	0.0055	0.000001	8,760	7.87E-08	7.87E-08
23	28F_11	Phenol	108-95-2	0.6843	0.000078	8,760	9.84E-06	9.84E-06
23	28F_11	Propylene	115-07-1	25.6627	0.002930	8,760	3.69E-04	3.69E-04
23	28F_11	Pyrene	129-00-0	0.0017	0.000000	8,760	2.41E-08	2.41E-08
23	28F_11	Selenium compounds	7782-49-2	0.1506	0.000017	8,760	2.17E-06	2.17E-06
23	28F_11	Silver compounds	7440-22-4	0.2737	0.000031	8,760	3.94E-06	3.94E-06
23	28F_11	Sulfuric Acid	7664-93-9	52.5280	0.005996	8,760	7.56E-04	7.56E-04
23	28F_11	Toluene	108-88-3	25.6627	0.002930	8,760	3.69E-04	3.69E-04
23	28F_11	Vanadium compounds	7440-62-2	0.3344	0.000038	8,760	4.81E-06	4.81E-06
23	28F_11	Xylenes (mixed isomers)	1330-20-7	4.2771	0.000488	8,760	6.15E-05	6.15E-05
23	28F_11	Zinc compounds	7440-66-6	9.0675	0.001035	8,760	1.30E-04	1.30E-04
24	29F_5	Acenaphthene	83-32-9	0.0005	0.000000	8,760	6.47E-09	6.47E-09
24	29F_5	Acenaphthylene	208-96-8	0.0012	0.000000	8,760	1.75E-08	1.75E-08
24	29F_5	Acetaldehyde	75-07-0	54.1179	0.006178	8,760	7.78E-04	7.78E-04
24	29F_5	Acrolein	107-02-8	3.1883	0.000364	8,760	4.59E-05	4.59E-05
24	29F_5	Anthracene	120-12-7	0.0009	0.000000	8,760	1.27E-08	1.27E-08
24	29F_5	Antimony compounds	7440-36-0	0.0975	0.000011	8,760	1.40E-06	1.40E-06
24	29F_5	Arsenic compounds	7440-38-2	0.1350	0.000015	8,760	1.94E-06	1.94E-06
24	29F_5	Benzene	71-43-2	11.2528	0.001285	8,760	1.62E-04	1.62E-04
24	29F_5	Benzo(a)anthracene	56-55-3	0.0041	0.000000	8,760	5.93E-08	5.93E-08
24	29F_5	Benzo(a)pyrene	50-32-8	0.0107	0.000001	8,760	1.54E-07	1.54E-07

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
24	29F_5	Benzo(b)fluoranthene	205-99-2	0.0051	0.000001	8,760	7.28E-08	7.28E-08
24	29F_5	Benzo(g,h,i)perylene	191-24-2	0.0002	0.000000	8,760	3.51E-09	3.51E-09
24	29F_5	Benzo(k)fluoranthene	207-08-9	0.0032	0.000000	8,760	4.59E-08	4.59E-08
24	29F_5	Beryllium compounds	7440-41-7	0.0244	0.000003	8,760	3.51E-07	3.51E-07
24	29F_5	Cadmium compounds	7440-43-9	0.2813	0.000032	8,760	4.05E-06	4.05E-06
24	29F_5	Carbon disulfide	75-15-0	34.6401	0.003954	8,760	4.98E-04	4.98E-04
24	29F_5	Carbonyl sulfide	463-58-1	256.5824	0.029290	8,760	3.69E-03	3.69E-03
24	29F_5	Chromium compounds	7440-47-3	1.0690	0.000122	8,760	1.54E-05	1.54E-05
24	29F_5	Chrysene	218-01-9	0.0003	0.000000	8,760	4.32E-09	4.32E-09
24	29F_5	Cobalt compounds	7440-48-4	0.0134	0.000002	8,760	1.93E-07	1.93E-07
24	29F_5	Copper compounds	7440-50-8	0.8815	0.000101	8,760	1.27E-05	1.27E-05
24	29F_5	Dibenz(a,h)anthracene	53-70-3	0.1913	0.000022	8,760	2.75E-06	2.75E-06
24	29F_5	Ethylbenzene	100-41-4	3.0007	0.000343	8,760	4.32E-05	4.32E-05
24	29F_5	Fluoranthene	206-44-0	0.0016	0.000000	8,760	2.35E-08	2.35E-08
24	29F_5	Fluorene	86-73-7	0.0090	0.000001	8,760	1.29E-07	1.29E-07
24	29F_5	Formaldehyde	50-00-0	331.7993	0.037877	8,760	4.77E-03	4.77E-03
24	29F_5	Hydrogen sulfide	7783-06-4	15.9414	0.001820	8,760	2.29E-04	2.29E-04
24	29F_5	Indeno(1,2,3-cd)pyrene	193-39-5	0.0133	0.000002	8,760	1.92E-07	1.92E-07
24	29F_5	Lead compounds	7439-92-1	0.7127	0.000081	8,760	1.03E-05	1.03E-05
24	29F_5	Manganese compounds	7439-96-5	0.9190	0.000105	8,760	1.32E-05	1.32E-05
24	29F_5	Mercury compounds	7439-97-6	0.0338	0.000004	8,760	4.86E-07	4.86E-07
24	29F_5	Methylnaphthalene 2-	91-57-6	0.0038	0.000000	8,760	5.50E-08	5.50E-08
24	29F_5	Naphthalene	91-20-3	0.0731	0.000008	8,760	1.05E-06	1.05E-06
24	29F_5	n-Hexane	110-54-3	0.3186	0.000036	8,760	4.58E-06	4.58E-06
24	29F_5	Nickel compounds	7440-02-0	1.4066	0.000161	8,760	2.02E-05	2.02E-05
24	29F_5	Phenanthrene	85-01-8	0.0060	0.000001	8,760	8.63E-08	8.63E-08
24	29F_5	Phenol	108-95-2	0.7502	0.000086	8,760	1.08E-05	1.08E-05
24	29F_5	Propylene	115-07-1	28.1319	0.003211	8,760	4.05E-04	4.05E-04
24	29F_5	Pyrene	129-00-0	0.0018	0.000000	8,760	2.64E-08	2.64E-08
24	29F_5	Selenium compounds	7782-49-2	0.1650	0.000019	8,760	2.37E-06	2.37E-06
24	29F_5	Silver compounds	7440-22-4	0.3001	0.000034	8,760	4.32E-06	4.32E-06
24	29F_5	Sulfuric Acid	7664-93-9	2,417.7792	0.276002	8,760	3.48E-02	3.48E-02
24	29F_5	Toluene	108-88-3	28.1319	0.003211	8,760	4.05E-04	4.05E-04
24	29F_5	Vanadium compounds	7440-62-2	0.3666	0.000042	8,760	5.27E-06	5.27E-06
24	29F_5	Xylenes (mixed isomers)	1330-20-7	4.6887	0.000535	8,760	6.74E-05	6.74E-05
24	29F_5	Zinc compounds	7440-66-6	9.9400	0.001135	8,760	1.43E-04	1.43E-04
25	30F_1	Acenaphthene	83-32-9	0.0029	0.000000	8,760	4.19E-08	4.19E-08
25	30F_1	Acenaphthylene	208-96-8	0.0079	0.000001	8,760	1.13E-07	1.13E-07
25	30F_1	Acetaldehyde	75-07-0	14.5506	0.001661	8,760	2.09E-04	2.09E-04
25	30F_1	Acrolein	107-02-8	20.6133	0.002353	8,760	2.96E-04	2.96E-04
25	30F_1	Ammonia	7664-41-7	8,517.7838	0.972350	8,760	1.23E-01	1.23E-01
25	30F_1	Anthracene	120-12-7	0.0057	0.000001	8,760	8.20E-08	8.20E-08
25	30F_1	Antimony compounds	7440-36-0	0.6305	0.000072	8,760	9.07E-06	9.07E-06
25	30F_1	Arsenic compounds	7440-38-2	0.8730	0.000100	8,760	1.26E-05	1.26E-05
25	30F_1	Benzene	71-43-2	72.7530	0.008305	8,760	1.05E-03	1.05E-03
25	30F_1	Benzo(a)anthracene	56-55-3	0.0267	0.000003	8,760	3.84E-07	3.84E-07
25	30F_1	Benzo(a)pyrene	50-32-8	0.0691	0.000008	8,760	9.94E-07	9.94E-07
25	30F_1	Benzo(b)fluoranthene	205-99-2	0.0327	0.000004	8,760	4.71E-07	4.71E-07
25	30F_1	Benzo(g,h,i)perylene	191-24-2	0.0016	0.000000	8,760	2.27E-08	2.27E-08
25	30F_1	Benzo(k)fluoranthene	207-08-9	0.0206	0.000002	8,760	2.96E-07	2.96E-07
25	30F_1	Beryllium compounds	7440-41-7	0.1576	0.000018	8,760	2.27E-06	2.27E-06
25	30F_1	Cadmium compounds	7440-43-9	1.8188	0.000208	8,760	2.62E-05	2.62E-05
25	30F_1	Chromium compounds	7440-47-3	6.9115	0.000789	8,760	9.94E-05	9.94E-05
25	30F_1	Chrysene	218-01-9	0.0019	0.000000	8,760	2.79E-08	2.79E-08
25	30F_1	Cobalt compounds	7440-48-4	0.0866	0.000010	8,760	1.25E-06	1.25E-06
25	30F_1	Copper compounds	7440-50-8	5.6990	0.000651	8,760	8.20E-05	8.20E-05
25	30F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	1.2366	0.000141	8,760	1.78E-05	1.78E-05
25	30F_1	Ethylbenzene	100-41-4	19.4008	0.002215	8,760	2.79E-04	2.79E-04
25	30F_1	Fluoranthene	206-44-0	0.0105	0.000001	8,760	1.52E-07	1.52E-07
25	30F_1	Fluorene	86-73-7	0.0582	0.000007	8,760	8.37E-07	8.37E-07
25	30F_1	Formaldehyde	50-00-0	63.0526	0.007198	8,760	9.07E-04	9.07E-04
25	30F_1	Hydrogen sulfide	7783-06-4	103.0667	0.011766	8,760	1.48E-03	1.48E-03
25	30F_1	Indeno(1,2,3-cd)pyrene	193-39-5	0.0861	0.000010	8,760	1.24E-06	1.24E-06
25	30F_1	Lead compounds	7439-92-1	4.6077	0.000526	8,760	6.63E-05	6.63E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
25	30F_1	Manganese compounds	7439-96-5	5.9415	0.000678	8,760	8.55E-05	8.55E-05
25	30F_1	Mercury compounds	7439-97-6	0.2183	0.000025	8,760	3.14E-06	3.14E-06
25	30F_1	Methylnaphthalene 2-	91-57-6	0.0247	0.000003	8,760	3.56E-07	3.56E-07
25	30F_1	Naphthalene	91-20-3	0.4729	0.000054	8,760	6.80E-06	6.80E-06
25	30F_1	n-Hexane	110-54-3	1.2503	0.000143	8,760	1.80E-05	1.80E-05
25	30F_1	Nickel compounds	7440-02-0	9.0941	0.001038	8,760	1.31E-04	1.31E-04
25	30F_1	Phenanthrene	85-01-8	0.0388	0.000004	8,760	5.58E-07	5.58E-07
25	30F_1	Phenol	108-95-2	4.8502	0.000554	8,760	6.98E-05	6.98E-05
25	30F_1	Propylene	115-07-1	181.8824	0.020763	8,760	2.62E-03	2.62E-03
25	30F_1	Pyrene	129-00-0	0.0119	0.000001	8,760	1.71E-07	1.71E-07
25	30F_1	Selenium compounds	7782-49-2	1.0670	0.000122	8,760	1.53E-05	1.53E-05
25	30F_1	Silver compounds	7440-22-4	1.9401	0.000221	8,760	2.79E-05	2.79E-05
25	30F_1	Sulfuric Acid	7664-93-9	639.1159	0.072958	8,760	9.19E-03	9.19E-03
25	30F_1	Toluene	108-88-3	181.8824	0.020763	8,760	2.62E-03	2.62E-03
25	30F_1	Vanadium compounds	7440-62-2	2.3702	0.000271	8,760	3.41E-05	3.41E-05
25	30F_1	Xylenes (mixed isomers)	1330-20-7	30.3137	0.003460	8,760	4.36E-04	4.36E-04
25	30F_1	Zinc compounds	7440-66-6	64.2651	0.007336	8,760	9.24E-04	9.24E-04
26	30F_2	Acenaphthene	83-32-9	0.0031	0.000000	8,760	4.46E-08	4.46E-08
26	30F_2	Acenaphthylene	208-96-8	0.0084	0.000001	8,760	1.21E-07	1.21E-07
26	30F_2	Acetaldehyde	75-07-0	15.4990	0.001769	8,760	2.23E-04	2.23E-04
26	30F_2	Acrolein	107-02-8	21.9569	0.002507	8,760	3.16E-04	3.16E-04
26	30F_2	Ammonia	7664-41-7	9,883.2053	1.128220	8,760	1.42E-01	1.42E-01
26	30F_2	Anthracene	120-12-7	0.0061	0.000001	8,760	8.73E-08	8.73E-08
26	30F_2	Antimony compounds	7440-36-0	0.6716	0.000077	8,760	9.66E-06	9.66E-06
26	30F_2	Arsenic compounds	7440-38-2	0.9299	0.000106	8,760	1.34E-05	1.34E-05
26	30F_2	Benzene	71-43-2	77.4951	0.008846	8,760	1.11E-03	1.11E-03
26	30F_2	Benzo(a)anthracene	56-55-3	0.0284	0.000003	8,760	4.09E-07	4.09E-07
26	30F_2	Benzo(a)pyrene	50-32-8	0.0736	0.000008	8,760	1.06E-06	1.06E-06
26	30F_2	Benzo(b)fluoranthene	205-99-2	0.0349	0.000004	8,760	5.02E-07	5.02E-07
26	30F_2	Benzo(g,h,i)perylene	191-24-2	0.0017	0.000000	8,760	2.42E-08	2.42E-08
26	30F_2	Benzo(k)fluoranthene	207-08-9	0.0220	0.000003	8,760	3.16E-07	3.16E-07
26	30F_2	Beryllium compounds	7440-41-7	0.1679	0.000019	8,760	2.42E-06	2.42E-06
26	30F_2	Cadmium compounds	7440-43-9	1.9374	0.000221	8,760	2.79E-05	2.79E-05
26	30F_2	Chromium compounds	7440-47-3	7.3620	0.000840	8,760	1.06E-04	1.06E-04
26	30F_2	Chrysene	218-01-9	0.0021	0.000000	8,760	2.97E-08	2.97E-08
26	30F_2	Cobalt compounds	7440-48-4	0.0922	0.000011	8,760	1.33E-06	1.33E-06
26	30F_2	Copper compounds	7440-50-8	6.0705	0.000693	8,760	8.73E-05	8.73E-05
26	30F_2	Dichlorobenzenes (mixed isomers)	25321-22-6	1.3172	0.000150	8,760	1.89E-05	1.89E-05
26	30F_2	Ethylbenzene	100-41-4	20.6654	0.002359	8,760	2.97E-04	2.97E-04
26	30F_2	Fluoranthene	206-44-0	0.0112	0.000001	8,760	1.62E-07	1.62E-07
26	30F_2	Fluorene	86-73-7	0.0620	0.000007	8,760	8.92E-07	8.92E-07
26	30F_2	Formaldehyde	50-00-0	67.1624	0.007667	8,760	9.66E-04	9.66E-04
26	30F_2	Hydrogen sulfide	7783-06-4	109.7847	0.012533	8,760	1.58E-03	1.58E-03
26	30F_2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0917	0.000010	8,760	1.32E-06	1.32E-06
26	30F_2	Lead compounds	7439-92-1	4.9080	0.000560	8,760	7.06E-05	7.06E-05
26	30F_2	Manganese compounds	7439-96-5	6.3288	0.000722	8,760	9.10E-05	9.10E-05
26	30F_2	Mercury compounds	7439-97-6	0.2325	0.000027	8,760	3.34E-06	3.34E-06
26	30F_2	Methylnaphthalene 2-	91-57-6	0.0263	0.000003	8,760	3.79E-07	3.79E-07
26	30F_2	Naphthalene	91-20-3	0.5037	0.000058	8,760	7.25E-06	7.25E-06
26	30F_2	n-Hexane	110-54-3	1.3317	0.000152	8,760	1.92E-05	1.92E-05
26	30F_2	Nickel compounds	7440-02-0	9.6869	0.001106	8,760	1.39E-04	1.39E-04
26	30F_2	Phenanthrene	85-01-8	0.0413	0.000005	8,760	5.94E-07	5.94E-07
26	30F_2	Phenol	108-95-2	5.1663	0.000590	8,760	7.43E-05	7.43E-05
26	30F_2	Propylene	115-07-1	193.7378	0.022116	8,760	2.79E-03	2.79E-03
26	30F_2	Pyrene	129-00-0	0.0127	0.000001	8,760	1.82E-07	1.82E-07
26	30F_2	Selenium compounds	7782-49-2	1.1366	0.000130	8,760	1.63E-05	1.63E-05
26	30F_2	Silver compounds	7440-22-4	2.0665	0.000236	8,760	2.97E-05	2.97E-05
26	30F_2	Sulfuric Acid	7664-93-9	553.7470	0.063213	8,760	7.96E-03	7.96E-03
26	30F_2	Toluene	108-88-3	193.7378	0.022116	8,760	2.79E-03	2.79E-03
26	30F_2	Vanadium compounds	7440-62-2	2.5247	0.000288	8,760	3.63E-05	3.63E-05
26	30F_2	Xylenes (mixed isomers)	1330-20-7	32.2896	0.003686	8,760	4.64E-04	4.64E-04
26	30F_2	Zinc compounds	7440-66-6	68.4540	0.007814	8,760	9.85E-04	9.85E-04
28	72F_2	1,2,4-Trimethylbenzene	95-63-6	40.2668	0.004597	8,760	5.79E-04	5.79E-04
28	72F_2	2,2,4-Trimethylpentane	540-84-1	3.7230	0.000425	8,760	5.35E-05	5.35E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
28	72F_2	2,4-Dimethylphenol	105-67-9	18.7183	0.002137	8,760	2.69E-04	2.69E-04
28	72F_2	Acenaphthene	83-32-9	0.0001	0.000000	8,760	1.62E-09	1.62E-09
28	72F_2	Acenaphthylene	208-96-8	0.0003	0.000000	8,760	4.38E-09	4.38E-09
28	72F_2	Acetaldehyde	75-07-0	0.5624	0.000064	8,760	8.09E-06	8.09E-06
28	72F_2	Acrolein	107-02-8	0.7968	0.000091	8,760	1.15E-05	1.15E-05
28	72F_2	Ammonia	7664-41-7	698.1722	0.079700	8,760	1.00E-02	1.00E-02
28	72F_2	Anthracene	120-12-7	0.0002	0.000000	8,760	3.17E-09	3.17E-09
28	72F_2	Antimony compounds	7440-36-0	0.0244	0.000003	8,760	3.51E-07	3.51E-07
28	72F_2	Arsenic compounds	7440-38-2	0.0337	0.000004	8,760	4.85E-07	4.85E-07
28	72F_2	Benzene	71-43-2	37.5470	0.004286	8,760	5.40E-04	5.40E-04
28	72F_2	Benzo(a)anthracene	56-55-3	0.0010	0.000000	8,760	1.48E-08	1.48E-08
28	72F_2	Benzo(a)pyrene	50-32-8	0.0027	0.000000	8,760	3.84E-08	3.84E-08
28	72F_2	Benzo(b)fluoranthene	205-99-2	0.0013	0.000000	8,760	1.82E-08	1.82E-08
28	72F_2	Benzo(g,h,i)perylene	191-24-2	0.0001	0.000000	8,760	8.76E-10	8.76E-10
28	72F_2	Benzo(k)fluoranthene	207-08-9	0.0008	0.000000	8,760	1.15E-08	1.15E-08
28	72F_2	Beryllium compounds	7440-41-7	0.0061	0.000001	8,760	8.76E-08	8.76E-08
28	72F_2	Biphenyl	92-52-4	0.5475	0.000063	8,760	7.87E-06	7.87E-06
28	72F_2	Cadmium compounds	7440-43-9	0.0703	0.000008	8,760	1.01E-06	1.01E-06
28	72F_2	Carbon disulfide	75-15-0	8.6837	0.000991	8,760	1.25E-04	1.25E-04
28	72F_2	Chromium compounds	7440-47-3	0.2672	0.000030	8,760	3.84E-06	3.84E-06
28	72F_2	Chrysene	218-01-9	0.0001	0.000000	8,760	1.08E-09	1.08E-09
28	72F_2	Cobalt compounds	7440-48-4	0.0039	0.000000	8,760	5.65E-08	5.65E-08
28	72F_2	Copper compounds	7440-50-8	0.2203	0.000025	8,760	3.17E-06	3.17E-06
28	72F_2	Cresols (mixed isomers)	1319-77-3	0.2573	0.000029	8,760	3.70E-06	3.70E-06
28	72F_2	Cumene	98-82-8	0.9649	0.000110	8,760	1.39E-05	1.39E-05
28	72F_2	Cyclohexane	110-82-7	16.0810	0.001836	8,760	2.31E-04	2.31E-04
28	72F_2	Dibenz(a,h)anthracene	53-70-3	0.0561	0.000006	8,760	8.07E-07	8.07E-07
28	72F_2	Ethylbenzene	100-41-4	5.8315	0.000666	8,760	8.39E-05	8.39E-05
28	72F_2	Ethylene dibromide (1,2-Dibromoeth	106-93-4	0.2920	0.000033	8,760	4.20E-06	4.20E-06
28	72F_2	Ethylene glycol	107-21-1	0.0007	0.000000	8,760	1.00E-08	1.00E-08
28	72F_2	Fluoranthene	206-44-0	0.0004	0.000000	8,760	5.86E-09	5.86E-09
28	72F_2	Fluorene	86-73-7	0.0022	0.000000	8,760	3.24E-08	3.24E-08
28	72F_2	Formaldehyde	50-00-0	2.4372	0.000278	8,760	3.51E-05	3.51E-05
28	72F_2	Hydrogen sulfide	7783-06-4	3.9838	0.000455	8,760	5.73E-05	5.73E-05
28	72F_2	Indeno(1,2,3-cd)pyrene	193-39-5	0.0033	0.000000	8,760	4.79E-08	4.79E-08
28	72F_2	Lead compounds	7439-92-1	0.1781	0.000020	8,760	2.56E-06	2.56E-06
28	72F_2	Manganese compounds	7439-96-5	0.2297	0.000026	8,760	3.30E-06	3.30E-06
28	72F_2	Mercury compounds	7439-97-6	0.0084	0.000001	8,760	1.21E-07	1.21E-07
28	72F_2	Methanol	67-56-1	5.2746	0.000602	8,760	7.59E-05	7.59E-05
28	72F_2	Methyl ethyl ketone	78-93-3	1.8980	0.000217	8,760	2.73E-05	2.73E-05
28	72F_2	Methyl isobutyl ketone	108-10-1	0.8030	0.000092	8,760	1.15E-05	1.15E-05
28	72F_2	Methylnaphthalene 2-	91-57-6	0.0011	0.000000	8,760	1.61E-08	1.61E-08
28	72F_2	Naphthalene	91-20-3	6.3220	0.000722	8,760	9.09E-05	9.09E-05
28	72F_2	n-Hexane	110-54-3	18.4763	0.002109	8,760	2.66E-04	2.66E-04
28	72F_2	Nickel compounds	7440-02-0	0.3515	0.000040	8,760	5.06E-06	5.06E-06
28	72F_2	Phenanthrene	85-01-8	0.0015	0.000000	8,760	2.16E-08	2.16E-08
28	72F_2	Phenol	108-95-2	0.3804	0.000043	8,760	5.47E-06	5.47E-06
28	72F_2	Propylene	115-07-1	7.0303	0.000803	8,760	1.01E-04	1.01E-04
28	72F_2	Pyrene	129-00-0	0.0005	0.000000	8,760	6.61E-09	6.61E-09
28	72F_2	Selenium compounds	7782-49-2	0.0412	0.000005	8,760	5.93E-07	5.93E-07
28	72F_2	Silver compounds	7440-22-4	0.0750	0.000009	8,760	1.08E-06	1.08E-06
28	72F_2	Styrene	100-42-5	1.2865	0.000147	8,760	1.85E-05	1.85E-05
28	72F_2	Sulfuric Acid	7664-93-9	0.1345	0.000015	8,760	1.93E-06	1.93E-06
28	72F_2	Toluene	108-88-3	36.1047	0.004122	8,760	5.19E-04	5.19E-04
28	72F_2	Vanadium compounds	7440-62-2	0.1075	0.000012	8,760	1.55E-06	1.55E-06
28	72F_2	Xylenes (mixed isomers)	1330-20-7	44.3974	0.005068	8,760	6.39E-04	6.39E-04
28	72F_2	Zinc compounds	7440-66-6	2.4840	0.000284	8,760	3.57E-05	3.57E-05
29	75F_1	Acenaphthene	83-32-9	0.5861	0.000067	8,760	8.43E-06	8.43E-06
29	75F_1	Acenaphthylene	208-96-8	0.8955	0.000102	8,760	1.29E-05	1.29E-05
29	75F_1	Acetaldehyde	75-07-0	2.1166	0.000242	8,760	3.04E-05	3.04E-05
29	75F_1	Acrolein	107-02-8	27.6790	0.003160	8,760	3.98E-04	3.98E-04
29	75F_1	Anthracene	120-12-7	2.4423	0.000279	8,760	3.51E-05	3.51E-05
29	75F_1	Antimony compounds	7440-36-0	0.8467	0.000097	8,760	1.22E-05	1.22E-05
29	75F_1	Chromium compounds	7440-47-3	0.6513	0.000074	8,760	9.37E-06	9.37E-06

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
29	75F_1	Cobalt compounds	7440-48-4	0.1162	0.000013	8,760	1.67E-06	1.67E-06
29	75F_1	Dichlorobenzenes (mixed isomers)	25321-22-6	1.6605	0.000190	8,760	2.39E-05	2.39E-05
29	75F_1	Ethylbenzene	100-41-4	26.0508	0.002974	8,760	3.75E-04	3.75E-04
29	75F_1	Fluorene	86-73-7	0.5861	0.000067	8,760	8.43E-06	8.43E-06
29	75F_1	Formaldehyde	50-00-0	19.2125	0.002193	8,760	2.76E-04	2.76E-04
29	75F_1	Lead compounds	7439-92-1	0.9769	0.000112	8,760	1.41E-05	1.41E-05
29	75F_1	Manganese compounds	7439-96-5	2.9307	0.000335	8,760	4.22E-05	4.22E-05
29	75F_1	Mercury compounds	7439-97-6	133.0221	0.015185	8,760	1.91E-03	1.91E-03
29	75F_1	Methylnaphthalene 2-	91-57-6	0.0332	0.000004	8,760	4.78E-07	4.78E-07
29	75F_1	Naphthalene	91-20-3	4.8194	0.000550	8,760	6.93E-05	6.93E-05
29	75F_1	n-Hexane	110-54-3	1.6788	0.000192	8,760	2.41E-05	2.41E-05
29	75F_1	Nickel compounds	7440-02-0	4.3961	0.000502	8,760	6.32E-05	6.32E-05
29	75F_1	Phenanthrene	85-01-8	2.4423	0.000279	8,760	3.51E-05	3.51E-05
29	75F_1	Phenol	108-95-2	6.3499	0.000725	8,760	9.13E-05	9.13E-05
29	75F_1	Propylene	115-07-1	244.2267	0.027880	8,760	3.51E-03	3.51E-03
29	75F_1	Silver compounds	7440-22-4	2.6051	0.000297	8,760	3.75E-05	3.75E-05
29	75F_1	Sulfuric Acid	7664-93-9	1,293.7760	0.147691	8,760	1.86E-02	1.86E-02
29	75F_1	Toluene	108-88-3	72.7795	0.008308	8,760	1.05E-03	1.05E-03
29	75F_1	Vanadium compounds	7440-62-2	3.1826	0.000363	8,760	4.58E-05	4.58E-05
29	75F_1	Xylenes (mixed isomers)	1330-20-7	40.7044	0.004647	8,760	5.85E-04	5.85E-04
29	75F_1	Zinc compounds	7440-66-6	1.8724	0.000214	8,760	2.69E-05	2.69E-05
33	CT_FGT	1,2,4-Trimethylbenzene	95-63-6	0.1200	0.000014	8,760	1.73E-06	1.73E-06
33	CT_FGT	1,3-Butadiene	106-99-0	0.3532	0.000040	8,760	5.08E-06	5.08E-06
33	CT_FGT	Ammonia	7664-41-7	0.0012	0.000000	8,760	1.69E-08	1.69E-08
33	CT_FGT	Anthracene	120-12-7	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Benzene	71-43-2	0.0600	0.000007	8,760	8.63E-07	8.63E-07
33	CT_FGT	Benzo(a)anthracene	56-55-3	0.0429	0.000005	8,760	6.17E-07	6.17E-07
33	CT_FGT	Benzo(a)pyrene	50-32-8	0.0009	0.000000	8,760	1.23E-08	1.26E-08
33	CT_FGT	Benzo(b)fluoranthene	205-99-2	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Benzo(g,h,i)perylene	191-24-2	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Benzo(k)fluoranthene	207-08-9	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Cadmium compounds	7440-43-9	0.0214	0.000002	8,760	3.08E-07	3.08E-07
33	CT_FGT	Carbonyl sulfide	463-58-1	0.0120	0.000001	8,760	1.73E-07	1.73E-07
33	CT_FGT	Chloroform	67-66-3	0.1200	0.000014	8,760	1.73E-06	1.73E-06
33	CT_FGT	Chromium compounds	7440-47-3	0.2059	0.000024	8,760	2.96E-06	2.96E-06
33	CT_FGT	Chrysene	218-01-9	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Copper compounds	7440-50-8	0.6288	0.000072	8,760	9.04E-06	9.04E-06
33	CT_FGT	Dibenz(a,h)anthracene	53-70-3	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Ethylbenzene	100-41-4	0.1200	0.000014	8,760	1.73E-06	1.73E-06
33	CT_FGT	Fluoranthene	206-44-0	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Glycol ethers and their acetates	1115	0.0007	0.000000	8,760	1.02E-08	1.02E-08
33	CT_FGT	Hydrogen sulfide	7783-06-4	0.0287	0.000003	8,760	4.13E-07	4.13E-07
33	CT_FGT	Indeno(1,2,3-cd)pyrene	193-39-5	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Lead compounds	7439-92-1	0.0429	0.000005	8,760	6.17E-07	6.17E-07
33	CT_FGT	Methanol	67-56-1	12.0005	0.001370	8,760	1.73E-04	1.73E-04
33	CT_FGT	Naphthalene	91-20-3	1.2000	0.000137	8,760	1.73E-05	1.73E-05
33	CT_FGT	n-Hexane	110-54-3	0.0600	0.000007	8,760	8.63E-07	8.63E-07
33	CT_FGT	Nickel compounds	7440-02-0	0.3294	0.000038	8,760	4.74E-06	4.74E-06
33	CT_FGT	Phenanthrene	85-01-8	0.0043	0.000001	8,760	6.17E-08	6.30E-08
33	CT_FGT	Phenol	108-95-2	1.2000	0.000137	8,760	1.73E-05	1.73E-05
33	CT_FGT	Propylene	115-07-1	3.5320	0.000403	8,760	5.08E-05	5.08E-05
33	CT_FGT	Tetrachloroethylene	127-18-4	0.1200	0.000014	8,760	1.73E-06	1.73E-06
33	CT_FGT	Toluene	108-88-3	0.1200	0.000014	8,760	1.73E-06	1.73E-06
33	CT_FGT	Xylenes (mixed isomers)	1330-20-7	0.2400	0.000027	8,760	3.45E-06	3.45E-06
33	CT_FGT	Zinc compounds	7440-66-6	31.2232	0.003564	8,760	4.49E-04	4.49E-04
34	CT_HDT	1,2,4-Trimethylbenzene	95-63-6	2.5146	0.000287	8,760	3.62E-05	3.62E-05
34	CT_HDT	1,3-Butadiene	106-99-0	0.4453	0.000051	8,760	6.40E-06	6.40E-06
34	CT_HDT	Ammonia	7664-41-7	16.5661	0.001891	8,760	2.38E-04	2.38E-04
34	CT_HDT	Anthracene	120-12-7	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Benzene	71-43-2	1.2573	0.000144	8,760	1.81E-05	1.81E-05
34	CT_HDT	Benzo(a)anthracene	56-55-3	0.3485	0.000040	8,760	5.01E-06	5.01E-06
34	CT_HDT	Benzo(a)pyrene	50-32-8	0.0070	0.000001	8,760	1.00E-07	1.01E-07
34	CT_HDT	Benzo(b)fluoranthene	205-99-2	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Benzo(g,h,i)perylene	191-24-2	0.0348	0.000004	8,760	5.01E-07	5.04E-07

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
34	CT_HDT	Benzo(k)fluoranthene	207-08-9	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Cadmium compounds	7440-43-9	0.1742	0.000020	8,760	2.51E-06	2.51E-06
34	CT_HDT	Chloroform	67-66-3	20.6195	0.002354	8,760	2.97E-04	2.97E-04
34	CT_HDT	Chromium compounds	7440-47-3	1.2406	0.000142	8,760	1.78E-05	1.78E-05
34	CT_HDT	Chrysene	218-01-9	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Copper compounds	7440-50-8	3.2129	0.000367	8,760	4.62E-05	4.62E-05
34	CT_HDT	Dibenz(a,h)anthracene	53-70-3	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Diethanolamine	111-42-2	375.2784	0.042840	8,760	5.40E-03	5.40E-03
34	CT_HDT	Ethylbenzene	100-41-4	2.5146	0.000287	8,760	3.62E-05	3.62E-05
34	CT_HDT	Ethylene	74-85-1	146.3685	0.016709	8,760	2.11E-03	2.11E-03
34	CT_HDT	Fluoranthene	206-44-0	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Glycol ethers and their acetates	1115	0.0110	0.000001	8,760	1.59E-07	1.59E-07
34	CT_HDT	Hydrogen sulfide	7783-06-4	79.6571	0.009093	8,760	1.15E-03	1.15E-03
34	CT_HDT	Indeno(1,2,3-cd)pyrene	193-39-5	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Lead compounds	7439-92-1	0.3485	0.000040	8,760	5.01E-06	5.01E-06
34	CT_HDT	Methanol	67-56-1	251.4569	0.028705	8,760	3.62E-03	3.62E-03
34	CT_HDT	Naphthalene	91-20-3	25.1457	0.002871	8,760	3.62E-04	3.62E-04
34	CT_HDT	n-Hexane	110-54-3	1.2573	0.000144	8,760	1.81E-05	1.81E-05
34	CT_HDT	Nickel compounds	7440-02-0	2.1745	0.000248	8,760	3.13E-05	3.13E-05
34	CT_HDT	Phenanthrene	85-01-8	0.0348	0.000004	8,760	5.01E-07	5.04E-07
34	CT_HDT	Phenol	108-95-2	25.1457	0.002871	8,760	3.62E-04	3.62E-04
34	CT_HDT	Propylene	115-07-1	558.4324	0.063748	8,760	8.03E-03	8.03E-03
34	CT_HDT	Tetrachloroethylene	127-18-4	2.5146	0.000287	8,760	3.62E-05	3.62E-05
34	CT_HDT	Toluene	108-88-3	2.5146	0.000287	8,760	3.62E-05	3.62E-05
34	CT_HDT	Xylenes (mixed isomers)	1330-20-7	5.0291	0.000574	8,760	7.23E-05	7.23E-05
34	CT_HDT	Zinc compounds	7440-66-6	330.3522	0.037711	8,760	4.75E-03	4.75E-03
36	CT_NO	1,2,4-Trimethylbenzene	95-63-6	1.0807	0.000123	8,760	1.55E-05	1.55E-05
36	CT_NO	1,3-Butadiene	106-99-0	0.0033	0.000000	8,760	4.80E-08	4.80E-08
36	CT_NO	Ammonia	7664-41-7	0.0050	0.000001	8,760	7.20E-08	7.20E-08
36	CT_NO	Anthracene	120-12-7	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Benzene	71-43-2	0.5403	0.000062	8,760	7.77E-06	7.77E-06
36	CT_NO	Benzo(a)anthracene	56-55-3	0.1622	0.000019	8,760	2.33E-06	2.33E-06
36	CT_NO	Benzo(a)pyrene	50-32-8	0.0032	0.000000	8,760	4.67E-08	5.04E-08
36	CT_NO	Benzo(b)fluoranthene	205-99-2	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Benzo(g,h,i)perylene	191-24-2	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Benzo(k)fluoranthene	207-08-9	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Cadmium compounds	7440-43-9	0.0811	0.000009	8,760	1.17E-06	1.17E-06
36	CT_NO	Chloroform	67-66-3	14.6973	0.001678	8,760	2.11E-04	2.11E-04
36	CT_NO	Chromium compounds	7440-47-3	2.3742	0.000271	8,760	3.41E-05	3.41E-05
36	CT_NO	Chrysene	218-01-9	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Copper compounds	7440-50-8	1.0931	0.000125	8,760	1.57E-05	1.57E-05
36	CT_NO	Dibenz(a,h)anthracene	53-70-3	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Ethylbenzene	100-41-4	1.0807	0.000123	8,760	1.55E-05	1.55E-05
36	CT_NO	Fluoranthene	206-44-0	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Glycol ethers and their acetates	1115	0.0067	0.000001	8,760	9.60E-08	9.60E-08
36	CT_NO	Hydrogen sulfide	7783-06-4	0.0134	0.000002	8,760	1.92E-07	1.92E-07
36	CT_NO	Indeno(1,2,3-cd)pyrene	193-39-5	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Lead compounds	7439-92-1	0.1622	0.000019	8,760	2.33E-06	2.33E-06
36	CT_NO	Methanol	67-56-1	108.0683	0.012337	8,760	1.55E-03	1.55E-03
36	CT_NO	Naphthalene	91-20-3	10.8068	0.001234	8,760	1.55E-04	1.55E-04
36	CT_NO	n-Hexane	110-54-3	0.5403	0.000062	8,760	7.77E-06	7.77E-06
36	CT_NO	Nickel compounds	7440-02-0	1.1352	0.000130	8,760	1.63E-05	1.63E-05
36	CT_NO	Phenanthrene	85-01-8	0.0162	0.000002	8,760	2.33E-07	2.39E-07
36	CT_NO	Phenol	108-95-2	10.8068	0.001234	8,760	1.55E-04	1.55E-04
36	CT_NO	Propylene	115-07-1	52.5889	0.006003	8,760	7.56E-04	7.56E-04
36	CT_NO	Tetrachloroethylene	127-18-4	1.0807	0.000123	8,760	1.55E-05	1.55E-05
36	CT_NO	Toluene	108-88-3	1.0807	0.000123	8,760	1.55E-05	1.55E-05
36	CT_NO	Xylenes (mixed isomers)	1330-20-7	2.1614	0.000247	8,760	3.11E-05	3.11E-05
36	CT_NO	Zinc compounds	7440-66-6	174.1747	0.019883	8,760	2.51E-03	2.51E-03
37	CT_PTR	1,1,2-Trichloroethane (Vinyl trichlori	79-00-5	0.0036	0.000000	8,760	5.13E-08	5.13E-08
37	CT_PTR	1,2,4-Trimethylbenzene	95-63-6	0.2601	0.000030	8,760	3.74E-06	3.74E-06
37	CT_PTR	Ammonia	7664-41-7	0.0009	0.000000	8,760	1.28E-08	1.28E-08
37	CT_PTR	Anthracene	120-12-7	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Benzene	71-43-2	0.1300	0.000015	8,760	1.87E-06	1.87E-06

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
37	CT_PTR	Benzo(a)anthracene	56-55-3	0.0433	0.000005	8,760	6.23E-07	6.17E-07
37	CT_PTR	Benzo(a)pyrene	50-32-8	0.0009	0.000000	8,760	1.25E-08	1.26E-08
37	CT_PTR	Benzo(b)fluoranthene	205-99-2	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Benzo(g,h,i)perylene	191-24-2	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Benzo(k)fluoranthene	207-08-9	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Cadmium compounds	7440-43-9	0.0217	0.000002	8,760	3.12E-07	3.12E-07
37	CT_PTR	Chlorine	7782-50-5	0.0036	0.000000	8,760	5.13E-08	5.13E-08
37	CT_PTR	Chloroform	67-66-3	2.0285	0.000232	8,760	2.92E-05	2.92E-05
37	CT_PTR	Chromium compounds	7440-47-3	0.3788	0.000043	8,760	5.45E-06	5.45E-06
37	CT_PTR	Chrysene	218-01-9	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Copper compounds	7440-50-8	0.3458	0.000039	8,760	4.97E-06	4.97E-06
37	CT_PTR	Dibenz(a,h)anthracene	53-70-3	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0018	0.000000	8,760	2.57E-08	2.57E-08
37	CT_PTR	Ethylbenzene	100-41-4	0.2601	0.000030	8,760	3.74E-06	3.74E-06
37	CT_PTR	Fluoranthene	206-44-0	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Glycol ethers and their acetates	1115	0.0018	0.000000	8,760	2.57E-08	2.57E-08
37	CT_PTR	Hydrochloric acid	7647-01-0	0.0018	0.000000	8,760	2.57E-08	2.57E-08
37	CT_PTR	Indeno(1,2,3-cd)pyrene	193-39-5	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Lead compounds	7439-92-1	0.0433	0.000005	8,760	6.23E-07	6.23E-07
37	CT_PTR	Methanol	67-56-1	26.0059	0.002969	8,760	3.74E-04	3.74E-04
37	CT_PTR	Methyl chloroform {1,1,1-Trichloroetl	71-55-6	0.0018	0.000000	8,760	2.57E-08	2.57E-08
37	CT_PTR	Naphthalene	91-20-3	2.6006	0.000297	8,760	3.74E-05	3.74E-05
37	CT_PTR	n-Hexane	110-54-3	0.1300	0.000015	8,760	1.87E-06	1.87E-06
37	CT_PTR	Nickel compounds	7440-02-0	0.2765	0.000032	8,760	3.98E-06	3.98E-06
37	CT_PTR	Phenanthrene	85-01-8	0.0043	0.000001	8,760	6.23E-08	6.30E-08
37	CT_PTR	Phenol	108-95-2	2.6006	0.000297	8,760	3.74E-05	3.74E-05
37	CT_PTR	Propylene	115-07-1	0.0018	0.000000	8,760	2.57E-08	2.57E-08
37	CT_PTR	Tetrachloroethylene	127-18-4	0.2601	0.000030	8,760	3.74E-06	3.74E-06
37	CT_PTR	Toluene	108-88-3	0.2601	0.000030	8,760	3.74E-06	3.74E-06
37	CT_PTR	Xylenes (mixed isomers)	1330-20-7	0.5201	0.000059	8,760	7.48E-06	7.48E-06
37	CT_PTR	Zinc compounds	7440-66-6	32.9351	0.003760	8,760	4.74E-04	4.74E-04
38	CT_SCOKR	1,2,4-Trimethylbenzene	95-63-6	0.0391	0.000004	8,760	5.63E-07	5.63E-07
38	CT_SCOKR	1,3-Butadiene	106-99-0	0.2391	0.000027	8,760	3.44E-06	3.44E-06
38	CT_SCOKR	Ammonia	7664-41-7	0.0005	0.000000	8,760	6.88E-09	6.88E-09
38	CT_SCOKR	Anthracene	120-12-7	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Benzene	71-43-2	0.0196	0.000002	8,760	2.81E-07	2.81E-07
38	CT_SCOKR	Benzo(a)anthracene	56-55-3	0.0174	0.000002	8,760	2.51E-07	2.52E-07
38	CT_SCOKR	Benzo(a)pyrene	50-32-8	0.0003	0.000000	8,760	5.01E-09	5.01E-09
38	CT_SCOKR	Benzo(b)fluoranthene	205-99-2	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Benzo(g,h,i)perylene	191-24-2	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Benzo(k)fluoranthene	207-08-9	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Cadmium compounds	7440-43-9	0.0087	0.000001	8,760	1.25E-07	1.25E-07
38	CT_SCOKR	Chloroform	67-66-3	0.1956	0.000022	8,760	2.81E-06	2.81E-06
38	CT_SCOKR	Chromium compounds	7440-47-3	0.0941	0.000011	8,760	1.35E-06	1.35E-06
38	CT_SCOKR	Chrysene	218-01-9	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Copper compounds	7440-50-8	0.0770	0.000009	8,760	1.11E-06	1.11E-06
38	CT_SCOKR	Dibenz(a,h)anthracene	53-70-3	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Ethylbenzene	100-41-4	0.0391	0.000004	8,760	5.63E-07	5.63E-07
38	CT_SCOKR	Fluoranthene	206-44-0	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Hydrogen sulfide	7783-06-4	0.0029	0.000000	8,760	4.13E-08	4.13E-08
38	CT_SCOKR	Indeno(1,2,3-cd)pyrene	193-39-5	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Lead compounds	7439-92-1	0.0174	0.000002	8,760	2.51E-07	2.51E-07
38	CT_SCOKR	Methanol	67-56-1	3.9130	0.000447	8,760	5.63E-05	5.63E-05
38	CT_SCOKR	Naphthalene	91-20-3	0.3913	0.000045	8,760	5.63E-06	5.63E-06
38	CT_SCOKR	n-Hexane	110-54-3	0.0196	0.000002	8,760	2.81E-07	2.81E-07
38	CT_SCOKR	Nickel compounds	7440-02-0	0.0969	0.000011	8,760	1.39E-06	1.39E-06
38	CT_SCOKR	Phenanthrene	85-01-8	0.0017	0.000000	8,760	2.51E-08	2.52E-08
38	CT_SCOKR	Phenol	108-95-2	0.3913	0.000045	8,760	5.63E-06	5.63E-06
38	CT_SCOKR	Propylene	115-07-1	0.4783	0.000055	8,760	6.88E-06	6.88E-06
38	CT_SCOKR	Tetrachloroethylene	127-18-4	0.0391	0.000004	8,760	5.62E-07	5.62E-07
38	CT_SCOKR	Toluene	108-88-3	0.0391	0.000004	8,760	5.63E-07	5.63E-07
38	CT_SCOKR	Xylenes (mixed isomers)	1330-20-7	0.0783	0.000009	8,760	1.13E-06	1.13E-06
38	CT_SCOKR	Zinc compounds	7440-66-6	16.8312	0.001921	8,760	2.42E-04	2.42E-04
39	CT_SO	1,2,4-Trimethylbenzene	95-63-6	0.4619	0.000053	8,760	6.64E-06	6.64E-06

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
39	CT_SO	Ammonia	7664-41-7	9.5678	0.001092	8,760	1.38E-04	1.38E-04
39	CT_SO	Anthracene	120-12-7	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Benzene	71-43-2	0.2309	0.000026	8,760	3.32E-06	3.32E-06
39	CT_SO	Benzo(a)anthracene	56-55-3	0.0697	0.000008	8,760	1.00E-06	1.01E-06
39	CT_SO	Benzo(a)pyrene	50-32-8	0.0014	0.000000	8,760	2.00E-08	2.52E-08
39	CT_SO	Benzo(b)fluoranthene	205-99-2	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Benzo(g,h,i)perylene	191-24-2	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Benzo(k)fluoranthene	207-08-9	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Cadmium compounds	7440-43-9	0.0348	0.000004	8,760	5.01E-07	5.01E-07
39	CT_SO	Chloroform	67-66-3	1.4780	0.000169	8,760	2.13E-05	2.13E-05
39	CT_SO	Chromium compounds	7440-47-3	0.2816	0.000032	8,760	4.05E-06	4.05E-06
39	CT_SO	Chrysene	218-01-9	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Copper compounds	7440-50-8	0.2300	0.000026	8,760	3.31E-06	3.31E-06
39	CT_SO	Dibenz(a,h)anthracene	53-70-3	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Ethylbenzene	100-41-4	0.4619	0.000053	8,760	6.64E-06	6.64E-06
39	CT_SO	Fluoranthene	206-44-0	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Glycol ethers and their acetates	1115	0.0019	0.000000	8,760	2.75E-08	2.75E-08
39	CT_SO	Indeno(1,2,3-cd)pyrene	193-39-5	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Lead compounds	7439-92-1	0.0697	0.000008	8,760	1.00E-06	1.00E-06
39	CT_SO	Methanol	67-56-1	46.1860	0.005272	8,760	6.64E-04	6.64E-04
39	CT_SO	Naphthalene	91-20-3	4.6186	0.000527	8,760	6.64E-05	6.64E-05
39	CT_SO	n-Hexane	110-54-3	0.2309	0.000026	8,760	3.32E-06	3.32E-06
39	CT_SO	Nickel compounds	7440-02-0	0.2063	0.000024	8,760	2.97E-06	2.97E-06
39	CT_SO	Phenanthrene	85-01-8	0.0070	0.000001	8,760	1.00E-07	1.01E-07
39	CT_SO	Phenol	108-95-2	4.6186	0.000527	8,760	6.64E-05	6.64E-05
39	CT_SO	Propylene	115-07-1	0.0038	0.000000	8,760	5.50E-08	5.50E-08
39	CT_SO	Tetrachloroethylene	127-18-4	0.4619	0.000053	8,760	6.64E-06	6.64E-06
39	CT_SO	Toluene	108-88-3	0.4619	0.000053	8,760	6.64E-06	6.64E-06
39	CT_SO	Xylenes (mixed isomers)	1330-20-7	0.9237	0.000105	8,760	1.33E-05	1.33E-05
39	CT_SO	Zinc compounds	7440-66-6	49.3437	0.005633	8,760	7.10E-04	7.10E-04
40	CT_SRU	1,2,4-Trimethylbenzene	95-63-6	0.0297	0.000003	8,760	4.27E-07	4.27E-07
40	CT_SRU	1,3-Butadiene	106-99-0	0.0860	0.000010	8,760	1.24E-06	1.24E-06
40	CT_SRU	Anthracene	120-12-7	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Benzene	71-43-2	0.0148	0.000002	8,760	2.14E-07	2.14E-07
40	CT_SRU	Benzo(a)anthracene	56-55-3	0.0004	0.000000	8,760	5.24E-09	5.24E-09
40	CT_SRU	Benzo(a)pyrene	50-32-8	0.0000	0.000000	8,760	1.05E-10	1.05E-10
40	CT_SRU	Benzo(b)fluoranthene	205-99-2	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Benzo(g,h,i)perylene	191-24-2	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Benzo(k)fluoranthene	207-08-9	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Cadmium compounds	7440-43-9	0.0002	0.000000	8,760	2.62E-09	2.62E-09
40	CT_SRU	Chloroform	67-66-3	0.1247	0.000014	8,760	1.79E-06	1.79E-06
40	CT_SRU	Chromium compounds	7440-47-3	0.0023	0.000000	8,760	3.34E-08	3.34E-08
40	CT_SRU	Chrysene	218-01-9	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Copper compounds	7440-50-8	0.0013	0.000000	8,760	1.86E-08	1.86E-08
40	CT_SRU	Dibenz(a,h)anthracene	53-70-3	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Diethanolamine	111-42-2	59.4191	0.006783	8,760	8.55E-04	8.55E-04
40	CT_SRU	Ethylbenzene	100-41-4	0.0297	0.000003	8,760	4.27E-07	4.27E-07
40	CT_SRU	Ethylene	74-85-1	13.3780	0.001527	8,760	1.92E-04	1.92E-04
40	CT_SRU	Fluoranthene	206-44-0	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Hydrogen sulfide	7783-06-4	11.6062	0.001325	8,760	1.67E-04	1.67E-04
40	CT_SRU	Indeno(1,2,3-cd)pyrene	193-39-5	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Lead compounds	7439-92-1	0.0004	0.000000	8,760	5.24E-09	5.24E-09
40	CT_SRU	Methanol	67-56-1	2.9689	0.000339	8,760	4.27E-05	4.27E-05
40	CT_SRU	Naphthalene	91-20-3	0.2969	0.000034	8,760	4.27E-06	4.27E-06
40	CT_SRU	n-Hexane	110-54-3	0.0148	0.000002	8,760	2.14E-07	2.14E-07
40	CT_SRU	Nickel compounds	7440-02-0	0.0013	0.000000	8,760	1.91E-08	1.91E-08
40	CT_SRU	Phenanthrene	85-01-8	0.0000	0.000000	8,760	5.24E-10	5.24E-10
40	CT_SRU	Phenol	108-95-2	0.2969	0.000034	8,760	4.27E-06	4.27E-06
40	CT_SRU	Propylene	115-07-1	26.7688	0.003056	8,760	3.85E-04	3.85E-04
40	CT_SRU	Tetrachloroethylene	127-18-4	0.0297	0.000003	8,760	4.27E-07	4.27E-07
40	CT_SRU	Toluene	108-88-3	0.0297	0.000003	8,760	4.27E-07	4.27E-07
40	CT_SRU	Xylenes (mixed isomers)	1330-20-7	0.0594	0.000007	8,760	8.54E-07	8.54E-07
40	CT_SRU	Zinc compounds	7440-66-6	0.5285	0.000060	8,760	7.60E-06	7.60E-06
41	FLARE_55	1,3-Butadiene	106-99-0	0.0555	0.000006	8,760	7.99E-07	7.99E-07

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
41	FLARE_55	Acetaldehyde	75-07-0	1.1239	0.000128	8,760	1.62E-05	1.62E-05
41	FLARE_55	Acrolein	107-02-8	0.2614	0.000030	8,760	3.76E-06	3.76E-06
41	FLARE_55	Benzene	71-43-2	4.1557	0.000474	8,760	5.98E-05	5.98E-05
41	FLARE_55	Ethylbenzene	100-41-4	37.7407	0.004308	8,760	5.43E-04	5.43E-04
41	FLARE_55	Ethylene	74-85-1	7.6988	0.000879	8,760	1.11E-04	1.11E-04
41	FLARE_55	Formaldehyde	50-00-0	30.5533	0.003488	8,760	4.39E-04	4.39E-04
41	FLARE_55	Lead compounds	7439-92-1	0.0289	0.000003	8,760	4.16E-07	4.16E-07
41	FLARE_55	Mercury compounds	7439-97-6	0.0026	0.000000	8,760	3.70E-08	3.70E-08
41	FLARE_55	Naphthalene	91-20-3	0.2875	0.000033	8,760	4.14E-06	4.14E-06
41	FLARE_55	n-Hexane	110-54-3	1.1198	0.000128	8,760	1.61E-05	1.61E-05
41	FLARE_55	PAHs, total	1151	0.0784	0.000009	8,760	1.13E-06	1.13E-06
41	FLARE_55	Propylene	115-07-1	38.0089	0.004339	8,760	5.47E-04	5.47E-04
41	FLARE_55	Toluene	108-88-3	1.5159	0.000173	8,760	2.18E-05	2.18E-05
41	FLARE_55	Xylenes (mixed isomers)	1330-20-7	0.7580	0.000087	8,760	1.09E-05	1.09E-05
42	FLARE_65	1,3-Butadiene	106-99-0	14.5137	0.001657	8,760	2.09E-04	2.09E-04
42	FLARE_65	Acetaldehyde	75-07-0	15.1072	0.001725	8,760	2.17E-04	2.17E-04
42	FLARE_65	Acrolein	107-02-8	3.5133	0.000401	8,760	5.05E-05	5.05E-05
42	FLARE_65	Benzene	71-43-2	55.8615	0.006377	8,760	8.03E-04	8.03E-04
42	FLARE_65	Carbon disulfide	75-15-0	2.0218	0.000231	8,760	2.91E-05	2.91E-05
42	FLARE_65	Carbonyl sulfide	463-58-1	26.4276	0.003017	8,760	3.80E-04	3.80E-04
42	FLARE_65	Ethylbenzene	100-41-4	507.3212	0.057913	8,760	7.30E-03	7.30E-03
42	FLARE_65	Ethylene	74-85-1	2,311.1048	0.263825	8,760	3.32E-02	3.32E-02
42	FLARE_65	Formaldehyde	50-00-0	410.7054	0.046884	8,760	5.91E-03	5.91E-03
42	FLARE_65	Hydrogen sulfide	7783-06-4	2,768.7260	0.316065	8,760	3.98E-02	3.98E-02
42	FLARE_65	Lead compounds	7439-92-1	0.3181	0.000036	8,760	4.58E-06	4.58E-06
42	FLARE_65	Naphthalene	91-20-3	3.8646	0.000441	8,760	5.56E-05	5.56E-05
42	FLARE_65	n-Hexane	110-54-3	10.1886	0.001163	8,760	1.47E-04	1.47E-04
42	FLARE_65	PAHs, total	1151	1.0540	0.000120	8,760	1.52E-05	1.52E-05
42	FLARE_65	Propylene	115-07-1	2,975.4412	0.339662	8,760	4.28E-02	4.28E-02
42	FLARE_65	Toluene	108-88-3	20.3772	0.002326	8,760	2.93E-04	2.93E-04
42	FLARE_65	Xylenes (mixed isomers)	1330-20-7	10.1886	0.001163	8,760	1.47E-04	1.47E-04
43	ICE_D (West)	Diesel exhaust particulates	9901	126.9200	0.461527	275	1.83E-03	5.82E-02
44	ICE_G (West)	1,2,4-Trimethylbenzene	95-63-6	1.1710	0.000419	2,795	1.68E-05	5.28E-05
44	ICE_G (West)	1,3-Butadiene	106-99-0	0.7714	0.000276	2,795	1.11E-05	3.48E-05
44	ICE_G (West)	Acetaldehyde	75-07-0	0.6970	0.000249	2,795	1.00E-05	3.14E-05
44	ICE_G (West)	Acrolein	107-02-8	0.1673	0.000060	2,795	2.41E-06	7.54E-06
44	ICE_G (West)	Benzene	71-43-2	3.1971	0.001144	2,795	4.60E-05	1.44E-04
44	ICE_G (West)	Chlorine	7782-50-5	0.3822	0.000137	2,795	5.50E-06	1.72E-05
44	ICE_G (West)	Copper compounds	7440-50-8	0.0028	0.000001	2,795	3.99E-08	1.25E-07
44	ICE_G (West)	Ethylbenzene	100-41-4	1.3941	0.000499	2,795	2.01E-05	6.28E-05
44	ICE_G (West)	Formaldehyde	50-00-0	2.8997	0.001038	2,795	4.17E-05	1.31E-04
44	ICE_G (West)	Manganese compounds	7439-96-5	0.0028	0.000001	2,795	3.99E-08	1.25E-07
44	ICE_G (West)	Methanol	67-56-1	0.6506	0.000233	2,795	9.36E-06	2.93E-05
44	ICE_G (West)	Methyl ethyl ketone	78-93-3	0.0558	0.000020	2,795	8.02E-07	2.51E-06
44	ICE_G (West)	m-Xylene	108-38-3	4.1357	0.001480	2,795	5.95E-05	1.86E-04
44	ICE_G (West)	Naphthalene	91-20-3	0.1208	0.000043	2,795	1.74E-06	5.45E-06
44	ICE_G (West)	n-Hexane	110-54-3	1.2175	0.000436	2,795	1.75E-05	5.49E-05
44	ICE_G (West)	Nickel compounds	7440-02-0	0.0028	0.000001	2,795	3.99E-08	1.25E-07
44	ICE_G (West)	o-Xylene	95-47-6	1.4405	0.000515	2,795	2.07E-05	6.49E-05
44	ICE_G (West)	Styrene	100-42-5	0.1208	0.000043	2,795	1.74E-06	5.45E-06
44	ICE_G (West)	Toluene	108-88-3	6.3105	0.002258	2,795	9.08E-05	2.84E-04
45	RESID	Acetaldehyde	75-07-0	0.1799	0.000021	8,760	2.59E-06	2.59E-06
45	RESID	Acrolein	107-02-8	0.2549	0.000029	8,760	3.67E-06	3.67E-06
45	RESID	Antimony compounds	7440-36-0	0.0078	0.000001	8,760	1.12E-07	1.12E-07
45	RESID	Arsenic compounds	7440-38-2	0.0108	0.000001	8,760	1.55E-07	1.55E-07
45	RESID	Benzene	71-43-2	0.6178	0.000071	8,760	8.89E-06	8.89E-06
45	RESID	Beryllium compounds	7440-41-7	0.0019	0.000000	8,760	2.80E-08	2.80E-08
45	RESID	Cadmium compounds	7440-43-9	0.0225	0.000003	8,760	3.24E-07	3.24E-07
45	RESID	Chromium compounds	7440-47-3	0.0855	0.000010	8,760	1.23E-06	1.23E-06
45	RESID	Cobalt compounds	7440-48-4	0.0013	0.000000	8,760	1.81E-08	1.81E-08
45	RESID	Copper compounds	7440-50-8	0.0705	0.000008	8,760	1.01E-06	1.01E-06
45	RESID	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0180	0.000002	8,760	2.58E-07	2.58E-07
45	RESID	Ethylbenzene	100-41-4	0.2399	0.000027	8,760	3.45E-06	3.45E-06
45	RESID	Formaldehyde	50-00-0	0.7797	0.000089	8,760	1.12E-05	1.12E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
45	RESID	Hydrogen sulfide	7783-06-4	1.2746	0.000145	8,760	1.83E-05	1.83E-05
45	RESID	Lead compounds	7439-92-1	0.0570	0.000007	8,760	8.20E-07	8.20E-07
45	RESID	Manganese compounds	7439-96-5	0.0735	0.000008	8,760	1.06E-06	1.06E-06
45	RESID	Mercury compounds	7439-97-6	0.0027	0.000000	8,760	3.88E-08	3.88E-08
45	RESID	Naphthalene	91-20-3	0.0058	0.000001	8,760	8.41E-08	8.41E-08
45	RESID	n-Hexane	110-54-3	0.0255	0.000003	8,760	3.66E-07	3.66E-07
45	RESID	Nickel compounds	7440-02-0	0.1125	0.000013	8,760	1.62E-06	1.62E-06
45	RESID	PAHs, total	1151	0.0076	0.000001	8,760	1.10E-07	1.10E-07
45	RESID	Phenol	108-95-2	0.0600	0.000007	8,760	8.63E-07	8.63E-07
45	RESID	Propylene	115-07-1	2.2492	0.000257	8,760	3.24E-05	3.24E-05
45	RESID	Selenium compounds	7782-49-2	0.0132	0.000002	8,760	1.90E-07	1.90E-07
45	RESID	Silver compounds	7440-22-4	0.0240	0.000003	8,760	3.45E-07	3.45E-07
45	RESID	Toluene	108-88-3	0.1059	0.000012	8,760	1.52E-06	1.52E-06
45	RESID	Vanadium compounds	7440-62-2	0.0344	0.000004	8,760	4.95E-07	4.95E-07
45	RESID	Xylenes (mixed isomers)	1330-20-7	0.1173	0.000013	8,760	1.69E-06	1.69E-06
45	RESID	Zinc compounds	7440-66-6	0.7947	0.000091	8,760	1.14E-05	1.14E-05
46	CO2_VENT	Methanol	67-56-1	10,436.3518	1.191364	8,760	1.50E-01	1.50E-01
47	DEAERATOR	Methanol	67-56-1	12,617.9779	1.440408	8,760	1.81E-01	1.81E-01
48	ICE_D (API)	Diesel exhaust particulates	9901	35.6900	0.011011	3,241	5.13E-04	1.39E-03
49	ICE_D (D955)	Diesel exhaust particulates	9901	14.4200	0.449221	32	2.07E-04	5.66E-02
50	ICE_D (D957)	Diesel exhaust particulates	9901	23.4500	0.449234	52	3.37E-04	5.66E-02
51	ICE_D (D959)	Diesel exhaust particulates	9901	5.2900	0.388971	14	7.61E-05	4.90E-02
52	ICE_D (D961)	Diesel exhaust particulates	9901	20.8000	0.449244	46	2.99E-04	5.66E-02
53	ICE_D (D1500)	Diesel exhaust particulates	9901	10.9500	0.443320	25	1.57E-04	5.59E-02
54	ICE_D (D1785)	Diesel exhaust particulates	9901	0.5000	0.090909	6	7.19E-06	1.15E-02
55	ICE_D (D394)	Diesel exhaust particulates	9901	0.9500	0.135714	7	1.37E-05	1.71E-02
56	ICE_D (D1686)	Diesel exhaust particulates	9901	0.8700	0.100000	9	1.25E-05	1.26E-02
57	ICE_D (D1786)	Diesel exhaust particulates	9901	0.9000	0.060811	15	1.29E-05	7.66E-03
58	ICE_D (East)	Diesel exhaust particulates	9901	91.8900	0.334145	275	1.32E-03	4.21E-02
59	ICE_G (East)	1,2,4-Trimethylbenzene	95-63-6	1.1710	0.000419	2,795	1.68E-05	5.28E-05
59	ICE_G (East)	1,3-Butadiene	106-99-0	0.7714	0.000276	2,795	1.11E-05	3.48E-05
59	ICE_G (East)	Acetaldehyde	75-07-0	0.6970	0.000249	2,795	1.00E-05	3.14E-05
59	ICE_G (East)	Acrolein	107-02-8	0.1673	0.000060	2,795	2.41E-06	7.54E-06
59	ICE_G (East)	Benzene	71-43-2	3.1971	0.001144	2,795	4.60E-05	1.44E-04
59	ICE_G (East)	Chlorine	7782-50-5	0.3822	0.000137	2,795	5.50E-06	1.72E-05
59	ICE_G (East)	Copper compounds	7440-50-8	0.0028	0.000001	2,795	3.99E-08	1.25E-07
59	ICE_G (East)	Ethylbenzene	100-41-4	1.3941	0.000499	2,795	2.01E-05	6.28E-05
59	ICE_G (East)	Formaldehyde	50-00-0	2.8997	0.001038	2,795	4.17E-05	1.31E-04
59	ICE_G (East)	Manganese compounds	7439-96-5	0.0028	0.000001	2,795	3.99E-08	1.25E-07
59	ICE_G (East)	Methanol	67-56-1	0.6506	0.000233	2,795	9.36E-06	2.93E-05
59	ICE_G (East)	Methyl ethyl ketone	78-93-3	0.0558	0.000020	2,795	8.02E-07	2.51E-06
59	ICE_G (East)	m-Xylene	108-38-3	4.1357	0.001480	2,795	5.95E-05	1.86E-04
59	ICE_G (East)	Naphthalene	91-20-3	0.1208	0.000043	2,795	1.74E-06	5.45E-06
59	ICE_G (East)	n-Hexane	110-54-3	1.2175	0.000436	2,795	1.75E-05	5.49E-05
59	ICE_G (East)	Nickel compounds	7440-02-0	0.0028	0.000001	2,795	3.99E-08	1.25E-07
59	ICE_G (East)	o-Xylene	95-47-6	1.4405	0.000515	2,795	2.07E-05	6.49E-05
59	ICE_G (East)	Styrene	100-42-5	0.1208	0.000043	2,795	1.74E-06	5.45E-06
59	ICE_G (East)	Toluene	108-88-3	6.3105	0.002258	2,795	9.08E-05	2.84E-04
60	DEG-TK	Acenaphthene	83-32-9	0.0001	0.000001	69	7.64E-10	9.73E-08
60	DEG-TK	Acenaphthylene	208-96-8	0.0001	0.000002	69	2.07E-09	2.64E-07
60	DEG-TK	Acetaldehyde	75-07-0	0.2655	0.003862	69	3.82E-06	4.87E-04
60	DEG-TK	Acrolein	107-02-8	0.3762	0.005471	69	5.41E-06	6.89E-04
60	DEG-TK	Anthracene	120-12-7	0.0001	0.000002	69	1.50E-09	1.91E-07
60	DEG-TK	Antimony compounds	7440-36-0	0.0115	0.000167	69	1.65E-07	2.11E-05
60	DEG-TK	Arsenic compounds	7440-38-2	0.0159	0.000232	69	2.29E-07	2.92E-05
60	DEG-TK	Benzene	71-43-2	1.3276	0.019308	69	1.91E-05	2.43E-03
60	DEG-TK	Benzo(a)anthracene	56-55-3	0.0005	0.000007	69	7.00E-09	8.92E-07
60	DEG-TK	Benzo(a)pyrene	50-32-8	0.0013	0.000018	69	1.81E-08	2.31E-06
60	DEG-TK	Benzo(b)fluoranthene	205-99-2	0.0006	0.000009	69	8.59E-09	1.09E-06
60	DEG-TK	Benzo(g,h,i)perylene	191-24-2	0.0000	0.000000	69	4.14E-10	5.27E-08
60	DEG-TK	Benzo(k)fluoranthene	207-08-9	0.0004	0.000005	69	5.41E-09	6.89E-07
60	DEG-TK	Beryllium compounds	7440-41-7	0.0029	0.000042	69	4.14E-08	5.27E-06
60	DEG-TK	Cadmium compounds	7440-43-9	0.0332	0.000483	69	4.77E-07	6.08E-05
60	DEG-TK	Chromium compounds	7440-47-3	0.1261	0.001834	69	1.81E-06	2.31E-04

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
60	DEG-TK	Chrysene	218-01-9	0.0000	0.000001	69	5.09E-10	6.49E-08
60	DEG-TK	Cobalt compounds	7440-48-4	0.0007	0.000011	69	1.06E-08	1.35E-06
60	DEG-TK	Copper compounds	7440-50-8	0.1040	0.001512	69	1.50E-06	1.91E-04
60	DEG-TK	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0106	0.000154	69	1.52E-07	1.94E-05
60	DEG-TK	Ethylbenzene	100-41-4	0.3540	0.005149	69	5.09E-06	6.49E-04
60	DEG-TK	Fluoranthene	206-44-0	0.0002	0.000003	69	2.77E-09	3.53E-07
60	DEG-TK	Fluorene	86-73-7	0.0011	0.000015	69	1.53E-08	1.95E-06
60	DEG-TK	Formaldehyde	50-00-0	1.1506	0.016734	69	1.65E-05	2.11E-03
60	DEG-TK	Hydrogen sulfide	7783-06-4	1.8808	0.027353	69	2.71E-05	3.45E-03
60	DEG-TK	Indeno(1,2,3-cd)pyrene	193-39-5	0.0016	0.000023	69	2.26E-08	2.88E-06
60	DEG-TK	Lead compounds	7439-92-1	0.0841	0.001223	69	1.21E-06	1.54E-04
60	DEG-TK	Manganese compounds	7439-96-5	0.1084	0.001577	69	1.56E-06	1.99E-04
60	DEG-TK	Mercury compounds	7439-97-6	0.0040	0.000058	69	5.73E-08	7.30E-06
60	DEG-TK	Methylnaphthalene 2-	91-57-6	0.0002	0.000003	69	3.04E-09	3.87E-07
60	DEG-TK	Naphthalene	91-20-3	0.0086	0.000126	69	1.24E-07	1.58E-05
60	DEG-TK	n-Hexane	110-54-3	0.0376	0.000547	69	5.41E-07	6.89E-05
60	DEG-TK	Nickel compounds	7440-02-0	0.1660	0.002414	69	2.39E-06	3.04E-04
60	DEG-TK	PAHs, total	1151	0.0113	0.000164	69	1.62E-07	2.07E-05
60	DEG-TK	Phenanthrene	85-01-8	0.0007	0.000010	69	1.02E-08	1.30E-06
60	DEG-TK	Phenol	108-95-2	0.0885	0.001287	69	1.27E-06	1.62E-04
60	DEG-TK	Propylene	115-07-1	3.3191	0.048270	69	4.77E-05	6.08E-03
60	DEG-TK	Pyrene	129-00-0	0.0002	0.000003	69	3.12E-09	3.97E-07
60	DEG-TK	Selenium compounds	7782-49-2	0.0195	0.000283	69	2.80E-07	3.57E-05
60	DEG-TK	Silver compounds	7440-22-4	0.0354	0.000515	69	5.09E-07	6.49E-05
60	DEG-TK	Toluene	108-88-3	3.3191	0.048270	69	4.77E-05	6.08E-03
60	DEG-TK	Vanadium compounds	7440-62-2	0.0202	0.000294	69	2.91E-07	3.71E-05
60	DEG-TK	Xylenes (mixed isomers)	1330-20-7	0.5532	0.008045	69	7.96E-06	1.01E-03
60	DEG-TK	Zinc compounds	7440-66-6	1.1727	0.017055	69	1.69E-05	2.15E-03
61	1340x1	1,2,4-Trimethylbenzene	95-63-6	0.7403	0.000085	8,760	1.06E-05	1.06E-05
61	1340x1	Ammonia	7664-41-7	0.0916	0.000010	8,760	1.32E-06	1.32E-06
61	1340x1	Benzene	71-43-2	1.8497	0.000211	8,760	2.66E-05	2.66E-05
61	1340x1	Carbon disulfide	75-15-0	0.0042	0.000000	8,760	6.07E-08	6.07E-08
61	1340x1	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	6.21E-10	6.21E-10
61	1340x1	Cumene	98-82-8	0.1267	0.000014	8,760	1.82E-06	1.82E-06
61	1340x1	Cyclohexane	110-82-7	13.4751	0.001538	8,760	1.94E-04	1.94E-04
61	1340x1	Ethylbenzene	100-41-4	0.6882	0.000079	8,760	9.90E-06	9.90E-06
61	1340x1	Hydrogen sulfide	7783-06-4	0.3957	0.000045	8,760	5.69E-06	5.69E-06
61	1340x1	Naphthalene	91-20-3	0.1479	0.000017	8,760	2.13E-06	2.13E-06
61	1340x1	n-Hexane	110-54-3	16.3423	0.001866	8,760	2.35E-04	2.35E-04
61	1340x1	Phenol	108-95-2	0.0000	0.000000	8,760	7.12E-10	7.12E-10
61	1340x1	Propylene	115-07-1	12.3510	0.001410	8,760	1.78E-04	1.78E-04
61	1340x1	Styrene	100-42-5	0.0349	0.000004	8,760	5.03E-07	5.03E-07
61	1340x1	Toluene	108-88-3	4.8121	0.000549	8,760	6.92E-05	6.92E-05
61	1340x1	Xylenes (mixed isomers)	1330-20-7	3.3526	0.000383	8,760	4.82E-05	4.82E-05
62	1340x112	Ammonia	7664-41-7	0.6400	0.000073	8,760	9.21E-06	9.21E-06
62	1340x112	Benzene	71-43-2	40.9378	0.004673	8,760	5.89E-04	5.89E-04
62	1340x112	Carbon disulfide	75-15-0	0.0292	0.000003	8,760	4.20E-07	4.20E-07
62	1340x112	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.20E-10	1.20E-10
62	1340x112	Ethylbenzene	100-41-4	7.0836	0.000809	8,760	1.02E-04	1.02E-04
62	1340x112	Hydrogen sulfide	7783-06-4	2.7651	0.000316	8,760	3.98E-05	3.98E-05
62	1340x112	Naphthalene	91-20-3	0.0000	0.000000	8,760	4.23E-10	4.22E-10
62	1340x112	n-Hexane	110-54-3	319.7714	0.036504	8,760	4.60E-03	4.60E-03
62	1340x112	Phenol	108-95-2	0.0001	0.000000	8,760	7.55E-10	7.55E-10
62	1340x112	Propylene	115-07-1	86.2884	0.009850	8,760	1.24E-03	1.24E-03
62	1340x112	Toluene	108-88-3	7.6753	0.000876	8,760	1.10E-04	1.10E-04
62	1340x112	Xylenes (mixed isomers)	1330-20-7	1.9882	0.000227	8,760	2.86E-05	2.86E-05
63	1340x113	1,2,4-Trimethylbenzene	95-63-6	2.3973	0.000274	8,760	3.45E-05	3.45E-05
63	1340x113	Ammonia	7664-41-7	0.5871	0.000067	8,760	8.44E-06	8.44E-06
63	1340x113	Benzene	71-43-2	73.7583	0.008420	8,760	1.06E-03	1.06E-03
63	1340x113	Carbon disulfide	75-15-0	0.0268	0.000003	8,760	3.85E-07	3.85E-07
63	1340x113	Cresols (mixed isomers)	1319-77-3	0.0191	0.000002	8,760	2.75E-07	2.75E-07
63	1340x113	Cumene	98-82-8	0.4663	0.000053	8,760	6.71E-06	6.71E-06
63	1340x113	Cyclohexane	110-82-7	103.9351	0.011865	8,760	1.49E-03	1.49E-03
63	1340x113	Ethylbenzene	100-41-4	6.4973	0.000742	8,760	9.35E-05	9.35E-05

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
63	1340x113	Hydrogen sulfide	7783-06-4	2.5363	0.000290	8,760	3.65E-05	3.65E-05
63	1340x113	Naphthalene	91-20-3	0.0008	0.000000	8,760	1.12E-08	1.12E-08
63	1340x113	n-Hexane	110-54-3	1,305.0347	0.148977	8,760	1.88E-02	1.88E-02
63	1340x113	Phenanthrene	85-01-8	0.0001	0.000000	8,760	1.33E-09	1.33E-09
63	1340x113	Phenol	108-95-2	0.0005	0.000000	8,760	6.92E-09	6.92E-09
63	1340x113	Propylene	115-07-1	79.1470	0.009035	8,760	1.14E-03	1.14E-03
63	1340x113	Styrene	100-42-5	0.1378	0.000016	8,760	1.98E-06	1.98E-06
63	1340x113	Toluene	108-88-3	65.7586	0.007507	8,760	9.46E-04	9.46E-04
63	1340x113	Xylenes (mixed isomers)	1330-20-7	40.0803	0.004575	8,760	5.76E-04	5.76E-04
64	1340x123	1,2,4-Trimethylbenzene	95-63-6	0.0027	0.000000	8,760	3.87E-08	3.87E-08
64	1340x123	Benzene	71-43-2	0.2522	0.000029	8,760	3.63E-06	3.63E-06
64	1340x123	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.38E-11	1.26E-11
64	1340x123	Ethylbenzene	100-41-4	0.0236	0.000003	8,760	3.40E-07	3.40E-07
64	1340x123	Naphthalene	91-20-3	0.0003	0.000000	8,760	4.86E-09	4.86E-09
64	1340x123	n-Hexane	110-54-3	0.0014	0.000000	8,760	1.96E-08	1.96E-08
64	1340x123	Phenol	108-95-2	0.0015	0.000000	8,760	2.17E-08	2.17E-08
64	1340x123	Styrene	100-42-5	0.0001	0.000000	8,760	7.77E-10	7.76E-10
64	1340x123	Toluene	108-88-3	0.0485	0.000006	8,760	6.98E-07	6.98E-07
64	1340x123	Xylenes (mixed isomers)	1330-20-7	0.0063	0.000001	8,760	9.03E-08	9.03E-08
65	1340x246	1,2,4-Trimethylbenzene	95-63-6	0.2676	0.000031	8,760	3.85E-06	3.85E-06
65	1340x246	Benzene	71-43-2	0.2774	0.000032	8,760	3.99E-06	3.99E-06
65	1340x246	Biphenyl	92-52-4	0.0484	0.000006	8,760	6.97E-07	6.97E-07
65	1340x246	Cresols (mixed isomers)	1319-77-3	0.0711	0.000008	8,760	1.02E-06	1.02E-06
65	1340x246	Cumene	98-82-8	0.0464	0.000005	8,760	6.68E-07	6.68E-07
65	1340x246	Ethylbenzene	100-41-4	0.0958	0.000011	8,760	1.38E-06	1.38E-06
65	1340x246	Naphthalene	91-20-3	0.1578	0.000018	8,760	2.27E-06	2.27E-06
65	1340x246	n-Hexane	110-54-3	1.0540	0.000120	8,760	1.52E-05	1.52E-05
65	1340x246	Phenanthrene	85-01-8	0.1317	0.000015	8,760	1.89E-06	1.89E-06
65	1340x246	Phenol	108-95-2	0.2274	0.000026	8,760	3.27E-06	3.27E-06
65	1340x246	Toluene	108-88-3	0.8485	0.000097	8,760	1.22E-05	1.22E-05
65	1340x246	Xylenes (mixed isomers)	1330-20-7	0.5404	0.000062	8,760	7.77E-06	7.77E-06
66	1340x247	1,2,4-Trimethylbenzene	95-63-6	17.2687	0.001971	8,760	2.48E-04	2.48E-04
66	1340x247	Benzene	71-43-2	40.7877	0.004656	8,760	5.87E-04	5.87E-04
66	1340x247	Biphenyl	92-52-4	0.0203	0.000002	8,760	2.93E-07	2.93E-07
66	1340x247	Cresols (mixed isomers)	1319-77-3	0.4653	0.000053	8,760	6.69E-06	6.69E-06
66	1340x247	Cumene	98-82-8	4.5380	0.000518	8,760	6.53E-05	6.53E-05
66	1340x247	Ethylbenzene	100-41-4	11.4616	0.001308	8,760	1.65E-04	1.65E-04
66	1340x247	Naphthalene	91-20-3	3.2793	0.000374	8,760	4.72E-05	4.72E-05
66	1340x247	n-Hexane	110-54-3	156.4526	0.017860	8,760	2.25E-03	2.25E-03
66	1340x247	Phenanthrene	85-01-8	7.0395	0.000804	8,760	1.01E-04	1.01E-04
66	1340x247	Phenol	108-95-2	7.6138	0.000869	8,760	1.10E-04	1.10E-04
66	1340x247	Toluene	108-88-3	117.6480	0.013430	8,760	1.69E-03	1.69E-03
66	1340x247	Xylenes (mixed isomers)	1330-20-7	60.9511	0.006958	8,760	8.77E-04	8.77E-04
67	1340x43	1,2,4-Trimethylbenzene	95-63-6	0.3692	0.000042	8,760	5.31E-06	5.31E-06
67	1340x43	Benzene	71-43-2	0.5351	0.000061	8,760	7.70E-06	7.70E-06
67	1340x43	Cresols (mixed isomers)	1319-77-3	0.0002	0.000000	8,760	2.93E-09	2.93E-09
67	1340x43	Naphthalene	91-20-3	0.0717	0.000008	8,760	1.03E-06	1.03E-06
67	1340x43	n-Hexane	110-54-3	24.1062	0.002752	8,760	3.47E-04	3.47E-04
67	1340x43	Phenol	108-95-2	0.3201	0.000037	8,760	4.60E-06	4.60E-06
67	1340x43	Styrene	100-42-5	0.0115	0.000001	8,760	1.65E-07	1.65E-07
67	1340x43	Toluene	108-88-3	10.2894	0.001175	8,760	1.48E-04	1.48E-04
67	1340x43	Xylenes (mixed isomers)	1330-20-7	1.3327	0.000152	8,760	1.92E-05	1.92E-05
68	1340x44	1,2,4-Trimethylbenzene	95-63-6	0.1187	0.000014	8,760	1.71E-06	1.71E-06
68	1340x44	1,3-Butadiene	106-99-0	0.0143	0.000002	8,760	2.06E-07	2.06E-07
68	1340x44	Benzene	71-43-2	3.9559	0.000452	8,760	5.69E-05	5.69E-05
68	1340x44	Biphenyl	92-52-4	0.0000	0.000000	8,760	5.79E-11	5.67E-11
68	1340x44	Carbon disulfide	75-15-0	0.7328	0.000084	8,760	1.05E-05	1.05E-05
68	1340x44	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.88E-10	1.88E-10
68	1340x44	Cumene	98-82-8	0.0085	0.000001	8,760	1.22E-07	1.22E-07
68	1340x44	Cyclohexane	110-82-7	1.8958	0.000216	8,760	2.73E-05	2.73E-05
68	1340x44	Ethylbenzene	100-41-4	0.3222	0.000037	8,760	4.63E-06	4.63E-06
68	1340x44	Methanol	67-56-1	0.0072	0.000001	8,760	1.04E-07	1.04E-07
68	1340x44	Naphthalene	91-20-3	0.0046	0.000001	8,760	6.63E-08	6.63E-08
68	1340x44	n-Hexane	110-54-3	8.5548	0.000977	8,760	1.23E-04	1.23E-04

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
68	1340x44	Phenanthrene	85-01-8	0.0001	0.000000	8,760	1.14E-09	1.14E-09
68	1340x44	Phenol	108-95-2	0.0000	0.000000	8,760	5.92E-10	5.91E-10
68	1340x44	Styrene	100-42-5	0.0118	0.000001	8,760	1.69E-07	1.69E-07
68	1340x44	Toluene	108-88-3	3.9688	0.000453	8,760	5.71E-05	5.71E-05
68	1340x44	Xylenes (mixed isomers)	1330-20-7	1.7563	0.000200	8,760	2.53E-05	2.53E-05
69	1340x52	1,2,4-Trimethylbenzene	95-63-6	1.1164	0.000127	8,760	1.61E-05	1.61E-05
69	1340x52	1,3-Butadiene	106-99-0	0.0108	0.000001	8,760	1.56E-07	1.56E-07
69	1340x52	Benzene	71-43-2	3.6115	0.000412	8,760	5.19E-05	5.19E-05
69	1340x52	Biphenyl	92-52-4	0.0093	0.000001	8,760	1.34E-07	1.34E-07
69	1340x52	Carbon disulfide	75-15-0	0.5795	0.000066	8,760	8.33E-06	8.33E-06
69	1340x52	Cresols (mixed isomers)	1319-77-3	0.0019	0.000000	8,760	2.70E-08	2.70E-08
69	1340x52	Cumene	98-82-8	0.0363	0.000004	8,760	5.22E-07	5.22E-07
69	1340x52	Cyclohexane	110-82-7	1.7208	0.000196	8,760	2.48E-05	2.48E-05
69	1340x52	Ethylbenzene	100-41-4	0.7834	0.000089	8,760	1.13E-05	1.13E-05
69	1340x52	Methanol	67-56-1	0.0064	0.000001	8,760	9.15E-08	9.15E-08
69	1340x52	Naphthalene	91-20-3	0.1902	0.000022	8,760	2.74E-06	2.74E-06
69	1340x52	n-Hexane	110-54-3	7.2756	0.000831	8,760	1.05E-04	1.05E-04
69	1340x52	Phenanthrene	85-01-8	0.0010	0.000000	8,760	1.43E-08	1.43E-08
69	1340x52	Phenol	108-95-2	0.0000	0.000000	8,760	7.12E-10	7.12E-10
69	1340x52	Styrene	100-42-5	0.0387	0.000004	8,760	5.57E-07	5.57E-07
69	1340x52	Toluene	108-88-3	5.2182	0.000596	8,760	7.51E-05	7.51E-05
69	1340x52	Xylenes (mixed isomers)	1330-20-7	5.1465	0.000587	8,760	7.40E-05	7.40E-05
70	1340x53	1,2,4-Trimethylbenzene	95-63-6	0.9203	0.000105	8,760	1.32E-05	1.32E-05
70	1340x53	1,3-Butadiene	106-99-0	0.0207	0.000002	8,760	2.97E-07	2.96E-07
70	1340x53	Benzene	71-43-2	9.8370	0.001123	8,760	1.41E-04	1.41E-04
70	1340x53	Cresols (mixed isomers)	1319-77-3	0.0106	0.000001	8,760	1.53E-07	1.52E-07
70	1340x53	Cumene	98-82-8	0.0531	0.000006	8,760	7.63E-07	7.62E-07
70	1340x53	Ethylbenzene	100-41-4	1.3950	0.000159	8,760	2.01E-05	2.01E-05
70	1340x53	Naphthalene	91-20-3	0.1014	0.000012	8,760	1.46E-06	1.50E-06
70	1340x53	n-Hexane	110-54-3	8.6380	0.000986	8,760	1.24E-04	1.24E-04
70	1340x53	Phenol	108-95-2	0.0111	0.000001	8,760	1.60E-07	1.59E-07
70	1340x53	Propylene	115-07-1	0.0972	0.000011	8,760	1.40E-06	1.40E-06
70	1340x53	Toluene	108-88-3	9.9354	0.001134	8,760	1.43E-04	1.43E-04
70	1340x53	Xylenes (mixed isomers)	1330-20-7	7.6277	0.000871	8,760	1.10E-04	1.10E-04
71	1340x54	1,2,4-Trimethylbenzene	95-63-6	0.1947	0.000022	8,760	2.80E-06	2.80E-06
71	1340x54	1,3-Butadiene	106-99-0	0.0172	0.000002	8,760	2.48E-07	2.48E-07
71	1340x54	Benzene	71-43-2	6.8981	0.000787	8,760	9.92E-05	9.92E-05
71	1340x54	Biphenyl	92-52-4	0.0000	0.000000	8,760	6.97E-11	6.93E-11
71	1340x54	Carbon disulfide	75-15-0	0.8817	0.000101	8,760	1.27E-05	1.27E-05
71	1340x54	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.13E-11	1.13E-11
71	1340x54	Cumene	98-82-8	0.0102	0.000001	8,760	1.47E-07	1.47E-07
71	1340x54	Cyclohexane	110-82-7	2.2810	0.000260	8,760	3.28E-05	3.28E-05
71	1340x54	Ethylbenzene	100-41-4	0.5280	0.000060	8,760	7.60E-06	7.60E-06
71	1340x54	Methanol	67-56-1	0.0087	0.000001	8,760	1.25E-07	1.25E-07
71	1340x54	Naphthalene	91-20-3	0.0089	0.000001	8,760	1.28E-07	1.28E-07
71	1340x54	n-Hexane	110-54-3	7.1603	0.000817	8,760	1.03E-04	1.03E-04
71	1340x54	Phenol	108-95-2	0.0000	0.000000	8,760	7.12E-11	7.06E-11
71	1340x54	Styrene	100-42-5	0.0142	0.000002	8,760	2.04E-07	2.04E-07
71	1340x54	Toluene	108-88-3	6.7649	0.000772	8,760	9.73E-05	9.73E-05
71	1340x54	Xylenes (mixed isomers)	1330-20-7	2.9894	0.000341	8,760	4.30E-05	4.30E-05
72	1340x55	1,2,4-Trimethylbenzene	95-63-6	0.1527	0.000017	8,760	2.20E-06	2.20E-06
72	1340x55	1,3-Butadiene	106-99-0	0.0184	0.000002	8,760	2.65E-07	2.65E-07
72	1340x55	Benzene	71-43-2	5.0891	0.000581	8,760	7.32E-05	7.32E-05
72	1340x55	Biphenyl	92-52-4	0.0000	0.000000	8,760	7.45E-11	7.43E-11
72	1340x55	Carbon disulfide	75-15-0	0.9427	0.000108	8,760	1.36E-05	1.36E-05
72	1340x55	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	2.42E-10	2.42E-10
72	1340x55	Cumene	98-82-8	0.0109	0.000001	8,760	1.57E-07	1.57E-07
72	1340x55	Cyclohexane	110-82-7	2.4389	0.000278	8,760	3.51E-05	3.51E-05
72	1340x55	Ethylbenzene	100-41-4	0.4145	0.000047	8,760	5.96E-06	5.96E-06
72	1340x55	Methanol	67-56-1	0.0093	0.000001	8,760	1.34E-07	1.34E-07
72	1340x55	Naphthalene	91-20-3	0.0059	0.000001	8,760	8.53E-08	8.53E-08
72	1340x55	n-Hexane	110-54-3	11.0054	0.001256	8,760	1.58E-04	1.58E-04
72	1340x55	Phenanthrene	85-01-8	0.0001	0.000000	8,760	1.46E-09	1.46E-09
72	1340x55	Phenol	108-95-2	0.0001	0.000000	8,760	7.62E-10	7.61E-10

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
72	1340x55	Styrene	100-42-5	0.0152	0.000002	8,760	2.18E-07	2.18E-07
72	1340x55	Toluene	108-88-3	5.1058	0.000583	8,760	7.34E-05	7.34E-05
72	1340x55	Xylenes (mixed isomers)	1330-20-7	2.2594	0.000258	8,760	3.25E-05	3.25E-05
73	1340x56	1,2,4-Trimethylbenzene	95-63-6	0.1091	0.000012	8,760	1.57E-06	1.57E-06
73	1340x56	1,3-Butadiene	106-99-0	0.0132	0.000002	8,760	1.89E-07	1.89E-07
73	1340x56	Benzene	71-43-2	3.6367	0.000415	8,760	5.23E-05	5.23E-05
73	1340x56	Biphenyl	92-52-4	0.0000	0.000000	8,760	5.33E-11	5.29E-11
73	1340x56	Carbon disulfide	75-15-0	0.6736	0.000077	8,760	9.69E-06	9.69E-06
73	1340x56	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.73E-10	1.73E-10
73	1340x56	Cumene	98-82-8	0.0078	0.000001	8,760	1.12E-07	1.12E-07
73	1340x56	Cyclohexane	110-82-7	1.7429	0.000199	8,760	2.51E-05	2.51E-05
73	1340x56	Ethylbenzene	100-41-4	0.2962	0.000034	8,760	4.26E-06	4.26E-06
73	1340x56	Methanol	67-56-1	0.0067	0.000001	8,760	9.57E-08	9.57E-08
73	1340x56	Naphthalene	91-20-3	0.0042	0.000000	8,760	6.09E-08	6.09E-08
73	1340x56	n-Hexane	110-54-3	7.8645	0.000898	8,760	1.13E-04	1.13E-04
73	1340x56	Phenanthrene	85-01-8	0.0001	0.000000	8,760	1.05E-09	1.05E-09
73	1340x56	Phenol	108-95-2	0.0000	0.000000	8,760	5.44E-10	5.43E-10
73	1340x56	Styrene	100-42-5	0.0108	0.000001	8,760	1.56E-07	1.56E-07
73	1340x56	Toluene	108-88-3	3.6486	0.000417	8,760	5.25E-05	5.25E-05
73	1340x56	Xylenes (mixed isomers)	1330-20-7	1.6146	0.000184	8,760	2.32E-05	2.32E-05
74	1340x57	1,2,4-Trimethylbenzene	95-63-6	1.9282	0.000220	8,760	2.77E-05	2.77E-05
74	1340x57	1,3-Butadiene	106-99-0	0.0173	0.000002	8,760	2.49E-07	2.49E-07
74	1340x57	Benzene	71-43-2	8.0398	0.000918	8,760	1.16E-04	1.16E-04
74	1340x57	Biphenyl	92-52-4	0.0116	0.000001	8,760	1.66E-07	1.66E-07
74	1340x57	Carbon disulfide	75-15-0	0.9168	0.000105	8,760	1.32E-05	1.32E-05
74	1340x57	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	1.67E-09	1.67E-09
74	1340x57	Cumene	98-82-8	0.0472	0.000005	8,760	6.79E-07	6.79E-07
74	1340x57	Cyclohexane	110-82-7	2.6462	0.000302	8,760	3.81E-05	3.81E-05
74	1340x57	Ethylbenzene	100-41-4	1.4401	0.000164	8,760	2.07E-05	2.07E-05
74	1340x57	Methanol	67-56-1	0.0098	0.000001	8,760	1.42E-07	1.42E-07
74	1340x57	Naphthalene	91-20-3	0.3787	0.000043	8,760	5.45E-06	5.45E-06
74	1340x57	n-Hexane	110-54-3	7.8853	0.000900	8,760	1.13E-04	1.13E-04
74	1340x57	Phenol	108-95-2	0.0001	0.000000	8,760	1.73E-09	1.73E-09
74	1340x57	Styrene	100-42-5	0.0511	0.000006	8,760	7.36E-07	7.36E-07
74	1340x57	Toluene	108-88-3	10.6811	0.001219	8,760	1.54E-04	1.54E-04
74	1340x57	Xylenes (mixed isomers)	1330-20-7	9.6875	0.001106	8,760	1.39E-04	1.39E-04
75	1340x60	1,2,4-Trimethylbenzene	95-63-6	3.2293	0.000369	8,760	4.64E-05	4.64E-05
75	1340x60	1,3-Butadiene	106-99-0	0.0101	0.000001	8,760	1.45E-07	1.45E-07
75	1340x60	Benzene	71-43-2	6.0277	0.000688	8,760	8.67E-05	8.67E-05
75	1340x60	Biphenyl	92-52-4	0.0208	0.000002	8,760	2.99E-07	2.99E-07
75	1340x60	Carbon disulfide	75-15-0	0.5713	0.000065	8,760	8.22E-06	8.22E-06
75	1340x60	Cresols (mixed isomers)	1319-77-3	0.0002	0.000000	8,760	3.00E-09	2.99E-09
75	1340x60	Cumene	98-82-8	0.0724	0.000008	8,760	1.04E-06	1.04E-06
75	1340x60	Cyclohexane	110-82-7	1.9710	0.000225	8,760	2.83E-05	2.83E-05
75	1340x60	Ethylbenzene	100-41-4	1.9444	0.000222	8,760	2.80E-05	2.80E-05
75	1340x60	Methanol	67-56-1	0.0071	0.000001	8,760	1.02E-07	1.02E-07
75	1340x60	Naphthalene	91-20-3	0.6702	0.000077	8,760	9.64E-06	9.64E-06
75	1340x60	n-Hexane	110-54-3	5.4295	0.000620	8,760	7.81E-05	7.81E-05
75	1340x60	Phenol	108-95-2	0.0002	0.000000	8,760	3.03E-09	3.03E-09
75	1340x60	Styrene	100-42-5	0.0746	0.000009	8,760	1.07E-06	1.07E-06
75	1340x60	Toluene	108-88-3	10.9400	0.001249	8,760	1.57E-04	1.57E-04
75	1340x60	Xylenes (mixed isomers)	1330-20-7	13.7671	0.001572	8,760	1.98E-04	1.98E-04
76	1340x61	1,2,4-Trimethylbenzene	95-63-6	1.8041	0.000206	8,760	2.59E-05	2.59E-05
76	1340x61	1,3-Butadiene	106-99-0	0.0096	0.000001	8,760	1.39E-07	1.39E-07
76	1340x61	Benzene	71-43-2	3.7019	0.000423	8,760	5.32E-05	5.32E-05
76	1340x61	Biphenyl	92-52-4	0.0157	0.000002	8,760	2.26E-07	2.26E-07
76	1340x61	Carbon disulfide	75-15-0	0.5354	0.000061	8,760	7.70E-06	7.70E-06
76	1340x61	Cresols (mixed isomers)	1319-77-3	0.0031	0.000000	8,760	4.52E-08	4.52E-08
76	1340x61	Cumene	98-82-8	0.0558	0.000006	8,760	8.03E-07	8.03E-07
76	1340x61	Cyclohexane	110-82-7	1.7573	0.000201	8,760	2.53E-05	2.53E-05
76	1340x61	Ethylbenzene	100-41-4	1.1232	0.000128	8,760	1.62E-05	1.62E-05
76	1340x61	Methanol	67-56-1	0.0064	0.000001	8,760	9.15E-08	9.15E-08
76	1340x61	Naphthalene	91-20-3	0.3168	0.000036	8,760	4.56E-06	4.56E-06
76	1340x61	n-Hexane	110-54-3	7.1079	0.000811	8,760	1.02E-04	1.02E-04

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
76	1340x61	Phenanthrene	85-01-8	0.0016	0.000000	8,760	2.33E-08	2.33E-08
76	1340x61	Phenol	108-95-2	0.0016	0.000000	8,760	2.30E-08	2.30E-08
76	1340x61	Styrene	100-42-5	0.0580	0.000007	8,760	8.34E-07	8.34E-07
76	1340x61	Toluene	108-88-3	6.3929	0.000730	8,760	9.20E-05	9.20E-05
76	1340x61	Xylenes (mixed isomers)	1330-20-7	7.5945	0.000867	8,760	1.09E-04	1.09E-04
77	1340x62	1,2,4-Trimethylbenzene	95-63-6	1.1145	0.000127	8,760	1.60E-05	1.60E-05
77	1340x62	1,3-Butadiene	106-99-0	0.0158	0.000002	8,760	2.27E-07	2.27E-07
77	1340x62	Benzene	71-43-2	6.9201	0.000790	8,760	9.95E-05	9.95E-05
77	1340x62	Biphenyl	92-52-4	0.0062	0.000001	8,760	8.99E-08	8.99E-08
77	1340x62	Carbon disulfide	75-15-0	0.8246	0.000094	8,760	1.19E-05	1.19E-05
77	1340x62	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	9.09E-10	9.08E-10
77	1340x62	Cumene	98-82-8	0.0293	0.000003	8,760	4.22E-07	4.22E-07
77	1340x62	Cyclohexane	110-82-7	2.2817	0.000260	8,760	3.28E-05	3.28E-05
77	1340x62	Ethylbenzene	100-41-4	0.9753	0.000111	8,760	1.40E-05	1.40E-05
77	1340x62	Methanol	67-56-1	0.0086	0.000001	8,760	1.23E-07	1.23E-07
77	1340x62	Naphthalene	91-20-3	0.2079	0.000024	8,760	2.99E-06	2.99E-06
77	1340x62	n-Hexane	110-54-3	6.9346	0.000792	8,760	9.97E-05	9.97E-05
77	1340x62	Phenol	108-95-2	0.0001	0.000000	8,760	9.63E-10	9.63E-10
77	1340x62	Styrene	100-42-5	0.0329	0.000004	8,760	4.74E-07	4.74E-07
77	1340x62	Toluene	108-88-3	8.2974	0.000947	8,760	1.19E-04	1.19E-04
77	1340x62	Xylenes (mixed isomers)	1330-20-7	6.3504	0.000725	8,760	9.13E-05	9.13E-05
78	1340x63	1,3-Butadiene	106-99-0	0.0176	0.000002	8,760	2.54E-07	2.54E-07
78	1340x63	Benzene	71-43-2	0.0007	0.000000	8,760	1.01E-08	1.01E-08
78	1340x63	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.16E-11	1.16E-11
78	1340x63	Naphthalene	91-20-3	0.0000	0.000000	8,760	4.08E-11	4.03E-11
78	1340x63	n-Hexane	110-54-3	0.5722	0.000065	8,760	8.23E-06	8.23E-06
78	1340x63	Phenol	108-95-2	0.0000	0.000000	8,760	7.29E-11	7.18E-11
78	1340x63	Propylene	115-07-1	0.0833	0.000010	8,760	1.20E-06	1.20E-06
78	1340x63	Styrene	100-42-5	0.0000	0.000000	8,760	6.52E-10	6.51E-10
78	1340x63	Toluene	108-88-3	0.0002	0.000000	8,760	2.93E-09	2.93E-09
78	1340x63	Xylenes (mixed isomers)	1330-20-7	0.0001	0.000000	8,760	7.58E-10	7.57E-10
79	1340x66	1,2,4-Trimethylbenzene	95-63-6	0.1003	0.000011	8,760	1.44E-06	1.44E-06
79	1340x66	Benzene	71-43-2	0.7553	0.000086	8,760	1.09E-05	1.09E-05
79	1340x66	Carbon disulfide	75-15-0	0.0018	0.000000	8,760	2.55E-08	2.55E-08
79	1340x66	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	7.29E-12	7.29E-12
79	1340x66	Cumene	98-82-8	0.0288	0.000003	8,760	4.15E-07	4.15E-07
79	1340x66	Cyclohexane	110-82-7	5.5091	0.000629	8,760	7.92E-05	7.92E-05
79	1340x66	Ethylbenzene	100-41-4	0.2066	0.000024	8,760	2.97E-06	2.97E-06
79	1340x66	Naphthalene	91-20-3	0.0057	0.000001	8,760	8.22E-08	8.22E-08
79	1340x66	n-Hexane	110-54-3	6.7732	0.000773	8,760	9.74E-05	9.74E-05
79	1340x66	Phenol	108-95-2	0.0000	0.000000	8,760	4.59E-11	4.54E-11
79	1340x66	Propylene	115-07-1	5.2440	0.000599	8,760	7.54E-05	7.54E-05
79	1340x66	Styrene	100-42-5	0.0091	0.000001	8,760	1.31E-07	1.31E-07
79	1340x66	Toluene	108-88-3	1.7940	0.000205	8,760	2.58E-05	2.58E-05
79	1340x66	Xylenes (mixed isomers)	1330-20-7	0.9261	0.000106	8,760	1.33E-05	1.33E-05
80	1340x67	1,2,4-Trimethylbenzene	95-63-6	0.1353	0.000015	8,760	1.95E-06	1.95E-06
80	1340x67	1,3-Butadiene	106-99-0	0.0163	0.000002	8,760	2.35E-07	2.35E-07
80	1340x67	Benzene	71-43-2	4.5110	0.000515	8,760	6.49E-05	6.49E-05
80	1340x67	Biphenyl	92-52-4	0.0000	0.000000	8,760	6.61E-11	6.55E-11
80	1340x67	Carbon disulfide	75-15-0	0.8356	0.000095	8,760	1.20E-05	1.20E-05
80	1340x67	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	2.15E-10	2.14E-10
80	1340x67	Cumene	98-82-8	0.0097	0.000001	8,760	1.39E-07	1.39E-07
80	1340x67	Cyclohexane	110-82-7	2.1619	0.000247	8,760	3.11E-05	3.11E-05
80	1340x67	Ethylbenzene	100-41-4	0.3674	0.000042	8,760	5.28E-06	5.28E-06
80	1340x67	Methanol	67-56-1	0.0083	0.000001	8,760	1.19E-07	1.19E-07
80	1340x67	Naphthalene	91-20-3	0.0053	0.000001	8,760	7.56E-08	7.56E-08
80	1340x67	n-Hexane	110-54-3	9.7552	0.001114	8,760	1.40E-04	1.40E-04
80	1340x67	Phenanthrene	85-01-8	0.0001	0.000000	8,760	1.30E-09	1.30E-09
80	1340x67	Phenol	108-95-2	0.0000	0.000000	8,760	6.75E-10	6.74E-10
80	1340x67	Styrene	100-42-5	0.0134	0.000002	8,760	1.93E-07	1.93E-07
80	1340x67	Toluene	108-88-3	4.5258	0.000517	8,760	6.51E-05	6.51E-05
80	1340x67	Xylenes (mixed isomers)	1330-20-7	2.0028	0.000229	8,760	2.88E-05	2.88E-05
81	1340x68	1,2,4-Trimethylbenzene	95-63-6	0.7994	0.000091	8,760	1.15E-05	1.15E-05
81	1340x68	1,3-Butadiene	106-99-0	0.0158	0.000002	8,760	2.28E-07	2.28E-07

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
81	1340x68	Benzene	71-43-2	4.7746	0.000545	8,760	6.87E-05	6.87E-05
81	1340x68	Biphenyl	92-52-4	0.0061	0.000001	8,760	8.75E-08	8.75E-08
81	1340x68	Carbon disulfide	75-15-0	0.8262	0.000094	8,760	1.19E-05	1.19E-05
81	1340x68	Cresols (mixed isomers)	1319-77-3	0.0012	0.000000	8,760	1.77E-08	1.77E-08
81	1340x68	Cumene	98-82-8	0.0288	0.000003	8,760	4.14E-07	4.14E-07
81	1340x68	Cyclohexane	110-82-7	2.2817	0.000260	8,760	3.28E-05	3.28E-05
81	1340x68	Ethylbenzene	100-41-4	0.7073	0.000081	8,760	1.02E-05	1.02E-05
81	1340x68	Methanol	67-56-1	0.0086	0.000001	8,760	1.23E-07	1.23E-07
81	1340x68	Naphthalene	91-20-3	0.1267	0.000014	8,760	1.82E-06	1.82E-06
81	1340x68	n-Hexane	110-54-3	9.9773	0.001139	8,760	1.44E-04	1.44E-04
81	1340x68	Phenanthrene	85-01-8	0.0007	0.000000	8,760	1.00E-08	1.00E-08
81	1340x68	Phenol	108-95-2	0.0007	0.000000	8,760	9.40E-09	9.40E-09
81	1340x68	Styrene	100-42-5	0.0324	0.000004	8,760	4.66E-07	4.66E-07
81	1340x68	Toluene	108-88-3	5.8284	0.000665	8,760	8.38E-05	8.38E-05
81	1340x68	Xylenes (mixed isomers)	1330-20-7	4.4261	0.000505	8,760	6.37E-05	6.37E-05
82	1340x69	1,2,4-Trimethylbenzene	95-63-6	0.8907	0.000102	8,760	1.28E-05	1.28E-05
82	1340x69	Benzene	71-43-2	10.4675	0.001195	8,760	1.51E-04	1.51E-04
82	1340x69	Biphenyl	92-52-4	0.0775	0.000009	8,760	1.11E-06	1.11E-06
82	1340x69	Cresols (mixed isomers)	1319-77-3	0.1632	0.000019	8,760	2.35E-06	2.35E-06
82	1340x69	Cumene	98-82-8	0.1502	0.000017	8,760	2.16E-06	2.16E-06
82	1340x69	Cyclohexane	110-82-7	35.9481	0.004104	8,760	5.17E-04	5.17E-04
82	1340x69	Ethylbenzene	100-41-4	0.7429	0.000085	8,760	1.07E-05	1.07E-05
82	1340x69	Hydrogen sulfide	7783-06-4	1.1983	0.000137	8,760	1.72E-05	1.72E-05
82	1340x69	Naphthalene	91-20-3	0.1677	0.000019	8,760	2.41E-06	2.41E-06
82	1340x69	n-Hexane	110-54-3	69.0483	0.007882	8,760	9.93E-04	9.93E-04
82	1340x69	Phenol	108-95-2	0.0003	0.000000	8,760	4.97E-09	4.97E-09
82	1340x69	Propylene	115-07-1	0.3741	0.000043	8,760	5.38E-06	5.38E-06
82	1340x69	Toluene	108-88-3	1.2360	0.000141	8,760	1.78E-05	1.78E-05
82	1340x69	Xylenes (mixed isomers)	1330-20-7	5.5930	0.000638	8,760	8.04E-05	8.04E-05
83	1340x70	1,2,4-Trimethylbenzene	95-63-6	1.3520	0.000154	8,760	1.94E-05	1.94E-05
83	1340x70	Benzene	71-43-2	25.7293	0.002937	8,760	3.70E-04	3.70E-04
83	1340x70	Biphenyl	92-52-4	0.1026	0.000012	8,760	1.48E-06	1.48E-06
83	1340x70	Cresols (mixed isomers)	1319-77-3	0.2181	0.000025	8,760	3.14E-06	3.14E-06
83	1340x70	Cumene	98-82-8	0.2575	0.000029	8,760	3.70E-06	3.70E-06
83	1340x70	Cyclohexane	110-82-7	88.4834	0.010101	8,760	1.27E-03	1.27E-03
83	1340x70	Ethylbenzene	100-41-4	1.4356	0.000164	8,760	2.06E-05	2.06E-05
83	1340x70	Hydrogen sulfide	7783-06-4	3.0834	0.000352	8,760	4.43E-05	4.43E-05
83	1340x70	Naphthalene	91-20-3	0.2298	0.000026	8,760	3.31E-06	3.31E-06
83	1340x70	n-Hexane	110-54-3	172.6040	0.019704	8,760	2.48E-03	2.48E-03
83	1340x70	Phenol	108-95-2	0.0005	0.000000	8,760	6.98E-09	6.98E-09
83	1340x70	Propylene	115-07-1	0.9624	0.000110	8,760	1.38E-05	1.38E-05
83	1340x70	Toluene	108-88-3	2.7776	0.000317	8,760	4.00E-05	4.00E-05
83	1340x70	Xylenes (mixed isomers)	1330-20-7	10.3584	0.001182	8,760	1.49E-04	1.49E-04
84	1340x71	1,2,4-Trimethylbenzene	95-63-6	2.1550	0.000246	8,760	3.10E-05	3.10E-05
84	1340x71	Benzene	71-43-2	10.9628	0.001251	8,760	1.58E-04	1.58E-04
84	1340x71	Biphenyl	92-52-4	0.2095	0.000024	8,760	3.01E-06	3.01E-06
84	1340x71	Cresols (mixed isomers)	1319-77-3	0.4379	0.000050	8,760	6.30E-06	6.30E-06
84	1340x71	Cumene	98-82-8	0.3205	0.000037	8,760	4.61E-06	4.61E-06
84	1340x71	Cyclohexane	110-82-7	37.4706	0.004277	8,760	5.39E-04	5.39E-04
84	1340x71	Ethylbenzene	100-41-4	1.3477	0.000154	8,760	1.94E-05	1.94E-05
84	1340x71	Hydrogen sulfide	7783-06-4	1.0539	0.000120	8,760	1.52E-05	1.52E-05
84	1340x71	Naphthalene	91-20-3	0.4419	0.000050	8,760	6.36E-06	6.36E-06
84	1340x71	n-Hexane	110-54-3	68.1099	0.007775	8,760	9.80E-04	9.80E-04
84	1340x71	Phenol	108-95-2	0.0009	0.000000	8,760	1.28E-08	1.28E-08
84	1340x71	Propylene	115-07-1	0.3292	0.000038	8,760	4.74E-06	4.74E-06
84	1340x71	Toluene	108-88-3	1.6749	0.000191	8,760	2.41E-05	2.41E-05
84	1340x71	Xylenes (mixed isomers)	1330-20-7	10.8041	0.001233	8,760	1.55E-04	1.55E-04
85	1340x74	1,2,4-Trimethylbenzene	95-63-6	0.5908	0.000067	8,760	8.50E-06	8.50E-06
85	1340x74	Benzene	71-43-2	0.0537	0.000006	8,760	7.73E-07	7.73E-07
85	1340x74	Biphenyl	92-52-4	0.1637	0.000019	8,760	2.35E-06	2.35E-06
85	1340x74	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	6.71E-10	6.70E-10
85	1340x74	Cumene	98-82-8	0.0090	0.000001	8,760	1.29E-07	1.29E-07
85	1340x74	Ethylbenzene	100-41-4	0.5218	0.000060	8,760	7.51E-06	7.51E-06
85	1340x74	Naphthalene	91-20-3	0.0048	0.000001	8,760	6.91E-08	6.91E-08

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
85	1340x74	n-Hexane	110-54-3	1.3487	0.000154	8,760	1.94E-05	1.94E-05
85	1340x74	Phenol	108-95-2	0.0124	0.000001	8,760	1.78E-07	1.78E-07
85	1340x74	Styrene	100-42-5	0.0001	0.000000	8,760	1.12E-09	1.12E-09
85	1340x74	Toluene	108-88-3	0.0376	0.000004	8,760	5.40E-07	5.40E-07
85	1340x74	Xylenes (mixed isomers)	1330-20-7	0.0083	0.000001	8,760	1.19E-07	1.19E-07
86	1340x75	1,2,4-Trimethylbenzene	95-63-6	0.3534	0.000040	8,760	5.08E-06	5.08E-06
86	1340x75	Benzene	71-43-2	2.2877	0.000261	8,760	3.29E-05	3.29E-05
86	1340x75	Biphenyl	92-52-4	0.0336	0.000004	8,760	4.83E-07	4.83E-07
86	1340x75	Cresols (mixed isomers)	1319-77-3	0.0703	0.000008	8,760	1.01E-06	1.01E-06
86	1340x75	Cumene	98-82-8	0.0540	0.000006	8,760	7.77E-07	7.77E-07
86	1340x75	Cyclohexane	110-82-7	7.8335	0.000894	8,760	1.13E-04	1.13E-04
86	1340x75	Ethylbenzene	100-41-4	0.2364	0.000027	8,760	3.40E-06	3.40E-06
86	1340x75	Hydrogen sulfide	7783-06-4	0.2358	0.000027	8,760	3.39E-06	3.39E-06
86	1340x75	Naphthalene	91-20-3	0.0712	0.000008	8,760	1.02E-06	1.02E-06
86	1340x75	n-Hexane	110-54-3	14.5446	0.001660	8,760	2.09E-04	2.09E-04
86	1340x75	Phenol	108-95-2	0.0001	0.000000	8,760	2.08E-09	2.08E-09
86	1340x75	Propylene	115-07-1	0.0736	0.000008	8,760	1.06E-06	1.06E-06
86	1340x75	Toluene	108-88-3	0.3196	0.000036	8,760	4.60E-06	4.60E-06
86	1340x75	Xylenes (mixed isomers)	1330-20-7	1.8649	0.000213	8,760	2.68E-05	2.68E-05
87	1340x76	1,2,4-Trimethylbenzene	95-63-6	0.7726	0.000088	8,760	1.11E-05	1.11E-05
87	1340x76	Benzene	71-43-2	9.4773	0.001082	8,760	1.36E-04	1.36E-04
87	1340x76	Biphenyl	92-52-4	0.0586	0.000007	8,760	8.42E-07	8.42E-07
87	1340x76	Cresols (mixed isomers)	1319-77-3	0.1267	0.000014	8,760	1.82E-06	1.82E-06
87	1340x76	Cumene	98-82-8	0.1405	0.000016	8,760	2.02E-06	2.02E-06
87	1340x76	Cyclohexane	110-82-7	31.8466	0.003635	8,760	4.58E-04	4.58E-04
87	1340x76	Ethylbenzene	100-41-4	0.7243	0.000083	8,760	1.04E-05	1.04E-05
87	1340x76	Hydrogen sulfide	7783-06-4	0.6291	0.000072	8,760	9.05E-06	9.05E-06
87	1340x76	Naphthalene	91-20-3	0.1310	0.000015	8,760	1.88E-06	1.88E-06
87	1340x76	n-Hexane	110-54-3	59.1431	0.006751	8,760	8.51E-04	8.51E-04
87	1340x76	Phenol	108-95-2	0.0003	0.000000	8,760	4.01E-09	4.01E-09
87	1340x76	Propylene	115-07-1	0.2196	0.000025	8,760	3.16E-06	3.16E-06
87	1340x76	Toluene	108-88-3	1.2029	0.000137	8,760	1.73E-05	1.73E-05
87	1340x76	Xylenes (mixed isomers)	1330-20-7	5.3597	0.000612	8,760	7.71E-05	7.71E-05
88	1340x77	1,2,4-Trimethylbenzene	95-63-6	0.9146	0.000104	8,760	1.32E-05	1.32E-05
88	1340x77	Benzene	71-43-2	9.2098	0.001051	8,760	1.32E-04	1.32E-04
88	1340x77	Biphenyl	92-52-4	0.0819	0.000009	8,760	1.18E-06	1.18E-06
88	1340x77	Cresols (mixed isomers)	1319-77-3	0.1721	0.000020	8,760	2.48E-06	2.48E-06
88	1340x77	Cumene	98-82-8	0.1497	0.000017	8,760	2.15E-06	2.15E-06
88	1340x77	Cyclohexane	110-82-7	31.6098	0.003608	8,760	4.55E-04	4.55E-04
88	1340x77	Ethylbenzene	100-41-4	0.7146	0.000082	8,760	1.03E-05	1.03E-05
88	1340x77	Hydrogen sulfide	7783-06-4	1.0328	0.000118	8,760	1.49E-05	1.49E-05
88	1340x77	Naphthalene	91-20-3	0.1761	0.000020	8,760	2.53E-06	2.53E-06
88	1340x77	n-Hexane	110-54-3	60.3018	0.006884	8,760	8.67E-04	8.67E-04
88	1340x77	Phenol	108-95-2	0.0004	0.000000	8,760	5.19E-09	5.19E-09
88	1340x77	Propylene	115-07-1	0.3224	0.000037	8,760	4.64E-06	4.64E-06
88	1340x77	Toluene	108-88-3	1.1283	0.000129	8,760	1.62E-05	1.62E-05
88	1340x77	Xylenes (mixed isomers)	1330-20-7	5.4506	0.000622	8,760	7.84E-05	7.84E-05
89	1340x78	1,2,4-Trimethylbenzene	95-63-6	1.4116	0.000161	8,760	2.03E-05	2.03E-05
89	1340x78	Benzene	71-43-2	16.2362	0.001853	8,760	2.34E-04	2.34E-04
89	1340x78	Biphenyl	92-52-4	0.1097	0.000013	8,760	1.58E-06	1.58E-06
89	1340x78	Cresols (mixed isomers)	1319-77-3	0.2364	0.000027	8,760	3.40E-06	3.40E-06
89	1340x78	Cumene	98-82-8	0.2524	0.000029	8,760	3.63E-06	3.63E-06
89	1340x78	Cyclohexane	110-82-7	54.5551	0.006228	8,760	7.85E-04	7.85E-04
89	1340x78	Ethylbenzene	100-41-4	1.2809	0.000146	8,760	1.84E-05	1.84E-05
89	1340x78	Hydrogen sulfide	7783-06-4	1.0694	0.000122	8,760	1.54E-05	1.54E-05
89	1340x78	Naphthalene	91-20-3	0.2437	0.000028	8,760	3.51E-06	3.51E-06
89	1340x78	n-Hexane	110-54-3	101.0658	0.011537	8,760	1.45E-03	1.45E-03
89	1340x78	Phenol	108-95-2	0.0005	0.000000	8,760	7.42E-09	7.41E-09
89	1340x78	Propylene	115-07-1	0.3733	0.000043	8,760	5.37E-06	5.37E-06
89	1340x78	Toluene	108-88-3	2.0870	0.000238	8,760	3.00E-05	3.00E-05
89	1340x78	Xylenes (mixed isomers)	1330-20-7	9.5324	0.001088	8,760	1.37E-04	1.37E-04
90	1340x79	1,2,4-Trimethylbenzene	95-63-6	0.9810	0.000112	8,760	1.41E-05	1.41E-05
90	1340x79	Benzene	71-43-2	9.0412	0.001032	8,760	1.30E-04	1.30E-04
90	1340x79	Biphenyl	92-52-4	0.0818	0.000009	8,760	1.18E-06	1.18E-06

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
90	1340x79	Cresols (mixed isomers)	1319-77-3	0.1747	0.000020	8,760	2.51E-06	2.51E-06
90	1340x79	Cumene	98-82-8	0.1663	0.000019	8,760	2.39E-06	2.39E-06
90	1340x79	Cyclohexane	110-82-7	30.3718	0.003467	8,760	4.37E-04	4.37E-04
90	1340x79	Ethylbenzene	100-41-4	0.8022	0.000092	8,760	1.15E-05	1.15E-05
90	1340x79	Hydrogen sulfide	7783-06-4	0.5771	0.000066	8,760	8.30E-06	8.30E-06
90	1340x79	Naphthalene	91-20-3	0.1786	0.000020	8,760	2.57E-06	2.57E-06
90	1340x79	n-Hexane	110-54-3	55.7115	0.006360	8,760	8.01E-04	8.01E-04
90	1340x79	Phenol	108-95-2	0.0004	0.000000	8,760	5.36E-09	5.35E-09
90	1340x79	Propylene	115-07-1	0.2015	0.000023	8,760	2.90E-06	2.90E-06
90	1340x79	Toluene	108-88-3	1.2200	0.000139	8,760	1.75E-05	1.75E-05
90	1340x79	Xylenes (mixed isomers)	1330-20-7	6.0844	0.000695	8,760	8.75E-05	8.75E-05
91	1340x80	1,2,4-Trimethylbenzene	95-63-6	0.7733	0.000088	8,760	1.11E-05	1.11E-05
91	1340x80	Benzene	71-43-2	5.2088	0.000595	8,760	7.49E-05	7.49E-05
91	1340x80	Biphenyl	92-52-4	0.0732	0.000008	8,760	1.05E-06	1.05E-06
91	1340x80	Cresols (mixed isomers)	1319-77-3	0.1533	0.000018	8,760	2.20E-06	2.20E-06
91	1340x80	Cumene	98-82-8	0.1188	0.000014	8,760	1.71E-06	1.71E-06
91	1340x80	Cyclohexane	110-82-7	17.8402	0.002037	8,760	2.57E-04	2.57E-04
91	1340x80	Ethylbenzene	100-41-4	0.5235	0.000060	8,760	7.53E-06	7.53E-06
91	1340x80	Hydrogen sulfide	7783-06-4	0.5420	0.000062	8,760	7.80E-06	7.80E-06
91	1340x80	Naphthalene	91-20-3	0.1554	0.000018	8,760	2.23E-06	2.23E-06
91	1340x80	n-Hexane	110-54-3	33.2239	0.003793	8,760	4.78E-04	4.78E-04
91	1340x80	Phenol	108-95-2	0.0003	0.000000	8,760	4.53E-09	4.53E-09
91	1340x80	Propylene	115-07-1	0.1693	0.000019	8,760	2.43E-06	2.43E-06
91	1340x80	Toluene	108-88-3	0.7178	0.000082	8,760	1.03E-05	1.03E-05
91	1340x80	Xylenes (mixed isomers)	1330-20-7	4.1191	0.000470	8,760	5.92E-05	5.92E-05
92	1340x87	1,2,4-Trimethylbenzene	95-63-6	0.8510	0.000097	8,760	1.22E-05	1.22E-05
92	1340x87	Benzene	71-43-2	13.3445	0.001523	8,760	1.92E-04	1.92E-04
92	1340x87	Cresols (mixed isomers)	1319-77-3	0.0030	0.000000	8,760	4.26E-08	4.26E-08
92	1340x87	Cumene	98-82-8	0.1547	0.000018	8,760	2.22E-06	2.22E-06
92	1340x87	Cyclohexane	110-82-7	3.4474	0.000394	8,760	4.96E-05	4.96E-05
92	1340x87	Ethylbenzene	100-41-4	1.7959	0.000205	8,760	2.58E-05	2.58E-05
92	1340x87	Naphthalene	91-20-3	0.0447	0.000005	8,760	6.43E-07	6.43E-07
92	1340x87	n-Hexane	110-54-3	72.7457	0.008304	8,760	1.05E-03	1.05E-03
92	1340x87	Phenol	108-95-2	0.0027	0.000000	8,760	3.83E-08	3.83E-08
92	1340x87	Styrene	100-42-5	0.0714	0.000008	8,760	1.03E-06	1.03E-06
92	1340x87	Toluene	108-88-3	13.7926	0.001574	8,760	1.98E-04	1.98E-04
92	1340x87	Xylenes (mixed isomers)	1330-20-7	6.3425	0.000724	8,760	9.12E-05	9.12E-05
93	1340x88	1,2,4-Trimethylbenzene	95-63-6	0.4135	0.000047	8,760	5.95E-06	5.95E-06
93	1340x88	Benzene	71-43-2	0.5992	0.000068	8,760	8.62E-06	8.62E-06
93	1340x88	Cresols (mixed isomers)	1319-77-3	0.0002	0.000000	8,760	3.28E-09	3.28E-09
93	1340x88	Naphthalene	91-20-3	0.0803	0.000009	8,760	1.15E-06	1.15E-06
93	1340x88	n-Hexane	110-54-3	26.9965	0.003082	8,760	3.88E-04	3.88E-04
93	1340x88	Phenol	108-95-2	0.3585	0.000041	8,760	5.16E-06	5.16E-06
93	1340x88	Styrene	100-42-5	0.0128	0.000001	8,760	1.85E-07	1.85E-07
93	1340x88	Toluene	108-88-3	11.5231	0.001315	8,760	1.66E-04	1.66E-04
93	1340x88	Xylenes (mixed isomers)	1330-20-7	1.4925	0.000170	8,760	2.15E-05	2.15E-05
94	150x101	1,2,4-Trimethylbenzene	95-63-6	0.2478	0.000028	8,760	3.56E-06	3.56E-06
94	150x101	Benzene	71-43-2	3.8861	0.000444	8,760	5.59E-05	5.59E-05
94	150x101	Cresols (mixed isomers)	1319-77-3	0.0009	0.000000	8,760	1.24E-08	1.24E-08
94	150x101	Cumene	98-82-8	0.0450	0.000005	8,760	6.48E-07	6.48E-07
94	150x101	Cyclohexane	110-82-7	1.0039	0.000115	8,760	1.44E-05	1.44E-05
94	150x101	Ethylbenzene	100-41-4	0.5230	0.000060	8,760	7.52E-06	7.52E-06
94	150x101	Naphthalene	91-20-3	0.0130	0.000001	8,760	1.87E-07	1.87E-07
94	150x101	n-Hexane	110-54-3	21.1843	0.002418	8,760	3.05E-04	3.05E-04
94	150x101	Phenol	108-95-2	0.0008	0.000000	8,760	1.11E-08	1.11E-08
94	150x101	Styrene	100-42-5	0.0208	0.000002	8,760	2.99E-07	2.99E-07
94	150x101	Toluene	108-88-3	4.0165	0.000459	8,760	5.78E-05	5.78E-05
94	150x101	Xylenes (mixed isomers)	1330-20-7	1.8470	0.000211	8,760	2.66E-05	2.66E-05
95	150x102	1,2,4-Trimethylbenzene	95-63-6	0.2461	0.000028	8,760	3.54E-06	3.54E-06
95	150x102	Benzene	71-43-2	3.8593	0.000441	8,760	5.55E-05	5.55E-05
95	150x102	Cresols (mixed isomers)	1319-77-3	0.0009	0.000000	8,760	1.23E-08	1.23E-08
95	150x102	Cumene	98-82-8	0.0447	0.000005	8,760	6.43E-07	6.43E-07
95	150x102	Cyclohexane	110-82-7	0.9970	0.000114	8,760	1.43E-05	1.43E-05
95	150x102	Ethylbenzene	100-41-4	0.5194	0.000059	8,760	7.47E-06	7.47E-06

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
95	150x102	Naphthalene	91-20-3	0.0129	0.000001	8,760	1.86E-07	1.86E-07
95	150x102	n-Hexane	110-54-3	21.0386	0.002402	8,760	3.03E-04	3.03E-04
95	150x102	Phenol	108-95-2	0.0008	0.000000	8,760	1.11E-08	1.11E-08
95	150x102	Styrene	100-42-5	0.0207	0.000002	8,760	2.97E-07	2.97E-07
95	150x102	Toluene	108-88-3	3.9889	0.000455	8,760	5.74E-05	5.74E-05
95	150x102	Xylenes (mixed isomers)	1330-20-7	1.8343	0.000209	8,760	2.64E-05	2.64E-05
96	150x103	1,2,4-Trimethylbenzene	95-63-6	0.1316	0.000015	8,760	1.89E-06	1.89E-06
96	150x103	Benzene	71-43-2	2.0630	0.000235	8,760	2.97E-05	2.97E-05
96	150x103	Cresols (mixed isomers)	1319-77-3	0.0005	0.000000	8,760	6.58E-09	6.58E-09
96	150x103	Cumene	98-82-8	0.0239	0.000003	8,760	3.44E-07	3.44E-07
96	150x103	Cyclohexane	110-82-7	0.5329	0.000061	8,760	7.67E-06	7.67E-06
96	150x103	Ethylbenzene	100-41-4	0.2776	0.000032	8,760	3.99E-06	3.99E-06
96	150x103	Naphthalene	91-20-3	0.0069	0.000001	8,760	9.94E-08	9.94E-08
96	150x103	n-Hexane	110-54-3	11.2459	0.001284	8,760	1.62E-04	1.62E-04
96	150x103	Phenol	108-95-2	0.0004	0.000000	8,760	5.92E-09	5.92E-09
96	150x103	Styrene	100-42-5	0.0110	0.000001	8,760	1.59E-07	1.59E-07
96	150x103	Toluene	108-88-3	2.1322	0.000243	8,760	3.07E-05	3.07E-05
96	150x103	Xylenes (mixed isomers)	1330-20-7	0.9805	0.000112	8,760	1.41E-05	1.41E-05
97	15x420	1,2,4-Trimethylbenzene	95-63-6	0.0002	0.000000	8,760	3.18E-09	3.18E-09
97	15x420	Benzene	71-43-2	0.2154	0.000025	8,760	3.10E-06	3.10E-06
97	15x420	Cumene	98-82-8	0.0003	0.000000	8,760	3.92E-09	3.92E-09
97	15x420	Ethylbenzene	100-41-4	0.0030	0.000000	8,760	4.37E-08	4.36E-08
97	15x420	Hydrogen sulfide	7783-06-4	0.3703	0.000042	8,760	5.33E-06	5.33E-06
97	15x420	Naphthalene	91-20-3	0.0000	0.000000	8,760	1.13E-10	1.12E-10
97	15x420	n-Hexane	110-54-3	0.9494	0.000108	8,760	1.37E-05	1.37E-05
97	15x420	Propylene	115-07-1	0.2311	0.000026	8,760	3.32E-06	3.32E-06
97	15x420	Toluene	108-88-3	0.0514	0.000006	8,760	7.39E-07	7.39E-07
97	15x420	Xylenes (mixed isomers)	1330-20-7	0.0124	0.000001	8,760	1.79E-07	1.79E-07
98	15x421	1,2,4-Trimethylbenzene	95-63-6	0.0002	0.000000	8,760	3.21E-09	3.21E-09
98	15x421	Benzene	71-43-2	0.2177	0.000025	8,760	3.13E-06	3.13E-06
98	15x421	Cumene	98-82-8	0.0003	0.000000	8,760	3.96E-09	3.96E-09
98	15x421	Ethylbenzene	100-41-4	0.0031	0.000000	8,760	4.41E-08	4.41E-08
98	15x421	Hydrogen sulfide	7783-06-4	0.3743	0.000043	8,760	5.38E-06	5.38E-06
98	15x421	Naphthalene	91-20-3	0.0000	0.000000	8,760	1.14E-10	1.13E-10
98	15x421	n-Hexane	110-54-3	0.9596	0.000110	8,760	1.38E-05	1.38E-05
98	15x421	Propylene	115-07-1	0.2336	0.000027	8,760	3.36E-06	3.36E-06
98	15x421	Toluene	108-88-3	0.0519	0.000006	8,760	7.47E-07	7.47E-07
98	15x421	Xylenes (mixed isomers)	1330-20-7	0.0126	0.000001	8,760	1.81E-07	1.81E-07
100	200x10	Benzene	71-43-2	6.9977	0.000799	8,760	1.01E-04	1.01E-04
100	200x10	Cresols (mixed isomers)	1319-77-3	0.0160	0.000002	8,760	2.30E-07	2.30E-07
100	200x10	Naphthalene	91-20-3	0.1125	0.000013	8,760	1.62E-06	1.62E-06
100	200x10	n-Hexane	110-54-3	1.1406	0.000130	8,760	1.64E-05	1.64E-05
100	200x10	Phenol	108-95-2	0.0001	0.000000	8,760	1.45E-09	1.45E-09
100	200x10	Toluene	108-88-3	4.0369	0.000461	8,760	5.81E-05	5.81E-05
100	200x10	Xylenes (mixed isomers)	1330-20-7	2.0914	0.000239	8,760	3.01E-05	3.01E-05
101	200x11	Benzene	71-43-2	6.9332	0.000791	8,760	9.97E-05	9.97E-05
101	200x11	Cresols (mixed isomers)	1319-77-3	0.0158	0.000002	8,760	2.28E-07	2.28E-07
101	200x11	Naphthalene	91-20-3	0.1115	0.000013	8,760	1.60E-06	1.60E-06
101	200x11	n-Hexane	110-54-3	1.1301	0.000129	8,760	1.63E-05	1.63E-05
101	200x11	Phenol	108-95-2	0.0001	0.000000	8,760	1.43E-09	1.43E-09
101	200x11	Toluene	108-88-3	3.9996	0.000457	8,760	5.75E-05	5.75E-05
101	200x11	Xylenes (mixed isomers)	1330-20-7	2.0721	0.000237	8,760	2.98E-05	2.98E-05
102	200x17	Benzene	71-43-2	1.3247	0.000151	8,760	1.91E-05	1.91E-05
102	200x17	Cresols (mixed isomers)	1319-77-3	0.0080	0.000001	8,760	1.15E-07	1.15E-07
102	200x17	Naphthalene	91-20-3	0.0313	0.000004	8,760	4.49E-07	4.49E-07
102	200x17	n-Hexane	110-54-3	0.2158	0.000025	8,760	3.10E-06	3.10E-06
102	200x17	Phenol	108-95-2	0.0000	0.000000	8,760	3.45E-10	3.44E-10
102	200x17	Toluene	108-88-3	0.7677	0.000088	8,760	1.10E-05	1.10E-05
102	200x17	Xylenes (mixed isomers)	1330-20-7	0.4052	0.000046	8,760	5.83E-06	5.83E-06
103	200x18	Benzene	71-43-2	0.7724	0.000088	8,760	1.11E-05	1.11E-05
103	200x18	Cresols (mixed isomers)	1319-77-3	0.0068	0.000001	8,760	9.74E-08	9.70E-08
103	200x18	Naphthalene	91-20-3	0.0224	0.000003	8,760	3.22E-07	3.21E-07
103	200x18	n-Hexane	110-54-3	0.1257	0.000014	8,760	1.81E-06	1.81E-06
103	200x18	Phenol	108-95-2	0.0000	0.000000	8,760	2.31E-10	2.31E-10

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
103	200x18	Toluene	108-88-3	0.4491	0.000051	8,760	6.46E-06	6.46E-06
103	200x18	Xylenes (mixed isomers)	1330-20-7	0.2401	0.000027	8,760	3.45E-06	3.45E-06
104	20x1011	1,2,4-Trimethylbenzene	95-63-6	0.0098	0.000001	8,760	1.40E-07	1.40E-07
104	20x1011	Benzene	71-43-2	0.1531	0.000017	8,760	2.20E-06	2.20E-06
104	20x1011	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	4.88E-10	4.88E-10
104	20x1011	Cumene	98-82-8	0.0018	0.000000	8,760	2.55E-08	2.55E-08
104	20x1011	Cyclohexane	110-82-7	0.0396	0.000005	8,760	5.69E-07	5.69E-07
104	20x1011	Ethylbenzene	100-41-4	0.0206	0.000002	8,760	2.96E-07	2.96E-07
104	20x1011	Naphthalene	91-20-3	0.0005	0.000000	8,760	7.38E-09	7.38E-09
104	20x1011	n-Hexane	110-54-3	0.8346	0.000095	8,760	1.20E-05	1.20E-05
104	20x1011	Phenol	108-95-2	0.0000	0.000000	8,760	4.39E-10	4.38E-10
104	20x1011	Styrene	100-42-5	0.0008	0.000000	8,760	1.18E-08	1.18E-08
104	20x1011	Toluene	108-88-3	0.1582	0.000018	8,760	2.28E-06	2.28E-06
104	20x1011	Xylenes (mixed isomers)	1330-20-7	0.0728	0.000008	8,760	1.05E-06	1.05E-06
106	2500x1	1,3-Butadiene	106-99-0	0.0177	0.000002	8,760	2.55E-07	2.55E-07
106	2500x1	Benzene	71-43-2	0.0008	0.000000	8,760	1.10E-08	1.10E-08
106	2500x1	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	7.87E-10	7.86E-10
106	2500x1	Naphthalene	91-20-3	0.0001	0.000000	8,760	8.16E-10	8.15E-10
106	2500x1	n-Hexane	110-54-3	0.6007	0.000069	8,760	8.64E-06	8.64E-06
106	2500x1	Phenol	108-95-2	0.0001	0.000000	8,760	8.49E-10	8.48E-10
106	2500x1	Propylene	115-07-1	0.0836	0.000010	8,760	1.20E-06	1.20E-06
106	2500x1	Styrene	100-42-5	0.0001	0.000000	8,760	1.43E-09	1.43E-09
106	2500x1	Toluene	108-88-3	0.0003	0.000000	8,760	3.71E-09	3.71E-09
106	2500x1	Xylenes (mixed isomers)	1330-20-7	0.0001	0.000000	8,760	1.54E-09	1.54E-09
107	2500x2	1,2,4-Trimethylbenzene	95-63-6	0.8076	0.000092	8,760	1.16E-05	1.16E-05
107	2500x2	Benzene	71-43-2	25.0750	0.002862	8,760	3.61E-04	3.61E-04
107	2500x2	Carbon disulfide	75-15-0	0.0030	0.000000	8,760	4.33E-08	4.33E-08
107	2500x2	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.24E-11	1.24E-11
107	2500x2	Cumene	98-82-8	0.0806	0.000009	8,760	1.16E-06	1.16E-06
107	2500x2	Cyclohexane	110-82-7	3.5016	0.000400	8,760	5.04E-05	5.04E-05
107	2500x2	Ethylbenzene	100-41-4	2.1828	0.000249	8,760	3.14E-05	3.14E-05
107	2500x2	Naphthalene	91-20-3	0.0203	0.000002	8,760	2.92E-07	2.92E-07
107	2500x2	n-Hexane	110-54-3	61.4249	0.007012	8,760	8.83E-04	8.83E-04
107	2500x2	Phenol	108-95-2	0.0005	0.000000	8,760	7.78E-09	7.78E-09
107	2500x2	Styrene	100-42-5	0.0522	0.000006	8,760	7.51E-07	7.51E-07
107	2500x2	Toluene	108-88-3	25.9908	0.002967	8,760	3.74E-04	3.74E-04
107	2500x2	Xylenes (mixed isomers)	1330-20-7	8.8892	0.001015	8,760	1.28E-04	1.28E-04
108	2500x3	1,2,4-Trimethylbenzene	95-63-6	2.1669	0.000247	8,760	3.12E-05	3.12E-05
108	2500x3	1,3-Butadiene	106-99-0	0.0257	0.000003	8,760	3.70E-07	3.70E-07
108	2500x3	Benzene	71-43-2	13.5953	0.001552	8,760	1.96E-04	1.96E-04
108	2500x3	Cresols (mixed isomers)	1319-77-3	0.0266	0.000003	8,760	3.83E-07	3.83E-07
108	2500x3	Cumene	98-82-8	0.1156	0.000013	8,760	1.66E-06	1.66E-06
108	2500x3	Ethylbenzene	100-41-4	2.7431	0.000313	8,760	3.95E-05	3.95E-05
108	2500x3	Naphthalene	91-20-3	0.2585	0.000030	8,760	3.72E-06	3.72E-06
108	2500x3	n-Hexane	110-54-3	11.4916	0.001312	8,760	1.65E-04	1.65E-04
108	2500x3	Phenol	108-95-2	0.0273	0.000003	8,760	3.92E-07	3.92E-07
108	2500x3	Propylene	115-07-1	0.1204	0.000014	8,760	1.73E-06	1.73E-06
108	2500x3	Toluene	108-88-3	16.2014	0.001849	8,760	2.33E-04	2.33E-04
108	2500x3	Xylenes (mixed isomers)	1330-20-7	15.6081	0.001782	8,760	2.24E-04	2.24E-04
109	2500x4	1,3-Butadiene	106-99-0	0.0171	0.000002	8,760	2.47E-07	2.47E-07
109	2500x4	Benzene	71-43-2	0.0008	0.000000	8,760	1.18E-08	1.18E-08
109	2500x4	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	2.05E-09	2.05E-09
109	2500x4	Naphthalene	91-20-3	0.0001	0.000000	8,760	2.08E-09	2.08E-09
109	2500x4	n-Hexane	110-54-3	0.6228	0.000071	8,760	8.96E-06	8.96E-06
109	2500x4	Phenol	108-95-2	0.0001	0.000000	8,760	2.11E-09	2.11E-09
109	2500x4	Propylene	115-07-1	0.0804	0.000009	8,760	1.16E-06	1.16E-06
109	2500x4	Styrene	100-42-5	0.0002	0.000000	8,760	2.67E-09	2.67E-09
109	2500x4	Toluene	108-88-3	0.0003	0.000000	8,760	4.87E-09	4.86E-09
109	2500x4	Xylenes (mixed isomers)	1330-20-7	0.0002	0.000000	8,760	2.77E-09	2.77E-09
110	250x9	1,2,4-Trimethylbenzene	95-63-6	0.1935	0.000022	8,760	2.78E-06	2.78E-06
110	250x9	Benzene	71-43-2	3.0344	0.000346	8,760	4.36E-05	4.36E-05
110	250x9	Cresols (mixed isomers)	1319-77-3	0.0007	0.000000	8,760	9.68E-09	9.68E-09
110	250x9	Cumene	98-82-8	0.0352	0.000004	8,760	5.06E-07	5.06E-07
110	250x9	Cyclohexane	110-82-7	0.7839	0.000089	8,760	1.13E-05	1.13E-05

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
110	250x9	Ethylbenzene	100-41-4	0.4084	0.000047	8,760	5.87E-06	5.87E-06
110	250x9	Naphthalene	91-20-3	0.0102	0.000001	8,760	1.46E-07	1.46E-07
110	250x9	n-Hexane	110-54-3	16.5416	0.001888	8,760	2.38E-04	2.38E-04
110	250x9	Phenol	108-95-2	0.0006	0.000000	8,760	8.70E-09	8.70E-09
110	250x9	Styrene	100-42-5	0.0162	0.000002	8,760	2.34E-07	2.34E-07
110	250x9	Toluene	108-88-3	3.1363	0.000358	8,760	4.51E-05	4.51E-05
110	250x9	Xylenes (mixed isomers)	1330-20-7	1.4422	0.000165	8,760	2.07E-05	2.07E-05
111	3000x1	Cresols (mixed isomers)	1319-77-3	22.8813	0.002612	8,760	3.29E-04	3.29E-04
111	3000x1	Naphthalene	91-20-3	14.8213	0.001692	8,760	2.13E-04	2.13E-04
111	3000x1	Phenol	108-95-2	38.1352	0.004353	8,760	5.49E-04	5.49E-04
111	3000x1	Styrene	100-42-5	77.4905	0.008846	8,760	1.11E-03	1.11E-03
112	300x10	1,2,4-Trimethylbenzene	95-63-6	0.4009	0.000046	8,760	5.77E-06	5.77E-06
112	300x10	1,3-Butadiene	106-99-0	0.0075	0.000001	8,760	1.08E-07	1.08E-07
112	300x10	Benzene	71-43-2	3.2199	0.000368	8,760	4.63E-05	4.63E-05
112	300x10	Biphenyl	92-52-4	0.0021	0.000000	8,760	3.03E-08	3.03E-08
112	300x10	Carbon disulfide	75-15-0	0.3914	0.000045	8,760	5.63E-06	5.63E-06
112	300x10	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.08E-10	3.07E-10
112	300x10	Cumene	98-82-8	0.0112	0.000001	8,760	1.61E-07	1.61E-07
112	300x10	Cyclohexane	110-82-7	1.0625	0.000121	8,760	1.53E-05	1.53E-05
112	300x10	Ethylbenzene	100-41-4	0.3968	0.000045	8,760	5.71E-06	5.71E-06
112	300x10	Methanol	67-56-1	0.0040	0.000000	8,760	5.77E-08	5.77E-08
112	300x10	Naphthalene	91-20-3	0.0713	0.000008	8,760	1.03E-06	1.03E-06
112	300x10	n-Hexane	110-54-3	3.2584	0.000372	8,760	4.69E-05	4.69E-05
112	300x10	Phenol	108-95-2	0.0000	0.000000	8,760	3.34E-10	3.34E-10
112	300x10	Styrene	100-42-5	0.0129	0.000001	8,760	1.86E-07	1.86E-07
112	300x10	Toluene	108-88-3	3.6673	0.000419	8,760	5.27E-05	5.27E-05
112	300x10	Xylenes (mixed isomers)	1330-20-7	2.5259	0.000288	8,760	3.63E-05	3.63E-05
113	300x11	1,2,4-Trimethylbenzene	95-63-6	0.0443	0.000005	8,760	6.37E-07	6.37E-07
113	300x11	Benzene	71-43-2	0.1140	0.000013	8,760	1.64E-06	1.64E-06
113	300x11	Biphenyl	92-52-4	0.0061	0.000001	8,760	8.83E-08	8.83E-08
113	300x11	Cresols (mixed isomers)	1319-77-3	0.0046	0.000001	8,760	6.67E-08	6.67E-08
113	300x11	Cumene	98-82-8	0.0058	0.000001	8,760	8.27E-08	8.27E-08
113	300x11	Ethylbenzene	100-41-4	0.0086	0.000001	8,760	1.24E-07	1.24E-07
113	300x11	Naphthalene	91-20-3	0.0158	0.000002	8,760	2.28E-07	2.28E-07
113	300x11	n-Hexane	110-54-3	3.5225	0.000402	8,760	5.07E-05	5.07E-05
113	300x11	Phenol	108-95-2	0.0000	0.000000	8,760	8.61E-11	8.57E-11
113	300x11	Toluene	108-88-3	0.0689	0.000008	8,760	9.90E-07	9.90E-07
113	300x11	Xylenes (mixed isomers)	1330-20-7	0.0211	0.000002	8,760	3.03E-07	3.03E-07
114	300x12	1,2,4-Trimethylbenzene	95-63-6	0.3960	0.000045	8,760	5.70E-06	5.70E-06
114	300x12	Benzene	71-43-2	0.2306	0.000026	8,760	3.32E-06	3.32E-06
114	300x12	Biphenyl	92-52-4	0.0971	0.000011	8,760	1.40E-06	1.40E-06
114	300x12	Cresols (mixed isomers)	1319-77-3	0.0698	0.000008	8,760	1.00E-06	1.00E-06
114	300x12	Cumene	98-82-8	0.0341	0.000004	8,760	4.91E-07	4.91E-07
114	300x12	Ethylbenzene	100-41-4	0.0354	0.000004	8,760	5.09E-07	5.09E-07
114	300x12	Naphthalene	91-20-3	0.2128	0.000024	8,760	3.06E-06	3.06E-06
114	300x12	n-Hexane	110-54-3	6.7673	0.000773	8,760	9.73E-05	9.73E-05
114	300x12	Phenol	108-95-2	0.0001	0.000000	8,760	1.04E-09	1.04E-09
114	300x12	Toluene	108-88-3	0.1824	0.000021	8,760	2.62E-06	2.62E-06
114	300x12	Xylenes (mixed isomers)	1330-20-7	0.0986	0.000011	8,760	1.42E-06	1.42E-06
115	300x15	1,2,4-Trimethylbenzene	95-63-6	0.3233	0.000037	8,760	4.65E-06	4.65E-06
115	300x15	Benzene	71-43-2	0.2095	0.000024	8,760	3.01E-06	3.01E-06
115	300x15	Biphenyl	92-52-4	0.0782	0.000009	8,760	1.12E-06	1.12E-06
115	300x15	Cresols (mixed isomers)	1319-77-3	0.0562	0.000006	8,760	8.09E-07	8.09E-07
115	300x15	Cumene	98-82-8	0.0283	0.000003	8,760	4.08E-07	4.08E-07
115	300x15	Ethylbenzene	100-41-4	0.0300	0.000003	8,760	4.32E-07	4.32E-07
115	300x15	Naphthalene	91-20-3	0.1718	0.000020	8,760	2.47E-06	2.47E-06
115	300x15	n-Hexane	110-54-3	6.1915	0.000707	8,760	8.91E-05	8.91E-05
115	300x15	Phenol	108-95-2	0.0001	0.000000	8,760	8.40E-10	8.40E-10
115	300x15	Toluene	108-88-3	0.1606	0.000018	8,760	2.31E-06	2.31E-06
115	300x15	Xylenes (mixed isomers)	1330-20-7	0.0830	0.000009	8,760	1.19E-06	1.19E-06
116	300x18	Benzene	71-43-2	2.7291	0.000312	8,760	3.93E-05	3.93E-05
116	300x18	Cresols (mixed isomers)	1319-77-3	0.0173	0.000002	8,760	2.49E-07	2.48E-07
116	300x18	Naphthalene	91-20-3	0.0660	0.000008	8,760	9.49E-07	9.49E-07
116	300x18	n-Hexane	110-54-3	0.4445	0.000051	8,760	6.39E-06	6.39E-06

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
116	300x18	Phenol	108-95-2	0.0001	0.000000	8,760	7.22E-10	7.22E-10
116	300x18	Toluene	108-88-3	1.5823	0.000181	8,760	2.28E-05	2.28E-05
116	300x18	Xylenes (mixed isomers)	1330-20-7	0.8362	0.000095	8,760	1.20E-05	1.20E-05
117	300x19	Benzene	71-43-2	1.3924	0.000159	8,760	2.00E-05	2.00E-05
117	300x19	Cresols (mixed isomers)	1319-77-3	0.0363	0.000004	8,760	5.22E-07	5.22E-07
117	300x19	Naphthalene	91-20-3	0.0885	0.000010	8,760	1.27E-06	1.27E-06
117	300x19	n-Hexane	110-54-3	0.2259	0.000026	8,760	3.25E-06	3.25E-06
117	300x19	Phenol	108-95-2	0.0001	0.000000	8,760	7.61E-10	7.61E-10
117	300x19	Toluene	108-88-3	0.8269	0.000094	8,760	1.19E-05	1.19E-05
117	300x19	Xylenes (mixed isomers)	1330-20-7	0.4776	0.000055	8,760	6.87E-06	6.87E-06
118	300x20	1,2,4-Trimethylbenzene	95-63-6	0.1903	0.000022	8,760	2.74E-06	2.74E-06
118	300x20	Benzene	71-43-2	0.1145	0.000013	8,760	1.65E-06	1.65E-06
118	300x20	Biphenyl	92-52-4	0.0465	0.000005	8,760	6.68E-07	6.68E-07
118	300x20	Cresols (mixed isomers)	1319-77-3	0.0334	0.000004	8,760	4.81E-07	4.81E-07
118	300x20	Cumene	98-82-8	0.0165	0.000002	8,760	2.37E-07	2.37E-07
118	300x20	Ethylbenzene	100-41-4	0.0172	0.000002	8,760	2.48E-07	2.48E-07
118	300x20	Naphthalene	91-20-3	0.1019	0.000012	8,760	1.47E-06	1.47E-06
118	300x20	n-Hexane	110-54-3	3.3683	0.000385	8,760	4.84E-05	4.84E-05
118	300x20	Phenol	108-95-2	0.0000	0.000000	8,760	4.98E-10	4.96E-10
118	300x20	Toluene	108-88-3	0.0897	0.000010	8,760	1.29E-06	1.29E-06
118	300x20	Xylenes (mixed isomers)	1330-20-7	0.0478	0.000005	8,760	6.88E-07	6.88E-07
119	300x21	1,2,4-Trimethylbenzene	95-63-6	0.1427	0.000016	8,760	2.05E-06	2.05E-06
119	300x21	Benzene	71-43-2	0.1106	0.000013	8,760	1.59E-06	1.59E-06
119	300x21	Biphenyl	92-52-4	0.0335	0.000004	8,760	4.82E-07	4.82E-07
119	300x21	Cresols (mixed isomers)	1319-77-3	0.0242	0.000003	8,760	3.48E-07	3.48E-07
119	300x21	Cumene	98-82-8	0.0129	0.000001	8,760	1.86E-07	1.86E-07
119	300x21	Ethylbenzene	100-41-4	0.0142	0.000002	8,760	2.04E-07	2.04E-07
119	300x21	Naphthalene	91-20-3	0.0742	0.000008	8,760	1.07E-06	1.07E-06
119	300x21	n-Hexane	110-54-3	3.3012	0.000377	8,760	4.75E-05	4.75E-05
119	300x21	Phenol	108-95-2	0.0000	0.000000	8,760	3.65E-10	3.64E-10
119	300x21	Toluene	108-88-3	0.0808	0.000009	8,760	1.16E-06	1.16E-06
119	300x21	Xylenes (mixed isomers)	1330-20-7	0.0387	0.000004	8,760	5.56E-07	5.56E-07
120	300x22	1,2,4-Trimethylbenzene	95-63-6	0.1451	0.000017	8,760	2.09E-06	2.09E-06
120	300x22	Benzene	71-43-2	0.1168	0.000013	8,760	1.68E-06	1.68E-06
120	300x22	Biphenyl	92-52-4	0.0338	0.000004	8,760	4.87E-07	4.87E-07
120	300x22	Cresols (mixed isomers)	1319-77-3	0.0244	0.000003	8,760	3.51E-07	3.51E-07
120	300x22	Cumene	98-82-8	0.0132	0.000002	8,760	1.90E-07	1.90E-07
120	300x22	Ethylbenzene	100-41-4	0.0147	0.000002	8,760	2.11E-07	2.11E-07
120	300x22	Naphthalene	91-20-3	0.0750	0.000009	8,760	1.08E-06	1.08E-06
120	300x22	n-Hexane	110-54-3	3.4916	0.000399	8,760	5.02E-05	5.02E-05
120	300x22	Phenol	108-95-2	0.0000	0.000000	8,760	3.69E-10	3.69E-10
120	300x22	Toluene	108-88-3	0.0846	0.000010	8,760	1.22E-06	1.22E-06
120	300x22	Xylenes (mixed isomers)	1330-20-7	0.0398	0.000005	8,760	5.73E-07	5.73E-07
121	300x23	1,2,4-Trimethylbenzene	95-63-6	4.3801	0.000500	8,760	6.30E-05	6.30E-05
121	300x23	Benzene	71-43-2	0.9107	0.000104	8,760	1.31E-05	1.31E-05
121	300x23	Biphenyl	92-52-4	1.1623	0.000133	8,760	1.67E-05	1.67E-05
121	300x23	Cresols (mixed isomers)	1319-77-3	0.8313	0.000095	8,760	1.20E-05	1.20E-05
121	300x23	Cumene	98-82-8	0.3417	0.000039	8,760	4.91E-06	4.91E-06
121	300x23	Ethylbenzene	100-41-4	0.3057	0.000035	8,760	4.40E-06	4.40E-06
121	300x23	Naphthalene	91-20-3	2.5026	0.000286	8,760	3.60E-05	3.60E-05
121	300x23	n-Hexane	110-54-3	23.4018	0.002671	8,760	3.37E-04	3.37E-04
121	300x23	Phenol	108-95-2	0.0008	0.000000	8,760	1.20E-08	1.13E-08
121	300x23	Toluene	108-88-3	1.1161	0.000127	8,760	1.61E-05	1.61E-05
121	300x23	Xylenes (mixed isomers)	1330-20-7	0.9043	0.000103	8,760	1.30E-05	1.30E-05
122	300x239	1,2,4-Trimethylbenzene	95-63-6	0.3190	0.000036	8,760	4.59E-06	4.59E-06
122	300x239	Benzene	71-43-2	3.8381	0.000438	8,760	5.52E-05	5.52E-05
122	300x239	Cresols (mixed isomers)	1319-77-3	0.0052	0.000001	8,760	7.47E-08	7.47E-08
122	300x239	Cumene	98-82-8	0.0498	0.000006	8,760	7.16E-07	7.16E-07
122	300x239	Cyclohexane	110-82-7	0.9914	0.000113	8,760	1.43E-05	1.43E-05
122	300x239	Ethylbenzene	100-41-4	0.5446	0.000062	8,760	7.83E-06	7.83E-06
122	300x239	Naphthalene	91-20-3	0.0314	0.000004	8,760	4.52E-07	4.52E-07
122	300x239	n-Hexane	110-54-3	20.8762	0.002383	8,760	3.00E-04	3.00E-04
122	300x239	Phenol	108-95-2	0.0014	0.000000	8,760	1.99E-08	1.99E-08
122	300x239	Styrene	100-42-5	0.0223	0.000003	8,760	3.21E-07	3.21E-07

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
122	300x239	Toluene	108-88-3	4.0239	0.000459	8,760	5.79E-05	5.79E-05
122	300x239	Xylenes (mixed isomers)	1330-20-7	1.9557	0.000223	8,760	2.81E-05	2.81E-05
123	300x24	1,2,4-Trimethylbenzene	95-63-6	0.3621	0.000041	8,760	5.21E-06	5.21E-06
123	300x24	Benzene	71-43-2	0.0283	0.000003	8,760	4.06E-07	4.06E-07
123	300x24	Biphenyl	92-52-4	0.1035	0.000012	8,760	1.49E-06	1.49E-06
123	300x24	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	4.23E-10	4.22E-10
123	300x24	Cumene	98-82-8	0.0053	0.000001	8,760	7.64E-08	7.64E-08
123	300x24	Ethylbenzene	100-41-4	0.2990	0.000034	8,760	4.30E-06	4.30E-06
123	300x24	Naphthalene	91-20-3	0.0030	0.000000	8,760	4.34E-08	4.34E-08
123	300x24	n-Hexane	110-54-3	0.7042	0.000080	8,760	1.01E-05	1.01E-05
123	300x24	Phenol	108-95-2	0.0077	0.000001	8,760	1.11E-07	1.11E-07
123	300x24	Styrene	100-42-5	0.0000	0.000000	8,760	6.53E-10	6.53E-10
123	300x24	Toluene	108-88-3	0.0204	0.000002	8,760	2.94E-07	2.94E-07
123	300x24	Xylenes (mixed isomers)	1330-20-7	0.0048	0.000001	8,760	6.91E-08	6.91E-08
124	300x25	1,2,4-Trimethylbenzene	95-63-6	0.7126	0.000081	8,760	1.02E-05	1.02E-05
124	300x25	Benzene	71-43-2	0.0609	0.000007	8,760	8.76E-07	8.76E-07
124	300x25	Biphenyl	92-52-4	0.2001	0.000023	8,760	2.88E-06	2.88E-06
124	300x25	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	8.19E-10	8.19E-10
124	300x25	Cumene	98-82-8	0.0107	0.000001	8,760	1.53E-07	1.53E-07
124	300x25	Ethylbenzene	100-41-4	0.6121	0.000070	8,760	8.80E-06	8.80E-06
124	300x25	Naphthalene	91-20-3	0.0059	0.000001	8,760	8.42E-08	8.42E-08
124	300x25	n-Hexane	110-54-3	1.5248	0.000174	8,760	2.19E-05	2.19E-05
124	300x25	Phenol	108-95-2	0.0151	0.000002	8,760	2.17E-07	2.17E-07
124	300x25	Styrene	100-42-5	0.0001	0.000000	8,760	1.32E-09	1.32E-09
124	300x25	Toluene	108-88-3	0.0432	0.000005	8,760	6.21E-07	6.21E-07
124	300x25	Xylenes (mixed isomers)	1330-20-7	0.0098	0.000001	8,760	1.40E-07	1.40E-07
125	300x26	1,2,4-Trimethylbenzene	95-63-6	0.7461	0.000085	8,760	1.07E-05	1.07E-05
125	300x26	Benzene	71-43-2	0.3713	0.000042	8,760	5.34E-06	5.34E-06
125	300x26	Biphenyl	92-52-4	0.0009	0.000000	8,760	1.33E-08	1.33E-08
125	300x26	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	6.09E-11	6.05E-11
125	300x26	Cumene	98-82-8	0.0224	0.000003	8,760	3.22E-07	3.22E-07
125	300x26	Ethylbenzene	100-41-4	2.0038	0.000229	8,760	2.88E-05	2.88E-05
125	300x26	Naphthalene	91-20-3	0.0015	0.000000	8,760	2.15E-08	2.15E-08
125	300x26	n-Hexane	110-54-3	9.6346	0.001100	8,760	1.39E-04	1.39E-04
125	300x26	Phenol	108-95-2	0.0067	0.000001	8,760	9.58E-08	9.58E-08
125	300x26	Styrene	100-42-5	0.0002	0.000000	8,760	3.43E-09	3.43E-09
125	300x26	Toluene	108-88-3	0.2142	0.000024	8,760	3.08E-06	3.08E-06
125	300x26	Xylenes (mixed isomers)	1330-20-7	0.0277	0.000003	8,760	3.99E-07	3.99E-07
126	300x27	Benzene	71-43-2	13.5572	0.001548	8,760	1.95E-04	1.95E-04
126	300x27	Cresols (mixed isomers)	1319-77-3	0.0309	0.000004	8,760	4.45E-07	4.45E-07
126	300x27	Naphthalene	91-20-3	0.2180	0.000025	8,760	3.14E-06	3.14E-06
126	300x27	n-Hexane	110-54-3	2.2098	0.000252	8,760	3.18E-05	3.18E-05
126	300x27	Phenol	108-95-2	0.0002	0.000000	8,760	2.80E-09	2.80E-09
126	300x27	Toluene	108-88-3	7.8209	0.000893	8,760	1.12E-04	1.12E-04
126	300x27	Xylenes (mixed isomers)	1330-20-7	4.0518	0.000463	8,760	5.83E-05	5.83E-05
128	300x33	1,2,4-Trimethylbenzene	95-63-6	0.2476	0.000028	8,760	3.56E-06	3.56E-06
128	300x33	1,3-Butadiene	106-99-0	0.0102	0.000001	8,760	1.47E-07	1.47E-07
128	300x33	Benzene	71-43-2	4.5737	0.000522	8,760	6.58E-05	6.58E-05
128	300x33	Cresols (mixed isomers)	1319-77-3	0.0025	0.000000	8,760	3.64E-08	3.64E-08
128	300x33	Cumene	98-82-8	0.0162	0.000002	8,760	2.33E-07	2.33E-07
128	300x33	Ethylbenzene	100-41-4	0.4844	0.000055	8,760	6.97E-06	6.97E-06
128	300x33	Naphthalene	91-20-3	0.0254	0.000003	8,760	3.66E-07	3.66E-07
128	300x33	n-Hexane	110-54-3	4.1062	0.000469	8,760	5.91E-05	5.91E-05
128	300x33	Phenol	108-95-2	0.0028	0.000000	8,760	3.99E-08	3.99E-08
128	300x33	Propylene	115-07-1	0.0480	0.000005	8,760	6.91E-07	6.91E-07
128	300x33	Toluene	108-88-3	4.1218	0.000471	8,760	5.93E-05	5.93E-05
128	300x33	Xylenes (mixed isomers)	1330-20-7	2.5259	0.000288	8,760	3.63E-05	3.63E-05
129	300x34	1,2,4-Trimethylbenzene	95-63-6	0.2575	0.000029	8,760	3.70E-06	3.70E-06
129	300x34	1,3-Butadiene	106-99-0	0.0090	0.000001	8,760	1.30E-07	1.30E-07
129	300x34	Benzene	71-43-2	4.1112	0.000469	8,760	5.91E-05	5.91E-05
129	300x34	Cresols (mixed isomers)	1319-77-3	0.0027	0.000000	8,760	3.94E-08	3.94E-08
129	300x34	Cumene	98-82-8	0.0162	0.000002	8,760	2.33E-07	2.33E-07
129	300x34	Ethylbenzene	100-41-4	0.4672	0.000053	8,760	6.72E-06	6.72E-06
129	300x34	Naphthalene	91-20-3	0.0273	0.000003	8,760	3.93E-07	3.93E-07

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
129	300x34	n-Hexane	110-54-3	3.6736	0.000419	8,760	5.28E-05	5.28E-05
129	300x34	Phenol	108-95-2	0.0030	0.000000	8,760	4.26E-08	4.26E-08
129	300x34	Propylene	115-07-1	0.0426	0.000005	8,760	6.13E-07	6.13E-07
129	300x34	Toluene	108-88-3	3.8014	0.000434	8,760	5.47E-05	5.47E-05
129	300x34	Xylenes (mixed isomers)	1330-20-7	2.4682	0.000282	8,760	3.55E-05	3.55E-05
130	300x9	1,2,4-Trimethylbenzene	95-63-6	0.4697	0.000054	8,760	6.76E-06	6.76E-06
130	300x9	1,3-Butadiene	106-99-0	0.0079	0.000001	8,760	1.14E-07	1.14E-07
130	300x9	Benzene	71-43-2	3.4015	0.000388	8,760	4.89E-05	4.89E-05
130	300x9	Biphenyl	92-52-4	0.0025	0.000000	8,760	3.66E-08	3.66E-08
130	300x9	Carbon disulfide	75-15-0	0.4104	0.000047	8,760	5.90E-06	5.90E-06
130	300x9	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.70E-10	3.69E-10
130	300x9	Cumene	98-82-8	0.0128	0.000001	8,760	1.84E-07	1.84E-07
130	300x9	Cyclohexane	110-82-7	1.1221	0.000128	8,760	1.61E-05	1.61E-05
130	300x9	Ethylbenzene	100-41-4	0.4415	0.000050	8,760	6.35E-06	6.35E-06
130	300x9	Methanol	67-56-1	0.0042	0.000000	8,760	6.08E-08	6.08E-08
130	300x9	Naphthalene	91-20-3	0.0853	0.000010	8,760	1.23E-06	1.23E-06
130	300x9	n-Hexane	110-54-3	3.4297	0.000392	8,760	4.93E-05	4.93E-05
130	300x9	Phenol	108-95-2	0.0000	0.000000	8,760	3.98E-10	3.97E-10
130	300x9	Styrene	100-42-5	0.0146	0.000002	8,760	2.10E-07	2.10E-07
130	300x9	Toluene	108-88-3	3.9501	0.000451	8,760	5.68E-05	5.68E-05
130	300x9	Xylenes (mixed isomers)	1330-20-7	2.8368	0.000324	8,760	4.08E-05	4.08E-05
131	400x11	1,2,4-Trimethylbenzene	95-63-6	0.6196	0.000071	8,760	8.91E-06	8.91E-06
131	400x11	1,3-Butadiene	106-99-0	0.0083	0.000001	8,760	1.19E-07	1.19E-07
131	400x11	Benzene	71-43-2	2.6195	0.000299	8,760	3.77E-05	3.77E-05
131	400x11	Biphenyl	92-52-4	0.0050	0.000001	8,760	7.21E-08	7.21E-08
131	400x11	Carbon disulfide	75-15-0	0.4372	0.000050	8,760	6.29E-06	6.29E-06
131	400x11	Cresols (mixed isomers)	1319-77-3	0.0010	0.000000	8,760	1.45E-08	1.45E-08
131	400x11	Cumene	98-82-8	0.0209	0.000002	8,760	3.01E-07	3.01E-07
131	400x11	Cyclohexane	110-82-7	1.2500	0.000143	8,760	1.80E-05	1.80E-05
131	400x11	Ethylbenzene	100-41-4	0.4759	0.000054	8,760	6.85E-06	6.85E-06
131	400x11	Methanol	67-56-1	0.0047	0.000001	8,760	6.71E-08	6.71E-08
131	400x11	Naphthalene	91-20-3	0.1029	0.000012	8,760	1.48E-06	1.48E-06
131	400x11	n-Hexane	110-54-3	5.3779	0.000614	8,760	7.74E-05	7.74E-05
131	400x11	Phenanthrene	85-01-8	0.0005	0.000000	8,760	7.86E-09	7.86E-09
131	400x11	Phenol	108-95-2	0.0005	0.000000	8,760	7.55E-09	7.55E-09
131	400x11	Styrene	100-42-5	0.0228	0.000003	8,760	3.28E-07	3.28E-07
131	400x11	Toluene	108-88-3	3.4842	0.000398	8,760	5.01E-05	5.01E-05
131	400x11	Xylenes (mixed isomers)	1330-20-7	3.0648	0.000350	8,760	4.41E-05	4.41E-05
132	400x12	1,2,4-Trimethylbenzene	95-63-6	0.7017	0.000080	8,760	1.01E-05	1.01E-05
132	400x12	1,3-Butadiene	106-99-0	0.0081	0.000001	8,760	1.17E-07	1.17E-07
132	400x12	Benzene	71-43-2	2.6297	0.000300	8,760	3.78E-05	3.78E-05
132	400x12	Biphenyl	92-52-4	0.0058	0.000001	8,760	8.30E-08	8.30E-08
132	400x12	Carbon disulfide	75-15-0	0.4318	0.000049	8,760	6.21E-06	6.21E-06
132	400x12	Cresols (mixed isomers)	1319-77-3	0.0012	0.000000	8,760	1.67E-08	1.67E-08
132	400x12	Cumene	98-82-8	0.0233	0.000003	8,760	3.35E-07	3.35E-07
132	400x12	Cyclohexane	110-82-7	1.2541	0.000143	8,760	1.80E-05	1.80E-05
132	400x12	Ethylbenzene	100-41-4	0.5164	0.000059	8,760	7.43E-06	7.43E-06
132	400x12	Methanol	67-56-1	0.0047	0.000001	8,760	6.70E-08	6.70E-08
132	400x12	Naphthalene	91-20-3	0.1180	0.000013	8,760	1.70E-06	1.70E-06
132	400x12	n-Hexane	110-54-3	5.3568	0.000612	8,760	7.70E-05	7.70E-05
132	400x12	Phenanthrene	85-01-8	0.0006	0.000000	8,760	8.94E-09	8.94E-09
132	400x12	Phenol	108-95-2	0.0006	0.000000	8,760	8.63E-09	8.63E-09
132	400x12	Styrene	100-42-5	0.0251	0.000003	8,760	3.61E-07	3.61E-07
132	400x12	Toluene	108-88-3	3.6238	0.000414	8,760	5.21E-05	5.21E-05
132	400x12	Xylenes (mixed isomers)	1330-20-7	3.3566	0.000383	8,760	4.83E-05	4.83E-05
133	400x13	Benzene	71-43-2	43.8504	0.005006	8,760	6.31E-04	6.31E-04
133	400x13	Cresols (mixed isomers)	1319-77-3	0.1000	0.000011	8,760	1.44E-06	1.44E-06
133	400x13	Naphthalene	91-20-3	0.7051	0.000080	8,760	1.01E-05	1.01E-05
133	400x13	n-Hexane	110-54-3	7.1476	0.000816	8,760	1.03E-04	1.03E-04
133	400x13	Phenol	108-95-2	0.0006	0.000000	8,760	9.06E-09	8.82E-09
133	400x13	Toluene	108-88-3	25.2964	0.002888	8,760	3.64E-04	3.64E-04
133	400x13	Xylenes (mixed isomers)	1330-20-7	13.1056	0.001496	8,760	1.89E-04	1.89E-04
134	5000x1	Cresols (mixed isomers)	1319-77-3	32.5350	0.003714	8,760	4.68E-04	4.68E-04
134	5000x1	Naphthalene	91-20-3	21.0745	0.002406	8,760	3.03E-04	3.03E-04

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
134	5000x1	Phenol	108-95-2	54.2245	0.006190	8,760	7.80E-04	7.80E-04
134	5000x1	Styrene	100-42-5	110.1839	0.012578	8,760	1.58E-03	1.58E-03
135	50x123	1,2,4-Trimethylbenzene	95-63-6	0.0288	0.000003	8,760	4.14E-07	4.14E-07
135	50x123	Benzene	71-43-2	1.2311	0.000141	8,760	1.77E-05	1.77E-05
135	50x123	Biphenyl	92-52-4	0.0000	0.000000	8,760	3.39E-11	3.28E-11
135	50x123	Cresols (mixed isomers)	1319-77-3	0.0007	0.000000	8,760	9.57E-09	9.57E-09
135	50x123	Cumene	98-82-8	0.0088	0.000001	8,760	1.26E-07	1.26E-07
135	50x123	Cyclohexane	110-82-7	4.1395	0.000473	8,760	5.95E-05	5.95E-05
135	50x123	Ethylbenzene	100-41-4	0.0614	0.000007	8,760	8.84E-07	8.84E-07
135	50x123	Hydrogen sulfide	7783-06-4	0.0885	0.000010	8,760	1.27E-06	1.27E-06
135	50x123	Naphthalene	91-20-3	0.0013	0.000000	8,760	1.82E-08	1.82E-08
135	50x123	n-Hexane	110-54-3	7.8909	0.000901	8,760	1.13E-04	1.13E-04
135	50x123	Phenol	108-95-2	0.0000	0.000000	8,760	7.00E-11	6.93E-11
135	50x123	Propylene	115-07-1	0.0309	0.000004	8,760	4.44E-07	4.44E-07
135	50x123	Toluene	108-88-3	0.1350	0.000015	8,760	1.94E-06	1.94E-06
135	50x123	Xylenes (mixed isomers)	1330-20-7	0.4111	0.000047	8,760	5.91E-06	5.91E-06
136	50x124	1,2,4-Trimethylbenzene	95-63-6	0.0291	0.000003	8,760	4.19E-07	4.19E-07
136	50x124	Benzene	71-43-2	1.2472	0.000142	8,760	1.79E-05	1.79E-05
136	50x124	Biphenyl	92-52-4	0.0000	0.000000	8,760	3.44E-11	3.40E-11
136	50x124	Cresols (mixed isomers)	1319-77-3	0.0007	0.000000	8,760	9.69E-09	9.69E-09
136	50x124	Cumene	98-82-8	0.0089	0.000001	8,760	1.28E-07	1.28E-07
136	50x124	Cyclohexane	110-82-7	4.1936	0.000479	8,760	6.03E-05	6.03E-05
136	50x124	Ethylbenzene	100-41-4	0.0622	0.000007	8,760	8.95E-07	8.95E-07
136	50x124	Hydrogen sulfide	7783-06-4	0.0896	0.000010	8,760	1.29E-06	1.29E-06
136	50x124	Naphthalene	91-20-3	0.0013	0.000000	8,760	1.85E-08	1.85E-08
136	50x124	n-Hexane	110-54-3	7.9940	0.000913	8,760	1.15E-04	1.15E-04
136	50x124	Phenol	108-95-2	0.0000	0.000000	8,760	7.09E-11	7.06E-11
136	50x124	Propylene	115-07-1	0.0313	0.000004	8,760	4.50E-07	4.50E-07
136	50x124	Toluene	108-88-3	0.1368	0.000016	8,760	1.97E-06	1.97E-06
136	50x124	Xylenes (mixed isomers)	1330-20-7	0.4165	0.000048	8,760	5.99E-06	5.99E-06
137	50x125	1,2,4-Trimethylbenzene	95-63-6	0.0135	0.000002	8,760	1.94E-07	1.94E-07
137	50x125	1,3-Butadiene	106-99-0	0.3583	0.000041	8,760	5.15E-06	5.15E-06
137	50x125	Benzene	71-43-2	0.1902	0.000022	8,760	2.74E-06	2.74E-06
137	50x125	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	7.17E-10	7.17E-10
137	50x125	Cumene	98-82-8	0.0024	0.000000	8,760	3.40E-08	3.40E-08
137	50x125	Cyclohexane	110-82-7	0.0386	0.000004	8,760	5.55E-07	5.55E-07
137	50x125	Ethylbenzene	100-41-4	0.0274	0.000003	8,760	3.94E-07	3.94E-07
137	50x125	Naphthalene	91-20-3	0.0007	0.000000	8,760	1.08E-08	1.08E-08
137	50x125	n-Hexane	110-54-3	0.7034	0.000080	8,760	1.01E-05	1.01E-05
137	50x125	Phenol	108-95-2	0.0004	0.000000	8,760	5.81E-09	5.81E-09
137	50x125	Styrene	100-42-5	0.0015	0.000000	8,760	2.20E-08	2.20E-08
137	50x125	Toluene	108-88-3	0.1644	0.000019	8,760	2.36E-06	2.36E-06
137	50x125	Xylenes (mixed isomers)	1330-20-7	0.0843	0.000010	8,760	1.21E-06	1.21E-06
138	50x126	1,2,4-Trimethylbenzene	95-63-6	0.0059	0.000001	8,760	8.48E-08	8.48E-08
138	50x126	1,3-Butadiene	106-99-0	0.1566	0.000018	8,760	2.25E-06	2.25E-06
138	50x126	Benzene	71-43-2	0.0831	0.000009	8,760	1.20E-06	1.20E-06
138	50x126	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.13E-10	3.12E-10
138	50x126	Cumene	98-82-8	0.0010	0.000000	8,760	1.48E-08	1.48E-08
138	50x126	Cyclohexane	110-82-7	0.0169	0.000002	8,760	2.42E-07	2.42E-07
138	50x126	Ethylbenzene	100-41-4	0.0120	0.000001	8,760	1.72E-07	1.72E-07
138	50x126	Naphthalene	91-20-3	0.0003	0.000000	8,760	4.70E-09	4.70E-09
138	50x126	n-Hexane	110-54-3	0.3074	0.000035	8,760	4.42E-06	4.42E-06
138	50x126	Phenol	108-95-2	0.0002	0.000000	8,760	2.54E-09	2.54E-09
138	50x126	Styrene	100-42-5	0.0007	0.000000	8,760	9.63E-09	9.63E-09
138	50x126	Toluene	108-88-3	0.0718	0.000008	8,760	1.03E-06	1.03E-06
138	50x126	Xylenes (mixed isomers)	1330-20-7	0.0368	0.000004	8,760	5.30E-07	5.30E-07
139	50x284	1,2,4-Trimethylbenzene	95-63-6	0.0585	0.000007	8,760	8.41E-07	8.41E-07
139	50x284	1,3-Butadiene	106-99-0	0.0057	0.000001	8,760	8.25E-08	8.25E-08
139	50x284	Benzene	71-43-2	1.5901	0.000182	8,760	2.29E-05	2.29E-05
139	50x284	Biphenyl	92-52-4	0.0001	0.000000	8,760	1.46E-09	1.46E-09
139	50x284	Carbon disulfide	75-15-0	0.2936	0.000034	8,760	4.22E-06	4.22E-06
139	50x284	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.63E-10	3.63E-10
139	50x284	Cumene	98-82-8	0.0037	0.000000	8,760	5.36E-08	5.36E-08
139	50x284	Cyclohexane	110-82-7	0.7619	0.000087	8,760	1.10E-05	1.10E-05

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
139	50x284	Ethylbenzene	100-41-4	0.1348	0.000015	8,760	1.94E-06	1.94E-06
139	50x284	Methanol	67-56-1	0.0029	0.000000	8,760	4.18E-08	4.18E-08
139	50x284	Naphthalene	91-20-3	0.0038	0.000000	8,760	5.53E-08	5.53E-08
139	50x284	n-Hexane	110-54-3	3.4328	0.000392	8,760	4.94E-05	4.94E-05
139	50x284	Phenanthrene	85-01-8	0.0000	0.000000	8,760	6.00E-10	5.98E-10
139	50x284	Phenol	108-95-2	0.0000	0.000000	8,760	3.81E-10	3.81E-10
139	50x284	Styrene	100-42-5	0.0050	0.000001	8,760	7.24E-08	7.24E-08
139	50x284	Toluene	108-88-3	1.6124	0.000184	8,760	2.32E-05	2.32E-05
139	50x284	Xylenes (mixed isomers)	1330-20-7	0.7439	0.000085	8,760	1.07E-05	1.07E-05
140	50x286	1,2,4-Trimethylbenzene	95-63-6	0.1431	0.000016	8,760	2.06E-06	2.06E-06
140	50x286	Benzene	71-43-2	1.4756	0.000168	8,760	2.12E-05	2.12E-05
140	50x286	Cresols (mixed isomers)	1319-77-3	0.0032	0.000000	8,760	4.58E-08	4.58E-08
140	50x286	Cumene	98-82-8	0.0206	0.000002	8,760	2.96E-07	2.96E-07
140	50x286	Cyclohexane	110-82-7	0.3811	0.000044	8,760	5.48E-06	5.48E-06
140	50x286	Ethylbenzene	100-41-4	0.2171	0.000025	8,760	3.12E-06	3.12E-06
140	50x286	Naphthalene	91-20-3	0.0172	0.000002	8,760	2.47E-07	2.47E-07
140	50x286	n-Hexane	110-54-3	8.0130	0.000915	8,760	1.15E-04	1.15E-04
140	50x286	Phenol	108-95-2	0.0007	0.000000	8,760	1.01E-08	1.01E-08
140	50x286	Styrene	100-42-5	0.0090	0.000001	8,760	1.30E-07	1.30E-07
140	50x286	Toluene	108-88-3	1.5626	0.000178	8,760	2.25E-05	2.25E-05
140	50x286	Xylenes (mixed isomers)	1330-20-7	0.7880	0.000090	8,760	1.13E-05	1.13E-05
141	50x287	1,2,4-Trimethylbenzene	95-63-6	0.1871	0.000021	8,760	2.69E-06	2.69E-06
141	50x287	Benzene	71-43-2	1.6437	0.000188	8,760	2.36E-05	2.36E-05
141	50x287	Cresols (mixed isomers)	1319-77-3	0.0052	0.000001	8,760	7.44E-08	7.44E-08
141	50x287	Cumene	98-82-8	0.0249	0.000003	8,760	3.59E-07	3.59E-07
141	50x287	Cyclohexane	110-82-7	0.4244	0.000048	8,760	6.10E-06	6.10E-06
141	50x287	Ethylbenzene	100-41-4	0.2523	0.000029	8,760	3.63E-06	3.63E-06
141	50x287	Naphthalene	91-20-3	0.0260	0.000003	8,760	3.75E-07	3.75E-07
141	50x287	n-Hexane	110-54-3	8.9087	0.001017	8,760	1.28E-04	1.28E-04
141	50x287	Phenol	108-95-2	0.0010	0.000000	8,760	1.45E-08	1.45E-08
141	50x287	Styrene	100-42-5	0.0107	0.000001	8,760	1.54E-07	1.54E-07
141	50x287	Toluene	108-88-3	1.7620	0.000201	8,760	2.53E-05	2.53E-05
141	50x287	Xylenes (mixed isomers)	1330-20-7	0.9269	0.000106	8,760	1.33E-05	1.33E-05
142	550x101	1,2,4-Trimethylbenzene	95-63-6	0.5968	0.000068	8,760	8.58E-06	8.58E-06
142	550x101	Benzene	71-43-2	0.5071	0.000058	8,760	7.29E-06	7.29E-06
142	550x101	Biphenyl	92-52-4	0.0116	0.000001	8,760	1.66E-07	1.66E-07
142	550x101	Cresols (mixed isomers)	1319-77-3	0.0011	0.000000	8,760	1.57E-08	1.51E-08
142	550x101	Cumene	98-82-8	0.1608	0.000018	8,760	2.31E-06	2.31E-06
142	550x101	Ethylbenzene	100-41-4	0.8433	0.000096	8,760	1.21E-05	1.21E-05
142	550x101	Naphthalene	91-20-3	0.0128	0.000001	8,760	1.84E-07	1.83E-07
142	550x101	n-Hexane	110-54-3	8.1394	0.000929	8,760	1.17E-04	1.17E-04
142	550x101	Phenol	108-95-2	0.0042	0.000000	8,760	5.97E-08	5.92E-08
142	550x101	Toluene	108-88-3	0.2933	0.000033	8,760	4.22E-06	4.22E-06
142	550x101	Xylenes (mixed isomers)	1330-20-7	0.1535	0.000018	8,760	2.21E-06	2.21E-06
144	550x71	1,2,4-Trimethylbenzene	95-63-6	0.1596	0.000018	8,760	2.30E-06	2.30E-06
144	550x71	Benzene	71-43-2	0.3316	0.000038	8,760	4.77E-06	4.77E-06
144	550x71	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.55E-10	1.54E-10
144	550x71	Naphthalene	91-20-3	0.0020	0.000000	8,760	2.95E-08	2.95E-08
144	550x71	Phenol	108-95-2	0.0098	0.000001	8,760	1.41E-07	1.41E-07
144	550x71	Styrene	100-42-5	0.0003	0.000000	8,760	4.08E-09	4.08E-09
144	550x71	Toluene	108-88-3	0.2182	0.000025	8,760	3.14E-06	3.14E-06
144	550x71	Xylenes (mixed isomers)	1330-20-7	0.0332	0.000004	8,760	4.78E-07	4.78E-07
145	550x94	1,2,4-Trimethylbenzene	95-63-6	0.3675	0.000042	8,760	5.29E-06	5.29E-06
145	550x94	Benzene	71-43-2	0.6044	0.000069	8,760	8.69E-06	8.69E-06
145	550x94	Biphenyl	92-52-4	0.0362	0.000004	8,760	5.21E-07	5.21E-07
145	550x94	Cresols (mixed isomers)	1319-77-3	0.0574	0.000007	8,760	8.25E-07	8.25E-07
145	550x94	Cumene	98-82-8	0.0788	0.000009	8,760	1.13E-06	1.13E-06
145	550x94	Ethylbenzene	100-41-4	0.1831	0.000021	8,760	2.63E-06	2.63E-06
145	550x94	Naphthalene	91-20-3	0.1493	0.000017	8,760	2.15E-06	2.15E-06
145	550x94	n-Hexane	110-54-3	2.3111	0.000264	8,760	3.32E-05	3.32E-05
145	550x94	Phenanthrene	85-01-8	0.1666	0.000019	8,760	2.40E-06	2.40E-06
145	550x94	Phenol	108-95-2	0.2433	0.000028	8,760	3.50E-06	3.50E-06
145	550x94	Toluene	108-88-3	1.7794	0.000203	8,760	2.56E-05	2.56E-05
145	550x94	Xylenes (mixed isomers)	1330-20-7	0.9968	0.000114	8,760	1.43E-05	1.43E-05

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
146	550x95	1,2,4-Trimethylbenzene	95-63-6	9.4967	0.001084	8,760	1.37E-04	1.37E-04
146	550x95	Benzene	71-43-2	22.4306	0.002561	8,760	3.23E-04	3.23E-04
146	550x95	Biphenyl	92-52-4	0.0112	0.000001	8,760	1.61E-07	1.61E-07
146	550x95	Cresols (mixed isomers)	1319-77-3	0.2559	0.000029	8,760	3.68E-06	3.68E-06
146	550x95	Cumene	98-82-8	2.4956	0.000285	8,760	3.59E-05	3.59E-05
146	550x95	Ethylbenzene	100-41-4	6.3031	0.000720	8,760	9.07E-05	9.07E-05
146	550x95	Naphthalene	91-20-3	1.8034	0.000206	8,760	2.59E-05	2.59E-05
146	550x95	n-Hexane	110-54-3	86.0387	0.009822	8,760	1.24E-03	1.24E-03
146	550x95	Phenanthrene	85-01-8	3.8713	0.000442	8,760	5.57E-05	5.57E-05
146	550x95	Phenol	108-95-2	4.1871	0.000478	8,760	6.02E-05	6.02E-05
146	550x95	Toluene	108-88-3	64.6987	0.007386	8,760	9.31E-04	9.31E-04
146	550x95	Xylenes (mixed isomers)	1330-20-7	33.5191	0.003826	8,760	4.82E-04	4.82E-04
147	550x96	1,2,4-Trimethylbenzene	95-63-6	0.7959	0.000091	8,760	1.14E-05	1.14E-05
147	550x96	Benzene	71-43-2	0.5204	0.000059	8,760	7.49E-06	7.49E-06
147	550x96	Biphenyl	92-52-4	0.0779	0.000009	8,760	1.12E-06	1.12E-06
147	550x96	Cresols (mixed isomers)	1319-77-3	0.0043	0.000000	8,760	6.13E-08	6.05E-08
147	550x96	Cumene	98-82-8	0.1851	0.000021	8,760	2.66E-06	2.66E-06
147	550x96	Ethylbenzene	100-41-4	0.9137	0.000104	8,760	1.31E-05	1.31E-05
147	550x96	Naphthalene	91-20-3	0.0288	0.000003	8,760	4.14E-07	4.13E-07
147	550x96	n-Hexane	110-54-3	8.3339	0.000951	8,760	1.20E-04	1.20E-04
147	550x96	Phenol	108-95-2	0.0074	0.000001	8,760	1.06E-07	1.06E-07
147	550x96	Toluene	108-88-3	0.3055	0.000035	8,760	4.39E-06	4.39E-06
147	550x96	Xylenes (mixed isomers)	1330-20-7	0.1691	0.000019	8,760	2.43E-06	2.43E-06
148	550x97	1,2,4-Trimethylbenzene	95-63-6	0.9874	0.000113	8,760	1.42E-05	1.42E-05
148	550x97	Benzene	71-43-2	0.5818	0.000066	8,760	8.37E-06	8.37E-06
148	550x97	Biphenyl	92-52-4	0.1223	0.000014	8,760	1.76E-06	1.76E-06
148	550x97	Cresols (mixed isomers)	1319-77-3	0.0064	0.000001	8,760	9.27E-08	9.20E-08
148	550x97	Cumene	98-82-8	0.2177	0.000025	8,760	3.13E-06	3.13E-06
148	550x97	Ethylbenzene	100-41-4	1.0471	0.000120	8,760	1.51E-05	1.51E-05
148	550x97	Naphthalene	91-20-3	0.0405	0.000005	8,760	5.83E-07	5.82E-07
148	550x97	n-Hexane	110-54-3	9.3057	0.001062	8,760	1.34E-04	1.34E-04
148	550x97	Phenol	108-95-2	0.0099	0.000001	8,760	1.43E-07	1.42E-07
148	550x97	Toluene	108-88-3	0.3438	0.000039	8,760	4.95E-06	4.95E-06
148	550x97	Xylenes (mixed isomers)	1330-20-7	0.1953	0.000022	8,760	2.81E-06	2.81E-06
149	72D-10	1,2,4-Trimethylbenzene	95-63-6	0.0080	0.000001	8,760	1.15E-07	1.15E-07
149	72D-10	Benzene	71-43-2	0.5451	0.000062	8,760	7.84E-06	7.84E-06
149	72D-10	Biphenyl	92-52-4	0.0000	0.000000	8,760	4.41E-11	4.28E-11
149	72D-10	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	1.49E-09	1.49E-09
149	72D-10	Cumene	98-82-8	0.0027	0.000000	8,760	3.88E-08	3.88E-08
149	72D-10	Cyclohexane	110-82-7	1.8776	0.000214	8,760	2.70E-05	2.70E-05
149	72D-10	Ethylbenzene	100-41-4	0.0208	0.000002	8,760	2.99E-07	2.99E-07
149	72D-10	Hydrogen sulfide	7783-06-4	0.0687	0.000008	8,760	9.89E-07	9.89E-07
149	72D-10	Naphthalene	91-20-3	0.0004	0.000000	8,760	5.25E-09	5.25E-09
149	72D-10	n-Hexane	110-54-3	3.7279	0.000426	8,760	5.36E-05	5.36E-05
149	72D-10	Phenol	108-95-2	0.0000	0.000000	8,760	1.88E-11	1.76E-11
149	72D-10	Propylene	115-07-1	0.0214	0.000002	8,760	3.08E-07	3.08E-07
149	72D-10	Toluene	108-88-3	0.0524	0.000006	8,760	7.54E-07	7.54E-07
149	72D-10	Xylenes (mixed isomers)	1330-20-7	0.1358	0.000015	8,760	1.95E-06	1.95E-06
150	800x104	1,2,4-Trimethylbenzene	95-63-6	0.6773	0.000077	8,760	9.74E-06	9.74E-06
150	800x104	Ammonia	7664-41-7	0.0748	0.000009	8,760	1.08E-06	1.08E-06
150	800x104	Benzene	71-43-2	1.5197	0.000173	8,760	2.19E-05	2.19E-05
150	800x104	Carbon disulfide	75-15-0	0.0034	0.000000	8,760	4.96E-08	4.96E-08
150	800x104	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	5.95E-10	5.95E-10
150	800x104	Cumene	98-82-8	0.1119	0.000013	8,760	1.61E-06	1.61E-06
150	800x104	Cyclohexane	110-82-7	11.0693	0.001264	8,760	1.59E-04	1.59E-04
150	800x104	Ethylbenzene	100-41-4	0.5909	0.000067	8,760	8.50E-06	8.50E-06
150	800x104	Naphthalene	91-20-3	0.1402	0.000016	8,760	2.02E-06	2.02E-06
150	800x104	n-Hexane	110-54-3	13.3931	0.001529	8,760	1.93E-04	1.93E-04
150	800x104	Phenol	108-95-2	0.0000	0.000000	8,760	6.69E-10	6.68E-10
150	800x104	Propylene	115-07-1	10.0794	0.001151	8,760	1.45E-04	1.45E-04
150	800x104	Styrene	100-42-5	0.0305	0.000003	8,760	4.38E-07	4.38E-07
150	800x104	Toluene	108-88-3	4.0123	0.000458	8,760	5.77E-05	5.77E-05
150	800x104	Xylenes (mixed isomers)	1330-20-7	2.9061	0.000332	8,760	4.18E-05	4.18E-05
151	800x121	1,2,4-Trimethylbenzene	95-63-6	0.0013	0.000000	8,760	1.85E-08	1.85E-08

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
151	800x121	Benzene	71-43-2	0.0019	0.000000	8,760	2.69E-08	2.69E-08
151	800x121	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.02E-11	1.02E-11
151	800x121	Naphthalene	91-20-3	0.0003	0.000000	8,760	3.60E-09	3.60E-09
151	800x121	n-Hexane	110-54-3	0.0842	0.000010	8,760	1.21E-06	1.21E-06
151	800x121	Phenol	108-95-2	0.0011	0.000000	8,760	1.61E-08	1.61E-08
151	800x121	Styrene	100-42-5	0.0000	0.000000	8,760	5.75E-10	5.75E-10
151	800x121	Toluene	108-88-3	0.0359	0.000004	8,760	5.17E-07	5.17E-07
151	800x121	Xylenes (mixed isomers)	1330-20-7	0.0047	0.000001	8,760	6.69E-08	6.69E-08
152	800x122	1,2,4-Trimethylbenzene	95-63-6	0.0021	0.000000	8,760	3.06E-08	3.06E-08
152	800x122	Benzene	71-43-2	0.0031	0.000000	8,760	4.43E-08	4.43E-08
152	800x122	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.68E-11	1.64E-11
152	800x122	Naphthalene	91-20-3	0.0004	0.000000	8,760	5.94E-09	5.94E-09
152	800x122	n-Hexane	110-54-3	0.1388	0.000016	8,760	2.00E-06	2.00E-06
152	800x122	Phenol	108-95-2	0.0018	0.000000	8,760	2.65E-08	2.65E-08
152	800x122	Styrene	100-42-5	0.0001	0.000000	8,760	9.49E-10	9.48E-10
152	800x122	Toluene	108-88-3	0.0592	0.000007	8,760	8.52E-07	8.52E-07
152	800x122	Xylenes (mixed isomers)	1330-20-7	0.0077	0.000001	8,760	1.10E-07	1.10E-07
153	800x125	Ammonia	7664-41-7	0.3467	0.000040	8,760	4.99E-06	4.99E-06
153	800x125	Benzene	71-43-2	22.1730	0.002531	8,760	3.19E-04	3.19E-04
153	800x125	Carbon disulfide	75-15-0	0.0158	0.000002	8,760	2.27E-07	2.27E-07
153	800x125	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	6.50E-11	6.43E-11
153	800x125	Ethylbenzene	100-41-4	3.8366	0.000438	8,760	5.52E-05	5.52E-05
153	800x125	Hydrogen sulfide	7783-06-4	1.4977	0.000171	8,760	2.15E-05	2.15E-05
153	800x125	Naphthalene	91-20-3	0.0000	0.000000	8,760	2.29E-10	2.28E-10
153	800x125	n-Hexane	110-54-3	173.1964	0.019771	8,760	2.49E-03	2.49E-03
153	800x125	Phenol	108-95-2	0.0000	0.000000	8,760	4.09E-10	4.08E-10
153	800x125	Propylene	115-07-1	46.7360	0.005335	8,760	6.72E-04	6.72E-04
153	800x125	Toluene	108-88-3	4.1571	0.000475	8,760	5.98E-05	5.98E-05
153	800x125	Xylenes (mixed isomers)	1330-20-7	1.0769	0.000123	8,760	1.55E-05	1.55E-05
154	800x126	Benzene	71-43-2	12.4968	0.001427	8,760	1.80E-04	1.80E-04
154	800x126	Cresols (mixed isomers)	1319-77-3	0.0004	0.000000	8,760	5.83E-09	5.83E-09
154	800x126	Naphthalene	91-20-3	0.0772	0.000009	8,760	1.11E-06	1.11E-06
154	800x126	n-Hexane	110-54-3	5.4786	0.000625	8,760	7.88E-05	7.88E-05
154	800x126	Phenol	108-95-2	0.3707	0.000042	8,760	5.33E-06	5.33E-06
154	800x126	Styrene	100-42-5	0.0107	0.000001	8,760	1.54E-07	1.54E-07
154	800x126	Toluene	108-88-3	8.2223	0.000939	8,760	1.18E-04	1.18E-04
154	800x126	Xylenes (mixed isomers)	1330-20-7	1.2520	0.000143	8,760	1.80E-05	1.80E-05
155	800x127	Benzene	71-43-2	12.4658	0.001423	8,760	1.79E-04	1.79E-04
155	800x127	Cresols (mixed isomers)	1319-77-3	0.0004	0.000000	8,760	5.81E-09	5.81E-09
155	800x127	Naphthalene	91-20-3	0.0770	0.000009	8,760	1.11E-06	1.11E-06
155	800x127	n-Hexane	110-54-3	5.4650	0.000624	8,760	7.86E-05	7.86E-05
155	800x127	Phenol	108-95-2	0.3697	0.000042	8,760	5.32E-06	5.32E-06
155	800x127	Styrene	100-42-5	0.0107	0.000001	8,760	1.53E-07	1.53E-07
155	800x127	Toluene	108-88-3	8.2019	0.000936	8,760	1.18E-04	1.18E-04
155	800x127	Xylenes (mixed isomers)	1330-20-7	1.2489	0.000143	8,760	1.80E-05	1.80E-05
156	800x128	Benzene	71-43-2	15.5221	0.001772	8,760	2.23E-04	2.23E-04
156	800x128	Cresols (mixed isomers)	1319-77-3	0.0002	0.000000	8,760	2.55E-09	2.55E-09
156	800x128	Naphthalene	91-20-3	0.0624	0.000007	8,760	8.98E-07	8.98E-07
156	800x128	n-Hexane	110-54-3	7.2605	0.000829	8,760	1.04E-04	1.04E-04
156	800x128	Phenol	108-95-2	0.2786	0.000032	8,760	4.01E-06	4.01E-06
156	800x128	Styrene	100-42-5	0.0100	0.000001	8,760	1.43E-07	1.43E-07
156	800x128	Toluene	108-88-3	8.9544	0.001022	8,760	1.29E-04	1.29E-04
156	800x128	Xylenes (mixed isomers)	1330-20-7	1.1598	0.000132	8,760	1.67E-05	1.67E-05
157	800x129	Benzene	71-43-2	0.1403	0.000016	8,760	2.02E-06	2.02E-06
157	800x129	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	2.30E-11	2.27E-11
157	800x129	Naphthalene	91-20-3	0.0006	0.000000	8,760	8.11E-09	8.11E-09
157	800x129	n-Hexane	110-54-3	0.0656	0.000007	8,760	9.44E-07	9.44E-07
157	800x129	Phenol	108-95-2	0.0025	0.000000	8,760	3.62E-08	3.62E-08
157	800x129	Styrene	100-42-5	0.0001	0.000000	8,760	1.30E-09	1.30E-09
157	800x129	Toluene	108-88-3	0.0809	0.000009	8,760	1.16E-06	1.16E-06
157	800x129	Xylenes (mixed isomers)	1330-20-7	0.0105	0.000001	8,760	1.51E-07	1.51E-07
159	800x132	1,2,4-Trimethylbenzene	95-63-6	0.6562	0.000075	8,760	9.44E-06	9.44E-06
159	800x132	Benzene	71-43-2	0.1624	0.000019	8,760	2.34E-06	2.33E-06
159	800x132	Biphenyl	92-52-4	0.1713	0.000020	8,760	2.46E-06	2.46E-06

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ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
159	800x132	Cresols (mixed isomers)	1319-77-3	0.0083	0.000001	8,760	1.20E-07	1.20E-07
159	800x132	Cumene	98-82-8	0.1025	0.000012	8,760	1.47E-06	1.47E-06
159	800x132	Ethylbenzene	100-41-4	0.3925	0.000045	8,760	5.65E-06	5.64E-06
159	800x132	Naphthalene	91-20-3	0.0438	0.000005	8,760	6.30E-07	6.30E-07
159	800x132	n-Hexane	110-54-3	2.5567	0.000292	8,760	3.68E-05	3.68E-05
159	800x132	Phenol	108-95-2	0.0093	0.000001	8,760	1.33E-07	1.32E-07
159	800x132	Toluene	108-88-3	0.1052	0.000012	8,760	1.51E-06	1.51E-06
159	800x132	Xylenes (mixed isomers)	1330-20-7	0.0787	0.000009	8,760	1.13E-06	1.13E-06
160	800x133	1,2,4-Trimethylbenzene	95-63-6	0.7600	0.000087	8,760	1.09E-05	1.09E-05
160	800x133	Benzene	71-43-2	0.2301	0.000026	8,760	3.31E-06	3.31E-06
160	800x133	Biphenyl	92-52-4	0.1815	0.000021	8,760	2.61E-06	2.61E-06
160	800x133	Cresols (mixed isomers)	1319-77-3	0.0089	0.000001	8,760	1.28E-07	1.27E-07
160	800x133	Cumene	98-82-8	0.1266	0.000014	8,760	1.82E-06	1.82E-06
160	800x133	Ethylbenzene	100-41-4	0.5115	0.000058	8,760	7.36E-06	7.36E-06
160	800x133	Naphthalene	91-20-3	0.0476	0.000005	8,760	6.84E-07	6.84E-07
160	800x133	n-Hexane	110-54-3	3.6412	0.000416	8,760	5.24E-05	5.24E-05
160	800x133	Phenol	108-95-2	0.0102	0.000001	8,760	1.47E-07	1.46E-07
160	800x133	Toluene	108-88-3	0.1450	0.000017	8,760	2.09E-06	2.09E-06
160	800x133	Xylenes (mixed isomers)	1330-20-7	0.1007	0.000011	8,760	1.45E-06	1.45E-06
161	800x134	1,2,4-Trimethylbenzene	95-63-6	0.7871	0.000090	8,760	1.13E-05	1.13E-05
161	800x134	Benzene	71-43-2	0.2305	0.000026	8,760	3.32E-06	3.32E-06
161	800x134	Biphenyl	92-52-4	0.1911	0.000022	8,760	2.75E-06	2.75E-06
161	800x134	Cresols (mixed isomers)	1319-77-3	0.0093	0.000001	8,760	1.34E-07	1.34E-07
161	800x134	Cumene	98-82-8	0.1296	0.000015	8,760	1.86E-06	1.86E-06
161	800x134	Ethylbenzene	100-41-4	0.5192	0.000059	8,760	7.47E-06	7.47E-06
161	800x134	Naphthalene	91-20-3	0.0499	0.000006	8,760	7.17E-07	7.17E-07
161	800x134	n-Hexane	110-54-3	3.6457	0.000416	8,760	5.24E-05	5.24E-05
161	800x134	Phenol	108-95-2	0.0107	0.000001	8,760	1.54E-07	1.52E-07
161	800x134	Toluene	108-88-3	0.1459	0.000017	8,760	2.10E-06	2.10E-06
161	800x134	Xylenes (mixed isomers)	1330-20-7	0.1025	0.000012	8,760	1.47E-06	1.47E-06
162	800x136	1,2,4-Trimethylbenzene	95-63-6	0.1984	0.000023	8,760	2.85E-06	2.85E-06
162	800x136	Benzene	71-43-2	3.1114	0.000355	8,760	4.48E-05	4.48E-05
162	800x136	Cresols (mixed isomers)	1319-77-3	0.0007	0.000000	8,760	9.93E-09	9.93E-09
162	800x136	Cumene	98-82-8	0.0361	0.000004	8,760	5.19E-07	5.19E-07
162	800x136	Cyclohexane	110-82-7	0.8038	0.000092	8,760	1.16E-05	1.16E-05
162	800x136	Ethylbenzene	100-41-4	0.4187	0.000048	8,760	6.02E-06	6.02E-06
162	800x136	Naphthalene	91-20-3	0.0104	0.000001	8,760	1.50E-07	1.50E-07
162	800x136	n-Hexane	110-54-3	16.9616	0.001936	8,760	2.44E-04	2.44E-04
162	800x136	Phenol	108-95-2	0.0006	0.000000	8,760	8.93E-09	8.92E-09
162	800x136	Styrene	100-42-5	0.0167	0.000002	8,760	2.40E-07	2.40E-07
162	800x136	Toluene	108-88-3	3.2159	0.000367	8,760	4.63E-05	4.63E-05
162	800x136	Xylenes (mixed isomers)	1330-20-7	1.4788	0.000169	8,760	2.13E-05	2.13E-05
163	800x137	1,2,4-Trimethylbenzene	95-63-6	0.3707	0.000042	8,760	5.33E-06	5.33E-06
163	800x137	Benzene	71-43-2	5.8132	0.000664	8,760	8.36E-05	8.36E-05
163	800x137	Cresols (mixed isomers)	1319-77-3	0.0013	0.000000	8,760	1.85E-08	1.85E-08
163	800x137	Cumene	98-82-8	0.0674	0.000008	8,760	9.69E-07	9.69E-07
163	800x137	Cyclohexane	110-82-7	1.5018	0.000171	8,760	2.16E-05	2.16E-05
163	800x137	Ethylbenzene	100-41-4	0.7823	0.000089	8,760	1.13E-05	1.13E-05
163	800x137	Naphthalene	91-20-3	0.0195	0.000002	8,760	2.80E-07	2.80E-07
163	800x137	n-Hexane	110-54-3	31.6898	0.003618	8,760	4.56E-04	4.56E-04
163	800x137	Phenol	108-95-2	0.0012	0.000000	8,760	1.67E-08	1.67E-08
163	800x137	Styrene	100-42-5	0.0311	0.000004	8,760	4.48E-07	4.48E-07
163	800x137	Toluene	108-88-3	6.0084	0.000686	8,760	8.64E-05	8.64E-05
163	800x137	Xylenes (mixed isomers)	1330-20-7	2.7629	0.000315	8,760	3.97E-05	3.97E-05
164	800x205	1,2,4-Trimethylbenzene	95-63-6	1.2120	0.000138	8,760	1.74E-05	1.74E-05
164	800x205	Benzene	71-43-2	0.6031	0.000069	8,760	8.67E-06	8.67E-06
164	800x205	Naphthalene	91-20-3	0.0024	0.000000	8,760	3.49E-08	3.49E-08
164	800x205	n-Hexane	110-54-3	15.6503	0.001787	8,760	2.25E-04	2.25E-04
164	800x205	Styrene	100-42-5	0.0004	0.000000	8,760	5.57E-09	5.57E-09
164	800x205	Toluene	108-88-3	0.3479	0.000040	8,760	5.00E-06	5.00E-06
164	800x205	Xylenes (mixed isomers)	1330-20-7	0.0451	0.000005	8,760	6.48E-07	6.48E-07
165	800x206	1,2,4-Trimethylbenzene	95-63-6	19.9288	0.002275	8,760	2.87E-04	2.87E-04
165	800x206	Benzene	71-43-2	41.4183	0.004728	8,760	5.96E-04	5.96E-04
165	800x206	Cresols (mixed isomers)	1319-77-3	0.0013	0.000000	8,760	1.93E-08	1.93E-08

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
165	800x206	Naphthalene	91-20-3	0.2559	0.000029	8,760	3.68E-06	3.68E-06
165	800x206	Phenol	108-95-2	1.2285	0.000140	8,760	1.77E-05	1.77E-05
165	800x206	Styrene	100-42-5	0.0354	0.000004	8,760	5.10E-07	5.10E-07
165	800x206	Toluene	108-88-3	27.2513	0.003111	8,760	3.92E-04	3.92E-04
165	800x206	Xylenes (mixed isomers)	1330-20-7	4.1494	0.000474	8,760	5.97E-05	5.97E-05
166	800x215	1,2,4-Trimethylbenzene	95-63-6	2.1404	0.000244	8,760	3.08E-05	3.08E-05
166	800x215	Benzene	71-43-2	1.0651	0.000122	8,760	1.53E-05	1.53E-05
166	800x215	Biphenyl	92-52-4	0.0027	0.000000	8,760	3.82E-08	3.82E-08
166	800x215	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.75E-10	1.74E-10
166	800x215	Cumene	98-82-8	0.0642	0.000007	8,760	9.23E-07	9.23E-07
166	800x215	Naphthalene	91-20-3	0.0043	0.000000	8,760	6.16E-08	6.16E-08
166	800x215	n-Hexane	110-54-3	27.6390	0.003155	8,760	3.98E-04	3.98E-04
166	800x215	Phenol	108-95-2	0.0191	0.000002	8,760	2.75E-07	2.75E-07
166	800x215	Styrene	100-42-5	0.0007	0.000000	8,760	9.84E-09	9.84E-09
166	800x215	Toluene	108-88-3	0.6144	0.000070	8,760	8.84E-06	8.84E-06
166	800x215	Xylenes (mixed isomers)	1330-20-7	0.0796	0.000009	8,760	1.14E-06	1.14E-06
167	800x216	1,2,4-Trimethylbenzene	95-63-6	20.5584	0.002347	8,760	2.96E-04	2.96E-04
167	800x216	Benzene	71-43-2	42.7269	0.004878	8,760	6.15E-04	6.15E-04
167	800x216	Cresols (mixed isomers)	1319-77-3	0.0014	0.000000	8,760	1.99E-08	1.99E-08
167	800x216	Naphthalene	91-20-3	0.2640	0.000030	8,760	3.80E-06	3.80E-06
167	800x216	Phenol	108-95-2	1.2673	0.000145	8,760	1.82E-05	1.82E-05
167	800x216	Styrene	100-42-5	0.0366	0.000004	8,760	5.26E-07	5.26E-07
167	800x216	Toluene	108-88-3	28.1123	0.003209	8,760	4.04E-04	4.04E-04
167	800x216	Xylenes (mixed isomers)	1330-20-7	4.2805	0.000489	8,760	6.16E-05	6.16E-05
168	800x244	Benzene	71-43-2	14.8399	0.001694	8,760	2.13E-04	2.13E-04
168	800x244	Cresols (mixed isomers)	1319-77-3	0.0002	0.000000	8,760	2.43E-09	2.43E-09
168	800x244	Naphthalene	91-20-3	0.0597	0.000007	8,760	8.58E-07	8.58E-07
168	800x244	n-Hexane	110-54-3	6.9414	0.000792	8,760	9.98E-05	9.98E-05
168	800x244	Phenol	108-95-2	0.2664	0.000030	8,760	3.83E-06	3.83E-06
168	800x244	Styrene	100-42-5	0.0095	0.000001	8,760	1.37E-07	1.37E-07
168	800x244	Toluene	108-88-3	8.5609	0.000977	8,760	1.23E-04	1.23E-04
168	800x244	Xylenes (mixed isomers)	1330-20-7	1.1088	0.000127	8,760	1.59E-05	1.59E-05
169	800x245	1,2,4-Trimethylbenzene	95-63-6	12.1675	0.001389	8,760	1.75E-04	1.75E-04
169	800x245	Benzene	71-43-2	28.7390	0.003281	8,760	4.13E-04	4.13E-04
169	800x245	Biphenyl	92-52-4	0.0143	0.000002	8,760	2.06E-07	2.06E-07
169	800x245	Cresols (mixed isomers)	1319-77-3	0.3278	0.000037	8,760	4.72E-06	4.72E-06
169	800x245	Cumene	98-82-8	3.1974	0.000365	8,760	4.60E-05	4.60E-05
169	800x245	Ethylbenzene	100-41-4	8.0758	0.000922	8,760	1.16E-04	1.16E-04
169	800x245	Naphthalene	91-20-3	2.3106	0.000264	8,760	3.32E-05	3.32E-05
169	800x245	n-Hexane	110-54-3	110.2364	0.012584	8,760	1.59E-03	1.59E-03
169	800x245	Phenanthrene	85-01-8	4.9600	0.000566	8,760	7.13E-05	7.13E-05
169	800x245	Phenol	108-95-2	5.3647	0.000612	8,760	7.72E-05	7.72E-05
169	800x245	Toluene	108-88-3	82.8947	0.009463	8,760	1.19E-03	1.19E-03
169	800x245	Xylenes (mixed isomers)	1330-20-7	42.9461	0.004903	8,760	6.18E-04	6.18E-04
170	800x248	1,2,4-Trimethylbenzene	95-63-6	12.6712	0.001446	8,760	1.82E-04	1.82E-04
170	800x248	Benzene	71-43-2	29.9286	0.003417	8,760	4.30E-04	4.30E-04
170	800x248	Biphenyl	92-52-4	0.0149	0.000002	8,760	2.15E-07	2.15E-07
170	800x248	Cresols (mixed isomers)	1319-77-3	0.3414	0.000039	8,760	4.91E-06	4.91E-06
170	800x248	Cumene	98-82-8	3.3298	0.000380	8,760	4.79E-05	4.79E-05
170	800x248	Ethylbenzene	100-41-4	8.4101	0.000960	8,760	1.21E-04	1.21E-04
170	800x248	Naphthalene	91-20-3	2.4063	0.000275	8,760	3.46E-05	3.46E-05
170	800x248	n-Hexane	110-54-3	114.7994	0.013105	8,760	1.65E-03	1.65E-03
170	800x248	Phenanthrene	85-01-8	5.1653	0.000590	8,760	7.43E-05	7.43E-05
170	800x248	Phenol	108-95-2	5.5867	0.000638	8,760	8.04E-05	8.04E-05
170	800x248	Toluene	108-88-3	86.3260	0.009855	8,760	1.24E-03	1.24E-03
170	800x248	Xylenes (mixed isomers)	1330-20-7	44.7238	0.005105	8,760	6.43E-04	6.43E-04
172	800x92	1,2,4-Trimethylbenzene	95-63-6	0.9617	0.000110	8,760	1.38E-05	1.38E-05
172	800x92	1,3-Butadiene	106-99-0	0.0125	0.000001	8,760	1.80E-07	1.80E-07
172	800x92	Benzene	71-43-2	5.5379	0.000632	8,760	7.97E-05	7.97E-05
172	800x92	Biphenyl	92-52-4	0.0055	0.000001	8,760	7.88E-08	7.88E-08
172	800x92	Carbon disulfide	75-15-0	0.6554	0.000075	8,760	9.43E-06	9.43E-06
172	800x92	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	7.95E-10	7.95E-10
172	800x92	Cumene	98-82-8	0.0249	0.000003	8,760	3.58E-07	3.58E-07
172	800x92	Cyclohexane	110-82-7	1.8254	0.000208	8,760	2.63E-05	2.63E-05

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
172	800x92	Ethylbenzene	100-41-4	0.8143	0.000093	8,760	1.17E-05	1.17E-05
172	800x92	Methanol	67-56-1	0.0068	0.000001	8,760	9.85E-08	9.85E-08
172	800x92	Naphthalene	91-20-3	0.1815	0.000021	8,760	2.61E-06	2.61E-06
172	800x92	n-Hexane	110-54-3	5.5306	0.000631	8,760	7.95E-05	7.95E-05
172	800x92	Phenol	108-95-2	0.0001	0.000000	8,760	8.39E-10	8.38E-10
172	800x92	Styrene	100-42-5	0.0278	0.000003	8,760	3.99E-07	3.99E-07
172	800x92	Toluene	108-88-3	6.7548	0.000771	8,760	9.72E-05	9.72E-05
172	800x92	Xylenes (mixed isomers)	1330-20-7	5.3365	0.000609	8,760	7.68E-05	7.68E-05
173	800x93	1,2,4-Trimethylbenzene	95-63-6	0.1572	0.000018	8,760	2.26E-06	2.26E-06
173	800x93	1,3-Butadiene	106-99-0	0.0139	0.000002	8,760	2.00E-07	2.00E-07
173	800x93	Benzene	71-43-2	5.5698	0.000636	8,760	8.01E-05	8.01E-05
173	800x93	Biphenyl	92-52-4	0.0000	0.000000	8,760	5.63E-11	5.54E-11
173	800x93	Carbon disulfide	75-15-0	0.7119	0.000081	8,760	1.02E-05	1.02E-05
173	800x93	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	9.14E-12	9.14E-12
173	800x93	Cumene	98-82-8	0.0083	0.000001	8,760	1.19E-07	1.19E-07
173	800x93	Cyclohexane	110-82-7	1.8418	0.000210	8,760	2.65E-05	2.65E-05
173	800x93	Ethylbenzene	100-41-4	0.4264	0.000049	8,760	6.13E-06	6.13E-06
173	800x93	Methanol	67-56-1	0.0070	0.000001	8,760	1.01E-07	1.01E-07
173	800x93	Naphthalene	91-20-3	0.0072	0.000001	8,760	1.03E-07	1.03E-07
173	800x93	n-Hexane	110-54-3	5.7815	0.000660	8,760	8.32E-05	8.32E-05
173	800x93	Phenol	108-95-2	0.0000	0.000000	8,760	5.75E-11	5.67E-11
173	800x93	Styrene	100-42-5	0.0114	0.000001	8,760	1.65E-07	1.65E-07
173	800x93	Toluene	108-88-3	5.4622	0.000624	8,760	7.86E-05	7.86E-05
173	800x93	Xylenes (mixed isomers)	1330-20-7	2.4137	0.000276	8,760	3.47E-05	3.47E-05
174	800x95	1,2,4-Trimethylbenzene	95-63-6	0.1482	0.000017	8,760	2.13E-06	2.13E-06
174	800x95	1,3-Butadiene	106-99-0	0.0131	0.000001	8,760	1.89E-07	1.89E-07
174	800x95	Benzene	71-43-2	5.2490	0.000599	8,760	7.55E-05	7.55E-05
174	800x95	Biphenyl	92-52-4	0.0000	0.000000	8,760	5.30E-11	5.29E-11
174	800x95	Carbon disulfide	75-15-0	0.6709	0.000077	8,760	9.65E-06	9.65E-06
174	800x95	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	8.61E-12	8.61E-12
174	800x95	Cumene	98-82-8	0.0078	0.000001	8,760	1.12E-07	1.12E-07
174	800x95	Cyclohexane	110-82-7	1.7357	0.000198	8,760	2.50E-05	2.50E-05
174	800x95	Ethylbenzene	100-41-4	0.4018	0.000046	8,760	5.78E-06	5.78E-06
174	800x95	Methanol	67-56-1	0.0066	0.000001	8,760	9.53E-08	9.53E-08
174	800x95	Naphthalene	91-20-3	0.0068	0.000001	8,760	9.71E-08	9.71E-08
174	800x95	n-Hexane	110-54-3	5.4485	0.000622	8,760	7.84E-05	7.84E-05
174	800x95	Phenol	108-95-2	0.0000	0.000000	8,760	5.42E-11	5.42E-11
174	800x95	Styrene	100-42-5	0.0108	0.000001	8,760	1.55E-07	1.55E-07
174	800x95	Toluene	108-88-3	5.1476	0.000588	8,760	7.40E-05	7.40E-05
174	800x95	Xylenes (mixed isomers)	1330-20-7	2.2747	0.000260	8,760	3.27E-05	3.27E-05
175	83D-1	1,2,4-Trimethylbenzene	95-63-6	0.0002	0.000000	8,760	3.00E-09	3.00E-09
175	83D-1	1,3-Butadiene	106-99-0	0.0000	0.000000	8,760	3.63E-10	3.62E-10
175	83D-1	Benzene	71-43-2	0.0070	0.000001	8,760	1.00E-07	1.00E-07
175	83D-1	Biphenyl	92-52-4	0.0000	0.000000	8,760	1.02E-13	1.02E-13
175	83D-1	Carbon disulfide	75-15-0	0.0013	0.000000	8,760	1.86E-08	1.86E-08
175	83D-1	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.31E-13	3.31E-13
175	83D-1	Cumene	98-82-8	0.0000	0.000000	8,760	2.15E-10	2.14E-10
175	83D-1	Cyclohexane	110-82-7	0.0033	0.000000	8,760	4.80E-08	4.80E-08
175	83D-1	Ethylbenzene	100-41-4	0.0006	0.000000	8,760	8.16E-09	8.06E-09
175	83D-1	Methanol	67-56-1	0.0000	0.000000	8,760	1.83E-10	1.83E-10
175	83D-1	Naphthalene	91-20-3	0.0000	0.000000	8,760	1.17E-10	1.16E-10
175	83D-1	n-Hexane	110-54-3	0.0151	0.000002	8,760	2.17E-07	2.17E-07
175	83D-1	Phenanthrene	85-01-8	0.0000	0.000000	8,760	2.00E-12	1.26E-12
175	83D-1	Phenol	108-95-2	0.0000	0.000000	8,760	1.04E-12	1.04E-12
175	83D-1	Styrene	100-42-5	0.0000	0.000000	8,760	2.98E-10	2.97E-10
175	83D-1	Toluene	108-88-3	0.0070	0.000001	8,760	1.00E-07	1.00E-07
175	83D-1	Xylenes (mixed isomers)	1330-20-7	0.0031	0.000000	8,760	4.45E-08	4.45E-08
176	900x1	1,2,4-Trimethylbenzene	95-63-6	0.0429	0.000005	8,760	6.17E-07	6.17E-07
176	900x1	1,3-Butadiene	106-99-0	2.1903	0.000250	8,760	3.15E-05	3.15E-05
176	900x1	Benzene	71-43-2	0.8764	0.000100	8,760	1.26E-05	1.26E-05
176	900x1	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	1.44E-09	1.44E-09
176	900x1	Cumene	98-82-8	0.0081	0.000001	8,760	1.17E-07	1.17E-07
176	900x1	Cyclohexane	110-82-7	0.1811	0.000021	8,760	2.61E-06	2.61E-06
176	900x1	Ethylbenzene	100-41-4	0.1019	0.000012	8,760	1.47E-06	1.47E-06

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
176	900x1	Naphthalene	91-20-3	0.0025	0.000000	8,760	3.55E-08	3.55E-08
176	900x1	n-Hexane	110-54-3	3.4113	0.000389	8,760	4.91E-05	4.91E-05
176	900x1	Phenol	108-95-2	0.0013	0.000000	8,760	1.81E-08	1.81E-08
176	900x1	Styrene	100-42-5	0.0056	0.000001	8,760	8.10E-08	8.10E-08
176	900x1	Toluene	108-88-3	0.6825	0.000078	8,760	9.82E-06	9.82E-06
176	900x1	Xylenes (mixed isomers)	1330-20-7	0.3078	0.000035	8,760	4.43E-06	4.43E-06
177	900x2	1,2,4-Trimethylbenzene	95-63-6	0.0023	0.000000	8,760	3.35E-08	3.35E-08
177	900x2	Benzene	71-43-2	0.0034	0.000000	8,760	4.85E-08	4.85E-08
177	900x2	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.84E-11	1.76E-11
177	900x2	Naphthalene	91-20-3	0.0005	0.000000	8,760	6.50E-09	6.50E-09
177	900x2	n-Hexane	110-54-3	0.1520	0.000017	8,760	2.19E-06	2.19E-06
177	900x2	Phenol	108-95-2	0.0020	0.000000	8,760	2.90E-08	2.90E-08
177	900x2	Styrene	100-42-5	0.0001	0.000000	8,760	1.04E-09	1.04E-09
177	900x2	Toluene	108-88-3	0.0649	0.000007	8,760	9.33E-07	9.33E-07
177	900x2	Xylenes (mixed isomers)	1330-20-7	0.0084	0.000001	8,760	1.21E-07	1.21E-07
178	900x3	1,2,4-Trimethylbenzene	95-63-6	0.0461	0.000005	8,760	6.63E-07	6.63E-07
178	900x3	1,3-Butadiene	106-99-0	2.3549	0.000269	8,760	3.39E-05	3.39E-05
178	900x3	Benzene	71-43-2	0.9422	0.000108	8,760	1.36E-05	1.36E-05
178	900x3	Cresols (mixed isomers)	1319-77-3	0.0001	0.000000	8,760	1.55E-09	1.54E-09
178	900x3	Cumene	98-82-8	0.0087	0.000001	8,760	1.26E-07	1.26E-07
178	900x3	Cyclohexane	110-82-7	0.1947	0.000022	8,760	2.80E-06	2.80E-06
178	900x3	Ethylbenzene	100-41-4	0.1096	0.000013	8,760	1.58E-06	1.58E-06
178	900x3	Naphthalene	91-20-3	0.0027	0.000000	8,760	3.81E-08	3.81E-08
178	900x3	n-Hexane	110-54-3	3.6677	0.000419	8,760	5.28E-05	5.28E-05
178	900x3	Phenol	108-95-2	0.0014	0.000000	8,760	1.95E-08	1.95E-08
178	900x3	Styrene	100-42-5	0.0061	0.000001	8,760	8.70E-08	8.70E-08
178	900x3	Toluene	108-88-3	0.7338	0.000084	8,760	1.06E-05	1.06E-05
178	900x3	Xylenes (mixed isomers)	1330-20-7	0.3309	0.000038	8,760	4.76E-06	4.76E-06
179	51D-10	Ethylbenzene	100-41-4	0.4498	0.000051	8,760	6.47E-06	6.47E-06
179	51D-10	Xylenes (mixed isomers)	1330-20-7	1.6618	0.000190	8,760	2.39E-05	2.39E-05
180	56C(5)	1,2,4-Trimethylbenzene	95-63-6	0.0081	0.000001	8,760	1.16E-07	1.16E-07
180	56C(5)	1,3-Butadiene	106-99-0	0.0010	0.000000	8,760	1.40E-08	1.40E-08
180	56C(5)	Benzene	71-43-2	0.2697	0.000031	8,760	3.88E-06	3.88E-06
180	56C(5)	Biphenyl	92-52-4	0.0000	0.000000	8,760	3.95E-12	3.95E-12
180	56C(5)	Carbon disulfide	75-15-0	0.0500	0.000006	8,760	7.18E-07	7.18E-07
180	56C(5)	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.28E-11	1.26E-11
180	56C(5)	Cumene	98-82-8	0.0006	0.000000	8,760	8.34E-09	8.34E-09
180	56C(5)	Cyclohexane	110-82-7	0.1292	0.000015	8,760	1.86E-06	1.86E-06
180	56C(5)	Ethylbenzene	100-41-4	0.0220	0.000003	8,760	3.16E-07	3.16E-07
180	56C(5)	Methanol	67-56-1	0.0005	0.000000	8,760	7.10E-09	7.10E-09
180	56C(5)	Naphthalene	91-20-3	0.0003	0.000000	8,760	4.52E-09	4.52E-09
180	56C(5)	n-Hexane	110-54-3	0.5832	0.000067	8,760	8.39E-06	8.39E-06
180	56C(5)	Phenanthrene	85-01-8	0.0000	0.000000	8,760	7.76E-11	7.69E-11
180	56C(5)	Phenol	108-95-2	0.0000	0.000000	8,760	4.04E-11	4.03E-11
180	56C(5)	Styrene	100-42-5	0.0008	0.000000	8,760	1.16E-08	1.16E-08
180	56C(5)	Toluene	108-88-3	0.2706	0.000031	8,760	3.89E-06	3.89E-06
180	56C(5)	Xylenes (mixed isomers)	1330-20-7	0.1197	0.000014	8,760	1.72E-06	1.72E-06
181	9x6	1,2,4-Trimethylbenzene	95-63-6	0.0108	0.000001	8,760	1.56E-07	1.56E-07
181	9x6	Benzene	71-43-2	0.1695	0.000019	8,760	2.44E-06	2.44E-06
181	9x6	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	5.41E-10	5.41E-10
181	9x6	Cumene	98-82-8	0.0020	0.000000	8,760	2.83E-08	2.83E-08
181	9x6	Cyclohexane	110-82-7	0.0438	0.000005	8,760	6.30E-07	6.30E-07
181	9x6	Ethylbenzene	100-41-4	0.0228	0.000003	8,760	3.28E-07	3.28E-07
181	9x6	Naphthalene	91-20-3	0.0006	0.000000	8,760	8.17E-09	8.17E-09
181	9x6	n-Hexane	110-54-3	0.9242	0.000106	8,760	1.33E-05	1.33E-05
181	9x6	Phenol	108-95-2	0.0000	0.000000	8,760	4.86E-10	4.85E-10
181	9x6	Styrene	100-42-5	0.0009	0.000000	8,760	1.31E-08	1.31E-08
181	9x6	Toluene	108-88-3	0.1752	0.000020	8,760	2.52E-06	2.52E-06
181	9x6	Xylenes (mixed isomers)	1330-20-7	0.0806	0.000009	8,760	1.16E-06	1.16E-06
182	9x7	1,2,4-Trimethylbenzene	95-63-6	0.0081	0.000001	8,760	1.16E-07	1.16E-07
182	9x7	Benzene	71-43-2	0.1266	0.000014	8,760	1.82E-06	1.82E-06
182	9x7	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	4.04E-10	4.03E-10
182	9x7	Cumene	98-82-8	0.0015	0.000000	8,760	2.11E-08	2.11E-08
182	9x7	Cyclohexane	110-82-7	0.0327	0.000004	8,760	4.70E-07	4.70E-07

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
182	9x7	Ethylbenzene	100-41-4	0.0170	0.000002	8,760	2.45E-07	2.45E-07
182	9x7	Naphthalene	91-20-3	0.0004	0.000000	8,760	6.10E-09	6.10E-09
182	9x7	n-Hexane	110-54-3	0.6900	0.000079	8,760	9.92E-06	9.92E-06
182	9x7	Phenol	108-95-2	0.0000	0.000000	8,760	3.63E-10	3.63E-10
182	9x7	Styrene	100-42-5	0.0007	0.000000	8,760	9.74E-09	9.74E-09
182	9x7	Toluene	108-88-3	0.1308	0.000015	8,760	1.88E-06	1.88E-06
182	9x7	Xylenes (mixed isomers)	1330-20-7	0.0602	0.000007	8,760	8.65E-07	8.65E-07
183	FHP1	1,2,4-Trimethylbenzene	95-63-6	0.0779	0.000009	8,760	1.12E-06	1.12E-06
183	FHP1	1,3-Butadiene	106-99-0	0.0094	0.000001	8,760	1.35E-07	1.35E-07
183	FHP1	Benzene	71-43-2	2.5953	0.000296	8,760	3.73E-05	3.73E-05
183	FHP1	Biphenyl	92-52-4	0.0000	0.000000	8,760	3.80E-11	3.78E-11
183	FHP1	Carbon disulfide	75-15-0	0.4807	0.000055	8,760	6.91E-06	6.91E-06
183	FHP1	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	1.23E-10	1.22E-10
183	FHP1	Cumene	98-82-8	0.0056	0.000001	8,760	8.03E-08	8.03E-08
183	FHP1	Cyclohexane	110-82-7	1.2438	0.000142	8,760	1.79E-05	1.79E-05
183	FHP1	Ethylbenzene	100-41-4	0.2114	0.000024	8,760	3.04E-06	3.04E-06
183	FHP1	Methanol	67-56-1	0.0047	0.000001	8,760	6.83E-08	6.83E-08
183	FHP1	Naphthalene	91-20-3	0.0030	0.000000	8,760	4.35E-08	4.35E-08
183	FHP1	n-Hexane	110-54-3	5.6123	0.000641	8,760	8.07E-05	8.07E-05
183	FHP1	Phenanthrene	85-01-8	0.0001	0.000000	8,760	7.47E-10	7.46E-10
183	FHP1	Phenol	108-95-2	0.0000	0.000000	8,760	3.88E-10	3.88E-10
183	FHP1	Styrene	100-42-5	0.0077	0.000001	8,760	1.11E-07	1.11E-07
183	FHP1	Toluene	108-88-3	2.6037	0.000297	8,760	3.75E-05	3.75E-05
183	FHP1	Xylenes (mixed isomers)	1330-20-7	1.1522	0.000132	8,760	1.66E-05	1.66E-05
184	FHP2	1,2,4-Trimethylbenzene	95-63-6	0.0444	0.000005	8,760	6.39E-07	6.39E-07
184	FHP2	1,3-Butadiene	106-99-0	0.0054	0.000001	8,760	7.72E-08	7.72E-08
184	FHP2	Benzene	71-43-2	1.4814	0.000169	8,760	2.13E-05	2.13E-05
184	FHP2	Biphenyl	92-52-4	0.0000	0.000000	8,760	2.17E-11	2.14E-11
184	FHP2	Carbon disulfide	75-15-0	0.2744	0.000031	8,760	3.95E-06	3.95E-06
184	FHP2	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	7.04E-11	6.93E-11
184	FHP2	Cumene	98-82-8	0.0032	0.000000	8,760	4.58E-08	4.58E-08
184	FHP2	Cyclohexane	110-82-7	0.7099	0.000081	8,760	1.02E-05	1.02E-05
184	FHP2	Ethylbenzene	100-41-4	0.1207	0.000014	8,760	1.74E-06	1.74E-06
184	FHP2	Methanol	67-56-1	0.0027	0.000000	8,760	3.90E-08	3.90E-08
184	FHP2	Naphthalene	91-20-3	0.0017	0.000000	8,760	2.48E-08	2.48E-08
184	FHP2	n-Hexane	110-54-3	3.2035	0.000366	8,760	4.61E-05	4.61E-05
184	FHP2	Phenanthrene	85-01-8	0.0000	0.000000	8,760	4.26E-10	4.26E-10
184	FHP2	Phenol	108-95-2	0.0000	0.000000	8,760	2.22E-10	2.20E-10
184	FHP2	Styrene	100-42-5	0.0044	0.000001	8,760	6.35E-08	6.35E-08
184	FHP2	Toluene	108-88-3	1.4862	0.000170	8,760	2.14E-05	2.14E-05
184	FHP2	Xylenes (mixed isomers)	1330-20-7	0.6577	0.000075	8,760	9.46E-06	9.46E-06
185	FHP3	1,2,4-Trimethylbenzene	95-63-6	0.2222	0.000025	8,760	3.20E-06	3.20E-06
185	FHP3	1,3-Butadiene	106-99-0	0.0268	0.000003	8,760	3.86E-07	3.86E-07
185	FHP3	Benzene	71-43-2	7.4068	0.000846	8,760	1.07E-04	1.07E-04
185	FHP3	Biphenyl	92-52-4	0.0000	0.000000	8,760	1.08E-10	1.08E-10
185	FHP3	Carbon disulfide	75-15-0	1.3720	0.000157	8,760	1.97E-05	1.97E-05
185	FHP3	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	8,760	3.52E-10	3.52E-10
185	FHP3	Cumene	98-82-8	0.0159	0.000002	8,760	2.29E-07	2.29E-07
185	FHP3	Cyclohexane	110-82-7	3.5497	0.000405	8,760	5.11E-05	5.11E-05
185	FHP3	Ethylbenzene	100-41-4	0.6033	0.000069	8,760	8.68E-06	8.68E-06
185	FHP3	Methanol	67-56-1	0.0136	0.000002	8,760	1.95E-07	1.95E-07
185	FHP3	Naphthalene	91-20-3	0.0086	0.000001	8,760	1.24E-07	1.24E-07
185	FHP3	n-Hexane	110-54-3	16.0174	0.001828	8,760	2.30E-04	2.30E-04
185	FHP3	Phenanthrene	85-01-8	0.0001	0.000000	8,760	2.13E-09	2.13E-09
185	FHP3	Phenol	108-95-2	0.0001	0.000000	8,760	1.11E-09	1.11E-09
185	FHP3	Styrene	100-42-5	0.0221	0.000003	8,760	3.17E-07	3.17E-07
185	FHP3	Toluene	108-88-3	7.4310	0.000848	8,760	1.07E-04	1.07E-04
185	FHP3	Xylenes (mixed isomers)	1330-20-7	3.2884	0.000375	8,760	4.73E-05	4.73E-05
188	COKER-NO	2,2,4-Trimethylpentane	540-84-1	0.0000	0.000000	8,760	6.50E-11	6.43E-11
188	COKER-NO	Benzene	71-43-2	0.0004	0.000000	8,760	6.37E-09	6.37E-09
188	COKER-NO	Carbon disulfide	75-15-0	0.0000	0.000000	8,760	1.95E-10	1.94E-10
188	COKER-NO	Cumene	98-82-8	0.0000	0.000000	8,760	1.95E-12	1.95E-12
188	COKER-NO	Ethylbenzene	100-41-4	0.0001	0.000000	8,760	1.43E-09	1.39E-09
188	COKER-NO	n-Hexane	110-54-3	0.0013	0.000000	8,760	1.89E-08	1.89E-08

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
188	COKER-NO	Toluene	108-88-3	0.0007	0.000000	8,760	9.69E-09	9.69E-09
188	COKER-NO	Xylenes (mixed isomers)	1330-20-7	0.0011	0.000000	8,760	1.52E-08	1.52E-08
189	COKER-SO	2,2,4-Trimethylpentane	540-84-1	0.0000	0.000000	8,760	6.50E-11	6.43E-11
189	COKER-SO	Benzene	71-43-2	0.0004	0.000000	8,760	6.37E-09	6.37E-09
189	COKER-SO	Carbon disulfide	75-15-0	0.0000	0.000000	8,760	1.95E-10	1.94E-10
189	COKER-SO	Cumene	98-82-8	0.0000	0.000000	8,760	1.95E-12	1.95E-12
189	COKER-SO	Ethylbenzene	100-41-4	0.0001	0.000000	8,760	1.43E-09	1.39E-09
189	COKER-SO	n-Hexane	110-54-3	0.0013	0.000000	8,760	1.89E-08	1.89E-08
189	COKER-SO	Toluene	108-88-3	0.0007	0.000000	8,760	9.69E-09	9.69E-09
189	COKER-SO	Xylenes (mixed isomers)	1330-20-7	0.0011	0.000000	8,760	1.52E-08	1.52E-08
192	LOAD-GAS	1,2,4-Trimethylbenzene	95-63-6	0.3560	0.000171	2,080	5.12E-06	2.16E-05
192	LOAD-GAS	1,3-Butadiene	106-99-0	0.0399	0.000019	2,080	5.74E-07	2.42E-06
192	LOAD-GAS	Benzene	71-43-2	12.0678	0.005802	2,080	1.74E-04	7.31E-04
192	LOAD-GAS	Biphenyl	92-52-4	0.0000	0.000000	2,080	1.61E-10	6.79E-10
192	LOAD-GAS	Carbon disulfide	75-15-0	2.0397	0.000981	2,080	2.93E-05	1.24E-04
192	LOAD-GAS	Cresols (mixed isomers)	1319-77-3	0.0000	0.000000	2,080	4.17E-10	1.76E-09
192	LOAD-GAS	Cumene	98-82-8	0.0237	0.000011	2,080	3.41E-07	1.43E-06
192	LOAD-GAS	Cyclohexane	110-82-7	5.2772	0.002537	2,080	7.59E-05	3.20E-04
192	LOAD-GAS	Ethylbenzene	100-41-4	0.9662	0.000465	2,080	1.39E-05	5.85E-05
192	LOAD-GAS	Methanol	67-56-1	0.0202	0.000010	2,080	2.90E-07	1.22E-06
192	LOAD-GAS	Naphthalene	91-20-3	0.0145	0.000007	2,080	2.08E-07	8.77E-07
192	LOAD-GAS	n-Hexane	110-54-3	22.2653	0.010704	2,080	3.20E-04	1.35E-03
192	LOAD-GAS	Phenanthrene	85-01-8	0.0002	0.000000	2,080	2.49E-09	1.05E-08
192	LOAD-GAS	Phenol	108-95-2	0.0001	0.000000	2,080	1.33E-09	5.61E-09
192	LOAD-GAS	Styrene	100-42-5	0.0328	0.000016	2,080	4.72E-07	1.99E-06
192	LOAD-GAS	Toluene	108-88-3	12.0303	0.005784	2,080	1.73E-04	7.29E-04
192	LOAD-GAS	Xylenes (mixed isomers)	1330-20-7	5.3216	0.002558	2,080	7.65E-05	3.22E-04
193	LOAD-LPG	Propylene	115-07-1	151.8602	0.073010	2,080	2.18E-03	9.20E-03
194	COKEBARN	Mercury compounds	7439-97-6	0.0000	0.000000	8,760	5.61E-10	5.61E-10
194	COKEBARN	Nickel compounds	7440-02-0	0.3752	0.000043	8,760	5.40E-06	5.40E-06
194	COKEBARN	Vanadium compounds	7440-62-2	0.4035	0.000046	8,760	5.80E-06	5.80E-06
195	FUELDISP	1,2,4-Trimethylbenzene	95-63-6	0.1488	0.000072	2,080	2.14E-06	9.01E-06
195	FUELDISP	1,3-Butadiene	106-99-0	0.0029	0.000001	2,080	4.10E-08	1.73E-07
195	FUELDISP	Benzene	71-43-2	1.4163	0.000681	2,080	2.04E-05	8.58E-05
195	FUELDISP	Biphenyl	92-52-4	0.0001	0.000000	2,080	1.99E-09	8.37E-09
195	FUELDISP	Carbon disulfide	75-15-0	0.1458	0.000070	2,080	2.10E-06	8.83E-06
195	FUELDISP	Cresols (mixed isomers)	1319-77-3	0.0031	0.000002	2,080	4.52E-08	1.90E-07
195	FUELDISP	Cumene	98-82-8	0.0323	0.000016	2,080	4.65E-07	1.96E-06
195	FUELDISP	Cyclohexane	110-82-7	0.3773	0.000181	2,080	5.43E-06	2.29E-05
195	FUELDISP	Ethylbenzene	100-41-4	0.1647	0.000079	2,080	2.37E-06	9.98E-06
195	FUELDISP	Methanol	67-56-1	0.0014	0.000001	2,080	2.07E-08	8.73E-08
195	FUELDISP	Naphthalene	91-20-3	0.0236	0.000011	2,080	3.39E-07	1.43E-06
195	FUELDISP	n-Hexane	110-54-3	2.2403	0.001077	2,080	3.22E-05	1.36E-04
195	FUELDISP	Phenanthrene	85-01-8	0.0475	0.000023	2,080	6.83E-07	2.88E-06
195	FUELDISP	Phenol	108-95-2	0.0514	0.000025	2,080	7.39E-07	3.11E-06
195	FUELDISP	Styrene	100-42-5	0.0023	0.000001	2,080	3.37E-08	1.42E-07
195	FUELDISP	Toluene	108-88-3	1.9130	0.000920	2,080	2.75E-05	1.16E-04
195	FUELDISP	Xylenes (mixed isomers)	1330-20-7	0.9059	0.000436	2,080	1.30E-05	5.49E-05
196	VACTRUCKS	1,2,4-Trimethylbenzene	95-63-6	43.1933	0.020766	2,080	6.21E-04	2.62E-03
196	VACTRUCKS	1,3-Butadiene	106-99-0	0.6992	0.000336	2,080	1.01E-05	4.24E-05
196	VACTRUCKS	Benzene	71-43-2	778.7093	0.374379	2,080	1.12E-02	4.72E-02
196	VACTRUCKS	Biphenyl	92-52-4	0.0002	0.000000	2,080	2.83E-09	1.19E-08
196	VACTRUCKS	Carbon disulfide	75-15-0	35.7555	0.017190	2,080	5.14E-04	2.17E-03
196	VACTRUCKS	Cresols (mixed isomers)	1319-77-3	0.1314	0.000063	2,080	1.89E-06	7.96E-06
196	VACTRUCKS	Cumene	98-82-8	7.2130	0.003468	2,080	1.04E-04	4.37E-04
196	VACTRUCKS	Cyclohexane	110-82-7	243.7034	0.117165	2,080	3.51E-03	1.48E-02
196	VACTRUCKS	Ethylbenzene	100-41-4	94.5142	0.045440	2,080	1.36E-03	5.73E-03
196	VACTRUCKS	Methanol	67-56-1	0.3533	0.000170	2,080	5.08E-06	2.14E-05
196	VACTRUCKS	Naphthalene	91-20-3	2.1957	0.001056	2,080	3.16E-05	1.33E-04
196	VACTRUCKS	n-Hexane	110-54-3	3,621.0020	1.740866	2,080	5.21E-02	2.19E-01
196	VACTRUCKS	Phenanthrene	85-01-8	0.0039	0.000002	2,080	5.56E-08	2.34E-07
196	VACTRUCKS	Phenol	108-95-2	0.1187	0.000057	2,080	1.71E-06	7.19E-06
196	VACTRUCKS	Styrene	100-42-5	3.7073	0.001782	2,080	5.33E-05	2.25E-04
196	VACTRUCKS	Toluene	108-88-3	798.8132	0.384045	2,080	1.15E-02	4.84E-02

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

2006-2007 AB 2588 HRA Revision

Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
196	VACTRUCKS	Xylenes (mixed isomers)	1330-20-7	363.9286	0.174966	2,080	5.23E-03	2.20E-02
197	MISC	1,2,4-Trimethylbenzene	95-63-6	49.0899	0.023601	2,080	3.39E-07	2.97E-03
197	MISC	1,3-Butadiene	106-99-0	0.0694	0.000033	2,080	4.80E-10	4.21E-06
197	MISC	Acenaphthene	83-32-9	0.0000	0.000000	2,080	1.58E-15	1.39E-11
197	MISC	Acenaphthylene	208-96-8	0.0000	0.000000	2,080	4.17E-15	3.65E-11
197	MISC	Acetaldehyde	75-07-0	0.0011	0.000001	2,080	7.95E-12	6.96E-08
197	MISC	Acrolein	107-02-8	0.0016	0.000001	2,080	1.13E-11	9.86E-08
197	MISC	Ammonia	7664-41-7	0.0000	0.000000	2,080	1.51E-13	1.32E-09
197	MISC	Anthracene	120-12-7	0.0000	0.000000	2,080	3.02E-15	2.65E-11
197	MISC	Antimony compounds	7440-36-0	0.0000	0.000000	2,080	3.44E-13	3.02E-09
197	MISC	Arsenic compounds	7440-38-2	0.0001	0.000000	2,080	4.77E-13	4.18E-09
197	MISC	Asbestos	1332-21-4	0.0431	0.000021	2,080	2.98E-10	2.61E-06
197	MISC	Benzene	71-43-2	8.6960	0.004181	2,080	6.01E-08	5.27E-04
197	MISC	Benzo(g,h,i)perylene	191-24-2	0.0000	0.000000	2,080	7.19E-16	6.30E-12
197	MISC	Beryllium compounds	7440-41-7	0.0000	0.000000	2,080	8.60E-14	7.53E-10
197	MISC	Biphenyl	92-52-4	0.0025	0.000001	2,080	1.71E-11	1.50E-07
197	MISC	Cadmium compounds	7440-43-9	0.0001	0.000000	2,080	9.93E-13	8.70E-09
197	MISC	Carbon disulfide	75-15-0	0.0188	0.000009	2,080	1.30E-10	1.14E-06
197	MISC	Chromium compounds	7440-47-3	0.5593	0.000269	2,080	3.87E-09	3.39E-05
197	MISC	Chromium, hexavalent	18540-29-9	0.0038	0.000002	2,080	2.63E-11	2.30E-07
197	MISC	Cobalt compounds	7440-48-4	0.0039	0.000002	2,080	2.70E-11	2.37E-07
197	MISC	Copper compounds	7440-50-8	0.0005	0.000000	2,080	3.11E-12	2.73E-08
197	MISC	Cresols (mixed isomers)	1319-77-3	0.0144	0.000007	2,080	9.94E-11	8.71E-07
197	MISC	Cumene	98-82-8	0.2328	0.000112	2,080	1.61E-09	1.41E-05
197	MISC	Cyclohexane	110-82-7	1.6096	0.000774	2,080	1.11E-08	9.75E-05
197	MISC	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0001	0.000000	2,080	7.93E-13	6.95E-09
197	MISC	Ethylbenzene	100-41-4	62.0547	0.029834	2,080	4.29E-07	3.76E-03
197	MISC	Fluorene	86-73-7	0.0000	0.000000	2,080	3.18E-14	2.78E-10
197	MISC	Formaldehyde	50-00-0	0.0050	0.000002	2,080	3.44E-11	3.02E-07
197	MISC	Glycol ethers and their acetates	1115	151.7403	0.072952	2,080	1.05E-06	9.19E-03
197	MISC	Hydrogen fluoride	7664-39-3	343.1700	0.164986	2,080	2.37E-06	2.08E-02
197	MISC	Hydrogen sulfide	7783-06-4	0.0183	0.000009	2,080	1.27E-10	1.11E-06
197	MISC	Lead compounds	7439-92-1	0.0004	0.000000	2,080	2.52E-12	2.20E-08
197	MISC	Manganese compounds	7439-96-5	9.5853	0.004608	2,080	6.63E-08	5.81E-04
197	MISC	Mercury compounds	7439-97-6	0.0000	0.000000	2,080	1.19E-13	1.04E-09
197	MISC	Methanol	67-56-1	2.0766	0.000998	2,080	1.44E-08	1.26E-04
197	MISC	Methyl isobutyl ketone	108-10-1	38.4171	0.018470	2,080	2.66E-07	2.33E-03
197	MISC	Methylnaphthalene 2-	91-57-6	0.0000	0.000000	2,080	1.58E-14	1.39E-10
197	MISC	Naphthalene	91-20-3	0.1718	0.000083	2,080	1.19E-09	1.04E-05
197	MISC	n-Hexane	110-54-3	71.7951	0.034517	2,080	4.96E-07	4.35E-03
197	MISC	Nickel compounds	7440-02-0	0.0787	0.000038	2,080	5.44E-10	4.77E-06
197	MISC	PAHs, total	1151	0.0000	0.000000	2,080	3.38E-13	2.96E-09
197	MISC	Phenanthrene	85-01-8	0.1976	0.000095	2,080	1.37E-09	1.20E-05
197	MISC	Phenol	108-95-2	0.4948	0.000238	2,080	3.42E-09	3.00E-05
197	MISC	Propylene	115-07-1	0.0205	0.000010	2,080	1.42E-10	1.24E-06
197	MISC	Pyrene	129-00-0	0.0000	0.000000	2,080	6.47E-15	5.67E-11
197	MISC	Selenium compounds	7782-49-2	0.0001	0.000000	2,080	5.83E-13	5.10E-09
197	MISC	Silver compounds	7440-22-4	0.0002	0.000000	2,080	1.06E-12	9.28E-09
197	MISC	Styrene	100-42-5	0.0370	0.000018	2,080	2.56E-10	2.24E-06
197	MISC	Tetrachloroethylene	127-18-4	92.0400	0.044250	2,080	6.36E-07	5.58E-03
197	MISC	Toluene	108-88-3	115.8160	0.055681	2,080	8.01E-07	7.02E-03
197	MISC	Vanadium compounds	7440-62-2	0.0002	0.000000	2,080	1.52E-12	1.33E-08
197	MISC	Xylenes (mixed isomers)	1330-20-7	157.6812	0.075808	2,080	1.09E-06	9.55E-03
197	MISC	Zinc compounds	7440-66-6	0.0051	0.000002	2,080	3.51E-11	3.07E-07
198	FUG01	1,3-Butadiene	106-99-0	0.0154	0.000002	8,760	2.22E-07	2.22E-07
198	FUG01	Ammonia	7664-41-7	0.0003	0.000000	8,760	4.80E-09	4.80E-09
198	FUG01	Benzene	71-43-2	2.2798	0.000260	8,760	3.28E-05	3.28E-05
198	FUG01	Carbon disulfide	75-15-0	0.0007	0.000000	8,760	9.68E-09	9.68E-09
198	FUG01	Ethylene	74-85-1	2.1939	0.000250	8,760	3.16E-05	3.16E-05
198	FUG01	Glycol ethers and their acetates	1115	0.0016	0.000000	8,760	2.30E-08	2.30E-08
198	FUG01	Hydrogen sulfide	7783-06-4	0.0108	0.000001	8,760	1.55E-07	1.55E-07
198	FUG01	Naphthalene	91-20-3	0.8011	0.000091	8,760	1.15E-05	1.15E-05
198	FUG01	n-Hexane	110-54-3	23.8964	0.002728	8,760	3.44E-04	3.44E-04
198	FUG01	Phenol	108-95-2	0.9707	0.000111	8,760	1.40E-05	1.40E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
198	FUG01	Propylene	115-07-1	4.8932	0.000559	8,760	7.04E-05	7.04E-05
198	FUG01	Styrene	100-42-5	0.0013	0.000000	8,760	1.82E-08	1.82E-08
198	FUG01	Toluene	108-88-3	1.6015	0.000183	8,760	2.30E-05	2.30E-05
198	FUG01	Xylenes (mixed isomers)	1330-20-7	1.6015	0.000183	8,760	2.30E-05	2.30E-05
199	FUG02	1,3-Butadiene	106-99-0	0.1768	0.000020	8,760	2.54E-06	2.54E-06
199	FUG02	Ammonia	7664-41-7	0.0010	0.000000	8,760	1.49E-08	1.49E-08
199	FUG02	Benzene	71-43-2	1.1328	0.000129	8,760	1.63E-05	1.63E-05
199	FUG02	Carbon disulfide	75-15-0	0.0004	0.000000	8,760	5.52E-09	5.52E-09
199	FUG02	Ethylene	74-85-1	85.5142	0.009762	8,760	1.23E-03	1.23E-03
199	FUG02	Glycol ethers and their acetates	1115	0.0006	0.000000	8,760	8.15E-09	8.15E-09
199	FUG02	Hydrogen sulfide	7783-06-4	4.7076	0.000537	8,760	6.77E-05	6.77E-05
199	FUG02	Naphthalene	91-20-3	0.0475	0.000005	8,760	6.83E-07	6.83E-07
199	FUG02	n-Hexane	110-54-3	4.3150	0.000493	8,760	6.21E-05	6.21E-05
199	FUG02	Phenol	108-95-2	0.0603	0.000007	8,760	8.67E-07	8.67E-07
199	FUG02	Propylene	115-07-1	340.9774	0.038924	8,760	4.90E-03	4.90E-03
199	FUG02	Styrene	100-42-5	0.0004	0.000000	8,760	5.52E-09	5.52E-09
199	FUG02	Toluene	108-88-3	19.8235	0.002263	8,760	2.85E-04	2.85E-04
199	FUG02	Xylenes (mixed isomers)	1330-20-7	1.1328	0.000129	8,760	1.63E-05	1.63E-05
200	FUG03	1,3-Butadiene	106-99-0	0.2619	0.000030	8,760	3.77E-06	3.77E-06
200	FUG03	Ammonia	7664-41-7	1.9832	0.000226	8,760	2.85E-05	2.85E-05
200	FUG03	Benzene	71-43-2	8.9026	0.001016	8,760	1.28E-04	1.28E-04
200	FUG03	Carbon disulfide	75-15-0	0.0004	0.000000	8,760	5.95E-09	5.95E-09
200	FUG03	Ethylene	74-85-1	40.5082	0.004624	8,760	5.83E-04	5.83E-04
200	FUG03	Glycol ethers and their acetates	1115	0.0020	0.000000	8,760	2.86E-08	2.86E-08
200	FUG03	Hydrogen sulfide	7783-06-4	1.2840	0.000147	8,760	1.85E-05	1.85E-05
200	FUG03	Naphthalene	91-20-3	0.0796	0.000009	8,760	1.14E-06	1.14E-06
200	FUG03	n-Hexane	110-54-3	10.2220	0.001167	8,760	1.47E-04	1.47E-04
200	FUG03	Phenol	108-95-2	0.2610	0.000030	8,760	3.75E-06	3.75E-06
200	FUG03	Propylene	115-07-1	81.0563	0.009253	8,760	1.17E-03	1.17E-03
200	FUG03	Styrene	100-42-5	0.0004	0.000000	8,760	5.95E-09	5.95E-09
200	FUG03	Toluene	108-88-3	0.2048	0.000023	8,760	2.95E-06	2.95E-06
200	FUG03	Xylenes (mixed isomers)	1330-20-7	0.1984	0.000023	8,760	2.85E-06	2.85E-06
201	FUG04	1,3-Butadiene	106-99-0	0.1728	0.000020	8,760	2.49E-06	2.49E-06
201	FUG04	Ammonia	7664-41-7	1.3014	0.000149	8,760	1.87E-05	1.87E-05
201	FUG04	Benzene	71-43-2	0.0037	0.000000	8,760	5.27E-08	5.27E-08
201	FUG04	Ethylene	74-85-1	23.7202	0.002708	8,760	3.41E-04	3.41E-04
201	FUG04	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	6.71E-10	6.70E-10
201	FUG04	Hydrogen sulfide	7783-06-4	0.1057	0.000012	8,760	1.52E-06	1.52E-06
201	FUG04	Naphthalene	91-20-3	0.0000	0.000000	8,760	6.71E-10	6.70E-10
201	FUG04	n-Hexane	110-54-3	2.6150	0.000299	8,760	3.76E-05	3.76E-05
201	FUG04	Propylene	115-07-1	47.4634	0.005418	8,760	6.83E-04	6.83E-04
201	FUG04	Toluene	108-88-3	0.0000	0.000000	8,760	6.71E-10	6.70E-10
201	FUG04	Xylenes (mixed isomers)	1330-20-7	0.0000	0.000000	8,760	6.71E-10	6.70E-10
202	FUG05	1,3-Butadiene	106-99-0	0.0037	0.000000	8,760	5.39E-08	5.39E-08
202	FUG05	Benzene	71-43-2	0.0037	0.000000	8,760	5.39E-08	5.39E-08
202	FUG05	Glycol ethers and their acetates	1115	0.0037	0.000000	8,760	5.39E-08	5.39E-08
202	FUG05	Naphthalene	91-20-3	0.0597	0.000007	8,760	8.59E-07	8.59E-07
202	FUG05	n-Hexane	110-54-3	1.1613	0.000133	8,760	1.67E-05	1.67E-05
202	FUG05	Phenol	108-95-2	0.0011	0.000000	8,760	1.61E-08	1.61E-08
202	FUG05	Propylene	115-07-1	5.7635	0.000658	8,760	8.29E-05	8.29E-05
202	FUG05	Styrene	100-42-5	0.0037	0.000000	8,760	5.39E-08	5.39E-08
202	FUG05	Toluene	108-88-3	0.0049	0.000001	8,760	7.00E-08	7.00E-08
202	FUG05	Xylenes (mixed isomers)	1330-20-7	0.0049	0.000001	8,760	7.00E-08	7.00E-08
203	FUG06	1,3-Butadiene	106-99-0	0.0219	0.000003	8,760	3.16E-07	3.16E-07
203	FUG06	Ammonia	7664-41-7	0.0792	0.000009	8,760	1.14E-06	1.14E-06
203	FUG06	Benzene	71-43-2	0.9680	0.000111	8,760	1.39E-05	1.39E-05
203	FUG06	Carbon disulfide	75-15-0	0.0020	0.000000	8,760	2.83E-08	2.83E-08
203	FUG06	Ethylene	74-85-1	3.0987	0.000354	8,760	4.46E-05	4.46E-05
203	FUG06	Glycol ethers and their acetates	1115	0.0019	0.000000	8,760	2.78E-08	2.78E-08
203	FUG06	Hydrogen sulfide	7783-06-4	10.8684	0.001241	8,760	1.56E-04	1.56E-04
203	FUG06	Naphthalene	91-20-3	6.7760	0.000774	8,760	9.75E-05	9.75E-05
203	FUG06	n-Hexane	110-54-3	8.8570	0.001011	8,760	1.27E-04	1.27E-04
203	FUG06	Phenol	108-95-2	0.5025	0.000057	8,760	7.23E-06	7.23E-06
203	FUG06	Propylene	115-07-1	6.2003	0.000708	8,760	8.92E-05	8.92E-05

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
203	FUG06	Styrene	100-42-5	0.0019	0.000000	8,760	2.68E-08	2.68E-08
203	FUG06	Toluene	108-88-3	0.9680	0.000111	8,760	1.39E-05	1.39E-05
203	FUG06	Xylenes (mixed isomers)	1330-20-7	5.8080	0.000663	8,760	8.35E-05	8.35E-05
204	FUG07	1,3-Butadiene	106-99-0	0.0126	0.000001	8,760	1.81E-07	1.81E-07
204	FUG07	Ammonia	7664-41-7	0.5842	0.000067	8,760	8.40E-06	8.40E-06
204	FUG07	Benzene	71-43-2	0.0048	0.000001	8,760	6.95E-08	6.95E-08
204	FUG07	Carbon disulfide	75-15-0	0.0064	0.000001	8,760	9.14E-08	9.14E-08
204	FUG07	Ethylene	74-85-1	1.9535	0.000223	8,760	2.81E-05	2.81E-05
204	FUG07	Glycol ethers and their acetates	1115	0.0064	0.000001	8,760	9.14E-08	9.14E-08
204	FUG07	Hydrogen sulfide	7783-06-4	11.4499	0.001307	8,760	1.65E-04	1.65E-04
204	FUG07	Naphthalene	91-20-3	0.0064	0.000001	8,760	9.14E-08	9.14E-08
204	FUG07	n-Hexane	110-54-3	29.8244	0.003405	8,760	4.29E-04	4.29E-04
204	FUG07	Phenol	108-95-2	0.0064	0.000001	8,760	9.14E-08	9.14E-08
204	FUG07	Propylene	115-07-1	21.5660	0.002462	8,760	3.10E-04	3.10E-04
204	FUG07	Styrene	100-42-5	0.0047	0.000001	8,760	6.76E-08	6.76E-08
204	FUG07	Toluene	108-88-3	0.0048	0.000001	8,760	6.95E-08	6.95E-08
204	FUG07	Xylenes (mixed isomers)	1330-20-7	0.0048	0.000001	8,760	6.95E-08	6.95E-08
205	FUG08	1,3-Butadiene	106-99-0	0.0195	0.000002	8,760	2.81E-07	2.81E-07
205	FUG08	Ammonia	7664-41-7	0.6074	0.000069	8,760	8.74E-06	8.74E-06
205	FUG08	Benzene	71-43-2	0.0087	0.000001	8,760	1.25E-07	1.25E-07
205	FUG08	Carbon disulfide	75-15-0	0.0091	0.000001	8,760	1.31E-07	1.31E-07
205	FUG08	Ethylene	74-85-1	0.0837	0.000010	8,760	1.20E-06	1.20E-06
205	FUG08	Glycol ethers and their acetates	1115	0.0091	0.000001	8,760	1.31E-07	1.31E-07
205	FUG08	Hydrogen sulfide	7783-06-4	11.4676	0.001309	8,760	1.65E-04	1.65E-04
205	FUG08	Naphthalene	91-20-3	0.0091	0.000001	8,760	1.31E-07	1.31E-07
205	FUG08	n-Hexane	110-54-3	11.9612	0.001365	8,760	1.72E-04	1.72E-04
205	FUG08	Phenol	108-95-2	0.0091	0.000001	8,760	1.31E-07	1.31E-07
205	FUG08	Propylene	115-07-1	8.2953	0.000947	8,760	1.19E-04	1.19E-04
205	FUG08	Styrene	100-42-5	0.0070	0.000001	8,760	1.01E-07	1.01E-07
205	FUG08	Toluene	108-88-3	0.0087	0.000001	8,760	1.25E-07	1.25E-07
205	FUG08	Xylenes (mixed isomers)	1330-20-7	0.0087	0.000001	8,760	1.25E-07	1.25E-07
206	FUG09	1,3-Butadiene	106-99-0	0.0014	0.000000	8,760	1.98E-08	1.98E-08
206	FUG09	Hydrogen sulfide	7783-06-4	10.8507	0.001239	8,760	1.56E-04	1.56E-04
206	FUG09	Propylene	115-07-1	1.3833	0.000158	8,760	1.99E-05	1.99E-05
207	FUG10	Ammonia	7664-41-7	0.0007	0.000000	8,760	9.42E-09	9.42E-09
207	FUG10	Carbon disulfide	75-15-0	0.0007	0.000000	8,760	9.42E-09	9.42E-09
207	FUG10	Glycol ethers and their acetates	1115	0.0007	0.000000	8,760	9.42E-09	9.42E-09
207	FUG10	Hydrogen sulfide	7783-06-4	0.0013	0.000000	8,760	1.88E-08	1.88E-08
207	FUG10	Naphthalene	91-20-3	0.0007	0.000000	8,760	9.42E-09	9.42E-09
207	FUG10	Phenol	108-95-2	0.0007	0.000000	8,760	9.42E-09	9.42E-09
207	FUG10	Propylene	115-07-1	9.8253	0.001122	8,760	1.41E-04	1.41E-04
208	FUG12	Benzene	71-43-2	4.3332	0.000495	8,760	6.23E-05	6.23E-05
208	FUG12	Carbon disulfide	75-15-0	0.0022	0.000000	8,760	3.12E-08	3.12E-08
208	FUG12	Glycol ethers and their acetates	1115	0.0022	0.000000	8,760	3.12E-08	3.12E-08
208	FUG12	Naphthalene	91-20-3	0.1083	0.000012	8,760	1.56E-06	1.56E-06
208	FUG12	n-Hexane	110-54-3	12.9997	0.001484	8,760	1.87E-04	1.87E-04
208	FUG12	Phenol	108-95-2	0.2167	0.000025	8,760	3.12E-06	3.12E-06
208	FUG12	Styrene	100-42-5	0.0015	0.000000	8,760	2.17E-08	2.17E-08
208	FUG12	Toluene	108-88-3	75.8316	0.008657	8,760	1.09E-03	1.09E-03
208	FUG12	Xylenes (mixed isomers)	1330-20-7	4.3332	0.000495	8,760	6.23E-05	6.23E-05
209	FUG13	1,3-Butadiene	106-99-0	0.0067	0.000001	8,760	9.61E-08	9.61E-08
209	FUG13	Benzene	71-43-2	6.0858	0.000695	8,760	8.75E-05	8.75E-05
209	FUG13	Carbon disulfide	75-15-0	0.0031	0.000000	8,760	4.40E-08	4.40E-08
209	FUG13	Ethylene	74-85-1	0.5026	0.000057	8,760	7.23E-06	7.23E-06
209	FUG13	Glycol ethers and their acetates	1115	0.0030	0.000000	8,760	4.38E-08	4.38E-08
209	FUG13	Hydrogen sulfide	7783-06-4	0.0084	0.000001	8,760	1.20E-07	1.20E-07
209	FUG13	Naphthalene	91-20-3	0.1522	0.000017	8,760	2.19E-06	2.19E-06
209	FUG13	n-Hexane	110-54-3	42.8599	0.004893	8,760	6.16E-04	6.16E-04
209	FUG13	Phenol	108-95-2	0.3043	0.000035	8,760	4.38E-06	4.38E-06
209	FUG13	Propylene	115-07-1	2.5290	0.000289	8,760	3.64E-05	3.64E-05
209	FUG13	Styrene	100-42-5	0.0027	0.000000	8,760	3.93E-08	3.93E-08
209	FUG13	Toluene	108-88-3	60.8584	0.006947	8,760	8.75E-04	8.75E-04
209	FUG13	Xylenes (mixed isomers)	1330-20-7	6.0858	0.000695	8,760	8.75E-05	8.75E-05
210	FUG19	1,1,2-Trichloroethane (Vinyl trichlorid	79-00-5	0.0042	0.000000	8,760	6.04E-08	6.04E-08

Appendix B - Emission Rates By Source and Substance

ExxonMobil Torrance Refinery

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
210	FUG19	1,3-Butadiene	106-99-0	0.0949	0.000011	8,760	1.36E-06	1.36E-06
210	FUG19	Benzene	71-43-2	94.6045	0.010800	8,760	1.36E-03	1.36E-03
210	FUG19	Chlorine	7782-50-5	0.0014	0.000000	8,760	2.04E-08	2.04E-08
210	FUG19	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0028	0.000000	8,760	4.00E-08	4.00E-08
210	FUG19	Ethylene	74-85-1	14.7000	0.001678	8,760	2.11E-04	2.11E-04
210	FUG19	Glycol ethers and their acetates	1115	0.0042	0.000000	8,760	6.02E-08	6.02E-08
210	FUG19	Hydrochloric acid	7647-01-0	0.0014	0.000000	8,760	2.01E-08	2.01E-08
210	FUG19	Hydrogen sulfide	7783-06-4	0.0655	0.000007	8,760	9.42E-07	9.42E-07
210	FUG19	Methyl chloroform {1,1,1-Trichloroetl	71-55-6	0.0042	0.000000	8,760	6.02E-08	6.02E-08
210	FUG19	Naphthalene	91-20-3	20.6385	0.002356	8,760	2.97E-04	2.97E-04
210	FUG19	n-Hexane	110-54-3	48.8495	0.005576	8,760	7.03E-04	7.03E-04
210	FUG19	Phenol	108-95-2	0.1428	0.000016	8,760	2.05E-06	2.05E-06
210	FUG19	Propylene	115-07-1	29.4140	0.003358	8,760	4.23E-04	4.23E-04
210	FUG19	Styrene	100-42-5	0.0028	0.000000	8,760	4.00E-08	4.00E-08
210	FUG19	Toluene	108-88-3	550.6058	0.062855	8,760	7.92E-03	7.92E-03
210	FUG19	Xylenes (mixed isomers)	1330-20-7	526.0738	0.060054	8,760	7.57E-03	7.57E-03
211	FUG20	1,1,2-Trichloroethane (Vinyl trichlori	79-00-5	0.0004	0.000000	8,760	5.52E-09	5.52E-09
211	FUG20	1,3-Butadiene	106-99-0	0.0058	0.000001	8,760	8.28E-08	8.28E-08
211	FUG20	Ammonia	7664-41-7	0.1172	0.000013	8,760	1.69E-06	1.69E-06
211	FUG20	Benzene	71-43-2	5.9275	0.000677	8,760	8.53E-05	8.53E-05
211	FUG20	Carbon disulfide	75-15-0	0.0004	0.000000	8,760	5.41E-09	5.41E-09
211	FUG20	Chlorine	7782-50-5	0.0002	0.000000	8,760	3.56E-09	3.56E-09
211	FUG20	Dichlorobenzenes (mixed isomers)	25321-22-6	0.0002	0.000000	8,760	3.56E-09	3.56E-09
211	FUG20	Ethylene	74-85-1	0.8704	0.000099	8,760	1.25E-05	1.25E-05
211	FUG20	Glycol ethers and their acetates	1115	0.0004	0.000000	8,760	5.41E-09	5.41E-09
211	FUG20	Hydrochloric acid	7647-01-0	0.0004	0.000000	8,760	5.41E-09	5.41E-09
211	FUG20	Hydrogen sulfide	7783-06-4	0.1208	0.000014	8,760	1.74E-06	1.74E-06
211	FUG20	Methyl chloroform {1,1,1-Trichloroetl	71-55-6	0.0002	0.000000	8,760	3.45E-09	3.45E-09
211	FUG20	Naphthalene	91-20-3	1.8313	0.000209	8,760	2.63E-05	2.63E-05
211	FUG20	n-Hexane	110-54-3	6.7641	0.000772	8,760	9.73E-05	9.73E-05
211	FUG20	Phenol	108-95-2	0.0241	0.000003	8,760	3.47E-07	3.47E-07
211	FUG20	Propylene	115-07-1	1.7416	0.000199	8,760	2.50E-05	2.50E-05
211	FUG20	Styrene	100-42-5	0.0001	0.000000	8,760	1.96E-09	1.96E-09
211	FUG20	Toluene	108-88-3	35.7929	0.004086	8,760	5.15E-04	5.15E-04
211	FUG20	Xylenes (mixed isomers)	1330-20-7	35.7556	0.004082	8,760	5.14E-04	5.14E-04
212	FUG21	1,3-Butadiene	106-99-0	0.5004	0.000057	8,760	7.20E-06	7.20E-06
212	FUG21	Ammonia	7664-41-7	0.0005	0.000000	8,760	7.91E-09	7.91E-09
212	FUG21	Benzene	71-43-2	9.5696	0.001092	8,760	1.38E-04	1.38E-04
212	FUG21	Carbon disulfide	75-15-0	0.0008	0.000000	8,760	1.21E-08	1.21E-08
212	FUG21	Ethylene	74-85-1	38.2730	0.004369	8,760	5.50E-04	5.50E-04
212	FUG21	Hydrogen sulfide	7783-06-4	0.1734	0.000020	8,760	2.49E-06	2.49E-06
212	FUG21	Naphthalene	91-20-3	2.5344	0.000289	8,760	3.65E-05	3.65E-05
212	FUG21	n-Hexane	110-54-3	33.5799	0.003833	8,760	4.83E-04	4.83E-04
212	FUG21	Phenol	108-95-2	0.0845	0.000010	8,760	1.22E-06	1.22E-06
212	FUG21	Propylene	115-07-1	77.1321	0.008805	8,760	1.11E-03	1.11E-03
212	FUG21	Styrene	100-42-5	0.0003	0.000000	8,760	4.83E-09	4.83E-09
212	FUG21	Toluene	108-88-3	28.7925	0.003287	8,760	4.14E-04	4.14E-04
212	FUG21	Xylenes (mixed isomers)	1330-20-7	24.1978	0.002762	8,760	3.48E-04	3.48E-04
213	FUG22	1,3-Butadiene	106-99-0	1.0411	0.000119	8,760	1.50E-05	1.50E-05
213	FUG22	Ammonia	7664-41-7	0.5616	0.000064	8,760	8.08E-06	8.08E-06
213	FUG22	Benzene	71-43-2	18.1066	0.002067	8,760	2.60E-04	2.60E-04
213	FUG22	Carbon disulfide	75-15-0	0.0052	0.000001	8,760	7.53E-08	7.53E-08
213	FUG22	Ethylene	74-85-1	87.0831	0.009941	8,760	1.25E-03	1.25E-03
213	FUG22	Hydrogen sulfide	7783-06-4	1.1010	0.000126	8,760	1.58E-05	1.58E-05
213	FUG22	Naphthalene	91-20-3	4.8497	0.000554	8,760	6.98E-05	6.98E-05
213	FUG22	n-Hexane	110-54-3	56.2857	0.006425	8,760	8.10E-04	8.10E-04
213	FUG22	Phenol	108-95-2	1.0561	0.000121	8,760	1.52E-05	1.52E-05
213	FUG22	Propylene	115-07-1	183.2645	0.020921	8,760	2.64E-03	2.64E-03
213	FUG22	Styrene	100-42-5	0.0042	0.000000	8,760	6.07E-08	6.07E-08
213	FUG22	Toluene	108-88-3	54.3686	0.006206	8,760	7.82E-04	7.82E-04
213	FUG22	Xylenes (mixed isomers)	1330-20-7	45.6487	0.005211	8,760	6.57E-04	6.57E-04
214	FUG24	1,3-Butadiene	106-99-0	0.1349	0.000015	8,760	1.94E-06	1.94E-06
214	FUG24	Ammonia	7664-41-7	0.7135	0.000081	8,760	1.03E-05	1.03E-05
214	FUG24	Benzene	71-43-2	0.0000	0.000000	8,760	6.15E-10	6.14E-10

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
214	FUG24	Ethylene	74-85-1	20.8933	0.002385	8,760	3.01E-04	3.01E-04
214	FUG24	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	6.15E-10	6.14E-10
214	FUG24	Hydrogen sulfide	7783-06-4	0.0931	0.000011	8,760	1.34E-06	1.34E-06
214	FUG24	Naphthalene	91-20-3	0.0000	0.000000	8,760	6.15E-10	6.14E-10
214	FUG24	n-Hexane	110-54-3	2.3034	0.000263	8,760	3.31E-05	3.31E-05
214	FUG24	Propylene	115-07-1	41.8066	0.004772	8,760	6.01E-04	6.01E-04
214	FUG24	Toluene	108-88-3	0.0000	0.000000	8,760	6.15E-10	6.14E-10
214	FUG24	Xylenes (mixed isomers)	1330-20-7	0.0000	0.000000	8,760	6.15E-10	6.14E-10
215	FUG25	1,3-Butadiene	106-99-0	0.2006	0.000023	8,760	2.89E-06	2.89E-06
215	FUG25	Ammonia	7664-41-7	9.3214	0.001064	8,760	1.34E-04	1.34E-04
215	FUG25	Benzene	71-43-2	1.5733	0.000180	8,760	2.26E-05	2.26E-05
215	FUG25	Carbon disulfide	75-15-0	0.0037	0.000000	8,760	5.37E-08	5.37E-08
215	FUG25	Ethylene	74-85-1	30.9867	0.003537	8,760	4.46E-04	4.46E-04
215	FUG25	Hydrogen sulfide	7783-06-4	58.0350	0.006625	8,760	8.35E-04	8.35E-04
215	FUG25	Naphthalene	91-20-3	15.7279	0.001795	8,760	2.26E-04	2.26E-04
215	FUG25	n-Hexane	110-54-3	30.2828	0.003457	8,760	4.36E-04	4.36E-04
215	FUG25	Phenol	108-95-2	0.9332	0.000107	8,760	1.34E-05	1.34E-05
215	FUG25	Propylene	115-07-1	62.0028	0.007078	8,760	8.92E-04	8.92E-04
215	FUG25	Styrene	100-42-5	0.0031	0.000000	8,760	4.52E-08	4.52E-08
215	FUG25	Toluene	108-88-3	3.1460	0.000359	8,760	4.52E-05	4.52E-05
215	FUG25	Xylenes (mixed isomers)	1330-20-7	3.1460	0.000359	8,760	4.52E-05	4.52E-05
216	FUG27	1,3-Butadiene	106-99-0	0.0091	0.000001	8,760	1.31E-07	1.31E-07
216	FUG27	Ammonia	7664-41-7	0.5720	0.000065	8,760	8.23E-06	8.23E-06
216	FUG27	Benzene	71-43-2	0.5862	0.000067	8,760	8.43E-06	8.43E-06
216	FUG27	Ethylene	74-85-1	1.3957	0.000159	8,760	2.01E-05	2.01E-05
216	FUG27	Glycol ethers and their acetates	1115	0.0010	0.000000	8,760	1.39E-08	1.39E-08
216	FUG27	Hydrogen sulfide	7783-06-4	0.5788	0.000066	8,760	8.33E-06	8.33E-06
216	FUG27	Naphthalene	91-20-3	2.9067	0.000332	8,760	4.18E-05	4.18E-05
216	FUG27	n-Hexane	110-54-3	5.1522	0.000588	8,760	7.41E-05	7.41E-05
216	FUG27	Phenol	108-95-2	0.0112	0.000001	8,760	1.61E-07	1.61E-07
216	FUG27	Propylene	115-07-1	2.8686	0.000327	8,760	4.13E-05	4.13E-05
216	FUG27	Toluene	108-88-3	1.4802	0.000169	8,760	2.13E-05	2.13E-05
216	FUG27	Xylenes (mixed isomers)	1330-20-7	1.0698	0.000122	8,760	1.54E-05	1.54E-05
217	FUG28	1,3-Butadiene	106-99-0	0.0066	0.000001	8,760	9.46E-08	9.46E-08
217	FUG28	Ammonia	7664-41-7	1.1460	0.000131	8,760	1.65E-05	1.65E-05
217	FUG28	Ethylene	74-85-1	1.0190	0.000116	8,760	1.47E-05	1.47E-05
217	FUG28	Hydrogen sulfide	7783-06-4	87.3897	0.009976	8,760	1.26E-03	1.26E-03
217	FUG28	n-Hexane	110-54-3	0.1124	0.000013	8,760	1.62E-06	1.62E-06
217	FUG28	Propylene	115-07-1	2.0390	0.000233	8,760	2.93E-05	2.93E-05
218	FUG29	1,3-Butadiene	106-99-0	0.0097	0.000001	8,760	1.40E-07	1.40E-07
218	FUG29	Ammonia	7664-41-7	0.7124	0.000081	8,760	1.02E-05	1.02E-05
218	FUG29	Ethylene	74-85-1	1.5052	0.000172	8,760	2.17E-05	2.17E-05
218	FUG29	Hydrogen sulfide	7783-06-4	0.7191	0.000082	8,760	1.03E-05	1.03E-05
218	FUG29	n-Hexane	110-54-3	0.1660	0.000019	8,760	2.39E-06	2.39E-06
218	FUG29	Propylene	115-07-1	3.0119	0.000344	8,760	4.33E-05	4.33E-05
219	FUG30	1,3-Butadiene	106-99-0	0.0477	0.000005	8,760	6.86E-07	6.86E-07
219	FUG30	Ethylene	74-85-1	6.2966	0.000719	8,760	9.06E-05	9.06E-05
219	FUG30	Hydrogen sulfide	7783-06-4	0.0281	0.000003	8,760	4.04E-07	4.04E-07
219	FUG30	n-Hexane	110-54-3	0.6942	0.000079	8,760	9.98E-06	9.98E-06
219	FUG30	Propylene	115-07-1	13.0565	0.001490	8,760	1.88E-04	1.88E-04
220	FUG5255	1,2,4-Trimethylbenzene	95-63-6	9.8567	0.001125	8,760	1.42E-04	1.42E-04
220	FUG5255	1,3-Butadiene	106-99-0	0.1536	0.000018	8,760	2.21E-06	2.21E-06
220	FUG5255	Ammonia	7664-41-7	0.0002	0.000000	8,760	2.46E-09	2.46E-09
220	FUG5255	Benzene	71-43-2	38.4640	0.004391	8,760	5.53E-04	5.53E-04
220	FUG5255	Chlorobenzene	108-90-7	0.0086	0.000001	8,760	1.23E-07	1.23E-07
220	FUG5255	Cyclohexane	110-82-7	7.0583	0.000806	8,760	1.02E-04	1.02E-04
220	FUG5255	Ethylbenzene	100-41-4	9.5769	0.001093	8,760	1.38E-04	1.38E-04
220	FUG5255	Glycol ethers and their acetates	1115	0.0015	0.000000	8,760	2.09E-08	2.09E-08
220	FUG5255	Hydrogen sulfide	7783-06-4	0.0010	0.000000	8,760	1.48E-08	1.48E-08
220	FUG5255	Naphthalene	91-20-3	10.8592	0.001240	8,760	1.56E-04	1.56E-04
220	FUG5255	n-Hexane	110-54-3	56.6384	0.006466	8,760	8.15E-04	8.15E-04
220	FUG5255	Phenol	108-95-2	1.3330	0.000152	8,760	1.92E-05	1.92E-05
220	FUG5255	Propylene	115-07-1	7.8753	0.000899	8,760	1.13E-04	1.13E-04
220	FUG5255	Styrene	100-42-5	0.0029	0.000000	8,760	4.17E-08	4.17E-08

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
220	FUG5255	Toluene	108-88-3	71.1746	0.008125	8,760	1.02E-03	1.02E-03
220	FUG5255	Xylenes (mixed isomers)	1330-20-7	83.6121	0.009545	8,760	1.20E-03	1.20E-03
221	FUG53	1,3-Butadiene	106-99-0	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Ammonia	7664-41-7	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Benzene	71-43-2	0.0129	0.000001	8,760	1.86E-07	1.86E-07
221	FUG53	Carbon disulfide	75-15-0	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Hydrogen sulfide	7783-06-4	0.0259	0.000003	8,760	3.72E-07	3.72E-07
221	FUG53	Naphthalene	91-20-3	0.0259	0.000003	8,760	3.72E-07	3.72E-07
221	FUG53	n-Hexane	110-54-3	0.1188	0.000014	8,760	1.71E-06	1.71E-06
221	FUG53	Phenol	108-95-2	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Propylene	115-07-1	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Toluene	108-88-3	0.0000	0.000000	8,760	3.72E-10	3.72E-10
221	FUG53	Xylenes (mixed isomers)	1330-20-7	0.0000	0.000000	8,760	3.72E-10	3.72E-10
222	FUG56A	1,2,4-Trimethylbenzene	95-63-6	0.5449	0.000062	8,760	7.84E-06	7.84E-06
222	FUG56A	1,3-Butadiene	106-99-0	0.0416	0.000005	8,760	5.99E-07	5.99E-07
222	FUG56A	Ammonia	7664-41-7	0.0081	0.000001	8,760	1.17E-07	1.17E-07
222	FUG56A	Benzene	71-43-2	9.6139	0.001097	8,760	1.38E-04	1.38E-04
222	FUG56A	Chlorobenzene	108-90-7	0.0005	0.000000	8,760	6.80E-09	6.80E-09
222	FUG56A	Cyclohexane	110-82-7	0.3902	0.000045	8,760	5.61E-06	5.61E-06
222	FUG56A	Ethylbenzene	100-41-4	0.5295	0.000060	8,760	7.62E-06	7.62E-06
222	FUG56A	Ethylene	74-85-1	4.8951	0.000559	8,760	7.04E-05	7.04E-05
222	FUG56A	Glycol ethers and their acetates	1115	0.0001	0.000000	8,760	1.16E-09	1.16E-09
222	FUG56A	Hydrogen sulfide	7783-06-4	0.0219	0.000002	8,760	3.15E-07	3.15E-07
222	FUG56A	Naphthalene	91-20-3	1.3473	0.000154	8,760	1.94E-05	1.94E-05
222	FUG56A	n-Hexane	110-54-3	14.2038	0.001621	8,760	2.04E-04	2.04E-04
222	FUG56A	Phenol	108-95-2	0.0732	0.000008	8,760	1.05E-06	1.05E-06
222	FUG56A	Propylene	115-07-1	9.7959	0.001118	8,760	1.41E-04	1.41E-04
222	FUG56A	Styrene	100-42-5	0.0002	0.000000	8,760	2.29E-09	2.29E-09
222	FUG56A	Toluene	108-88-3	11.4223	0.001304	8,760	1.64E-04	1.64E-04
222	FUG56A	Xylenes (mixed isomers)	1330-20-7	12.1099	0.001382	8,760	1.74E-04	1.74E-04
223	FUG56B	1,2,4-Trimethylbenzene	95-63-6	0.1635	0.000019	8,760	2.35E-06	2.35E-06
223	FUG56B	1,3-Butadiene	106-99-0	0.0125	0.000001	8,760	1.80E-07	1.80E-07
223	FUG56B	Ammonia	7664-41-7	0.0024	0.000000	8,760	3.50E-08	3.50E-08
223	FUG56B	Benzene	71-43-2	2.8842	0.000329	8,760	4.15E-05	4.15E-05
223	FUG56B	Chlorobenzene	108-90-7	0.0001	0.000000	8,760	2.04E-09	2.04E-09
223	FUG56B	Cyclohexane	110-82-7	0.1171	0.000013	8,760	1.68E-06	1.68E-06
223	FUG56B	Ethylbenzene	100-41-4	0.1588	0.000018	8,760	2.28E-06	2.28E-06
223	FUG56B	Ethylene	74-85-1	1.4685	0.000168	8,760	2.11E-05	2.11E-05
223	FUG56B	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	3.47E-10	3.46E-10
223	FUG56B	Hydrogen sulfide	7783-06-4	0.0066	0.000001	8,760	9.44E-08	9.44E-08
223	FUG56B	Naphthalene	91-20-3	0.4042	0.000046	8,760	5.81E-06	5.81E-06
223	FUG56B	n-Hexane	110-54-3	4.2611	0.000486	8,760	6.13E-05	6.13E-05
223	FUG56B	Phenol	108-95-2	0.0220	0.000003	8,760	3.16E-07	3.16E-07
223	FUG56B	Propylene	115-07-1	2.9388	0.000335	8,760	4.23E-05	4.23E-05
223	FUG56B	Styrene	100-42-5	0.0000	0.000000	8,760	6.88E-10	6.88E-10
223	FUG56B	Toluene	108-88-3	3.4267	0.000391	8,760	4.93E-05	4.93E-05
223	FUG56B	Xylenes (mixed isomers)	1330-20-7	3.6330	0.000415	8,760	5.23E-05	5.23E-05
224	FUG56C	1,2,4-Trimethylbenzene	95-63-6	0.1090	0.000012	8,760	1.57E-06	1.57E-06
224	FUG56C	1,3-Butadiene	106-99-0	0.0083	0.000001	8,760	1.20E-07	1.20E-07
224	FUG56C	Ammonia	7664-41-7	0.0016	0.000000	8,760	2.33E-08	2.33E-08
224	FUG56C	Benzene	71-43-2	1.9228	0.000219	8,760	2.77E-05	2.77E-05
224	FUG56C	Chlorobenzene	108-90-7	0.0001	0.000000	8,760	1.36E-09	1.36E-09
224	FUG56C	Cyclohexane	110-82-7	0.0780	0.000009	8,760	1.12E-06	1.12E-06
224	FUG56C	Ethylbenzene	100-41-4	0.1059	0.000012	8,760	1.52E-06	1.52E-06
224	FUG56C	Ethylene	74-85-1	0.9790	0.000112	8,760	1.41E-05	1.41E-05
224	FUG56C	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	2.31E-10	2.31E-10
224	FUG56C	Hydrogen sulfide	7783-06-4	0.0044	0.000000	8,760	6.29E-08	6.29E-08
224	FUG56C	Naphthalene	91-20-3	0.2695	0.000031	8,760	3.88E-06	3.88E-06
224	FUG56C	n-Hexane	110-54-3	2.8408	0.000324	8,760	4.09E-05	4.09E-05
224	FUG56C	Phenol	108-95-2	0.0146	0.000002	8,760	2.11E-07	2.11E-07
224	FUG56C	Propylene	115-07-1	1.9592	0.000224	8,760	2.82E-05	2.82E-05
224	FUG56C	Styrene	100-42-5	0.0000	0.000000	8,760	4.59E-10	4.59E-10
224	FUG56C	Toluene	108-88-3	2.2845	0.000261	8,760	3.29E-05	3.29E-05
224	FUG56C	Xylenes (mixed isomers)	1330-20-7	2.4220	0.000276	8,760	3.48E-05	3.48E-05

Appendix B - Emission Rates By Source and Substance

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
225	FUG56D	1,2,4-Trimethylbenzene	95-63-6	0.2725	0.000031	8,760	3.92E-06	3.92E-06
225	FUG56D	1,3-Butadiene	106-99-0	0.0208	0.000002	8,760	3.00E-07	3.00E-07
225	FUG56D	Ammonia	7664-41-7	0.0041	0.000000	8,760	5.83E-08	5.83E-08
225	FUG56D	Benzene	71-43-2	4.8069	0.000549	8,760	6.91E-05	6.91E-05
225	FUG56D	Chlorobenzene	108-90-7	0.0002	0.000000	8,760	3.40E-09	3.40E-09
225	FUG56D	Cyclohexane	110-82-7	0.1951	0.000022	8,760	2.81E-06	2.81E-06
225	FUG56D	Ethylbenzene	100-41-4	0.2647	0.000030	8,760	3.81E-06	3.81E-06
225	FUG56D	Ethylene	74-85-1	2.4476	0.000279	8,760	3.52E-05	3.52E-05
225	FUG56D	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	5.79E-10	5.78E-10
225	FUG56D	Hydrogen sulfide	7783-06-4	0.0109	0.000001	8,760	1.57E-07	1.57E-07
225	FUG56D	Naphthalene	91-20-3	0.6736	0.000077	8,760	9.69E-06	9.69E-06
225	FUG56D	n-Hexane	110-54-3	7.1019	0.000811	8,760	1.02E-04	1.02E-04
225	FUG56D	Phenol	108-95-2	0.0366	0.000004	8,760	5.27E-07	5.27E-07
225	FUG56D	Propylene	115-07-1	4.8979	0.000559	8,760	7.04E-05	7.04E-05
225	FUG56D	Styrene	100-42-5	0.0001	0.000000	8,760	1.15E-09	1.15E-09
225	FUG56D	Toluene	108-88-3	5.7111	0.000652	8,760	8.21E-05	8.21E-05
225	FUG56D	Xylenes (mixed isomers)	1330-20-7	6.0549	0.000691	8,760	8.71E-05	8.71E-05
226	FUG56E	1,2,4-Trimethylbenzene	95-63-6	0.5449	0.000062	8,760	7.84E-06	7.84E-06
226	FUG56E	1,3-Butadiene	106-99-0	0.0416	0.000005	8,760	5.99E-07	5.99E-07
226	FUG56E	Ammonia	7664-41-7	0.0081	0.000001	8,760	1.17E-07	1.17E-07
226	FUG56E	Benzene	71-43-2	9.6139	0.001097	8,760	1.38E-04	1.38E-04
226	FUG56E	Chlorobenzene	108-90-7	0.0005	0.000000	8,760	6.80E-09	6.80E-09
226	FUG56E	Cyclohexane	110-82-7	0.3902	0.000045	8,760	5.61E-06	5.61E-06
226	FUG56E	Ethylbenzene	100-41-4	0.5295	0.000060	8,760	7.62E-06	7.62E-06
226	FUG56E	Ethylene	74-85-1	4.8951	0.000559	8,760	7.04E-05	7.04E-05
226	FUG56E	Glycol ethers and their acetates	1115	0.0001	0.000000	8,760	1.16E-09	1.16E-09
226	FUG56E	Hydrogen sulfide	7783-06-4	0.0219	0.000002	8,760	3.15E-07	3.15E-07
226	FUG56E	Naphthalene	91-20-3	1.3473	0.000154	8,760	1.94E-05	1.94E-05
226	FUG56E	n-Hexane	110-54-3	14.2038	0.001621	8,760	2.04E-04	2.04E-04
226	FUG56E	Phenol	108-95-2	0.0732	0.000008	8,760	1.05E-06	1.05E-06
226	FUG56E	Propylene	115-07-1	9.7959	0.001118	8,760	1.41E-04	1.41E-04
226	FUG56E	Styrene	100-42-5	0.0002	0.000000	8,760	2.29E-09	2.29E-09
226	FUG56E	Toluene	108-88-3	11.4223	0.001304	8,760	1.64E-04	1.64E-04
226	FUG56E	Xylenes (mixed isomers)	1330-20-7	12.1099	0.001382	8,760	1.74E-04	1.74E-04
227	FUG56F	1,2,4-Trimethylbenzene	95-63-6	0.5449	0.000062	8,760	7.84E-06	7.84E-06
227	FUG56F	1,3-Butadiene	106-99-0	0.0416	0.000005	8,760	5.99E-07	5.99E-07
227	FUG56F	Ammonia	7664-41-7	0.0081	0.000001	8,760	1.17E-07	1.17E-07
227	FUG56F	Benzene	71-43-2	9.6139	0.001097	8,760	1.38E-04	1.38E-04
227	FUG56F	Chlorobenzene	108-90-7	0.0005	0.000000	8,760	6.80E-09	6.80E-09
227	FUG56F	Cyclohexane	110-82-7	0.3902	0.000045	8,760	5.61E-06	5.61E-06
227	FUG56F	Ethylbenzene	100-41-4	0.5295	0.000060	8,760	7.62E-06	7.62E-06
227	FUG56F	Ethylene	74-85-1	4.8951	0.000559	8,760	7.04E-05	7.04E-05
227	FUG56F	Glycol ethers and their acetates	1115	0.0001	0.000000	8,760	1.16E-09	1.16E-09
227	FUG56F	Hydrogen sulfide	7783-06-4	0.0219	0.000002	8,760	3.15E-07	3.15E-07
227	FUG56F	Naphthalene	91-20-3	1.3473	0.000154	8,760	1.94E-05	1.94E-05
227	FUG56F	n-Hexane	110-54-3	14.2038	0.001621	8,760	2.04E-04	2.04E-04
227	FUG56F	Phenol	108-95-2	0.0732	0.000008	8,760	1.05E-06	1.05E-06
227	FUG56F	Propylene	115-07-1	9.7959	0.001118	8,760	1.41E-04	1.41E-04
227	FUG56F	Styrene	100-42-5	0.0002	0.000000	8,760	2.29E-09	2.29E-09
227	FUG56F	Toluene	108-88-3	11.4223	0.001304	8,760	1.64E-04	1.64E-04
227	FUG56F	Xylenes (mixed isomers)	1330-20-7	12.1099	0.001382	8,760	1.74E-04	1.74E-04
228	FUG56G	1,2,4-Trimethylbenzene	95-63-6	3.2696	0.000373	8,760	4.70E-05	4.70E-05
228	FUG56G	1,3-Butadiene	106-99-0	0.2499	0.000029	8,760	3.59E-06	3.59E-06
228	FUG56G	Ammonia	7664-41-7	0.0486	0.000006	8,760	6.99E-07	6.99E-07
228	FUG56G	Benzene	71-43-2	57.6832	0.006585	8,760	8.30E-04	8.30E-04
228	FUG56G	Chlorobenzene	108-90-7	0.0028	0.000000	8,760	4.08E-08	4.08E-08
228	FUG56G	Cyclohexane	110-82-7	2.3413	0.000267	8,760	3.37E-05	3.37E-05
228	FUG56G	Ethylbenzene	100-41-4	3.1767	0.000363	8,760	4.57E-05	4.57E-05
228	FUG56G	Ethylene	74-85-1	29.3707	0.003353	8,760	4.22E-04	4.22E-04
228	FUG56G	Glycol ethers and their acetates	1115	0.0005	0.000000	8,760	6.94E-09	6.94E-09
228	FUG56G	Hydrogen sulfide	7783-06-4	0.1312	0.000015	8,760	1.89E-06	1.89E-06
228	FUG56G	Naphthalene	91-20-3	8.0838	0.000923	8,760	1.16E-04	1.16E-04
228	FUG56G	n-Hexane	110-54-3	85.2226	0.009729	8,760	1.23E-03	1.23E-03
228	FUG56G	Phenol	108-95-2	0.4394	0.000050	8,760	6.32E-06	6.32E-06

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Source ID No.	Source Name	Substance Name	CAS No.	Annual Average (lb/yr)	Maximum Hourly (lb/hr)	Op Hours	Annual Average (g/s)	Maximum Hourly (g/s)
228	FUG56G	Propylene	115-07-1	58.7753	0.006710	8,760	8.45E-04	8.45E-04
228	FUG56G	Styrene	100-42-5	0.0010	0.000000	8,760	1.38E-08	1.38E-08
228	FUG56G	Toluene	108-88-3	68.5335	0.007823	8,760	9.86E-04	9.86E-04
228	FUG56G	Xylenes (mixed isomers)	1330-20-7	72.6592	0.008294	8,760	1.05E-03	1.05E-03
229	FUG65	1,3-Butadiene	106-99-0	0.0852	0.000010	8,760	1.23E-06	1.23E-06
229	FUG65	Ammonia	7664-41-7	0.0992	0.000011	8,760	1.43E-06	1.43E-06
229	FUG65	Benzene	71-43-2	0.2892	0.000033	8,760	4.16E-06	4.16E-06
229	FUG65	Carbon disulfide	75-15-0	0.0000	0.000000	8,760	7.01E-10	7.01E-10
229	FUG65	Ethylene	74-85-1	7.0820	0.000808	8,760	1.02E-04	1.02E-04
229	FUG65	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	1.31E-10	1.30E-10
229	FUG65	Hydrogen sulfide	7783-06-4	0.2909	0.000033	8,760	4.18E-06	4.18E-06
229	FUG65	Naphthalene	91-20-3	0.0852	0.000010	8,760	1.22E-06	1.22E-06
229	FUG65	n-Hexane	110-54-3	1.0046	0.000115	8,760	1.44E-05	1.44E-05
229	FUG65	Phenol	108-95-2	0.0008	0.000000	8,760	1.21E-08	1.21E-08
229	FUG65	Propylene	115-07-1	14.1673	0.001617	8,760	2.04E-04	2.04E-04
229	FUG65	Styrene	100-42-5	0.0000	0.000000	8,760	1.31E-10	1.30E-10
229	FUG65	Toluene	108-88-3	0.2892	0.000033	8,760	4.16E-06	4.16E-06
229	FUG65	Xylenes (mixed isomers)	1330-20-7	0.2892	0.000033	8,760	4.16E-06	4.16E-06
230	FUG72	1,3-Butadiene	106-99-0	0.0096	0.000001	8,760	1.38E-07	1.38E-07
230	FUG72	Ammonia	7664-41-7	0.0000	0.000000	8,760	4.50E-10	4.49E-10
230	FUG72	Benzene	71-43-2	0.0000	0.000000	8,760	2.64E-10	2.63E-10
230	FUG72	Carbon disulfide	75-15-0	0.0000	0.000000	8,760	2.64E-10	2.63E-10
230	FUG72	Ethylene	74-85-1	1.2885	0.000147	8,760	1.85E-05	1.85E-05
230	FUG72	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	2.64E-10	2.63E-10
230	FUG72	Hydrogen sulfide	7783-06-4	0.0089	0.000001	8,760	1.28E-07	1.28E-07
230	FUG72	Naphthalene	91-20-3	0.0000	0.000000	8,760	2.64E-10	2.63E-10
230	FUG72	n-Hexane	110-54-3	0.1421	0.000016	8,760	2.04E-06	2.04E-06
230	FUG72	Phenol	108-95-2	0.0000	0.000000	8,760	2.64E-10	2.63E-10
230	FUG72	Propylene	115-07-1	2.5782	0.000294	8,760	3.71E-05	3.71E-05
230	FUG72	Toluene	108-88-3	0.0808	0.000009	8,760	1.16E-06	1.16E-06
230	FUG72	Xylenes (mixed isomers)	1330-20-7	0.2848	0.000033	8,760	4.10E-06	4.10E-06
231	FUG75	1,2,4-Trimethylbenzene	95-63-6	0.0237	0.000003	8,760	3.42E-07	3.42E-07
231	FUG75	1,3-Butadiene	106-99-0	0.7100	0.000081	8,760	1.02E-05	1.02E-05
231	FUG75	Ammonia	7664-41-7	0.0927	0.000011	8,760	1.33E-06	1.33E-06
231	FUG75	Benzene	71-43-2	0.4707	0.000054	8,760	6.77E-06	6.77E-06
231	FUG75	Chlorobenzene	108-90-7	0.0000	0.000000	8,760	2.96E-10	2.96E-10
231	FUG75	Cyclohexane	110-82-7	0.0170	0.000002	8,760	2.45E-07	2.45E-07
231	FUG75	Ethylbenzene	100-41-4	0.0231	0.000003	8,760	3.32E-07	3.32E-07
231	FUG75	Ethylene	74-85-1	109.9265	0.012549	8,760	1.58E-03	1.58E-03
231	FUG75	Glycol ethers and their acetates	1115	0.0000	0.000000	8,760	5.04E-11	5.04E-11
231	FUG75	Hydrogen sulfide	7783-06-4	11.7340	0.001339	8,760	1.69E-04	1.69E-04
231	FUG75	Naphthalene	91-20-3	0.0538	0.000006	8,760	7.74E-07	7.74E-07
231	FUG75	n-Hexane	110-54-3	12.7892	0.001460	8,760	1.84E-04	1.84E-04
231	FUG75	Phenol	108-95-2	0.0006	0.000000	8,760	8.80E-09	8.80E-09
231	FUG75	Propylene	115-07-1	219.9573	0.025109	8,760	3.16E-03	3.16E-03
231	FUG75	Styrene	100-42-5	0.0000	0.000000	8,760	2.57E-11	2.52E-11
231	FUG75	Toluene	108-88-3	0.5495	0.000063	8,760	7.90E-06	7.90E-06
231	FUG75	Xylenes (mixed isomers)	1330-20-7	0.5795	0.000066	8,760	8.33E-06	8.33E-06
232	FUG80	1,2,4-Trimethylbenzene	95-63-6	0.5730	0.000065	8,760	8.24E-06	8.24E-06
232	FUG80	1,3-Butadiene	106-99-0	0.0000	0.000000	8,760	3.58E-10	3.58E-10
232	FUG80	Benzene	71-43-2	0.2641	0.000030	8,760	3.80E-06	3.80E-06
232	FUG80	Ethylbenzene	100-41-4	0.3986	0.000046	8,760	5.73E-06	5.73E-06
232	FUG80	Naphthalene	91-20-3	0.0747	0.000009	8,760	1.08E-06	1.08E-06
232	FUG80	n-Hexane	110-54-3	0.3505	0.000040	8,760	5.04E-06	5.04E-06
232	FUG80	Phenol	108-95-2	0.0000	0.000000	8,760	3.58E-10	3.58E-10
232	FUG80	Toluene	108-88-3	1.4650	0.000167	8,760	2.11E-05	2.11E-05
232	FUG80	Xylenes (mixed isomers)	1330-20-7	1.9134	0.000218	8,760	2.75E-05	2.75E-05

Appendix C
Modeling Receptors

ExxonMobil Torrance Refinery
2006-2007 AB 2588 HRA Revision

Figure C-1
Facility Fenceline Receptors

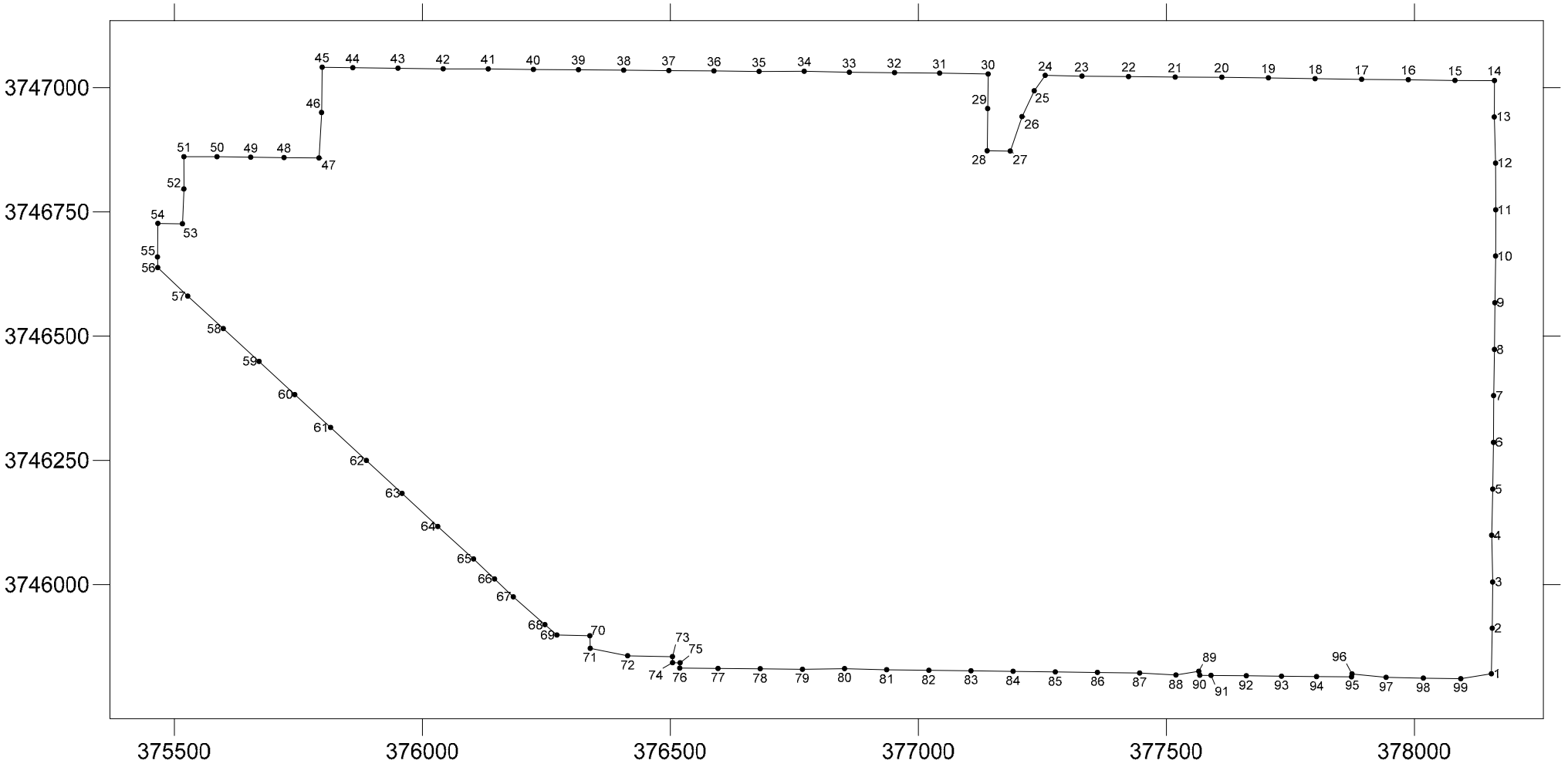

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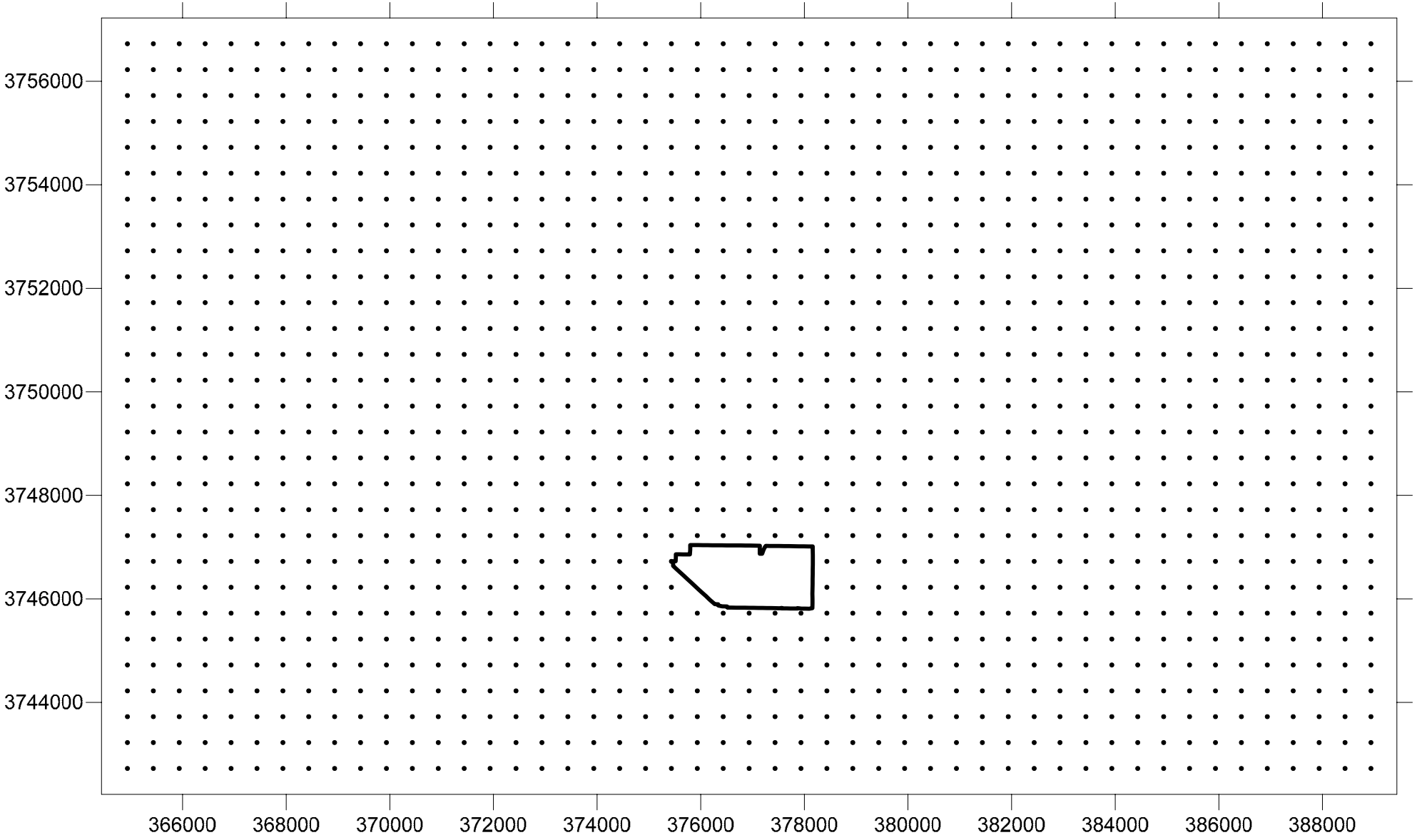
Figure C-2
Coarse Grid Receptors



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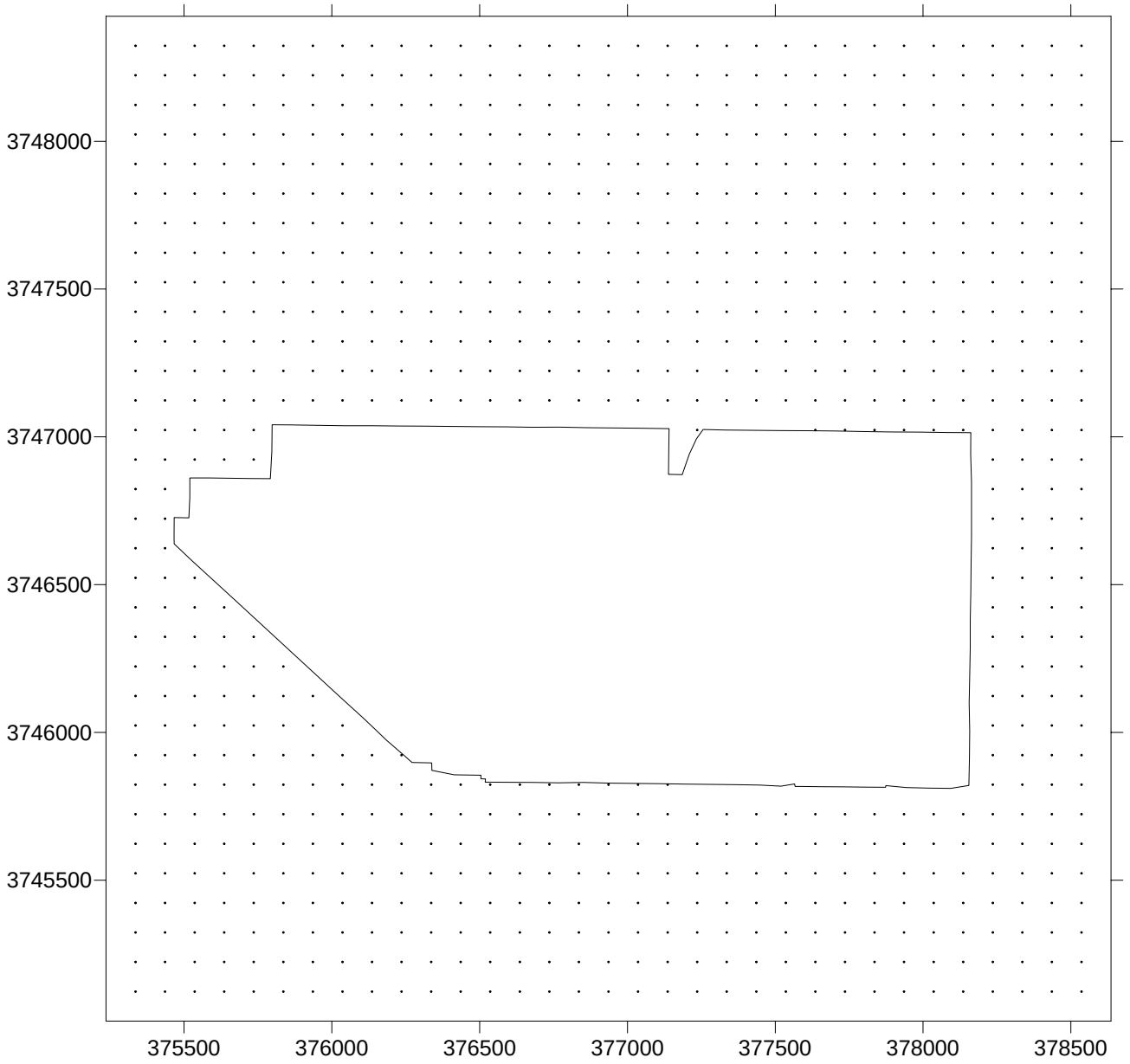
2006-2007 AB 2588 HRA Revision

Figure C-3
Fine Grid Receptors



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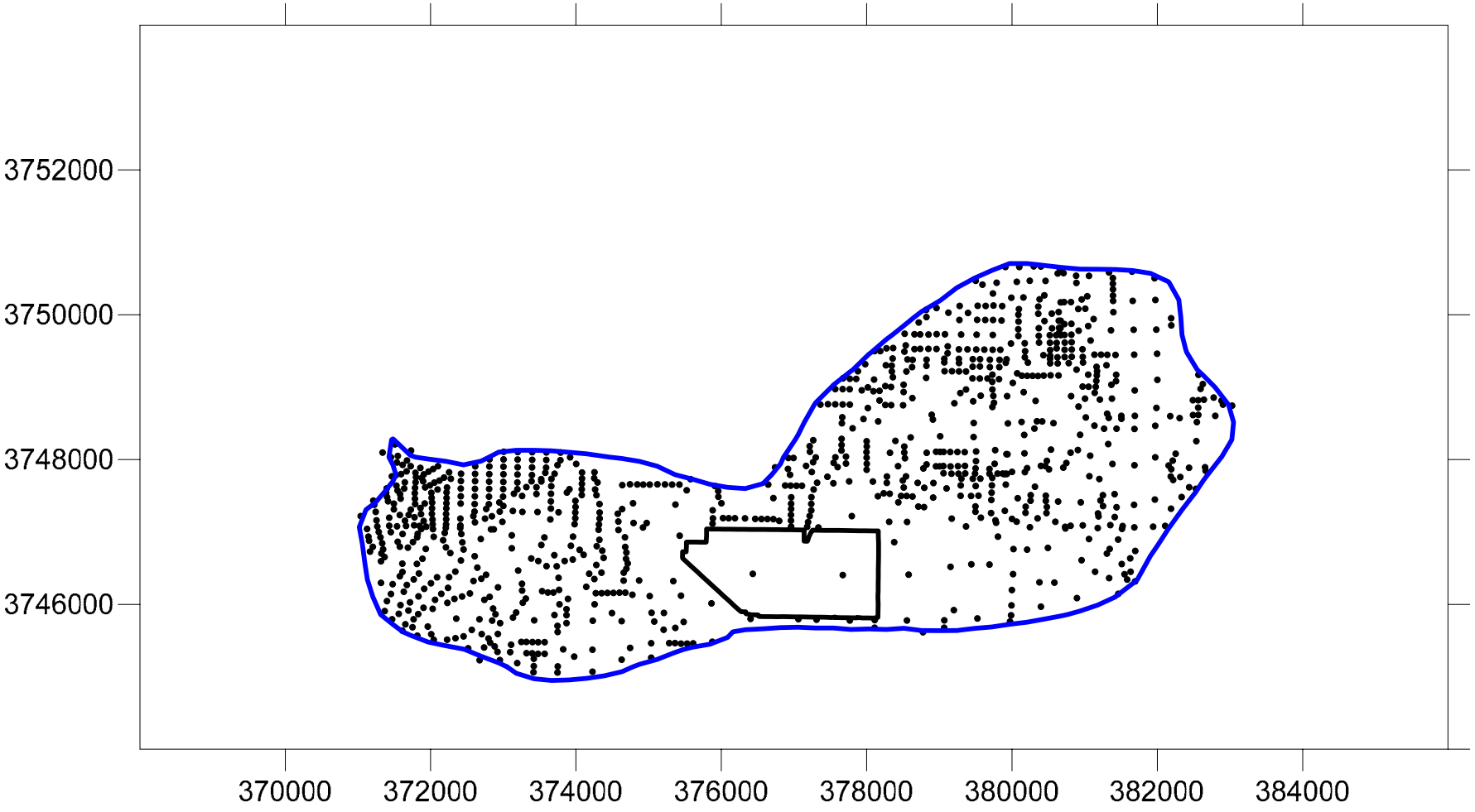
Appendix D
Cancer Burden

ExxonMobil Torrance Refinery
2006-2007 AB 2588 HRA Revision

Figure D-1
Cancer Burden Census Tract Centroids Within Zone of Impact



*Isopleth plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 1x10-6 cancer risk.

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Appendix D - Cancer Burden Analysis
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
1426	BLK541003004	381996.9	3749460.3	43	1.080E-06	4.6E-05
1427	BLK541003005	381682.7	3749447.7	89	1.160E-06	1.0E-04
1428	BLK541003006	381674.3	3749791.4	55	1.150E-06	6.3E-05
1435	BLK541003013	382626.2	3749042.2	128	1.010E-06	1.3E-04
1436	BLK541003014	382596.5	3748976.1	86	1.020E-06	8.8E-05
1437	BLK541003015	382489.3	3748818.4	46	1.090E-06	5.0E-05
1438	BLK541003016	382563.5	3748819.6	27	1.070E-06	2.9E-05
1439	BLK541003017	382641.2	3748825.8	34	1.050E-06	3.6E-05
1440	BLK541003018	382777.0	3748855.4	86	1.000E-06	8.6E-05
1441	BLK541003019	382903.6	3748757.8	90	1.020E-06	9.2E-05
1442	BLK541003020	382884.5	3748811.8	49	1.020E-06	5.0E-05
1444	BLK541003022	382797.9	3748603.4	70	1.040E-06	7.3E-05
1445	BLK541003023	382563.6	3748715.9	84	1.080E-06	9.1E-05
1446	BLK541003024	382491.1	3748614.4	56	1.100E-06	6.2E-05
1447	BLK541003025	382564.5	3748615.6	34	1.090E-06	3.7E-05
1453	BLK541003031	381690.0	3748953.9	1	1.200E-06	1.2E-06
1456	BLK541003034	381685.5	3748421.8	44	1.300E-06	5.7E-05
1461	BLK541003039	382538.1	3748254.2	1022	1.090E-06	1.1E-03
1713	BLK543401001	382658.6	3747894.0	93	1.030E-06	9.6E-05
1714	BLK543401002	382437.6	3747885.7	23	1.070E-06	2.5E-05
1715	BLK543401003	382439.2	3747617.5	218	1.030E-06	2.2E-04
1716	BLK543401004	382664.3	3747844.0	87	1.010E-06	8.8E-05
1719	BLK543401007	382531.4	3747596.0	160	1.010E-06	1.6E-04
1727	BLK543402002	382335.2	3747482.1	146	1.030E-06	1.5E-04
1728	BLK543402003	382316.7	3747757.8	133	1.080E-06	1.4E-04
1740	BLK543403002	382109.3	3747083.9	101	1.020E-06	1.0E-04
1741	BLK543403003	382184.8	3747764.9	98	1.130E-06	1.1E-04
1742	BLK543403004	382218.1	3747718.4	154	1.110E-06	1.7E-04
1743	BLK543403005	382189.2	3747321.5	104	1.050E-06	1.1E-04
1749	BLK543403011	381944.0	3747071.1	3	1.060E-06	3.2E-06
1958	BLK543802017	381694.6	3746316.5	147	1.010E-06	1.5E-04

Appendix D - Cancer Burden Analysis
ExxonMobil Torrance Refinery
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
3039	BLK541002013	381652.6	3750595.9	76	1.010E-06	7.7E-05
3042	BLK541002016	381973.7	3750203.5	5	1.060E-06	5.3E-06
3043	BLK541002017	381661.7	3750190.9	6	1.100E-06	6.6E-06
3767	BLK603007000	379789.9	3750441.6	564	1.070E-06	6.0E-04
3768	BLK603007001	379739.3	3750292.9	166	1.120E-06	1.9E-04
3770	BLK603007003	379500.9	3750469.4	131	1.020E-06	1.3E-04
3793	BLK603005006	379909.8	3750660.1	35	1.010E-06	3.5E-05
3796	BLK603102003	380398.2	3750667.0	108	1.000E-06	1.1E-04
3797	BLK603102004	380300.8	3750668.3	55	1.010E-06	5.6E-05
3798	BLK603102005	380101.7	3750659.8	2	1.020E-06	2.0E-06
3799	BLK603102006	380067.4	3750455.0	269	1.070E-06	2.9E-04
3800	BLK603102007	380244.7	3750469.3	291	1.060E-06	3.1E-04
3801	BLK603102008	380462.7	3750467.4	432	1.050E-06	4.5E-04
3803	BLK603103002	380446.0	3750267.0	372	1.110E-06	4.1E-04
3804	BLK603103003	380380.4	3750212.5	97	1.130E-06	1.1E-04
3805	BLK603103004	380158.5	3750239.4	47	1.130E-06	5.3E-05
3806	BLK603103005	379991.9	3750234.3	221	1.140E-06	2.5E-04
3807	BLK603103006	380096.5	3750077.7	117	1.180E-06	1.4E-04
3808	BLK603103007	380361.5	3750112.8	101	1.170E-06	1.2E-04
3809	BLK603103008	380547.3	3750016.2	326	1.210E-06	3.9E-04
3810	BLK603103009	380362.4	3750013.0	109	1.200E-06	1.3E-04
3811	BLK603103010	380089.1	3749999.9	124	1.210E-06	1.5E-04
3813	BLK603104002	380447.2	3749912.1	197	1.250E-06	2.5E-04
3814	BLK603104003	380090.8	3749905.6	121	1.250E-06	1.5E-04
3815	BLK603104004	380086.6	3749800.3	181	1.290E-06	2.3E-04
3816	BLK603104005	380369.1	3749813.2	98	1.290E-06	1.3E-04
3820	BLK603104011	380607.8	3749716.3	21	1.330E-06	2.8E-05
3821	BLK603104012	380520.3	3749717.4	14	1.330E-06	1.9E-05
3822	BLK603104013	380369.8	3749707.9	221	1.340E-06	3.0E-04
3823	BLK603104014	380088.2	3749705.9	292	1.340E-06	3.9E-04
3824	BLK603104015	379986.7	3749601.9	81	1.390E-06	1.1E-04

Appendix D - Cancer Burden Analysis
ExxonMobil Torrance Refinery
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
3825	BLK603104016	380176.6	3749605.0	98	1.390E-06	1.4E-04
3826	BLK603104017	380372.9	3749613.9	111	1.390E-06	1.5E-04
3827	BLK603104018	380523.2	3749612.0	9	1.380E-06	1.2E-05
3828	BLK603104019	380616.3	3749610.8	1	1.370E-06	1.4E-06
3830	BLK603103001	380526.9	3749512.1	84	1.420E-06	1.2E-04
3831	BLK603103002	380182.3	3749494.9	623	1.450E-06	9.0E-04
3832	BLK603103003	380178.4	3749411.2	283	1.490E-06	4.2E-04
3833	BLK603103004	380433.5	3749441.0	84	1.460E-06	1.2E-04
3834	BLK603103005	380525.9	3749434.3	56	1.450E-06	8.1E-05
3835	BLK603103006	380627.2	3749411.0	29	1.440E-06	4.2E-05
3836	BLK603103007	380525.3	3749389.9	20	1.460E-06	2.9E-05
3837	BLK603103008	380219.1	3749338.3	440	1.530E-06	6.7E-04
3839	BLK603103010	379926.1	3749384.7	7	1.510E-06	1.1E-05
3840	BLK603103011	380526.7	3749328.9	42	1.480E-06	6.2E-05
3841	BLK603103012	380631.1	3749327.6	15	1.460E-06	2.2E-05
3842	BLK603104000	380640.3	3749161.3	320	1.490E-06	4.8E-04
3843	BLK603104001	380531.7	3749162.6	233	1.520E-06	3.5E-04
3844	BLK603104002	380437.0	3749158.3	120	1.550E-06	1.9E-04
3845	BLK603104003	380357.9	3749154.2	64	1.580E-06	1.0E-04
3846	BLK603104004	380284.5	3749154.7	102	1.590E-06	1.6E-04
3847	BLK603104005	380210.4	3749155.7	124	1.610E-06	2.0E-04
3848	BLK603104006	380136.4	3749156.6	121	1.620E-06	2.0E-04
3849	BLK603104007	380071.9	3749190.4	58	1.620E-06	9.4E-05
3850	BLK603104008	380011.6	3749058.3	138	1.690E-06	2.3E-04
3851	BLK603105000	380325.4	3748810.3	960	1.660E-06	1.6E-03
3852	BLK603105001	380161.7	3748931.2	23	1.700E-06	3.9E-05
3853	BLK603201000	379473.9	3748505.0	4	2.200E-06	8.8E-06
3854	BLK603201002	379472.1	3748310.8	297	2.320E-06	6.9E-04
3855	BLK603201003	379769.1	3748129.8	210	2.210E-06	4.6E-04
3856	BLK603201004	379507.7	3748110.7	54	2.410E-06	1.3E-04
3857	BLK603201005	379506.0	3747977.9	68	2.490E-06	1.7E-04

Appendix D - Cancer Burden Analysis
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
3858	BLK603201006	379761.7	3747940.8	319	2.310E-06	7.4E-04
3859	BLK603201007	379691.7	3747869.3	56	2.400E-06	1.3E-04
3860	BLK603201008	379500.5	3747877.3	96	2.550E-06	2.4E-04
3861	BLK603202000	380572.0	3748502.1	47	1.640E-06	7.7E-05
3862	BLK603202001	380417.1	3748526.5	17	1.700E-06	2.9E-05
3863	BLK603202002	380343.7	3748527.4	25	1.740E-06	4.4E-05
3864	BLK603202003	380132.5	3748518.7	42	1.850E-06	7.8E-05
3866	BLK603202005	380309.3	3748428.0	84	1.740E-06	1.5E-04
3867	BLK603202006	380537.1	3748136.6	97	1.760E-06	1.7E-04
3870	BLK603202014	380177.4	3747825.1	97	2.060E-06	2.0E-04
3871	BLK603202015	380510.4	3747863.7	133	1.830E-06	2.4E-04
3872	BLK603202017	380481.5	3747982.1	70	1.830E-06	1.3E-04
3873	BLK603202018	380398.0	3747911.2	17	1.890E-06	3.2E-05
3874	BLK603202019	380459.4	3747910.4	19	1.860E-06	3.5E-05
3876	BLK603203000	379350.2	3748101.7	41	2.500E-06	1.0E-04
3877	BLK603203001	379250.7	3748103.0	72	2.630E-06	1.9E-04
3878	BLK603203002	379151.9	3748104.2	61	2.730E-06	1.7E-04
3879	BLK603203003	379059.4	3748105.4	16	2.800E-06	4.5E-05
3880	BLK603203006	379056.9	3747910.4	25	2.980E-06	7.5E-05
3881	BLK603203007	379155.7	3747904.1	72	2.850E-06	2.1E-04
3882	BLK603203008	379256.7	3747908.3	68	2.740E-06	1.9E-04
3883	BLK603203009	379353.4	3747912.5	84	2.650E-06	2.2E-04
3885	BLK603302001	379746.4	3750126.1	146	1.180E-06	1.7E-04
3886	BLK603302002	379637.6	3750122.0	154	1.180E-06	1.8E-04
3887	BLK603302003	379529.0	3750123.4	105	1.170E-06	1.2E-04
3888	BLK603302004	379521.6	3749929.7	153	1.250E-06	1.9E-04
3889	BLK603302005	379632.4	3749928.3	154	1.250E-06	1.9E-04
3890	BLK603302006	379741.0	3749926.9	127	1.250E-06	1.6E-04
3893	BLK603303001	379514.7	3749723.8	149	1.330E-06	2.0E-04
3894	BLK603303002	379509.3	3749519.1	129	1.430E-06	1.8E-04
3895	BLK603303003	379620.8	3749517.6	68	1.430E-06	9.7E-05

Appendix D - Cancer Burden Analysis
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
3896	BLK603303004	379735.8	3749516.2	149	1.430E-06	2.1E-04
3897	BLK603303005	379841.0	3749515.3	133	1.430E-06	1.9E-04
3898	BLK603304000	379395.8	3750025.2	367	1.200E-06	4.4E-04
3899	BLK603304001	379281.3	3750121.0	119	1.130E-06	1.3E-04
3900	BLK603304002	379125.5	3750028.7	362	1.130E-06	4.1E-04
3901	BLK603304003	379276.7	3749926.9	98	1.230E-06	1.2E-04
3902	BLK603304004	379301.6	3749726.5	8	1.330E-06	1.1E-05
3903	BLK603304005	379079.4	3749730.1	121	1.290E-06	1.6E-04
3904	BLK603304006	379116.8	3749563.0	102	1.400E-06	1.4E-04
3905	BLK603304007	379269.4	3749522.1	140	1.430E-06	2.0E-04
3906	BLK603304008	379389.4	3749520.6	157	1.430E-06	2.2E-04
3907	BLK603304009	379115.6	3749467.8	98	1.450E-06	1.4E-04
3908	BLK603305000	378961.2	3750092.1	327	1.040E-06	3.4E-04
3910	BLK603305002	378718.0	3749893.4	84	1.050E-06	8.8E-05
3911	BLK603305003	378822.7	3749968.2	103	1.050E-06	1.1E-04
3912	BLK603305004	378820.5	3750066.0	42	1.000E-06	4.2E-05
3913	BLK603305005	378852.8	3749727.1	96	1.210E-06	1.2E-04
3914	BLK603305006	378963.7	3749731.6	37	1.250E-06	4.6E-05
3915	BLK603305007	378737.1	3749728.6	98	1.160E-06	1.1E-04
3916	BLK603305008	378658.8	3749729.6	41	1.120E-06	4.6E-05
3918	BLK603303001	379697.4	3749378.3	10	1.510E-06	1.5E-05
3919	BLK603303002	379561.3	3749385.6	62	1.500E-06	9.3E-05
3920	BLK603303003	379461.8	3749386.8	46	1.500E-06	6.9E-05
3921	BLK603303004	379459.0	3749281.5	204	1.560E-06	3.2E-04
3922	BLK603303005	379560.0	3749285.7	141	1.560E-06	2.2E-04
3923	BLK603303006	379696.1	3749275.5	95	1.570E-06	1.5E-04
3924	BLK603303007	379825.2	3749276.9	98	1.580E-06	1.5E-04
3925	BLK603303008	379823.1	3749110.6	1	1.680E-06	1.7E-06
3926	BLK603303009	379731.5	3749172.7	17	1.640E-06	2.8E-05
3927	BLK603303010	379663.7	3749118.2	131	1.680E-06	2.2E-04
3928	BLK603303011	379730.2	3749072.9	52	1.710E-06	8.9E-05

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
3929	BLK603303012	379557.9	3749119.5	165	1.680E-06	2.8E-04
3930	BLK603303013	379458.4	3749120.8	122	1.670E-06	2.0E-04
3932	BLK603304001	379730.7	3748725.5	127	1.970E-06	2.5E-04
3933	BLK603304002	379744.0	3748878.5	66	1.840E-06	1.2E-04
3934	BLK603304003	379731.7	3748967.5	57	1.780E-06	1.0E-04
3935	BLK603304004	379571.1	3748880.7	126	1.860E-06	2.3E-04
3936	BLK603304005	379754.1	3748784.1	77	1.950E-06	1.5E-04
3937	BLK603304006	379467.8	3748804.6	246	2.020E-06	5.0E-04
3938	BLK603304007	379368.2	3748966.6	116	1.790E-06	2.1E-04
3939	BLK603304008	379369.3	3749216.2	138	1.600E-06	2.2E-04
3940	BLK603304009	379271.2	3749333.8	55	1.530E-06	8.4E-05
3941	BLK603304010	379269.8	3749389.3	119	1.500E-06	1.8E-04
3943	BLK603304012	379069.5	3749341.9	15	1.520E-06	2.3E-05
3944	BLK603304013	379072.9	3749220.0	115	1.590E-06	1.8E-04
3945	BLK603304014	379175.2	3749218.7	90	1.600E-06	1.4E-04
3946	BLK603304015	379271.9	3749217.5	73	1.600E-06	1.2E-04
3947	BLK603304016	379208.4	3748776.6	385	2.050E-06	7.9E-04
3948	BLK603304017	379289.2	3748917.7	71	1.820E-06	1.3E-04
3949	BLK603305000	378961.8	3749526.4	94	1.390E-06	1.3E-04
3950	BLK603305001	378850.3	3749527.9	148	1.350E-06	2.0E-04
3951	BLK603305002	378737.4	3749529.3	94	1.300E-06	1.2E-04
3952	BLK603305003	378658.3	3749524.4	36	1.260E-06	4.5E-05
3954	BLK603305007	378822.6	3749295.1	14	1.510E-06	2.1E-05
3955	BLK603305008	378819.1	3749127.2	205	1.630E-06	3.3E-04
5319	BLK603201012	379871.6	3747804.9	6	2.290E-06	1.4E-05
5322	BLK603202008	380172.2	3748085.4	1	1.980E-06	2.0E-06
5326	BLK603202016	380707.6	3747888.3	46	1.720E-06	7.9E-05
5328	BLK603203011	379265.2	3747802.8	64	2.820E-06	1.8E-04
5329	BLK603203012	379167.8	3747804.1	2	2.930E-06	5.9E-06
5336	BLK603305009	378630.6	3748848.3	65	1.950E-06	1.3E-04
5337	BLK603305010	378896.5	3748616.8	2	2.170E-06	4.3E-06

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
6679	BLK291211004	381059.8	3750536.9	131	1.030E-06	1.3E-04
6680	BLK291211005	381036.5	3750254.1	384	1.120E-06	4.3E-04
6683	BLK291211008	380884.1	3750539.1	110	1.020E-06	1.1E-04
6684	BLK291211009	380711.0	3750574.2	280	1.020E-06	2.9E-04
6685	BLK291211010	380887.8	3750439.2	85	1.060E-06	9.0E-05
6686	BLK291211011	380812.5	3750174.0	172	1.150E-06	2.0E-04
6687	BLK291211012	380718.0	3750175.2	370	1.150E-06	4.3E-04
6688	BLK291211013	380912.9	3750078.4	65	1.180E-06	7.7E-05
6689	BLK291211014	380961.2	3750210.7	67	1.130E-06	7.6E-05
6690	BLK291211015	381010.4	3750082.7	79	1.180E-06	9.3E-05
6691	BLK291212000	381125.0	3749940.8	148	1.220E-06	1.8E-04
6692	BLK291212001	381049.0	3749843.6	173	1.250E-06	2.2E-04
6693	BLK291212002	380917.7	3749778.8	275	1.280E-06	3.5E-04
6694	BLK291212003	381083.2	3749643.5	42	1.290E-06	5.4E-05
6695	BLK291212004	380821.8	3749619.3	131	1.350E-06	1.8E-04
6696	BLK291212005	380818.2	3749724.7	127	1.310E-06	1.7E-04
6697	BLK291212006	380817.9	3749874.4	250	1.260E-06	3.2E-04
6698	BLK291212007	380721.2	3749870.1	134	1.270E-06	1.7E-04
6699	BLK291212008	380723.6	3749720.3	39	1.320E-06	5.1E-05
6700	BLK291212009	380727.2	3749615.0	203	1.360E-06	2.8E-04
6704	BLK291213003	381336.3	3750583.8	150	1.010E-06	1.5E-04
6705	BLK291213004	381389.0	3750504.8	33	1.040E-06	3.4E-05
6706	BLK291213005	381389.4	3750428.7	31	1.060E-06	3.3E-05
6707	BLK291213006	381390.5	3750349.5	47	1.080E-06	5.1E-05
6708	BLK291213007	381390.2	3750263.2	43	1.110E-06	4.8E-05
6709	BLK291213008	381392.1	3750190.0	34	1.130E-06	3.8E-05
6710	BLK291213009	381395.8	3750034.7	61	1.160E-06	7.1E-05
6711	BLK291213010	381363.0	3749784.3	892	1.210E-06	1.1E-03
6713	BLK291221001	381135.1	3749449.1	286	1.310E-06	3.7E-04
6714	BLK291221002	380970.9	3749523.1	99	1.340E-06	1.3E-04
6715	BLK291221003	380822.7	3749519.4	107	1.370E-06	1.5E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
6716	BLK291221004	380725.9	3749515.1	190	1.390E-06	2.6E-04
6717	BLK291222000	381164.8	3749279.9	32	1.310E-06	4.2E-05
6718	BLK291222001	380888.3	3749241.5	146	1.400E-06	2.0E-04
6719	BLK291222002	380780.8	3749331.3	161	1.420E-06	2.3E-04
6720	BLK291222003	380724.7	3749415.3	235	1.420E-06	3.3E-04
6721	BLK291222004	380824.2	3749419.5	209	1.390E-06	2.9E-04
6722	BLK291222005	380974.5	3749417.7	193	1.350E-06	2.6E-04
6723	BLK291222006	380977.8	3749339.8	84	1.360E-06	1.1E-04
6724	BLK291222007	381049.8	3749171.8	45	1.350E-06	6.1E-05
6725	BLK291222008	381171.1	3749220.2	28	1.310E-06	3.7E-05
6726	BLK291222009	381168.2	3749161.8	42	1.310E-06	5.5E-05
6727	BLK291222010	381160.9	3749085.3	29	1.320E-06	3.8E-05
6728	BLK291222011	381054.8	3749006.3	66	1.360E-06	9.0E-05
6729	BLK291222012	380973.6	3749007.3	67	1.390E-06	9.3E-05
6730	BLK291222013	380814.6	3748876.5	414	1.460E-06	6.0E-04
6731	BLK291222014	381006.1	3748840.6	37	1.430E-06	5.3E-05
6732	BLK291222015	380915.8	3748730.9	99	1.470E-06	1.5E-04
6735	BLK291222018	381152.8	3749003.8	42	1.330E-06	5.6E-05
6736	BLK291222019	381139.8	3748920.6	39	1.340E-06	5.2E-05
6737	BLK291223000	381425.8	3749445.4	407	1.230E-06	5.0E-04
6738	BLK291223001	381312.2	3749446.9	247	1.260E-06	3.1E-04
6739	BLK291223002	381300.5	3749301.5	31	1.270E-06	3.9E-05
6740	BLK291223003	381369.2	3749032.4	90	1.270E-06	1.1E-04
6741	BLK291223004	381434.4	3749169.9	34	1.240E-06	4.2E-05
6742	BLK291223005	381433.3	3749083.2	20	1.240E-06	2.5E-05
6750	BLK291301004	381076.7	3748052.4	1	1.540E-06	1.5E-06
6752	BLK291301006	381325.0	3748213.5	4	1.440E-06	5.8E-06
6753	BLK291301007	381383.7	3747938.2	1	1.420E-06	1.4E-06
6759	BLK291301013	380635.4	3747420.4	37	1.720E-06	6.4E-05
6760	BLK291301014	380316.8	3747623.7	276	1.970E-06	5.4E-04
6761	BLK291301015	379916.2	3747654.5	178	2.290E-06	4.1E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
6762	BLK291301016	380080.4	3747465.9	58	2.140E-06	1.2E-04
6763	BLK291301017	380258.8	3747508.1	71	2.010E-06	1.4E-04
6764	BLK291301018	380467.0	3747499.9	76	1.860E-06	1.4E-04
6765	BLK291301019	380466.1	3747428.0	66	1.840E-06	1.2E-04
6766	BLK291301020	380255.8	3747430.7	57	2.000E-06	1.1E-04
6772	BLK291302000	380352.9	3747187.0	178	1.850E-06	3.3E-04
6773	BLK291302001	380598.0	3747140.0	6	1.660E-06	1.0E-05
6774	BLK291302002	380475.3	3747261.2	75	1.790E-06	1.3E-04
6775	BLK291302003	380481.3	3747344.5	86	1.810E-06	1.6E-04
6776	BLK291302004	380189.8	3747348.2	124	2.050E-06	2.5E-04
6777	BLK291302005	380186.6	3747264.9	132	2.060E-06	2.7E-04
6779	BLK291302007	379902.5	3747290.9	2	2.330E-06	4.7E-06
6780	BLK291302008	379572.3	3747196.9	193	2.710E-06	5.2E-04
6782	BLK291302010	379497.1	3747279.5	66	2.810E-06	1.9E-04
6783	BLK291302011	379498.8	3747351.4	57	2.810E-06	1.6E-04
6784	BLK291302012	379712.2	3747259.9	79	2.530E-06	2.0E-04
6786	BLK291303000	379728.9	3747747.4	99	2.430E-06	2.4E-04
6787	BLK291303001	379565.8	3747736.4	22	2.590E-06	5.7E-05
6788	BLK291303002	379461.3	3747734.3	24	2.690E-06	6.5E-05
6789	BLK291303003	379304.6	3747736.3	79	2.840E-06	2.2E-04
6790	BLK291303004	379100.3	3747600.2	144	3.230E-06	4.7E-04
6791	BLK291303005	379296.3	3747642.1	58	2.920E-06	1.7E-04
6792	BLK291303006	379501.6	3747634.0	58	2.700E-06	1.6E-04
6793	BLK291303007	379723.4	3747642.2	95	2.470E-06	2.3E-04
6794	BLK291303008	379720.7	3747541.5	85	2.500E-06	2.1E-04
6795	BLK291303009	379540.2	3747500.6	77	2.700E-06	2.1E-04
6796	BLK291303010	379715.9	3747442.2	89	2.510E-06	2.2E-04
6797	BLK291303011	379437.8	3747496.0	58	2.860E-06	1.7E-04
6798	BLK291303012	379294.5	3747497.8	4	3.060E-06	1.2E-05
6803	BLK292001004	380246.9	3747064.4	4	1.890E-06	7.6E-06
6804	BLK292001005	380064.3	3747140.8	4	2.130E-06	8.5E-06

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
6813	BLK292001019	379067.3	3745676.5	404	1.070E-06	4.3E-04
6859	BLK292009004	379690.5	3746549.4	4	2.150E-06	8.6E-06
6861	BLK292009006	379525.0	3745803.9	131	1.180E-06	1.5E-04
6863	BLK292009008	379068.6	3745779.3	97	1.240E-06	1.2E-04
7793	BLK292001011	379999.5	3746197.3	4	1.590E-06	6.4E-06
8733	BLK621002034	371340.2	3748095.9	63	1.030E-06	6.5E-05
8735	BLK621003000	371510.4	3748210.0	264	1.030E-06	2.7E-04
8736	BLK621003001	371549.9	3748048.7	72	1.080E-06	7.8E-05
8737	BLK621003002	371454.4	3748031.3	40	1.070E-06	4.3E-05
8744	BLK621003009	371536.7	3747960.0	48	1.110E-06	5.3E-05
8745	BLK621003010	371676.1	3747986.0	61	1.120E-06	6.8E-05
8746	BLK621003011	371725.9	3747907.5	21	1.160E-06	2.4E-05
8747	BLK621003012	371670.6	3747836.3	47	1.010E-06	4.7E-05
8748	BLK621003013	371616.0	3747925.9	3	1.140E-06	3.4E-06
8749	BLK621003014	371595.2	3747798.4	59	1.010E-06	6.0E-05
8750	BLK621003015	371523.7	3747782.9	62	1.040E-06	6.4E-05
8751	BLK621003016	371467.7	3747766.7	32	1.040E-06	3.3E-05
8929	BLK621102005	371211.9	3747432.2	93	1.010E-06	9.4E-05
8930	BLK621102006	371224.6	3747376.6	63	1.030E-06	6.5E-05
8931	BLK621102007	371244.4	3747276.5	118	1.060E-06	1.3E-04
8932	BLK621102008	371126.1	3747041.6	14	1.010E-06	1.4E-05
8933	BLK621102009	371256.2	3747159.9	49	1.080E-06	5.3E-05
8934	BLK621102010	371267.8	3747076.4	150	1.100E-06	1.7E-04
8935	BLK621102011	371286.5	3746998.8	116	1.110E-06	1.3E-04
8936	BLK621102012	371311.6	3746926.1	90	1.110E-06	1.0E-04
8937	BLK621102013	371154.3	3746878.3	81	1.060E-06	8.6E-05
8938	BLK621102014	371144.4	3746934.3	20	1.030E-06	2.1E-05
8939	BLK621102015	371205.4	3746794.7	46	1.070E-06	4.9E-05
8940	BLK621102016	371334.5	3746842.8	55	1.120E-06	6.2E-05
8941	BLK621102017	371347.5	3746759.3	112	1.120E-06	1.3E-04
8943	BLK621102019	371324.1	3746702.1	65	1.100E-06	7.2E-05

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
8957	BLK621103013	371039.6	3747218.3	39	1.010E-06	3.9E-05
9027	BLK621103000	371792.4	3747816.1	9	1.200E-06	1.1E-05
9028	BLK621103001	371645.9	3747684.8	45	1.070E-06	4.8E-05
9029	BLK621103002	371798.7	3747756.8	75	1.240E-06	9.3E-05
9030	BLK621103003	371794.9	3747684.9	109	1.310E-06	1.4E-04
9031	BLK621103004	371787.5	3747607.2	103	1.350E-06	1.4E-04
9032	BLK621103005	371636.3	3747598.2	23	1.290E-06	3.0E-05
9033	BLK621103006	371546.3	3747571.9	29	1.290E-06	3.7E-05
9034	BLK621103007	371528.8	3747638.6	22	1.030E-06	2.3E-05
9035	BLK621103008	371396.3	3747601.4	27	1.010E-06	2.7E-05
9037	BLK621103010	371388.4	3747540.6	55	1.040E-06	5.7E-05
9038	BLK621103011	371401.7	3747479.5	54	1.070E-06	5.8E-05
9039	BLK621103012	371580.9	3747521.5	49	1.320E-06	6.5E-05
9040	BLK621103013	371783.7	3747535.3	106	1.360E-06	1.4E-04
9041	BLK621103014	371784.7	3747457.8	107	1.390E-06	1.5E-04
9042	BLK621103015	371587.1	3747460.5	39	1.350E-06	5.3E-05
9043	BLK621103016	371415.1	3747423.9	54	1.090E-06	5.9E-05
9044	BLK621103017	371495.1	3747389.4	92	1.140E-06	1.0E-04
9045	BLK621104000	371788.0	3747385.5	137	1.430E-06	2.0E-04
9046	BLK621104001	371495.5	3747312.0	176	1.150E-06	2.0E-04
9047	BLK621104002	371729.1	3747308.8	41	1.450E-06	5.9E-05
9048	BLK621104003	371861.4	3747329.0	42	1.480E-06	6.2E-05
9049	BLK621104004	371868.0	3747245.2	91	1.530E-06	1.4E-04
9050	BLK621104005	371779.2	3747202.8	75	1.510E-06	1.1E-04
9051	BLK621104006	371699.8	3747234.3	36	1.330E-06	4.8E-05
9052	BLK621104007	371577.0	3747233.0	87	1.190E-06	1.0E-04
9053	BLK621104008	371430.4	3747196.1	78	1.150E-06	9.0E-05
9054	BLK621104009	371431.7	3747085.2	27	1.170E-06	3.2E-05
9055	BLK621104010	371539.6	3747078.3	97	1.210E-06	1.2E-04
9056	BLK621104011	371647.9	3747154.6	41	1.250E-06	5.1E-05
9057	BLK621104012	371663.2	3747082.1	79	1.270E-06	1.0E-04

Appendix D - Cancer Burden Analysis
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
9058	BLK621104013	371773.4	3747091.6	25	1.390E-06	3.5E-05
9059	BLK621104014	371849.6	3747083.4	3	1.570E-06	4.7E-06
9060	BLK621104015	371905.6	3747151.2	11	1.570E-06	1.7E-05
9061	BLK621104016	371939.1	3747072.5	1	1.610E-06	1.6E-06
9062	BLK621104017	371872.3	3747040.4	30	1.600E-06	4.8E-05
9063	BLK621104018	371615.1	3746971.9	171	1.250E-06	2.1E-04
9064	BLK621104019	371452.4	3746996.5	17	1.190E-06	2.0E-05
9065	BLK621104020	371548.7	3746862.8	102	1.220E-06	1.2E-04
9066	BLK621104021	371823.4	3746972.9	89	1.590E-06	1.4E-04
9067	BLK621104022	371815.0	3746924.8	89	1.440E-06	1.3E-04
9068	BLK621104023	371758.3	3746859.1	75	1.430E-06	1.1E-04
9069	BLK621104024	371576.7	3746795.1	124	1.230E-06	1.5E-04
10075	BLK620604001	373788.1	3748096.1	151	1.020E-06	1.5E-04
10076	BLK620604002	373593.3	3748098.7	137	1.020E-06	1.4E-04
10080	BLK620604006	373200.2	3748103.9	125	1.010E-06	1.3E-04
10081	BLK620604007	373399.2	3748101.3	113	1.010E-06	1.1E-04
10082	BLK620604008	373747.0	3747923.2	38	1.150E-06	4.4E-05
10083	BLK620604009	373786.7	3747990.8	114	1.100E-06	1.3E-04
10084	BLK620604010	373919.2	3748030.1	9	1.070E-06	9.6E-06
10097	BLK620603000	374297.2	3747682.8	202	1.410E-06	2.8E-04
10098	BLK620603001	374256.0	3747823.8	47	1.260E-06	5.9E-05
10099	BLK620603002	374252.8	3747740.9	52	1.340E-06	7.0E-05
10100	BLK620603003	374264.8	3747585.5	54	1.520E-06	8.2E-05
10101	BLK620603004	374282.2	3747507.4	72	1.630E-06	1.2E-04
10102	BLK620603005	374324.3	3747385.0	63	1.770E-06	1.1E-04
10103	BLK620603006	374327.0	3747268.6	93	1.940E-06	1.8E-04
10104	BLK620603007	374577.4	3747250.5	49	2.090E-06	1.0E-04
10105	BLK620603008	374636.1	3747314.9	13	1.980E-06	2.6E-05
10106	BLK620603009	374584.4	3747142.9	67	2.280E-06	1.5E-04
10107	BLK620603010	374793.8	3747123.7	181	2.430E-06	4.4E-04
10108	BLK620603011	374325.9	3747185.3	90	2.090E-06	1.9E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10109	BLK620603012	374318.5	3747102.5	81	2.230E-06	1.8E-04
10110	BLK620604000	374084.4	3747820.6	50	1.250E-06	6.3E-05
10111	BLK620604001	374083.3	3747737.6	55	1.330E-06	7.3E-05
10112	BLK620604002	374082.4	3747665.3	50	1.400E-06	7.0E-05
10113	BLK620604003	374081.3	3747587.9	52	1.470E-06	7.6E-05
10114	BLK620604004	374080.3	3747510.1	58	1.570E-06	9.1E-05
10115	BLK620604005	373993.8	3747428.3	95	1.630E-06	1.5E-04
10116	BLK620604006	373995.5	3747344.9	105	1.730E-06	1.8E-04
10117	BLK620604007	373991.7	3747267.6	107	1.820E-06	1.9E-04
10118	BLK620604008	373990.7	3747189.7	110	1.940E-06	2.1E-04
10119	BLK620604009	373982.5	3747106.9	97	2.060E-06	2.0E-04
10120	BLK620605000	374003.4	3747938.4	24	1.150E-06	2.8E-05
10121	BLK620605001	373706.6	3747803.6	40	1.240E-06	5.0E-05
10122	BLK620605002	373662.6	3747731.8	108	1.320E-06	1.4E-04
10123	BLK620605003	373661.2	3747632.0	79	1.380E-06	1.1E-04
10124	BLK620605004	373876.1	3747544.5	109	1.480E-06	1.6E-04
10125	BLK620605005	373910.6	3747590.2	59	1.440E-06	8.5E-05
10126	BLK620605006	373657.7	3747527.1	94	1.440E-06	1.4E-04
10127	BLK620605007	373656.3	3747421.8	79	1.540E-06	1.2E-04
10128	BLK620605008	373760.9	3747270.6	123	1.730E-06	2.1E-04
10129	BLK620605009	373655.0	3747322.0	153	1.650E-06	2.5E-04
10130	BLK620605010	373648.1	3747172.3	39	1.820E-06	7.1E-05
10131	BLK620606000	373523.7	3747696.8	7	1.350E-06	9.5E-06
10133	BLK620606002	373389.6	3747698.6	94	1.270E-06	1.2E-04
10134	BLK620606003	373194.6	3747682.6	92	1.220E-06	1.1E-04
10135	BLK620606004	373194.1	3747589.5	77	1.290E-06	9.9E-05
10136	BLK620606005	373318.0	3747618.4	6	1.320E-06	7.9E-06
10137	BLK620606006	373259.2	3747496.9	46	1.380E-06	6.3E-05
10138	BLK620606007	373457.7	3747616.5	68	1.390E-06	9.5E-05
10139	BLK620606008	373456.5	3747523.9	91	1.430E-06	1.3E-04
10140	BLK620606009	373471.5	3747274.5	392	1.650E-06	6.5E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10141	BLK620606010	373263.3	3747276.8	375	1.580E-06	5.9E-04
10142	BLK620606011	373131.5	3747290.0	68	1.450E-06	9.9E-05
10143	BLK620606012	373146.7	3747528.0	9	1.310E-06	1.2E-05
10144	BLK620607000	373591.9	3747993.4	112	1.090E-06	1.2E-04
10145	BLK620607001	373397.8	3747995.9	115	1.090E-06	1.3E-04
10146	BLK620607002	373198.8	3747998.6	156	1.060E-06	1.7E-04
10147	BLK620607003	373197.4	3747893.3	139	1.110E-06	1.5E-04
10148	BLK620607004	373396.4	3747890.6	165	1.150E-06	1.9E-04
10149	BLK620607005	373590.5	3747888.0	115	1.170E-06	1.3E-04
10150	BLK620607006	373579.7	3747816.3	66	1.240E-06	8.2E-05
10151	BLK620607007	373395.0	3747785.3	139	1.210E-06	1.7E-04
10152	BLK620607008	373196.1	3747793.4	127	1.150E-06	1.5E-04
10180	BLK620703013	373006.2	3748106.5	135	1.020E-06	1.4E-04
10207	BLK620705013	371732.3	3748123.6	108	1.060E-06	1.1E-04
10211	BLK620703000	373004.7	3748001.2	106	1.040E-06	1.1E-04
10212	BLK620703001	372810.7	3748003.8	126	1.010E-06	1.3E-04
10216	BLK620703005	372614.5	3747906.6	122	1.030E-06	1.3E-04
10217	BLK620703006	372809.3	3747904.0	125	1.040E-06	1.3E-04
10218	BLK620703007	373003.4	3747901.4	110	1.070E-06	1.2E-04
10219	BLK620703008	373002.0	3747796.0	127	1.130E-06	1.4E-04
10220	BLK620703009	372807.9	3747798.6	144	1.090E-06	1.6E-04
10221	BLK620703010	372613.1	3747801.2	87	1.060E-06	9.2E-05
10222	BLK620703011	372419.1	3747803.8	113	1.070E-06	1.2E-04
10223	BLK620703012	372417.7	3747704.0	119	1.120E-06	1.3E-04
10224	BLK620703013	372611.8	3747701.4	94	1.120E-06	1.1E-04
10225	BLK620703014	372806.5	3747693.3	136	1.150E-06	1.6E-04
10226	BLK620703015	373000.6	3747690.7	98	1.180E-06	1.2E-04
10227	BLK620704000	372999.3	3747590.9	77	1.190E-06	9.2E-05
10228	BLK620704001	372805.2	3747593.5	126	1.220E-06	1.5E-04
10229	BLK620704002	372610.4	3747596.1	110	1.200E-06	1.3E-04
10230	BLK620704003	372609.0	3747490.8	119	1.270E-06	1.5E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10231	BLK620704004	372803.8	3747488.1	120	1.320E-06	1.6E-04
10232	BLK620704005	372997.9	3747486.4	55	1.260E-06	6.9E-05
10233	BLK620704006	373001.1	3747359.9	39	1.450E-06	5.7E-05
10234	BLK620704007	372946.0	3747405.9	14	1.410E-06	2.0E-05
10235	BLK620704008	372802.4	3747382.8	122	1.410E-06	1.7E-04
10236	BLK620704009	372607.6	3747385.4	129	1.360E-06	1.8E-04
10237	BLK620704010	372606.1	3747280.1	95	1.450E-06	1.4E-04
10238	BLK620704011	372766.2	3747316.9	29	1.450E-06	4.2E-05
10239	BLK620704012	372844.6	3747216.0	59	1.520E-06	9.0E-05
10240	BLK620704013	372952.1	3747281.0	36	1.500E-06	5.4E-05
10241	BLK620704014	372988.3	3747139.2	49	1.620E-06	7.9E-05
10242	BLK620704015	372748.9	3747183.8	50	1.530E-06	7.7E-05
10243	BLK620704016	372611.2	3747132.4	46	1.620E-06	7.5E-05
10244	BLK620704017	372589.8	3747217.7	41	1.600E-06	6.6E-05
10246	BLK620705000	372416.3	3747598.7	116	1.180E-06	1.4E-04
10247	BLK620705001	372226.6	3747612.7	77	1.240E-06	9.5E-05
10249	BLK620705003	372221.5	3747545.9	115	1.260E-06	1.4E-04
10250	BLK620705004	372414.9	3747493.4	112	1.260E-06	1.4E-04
10251	BLK620705005	372220.4	3747468.5	122	1.490E-06	1.8E-04
10252	BLK620705006	372219.5	3747396.1	105	1.540E-06	1.6E-04
10253	BLK620705007	372413.5	3747391.8	12	1.340E-06	1.6E-05
10254	BLK620705008	372216.4	3747324.3	92	1.580E-06	1.5E-04
10255	BLK620705009	372212.5	3747246.9	95	1.420E-06	1.3E-04
10256	BLK620705010	372410.7	3747182.9	186	1.720E-06	3.2E-04
10257	BLK620705011	372214.4	3747174.5	76	1.410E-06	1.1E-04
10258	BLK620705012	372213.4	3747102.6	115	1.690E-06	1.9E-04
10259	BLK620705013	372409.5	3747089.0	42	1.790E-06	7.5E-05
10260	BLK620705014	372408.3	3747053.5	35	1.800E-06	6.3E-05
10261	BLK620705015	372194.9	3746986.5	46	1.730E-06	8.0E-05
10262	BLK620705016	372209.9	3747054.8	68	1.710E-06	1.2E-04
10263	BLK620706000	372011.7	3747539.8	71	1.130E-06	8.0E-05

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10264	BLK620706001	371925.2	3747614.6	16	1.350E-06	2.2E-05
10265	BLK620706002	371897.4	3747700.0	6	1.320E-06	7.9E-06
10267	BLK620706004	372015.0	3747471.2	120	1.160E-06	1.4E-04
10268	BLK620706005	372021.2	3747404.7	104	1.210E-06	1.3E-04
10270	BLK620706007	372019.5	3747326.9	114	1.510E-06	1.7E-04
10271	BLK620706008	372018.4	3747249.9	95	1.320E-06	1.3E-04
10272	BLK620706009	372027.2	3747171.5	94	1.320E-06	1.2E-04
10273	BLK620706010	372029.9	3747105.1	96	1.380E-06	1.3E-04
10274	BLK620706011	372032.5	3747039.5	77	1.650E-06	1.3E-04
10275	BLK620706012	372044.5	3746932.7	79	1.690E-06	1.3E-04
10280	BLK620707004	371860.4	3747883.7	18	1.040E-06	1.9E-05
10281	BLK620707005	371907.2	3747794.2	58	1.240E-06	7.2E-05
10282	BLK620707006	371973.3	3747832.3	60	1.230E-06	7.4E-05
10283	BLK620707007	372037.4	3747870.3	44	1.070E-06	4.7E-05
10284	BLK620707008	372102.1	3747908.0	61	1.020E-06	6.2E-05
10286	BLK620707010	372255.6	3747824.7	78	1.010E-06	7.9E-05
10287	BLK620707011	372185.4	3747751.6	65	1.040E-06	6.8E-05
10288	BLK620707012	372278.3	3747733.8	35	1.090E-06	3.8E-05
10289	BLK620707013	372122.0	3747708.0	73	1.080E-06	7.9E-05
10290	BLK620707014	372052.5	3747681.4	52	1.170E-06	6.1E-05
10291	BLK620707015	371990.5	3747643.3	99	1.330E-06	1.3E-04
10294	BLK621202002	371934.9	3746764.5	129	1.700E-06	2.2E-04
10295	BLK621202003	371688.1	3746782.2	89	1.290E-06	1.1E-04
10296	BLK621202004	371889.4	3746630.2	145	1.350E-06	2.0E-04
10297	BLK621202005	371812.9	3746558.8	200	1.320E-06	2.6E-04
10299	BLK621202007	372254.4	3746375.6	171	1.510E-06	2.6E-04
10300	BLK621202008	372240.4	3746226.0	123	1.450E-06	1.8E-04
10301	BLK621202009	372340.2	3746451.9	195	1.620E-06	3.2E-04
10303	BLK621202011	372453.7	3746758.0	258	1.590E-06	4.1E-04
10304	BLK621202012	372437.4	3746855.5	261	1.590E-06	4.1E-04
10305	BLK621202013	372212.0	3746787.0	350	1.490E-06	5.2E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10306	BLK621202014	372271.6	3746707.9	262	1.520E-06	4.0E-04
10307	BLK621203000	372591.2	3746322.9	82	1.650E-06	1.4E-04
10308	BLK621203001	372542.3	3746150.1	139	1.700E-06	2.4E-04
10309	BLK621203002	372433.7	3746107.1	114	1.540E-06	1.8E-04
10310	BLK621203003	372328.8	3746075.1	68	1.490E-06	1.0E-04
10311	BLK621203004	372232.0	3746021.0	20	1.400E-06	2.8E-05
10313	BLK621203006	372673.1	3745793.4	55	1.370E-06	7.5E-05
10314	BLK621203007	372568.0	3745646.7	101	1.230E-06	1.2E-04
10315	BLK621203008	372454.6	3745557.7	192	1.100E-06	2.1E-04
10316	BLK621203009	372343.4	3745531.7	251	1.060E-06	2.7E-04
10317	BLK621203010	372227.3	3745510.8	142	1.030E-06	1.5E-04
10319	BLK621203012	372044.4	3745509.0	65	1.010E-06	6.6E-05
10320	BLK621203013	372008.7	3745586.9	16	1.070E-06	1.7E-05
10321	BLK621203014	371962.1	3745692.1	38	1.140E-06	4.3E-05
10329	BLK621203022	372518.7	3745392.2	75	1.000E-06	7.5E-05
10330	BLK621203023	372736.3	3745404.1	72	1.080E-06	7.8E-05
10331	BLK621203024	372704.2	3745587.8	34	1.270E-06	4.3E-05
10332	BLK621207000	372146.8	3746144.0	113	1.440E-06	1.6E-04
10333	BLK621207001	372005.5	3746290.1	108	1.410E-06	1.5E-04
10334	BLK621207002	371840.0	3746425.6	108	1.320E-06	1.4E-04
10335	BLK621207003	371611.7	3746561.6	132	1.190E-06	1.6E-04
10336	BLK621207004	371613.7	3746446.9	99	1.140E-06	1.1E-04
10337	BLK621207005	371768.3	3746343.3	147	1.230E-06	1.8E-04
10338	BLK621207006	371673.4	3746266.7	165	1.160E-06	1.9E-04
10339	BLK621207007	371576.9	3746388.1	3	1.130E-06	3.4E-06
10340	BLK621207008	371631.9	3746173.3	40	1.140E-06	4.6E-05
10341	BLK621207009	371717.4	3746027.9	156	1.170E-06	1.8E-04
10342	BLK621207010	371834.3	3746109.2	225	1.280E-06	2.9E-04
10343	BLK621207011	371912.0	3746213.5	145	1.340E-06	1.9E-04
10344	BLK621207012	372062.4	3746062.2	155	1.390E-06	2.2E-04
10345	BLK621207013	372028.3	3745938.7	129	1.330E-06	1.7E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10346	BLK621207014	371904.2	3745953.0	95	1.280E-06	1.2E-04
10347	BLK621207015	371831.0	3745865.6	64	1.170E-06	7.5E-05
10348	BLK621207016	371767.2	3745794.1	136	1.120E-06	1.5E-04
10349	BLK621207017	371696.1	3745913.5	11	1.140E-06	1.3E-05
10350	BLK621207018	371752.3	3745683.5	55	1.060E-06	5.8E-05
10351	BLK621206000	371587.0	3745989.0	6	1.110E-06	6.7E-06
10353	BLK621206002	371471.4	3745792.6	233	1.050E-06	2.4E-04
10368	BLK621207000	371367.3	3746653.7	145	1.120E-06	1.6E-04
10370	BLK621207002	371479.4	3746278.6	14	1.130E-06	1.6E-05
10371	BLK621207003	371454.2	3746142.3	135	1.120E-06	1.5E-04
10372	BLK621207004	371317.2	3746295.6	1	1.030E-06	1.0E-06
10374	BLK621207006	371399.2	3746043.2	192	1.040E-06	2.0E-04
10375	BLK621207007	371369.2	3745906.9	65	1.010E-06	6.6E-05
10378	BLK621302001	372674.0	3745227.7	141	1.030E-06	1.5E-04
10550	BLK650002007	378524.8	3749737.2	206	1.060E-06	2.2E-04
10551	BLK650002008	378520.2	3749491.0	116	1.210E-06	1.4E-04
10552	BLK650002009	378539.0	3749575.8	32	1.160E-06	3.7E-05
10553	BLK650002010	378364.9	3749539.6	67	1.100E-06	7.4E-05
10554	BLK650002011	378274.5	3749535.2	61	1.070E-06	6.5E-05
10555	BLK650003000	378561.9	3749381.8	19	1.320E-06	2.5E-05
10556	BLK650003001	378358.8	3749395.4	213	1.190E-06	2.5E-04
10557	BLK650003002	378265.2	3749302.2	34	1.210E-06	4.1E-05
10558	BLK650003003	378345.5	3749295.7	31	1.260E-06	3.9E-05
10559	BLK650003004	378348.0	3749215.7	90	1.320E-06	1.2E-04
10560	BLK650003005	378547.1	3749215.3	34	1.450E-06	4.9E-05
10561	BLK650003006	378361.8	3749136.4	174	1.400E-06	2.4E-04
10562	BLK650003007	378336.8	3749001.8	65	1.510E-06	9.8E-05
10563	BLK650003008	378257.2	3749014.2	60	1.440E-06	8.6E-05
10564	BLK650003009	378258.1	3748753.2	91	1.890E-06	1.7E-04
10565	BLK650003010	378177.8	3748815.6	49	1.740E-06	8.5E-05
10566	BLK650003011	378017.6	3748710.2	239	1.740E-06	4.2E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10567	BLK650003012	377769.8	3748759.5	91	1.470E-06	1.3E-04
10568	BLK650003013	377670.3	3748760.7	86	1.390E-06	1.2E-04
10569	BLK650003014	377568.7	3748762.0	92	1.320E-06	1.2E-04
10570	BLK650003015	377469.2	3748763.3	80	1.210E-06	9.7E-05
10571	BLK650003016	378338.6	3748752.2	82	1.950E-06	1.6E-04
10572	BLK650003017	378503.0	3748750.1	508	2.030E-06	1.0E-03
10573	BLK650003018	378509.6	3748933.2	35	1.690E-06	5.9E-05
10574	BLK650003019	378508.7	3749033.0	38	1.590E-06	6.0E-05
10575	BLK650004000	378103.8	3749104.6	98	1.260E-06	1.2E-04
10576	BLK650004001	378017.1	3748997.0	25	1.290E-06	3.2E-05
10577	BLK650004002	377932.6	3748957.1	87	1.270E-06	1.1E-04
10578	BLK650004003	377857.6	3749113.3	46	1.110E-06	5.1E-05
10579	BLK650004004	377770.1	3749114.4	56	1.060E-06	5.9E-05
10584	BLK650004009	377569.3	3748973.2	38	1.010E-06	3.8E-05
10585	BLK650004010	377670.9	3748971.8	38	1.090E-06	4.1E-05
10586	BLK650004011	377768.3	3748970.6	50	1.150E-06	5.8E-05
10587	BLK650004012	378093.3	3748944.0	46	1.390E-06	6.4E-05
10588	BLK650004013	378177.4	3748948.4	37	1.440E-06	5.3E-05
10593	BLK650005004	378110.3	3749498.4	38	1.020E-06	3.9E-05
10594	BLK650005005	378188.6	3749497.4	28	1.050E-06	2.9E-05
10595	BLK650005006	377980.2	3749316.9	161	1.060E-06	1.7E-04
10598	BLK650005009	377880.9	3749220.0	280	1.060E-06	3.0E-04
10628	BLK650005000	377365.4	3748759.2	87	1.090E-06	9.5E-05
10659	BLK650102000	378911.9	3748551.5	2	2.250E-06	4.5E-06
10660	BLK650102001	378606.0	3748305.4	679	2.660E-06	1.8E-03
10661	BLK650102002	378397.2	3748258.1	121	2.730E-06	3.3E-04
10662	BLK650102003	378321.0	3748092.8	75	3.050E-06	2.3E-04
10663	BLK650102004	378519.0	3748178.7	39	2.910E-06	1.1E-04
10664	BLK650102005	378517.9	3748095.8	47	3.080E-06	1.4E-04
10665	BLK650102006	378527.5	3748017.8	66	3.230E-06	2.1E-04
10666	BLK650102007	378432.2	3747908.2	228	3.490E-06	8.0E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10667	BLK650102008	378781.2	3747876.2	82	3.310E-06	2.7E-04
10668	BLK650102009	378827.7	3748091.8	141	2.990E-06	4.2E-04
10669	BLK650102010	378957.1	3748106.7	31	2.890E-06	9.0E-05
10670	BLK650102011	378953.8	3747907.0	54	3.100E-06	1.7E-04
10671	BLK650102012	378825.7	3747931.1	44	3.210E-06	1.4E-04
10672	BLK650103000	378919.1	3747674.8	60	3.370E-06	2.0E-04
10673	BLK650103001	378793.3	3747609.6	137	3.620E-06	5.0E-04
10674	BLK650103002	378702.5	3747677.6	137	3.650E-06	5.0E-04
10675	BLK650103003	378511.0	3747613.2	231	4.000E-06	9.2E-04
10676	BLK650103004	378498.2	3747709.8	41	3.860E-06	1.6E-04
10677	BLK650103005	378541.9	3747766.8	11	3.700E-06	4.1E-05
10678	BLK650103006	378551.9	3747496.3	43	4.150E-06	1.8E-04
10679	BLK650103007	378475.7	3747497.3	59	4.260E-06	2.5E-04
10680	BLK650103008	378437.1	3747409.3	105	4.660E-06	4.9E-04
10681	BLK650103009	378632.3	3747489.8	52	4.060E-06	2.1E-04
10682	BLK650103010	378711.7	3747350.0	42	4.180E-06	1.8E-04
10683	BLK650103011	378790.7	3747343.5	30	4.050E-06	1.2E-04
10684	BLK650103012	378916.6	3747475.1	40	3.640E-06	1.5E-04
10685	BLK650104000	378001.0	3748024.6	112	3.090E-06	3.5E-04
10686	BLK650104001	377716.8	3748039.7	62	2.710E-06	1.7E-04
10687	BLK650104002	377570.6	3748030.1	50	2.470E-06	1.2E-04
10688	BLK650104003	377601.3	3747894.8	254	3.000E-06	7.6E-04
10689	BLK650104004	377547.0	3747953.0	26	2.690E-06	7.0E-05
10690	BLK650104005	377715.6	3747945.3	53	2.990E-06	1.6E-04
10691	BLK650104006	378002.1	3747941.6	130	3.310E-06	4.3E-04
10692	BLK650104007	378001.0	3747858.3	162	3.540E-06	5.7E-04
10693	BLK650104008	378086.5	3747696.4	313	4.210E-06	1.3E-03
10694	BLK650104009	378280.1	3747765.9	127	3.890E-06	4.9E-04
10695	BLK650104010	378278.9	3747677.5	40	4.110E-06	1.6E-04
10696	BLK650104011	378236.9	3747533.8	66	4.720E-06	3.1E-04
10697	BLK650104012	378318.7	3747527.2	73	4.540E-06	3.3E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10698	BLK650104013	378155.2	3747492.9	33	4.980E-06	1.6E-04
10699	BLK650104014	377759.7	3747698.5	162	3.940E-06	6.4E-04
10700	BLK650104015	377461.2	3747760.8	67	3.210E-06	2.2E-04
10702	BLK650105000	378159.2	3748526.0	36	2.130E-06	7.7E-05
10703	BLK650105001	377956.4	3748559.9	94	1.890E-06	1.8E-04
10704	BLK650105002	377665.9	3748583.5	105	1.590E-06	1.7E-04
10705	BLK650105003	377807.2	3748431.9	208	1.950E-06	4.1E-04
10706	BLK650105004	377659.9	3748500.3	93	1.680E-06	1.6E-04
10707	BLK650105005	377655.7	3748284.1	98	2.020E-06	2.0E-04
10708	BLK650105006	378000.4	3748252.2	125	2.550E-06	3.2E-04
10709	BLK650105007	378003.0	3748179.8	125	2.710E-06	3.4E-04
10710	BLK650105008	377656.0	3748201.2	103	2.190E-06	2.3E-04
10711	BLK650105009	377653.6	3748123.4	106	2.390E-06	2.5E-04
10712	BLK650105010	377998.5	3748102.5	122	2.880E-06	3.5E-04
10722	BLK650104002	377266.6	3748267.1	81	1.450E-06	1.2E-04
10723	BLK650104003	377216.8	3748184.4	159	1.460E-06	2.3E-04
10724	BLK650104004	377220.0	3748107.0	152	1.580E-06	2.4E-04
10727	BLK650105000	377300.9	3748028.1	60	1.940E-06	1.2E-04
10728	BLK650105001	377263.3	3747962.2	107	1.980E-06	2.1E-04
10729	BLK650105002	377166.7	3747911.8	137	1.770E-06	2.4E-04
10731	BLK650105004	376995.2	3748021.0	63	1.210E-06	7.6E-05
10732	BLK650105005	376923.2	3748022.0	62	1.100E-06	6.8E-05
10733	BLK650201000	378557.2	3747137.5	188	4.970E-06	9.3E-04
10734	BLK650201001	378310.9	3747138.9	97	5.890E-06	5.7E-04
10737	BLK650202000	377240.2	3747480.2	100	3.470E-06	3.5E-04
10738	BLK650202001	377239.0	3747385.8	105	4.070E-06	4.3E-04
10739	BLK650202002	377237.8	3747297.0	109	4.850E-06	5.3E-04
10740	BLK650202003	377216.3	3747219.9	79	5.600E-06	4.4E-04
10741	BLK650202004	377195.5	3747136.8	75	6.940E-06	5.2E-04
10742	BLK650202005	377182.6	3747070.5	60	8.900E-06	5.3E-04
10744	BLK650203001	377271.9	3747586.8	97	3.150E-06	3.1E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10745	BLK650203002	377110.2	3747637.1	74	2.220E-06	1.6E-04
10746	BLK650203003	377034.0	3747638.1	69	1.960E-06	1.4E-04
10747	BLK650203004	376947.7	3747788.5	68	1.450E-06	9.9E-05
10748	BLK650203005	376878.7	3747640.1	59	1.600E-06	9.4E-05
10749	BLK650203006	376954.9	3747639.1	67	1.750E-06	1.2E-04
10750	BLK650204000	376962.7	3747477.8	95	2.170E-06	2.1E-04
10751	BLK650204001	376961.6	3747389.4	80	2.470E-06	2.0E-04
10752	BLK650204002	376960.7	3747317.1	80	2.760E-06	2.2E-04
10753	BLK650204003	376959.6	3747234.2	88	3.200E-06	2.8E-04
10754	BLK650204004	376798.3	3747152.9	47	3.430E-06	1.6E-04
10755	BLK650204005	376960.0	3747156.3	91	3.690E-06	3.4E-04
10756	BLK650204006	376961.7	3747073.4	139	4.430E-06	6.2E-04
10757	BLK650205000	376717.4	3747176.4	114	3.120E-06	3.6E-04
10758	BLK650205001	376634.8	3747177.5	110	3.020E-06	3.3E-04
10759	BLK650205002	376553.7	3747178.5	99	2.880E-06	2.9E-04
10760	BLK650205003	376468.3	3747179.6	109	2.700E-06	2.9E-04
10761	BLK650205004	376327.2	3747187.0	188	2.580E-06	4.9E-04
10762	BLK650205005	376188.1	3747188.8	131	2.320E-06	3.0E-04
10763	BLK650205006	376102.7	3747189.9	99	2.130E-06	2.1E-04
10764	BLK650205007	376024.4	3747190.9	108	2.080E-06	2.2E-04
10765	BLK650205008	375881.8	3747298.1	77	1.730E-06	1.3E-04
10766	BLK650205009	375879.4	3747115.0	105	2.400E-06	2.5E-04
10767	BLK650205010	375885.3	3747187.2	38	2.100E-06	8.0E-05
10768	BLK650206000	376716.9	3747466.6	127	1.780E-06	2.3E-04
10769	BLK650206001	376645.3	3747654.1	153	1.230E-06	1.9E-04
10772	BLK650206004	375911.6	3747635.8	92	1.040E-06	9.6E-05
10773	BLK650206005	375959.4	3747563.2	123	1.140E-06	1.4E-04
10774	BLK650206006	375961.2	3747485.3	55	1.270E-06	7.0E-05
10775	BLK650206007	376001.7	3747396.4	119	1.430E-06	1.7E-04
10776	BLK650207000	376917.7	3747869.7	4	1.280E-06	5.1E-06
10777	BLK650207001	376741.5	3747891.1	53	1.010E-06	5.4E-05

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10815	BLK650304002	375424.1	3747653.1	413	1.170E-06	4.8E-04
10816	BLK650304003	375324.6	3747654.4	217	1.220E-06	2.6E-04
10817	BLK650304004	375225.1	3747655.7	261	1.280E-06	3.3E-04
10818	BLK650304005	375121.3	3747657.1	281	1.320E-06	3.7E-04
10819	BLK650304006	375016.8	3747653.0	72	1.370E-06	9.9E-05
10820	BLK650304007	375577.5	3747729.0	74	1.020E-06	7.5E-05
10822	BLK650305000	375369.6	3747376.7	65	1.730E-06	1.1E-04
10823	BLK650305001	375524.7	3747574.4	31	1.250E-06	3.9E-05
10824	BLK650305002	374927.2	3747654.2	5	1.390E-06	7.0E-06
10825	BLK650305003	374843.9	3747655.3	177	1.400E-06	2.5E-04
10826	BLK650305004	374744.4	3747656.6	275	1.400E-06	3.9E-04
10827	BLK650305005	374637.7	3747647.0	259	1.420E-06	3.7E-04
10828	BLK650305006	374785.4	3747395.4	457	1.860E-06	8.5E-04
10901	BLK650502000	374675.4	3746925.6	101	2.850E-06	2.9E-04
10902	BLK650502001	374585.7	3747026.6	39	2.510E-06	9.8E-05
10903	BLK650502002	374312.6	3747030.2	64	2.370E-06	1.5E-04
10904	BLK650502003	374323.4	3746891.3	144	2.640E-06	3.8E-04
10905	BLK650502004	374287.0	3746803.3	79	2.730E-06	2.2E-04
10906	BLK650502005	374363.8	3746741.4	106	2.890E-06	3.1E-04
10907	BLK650502006	374678.6	3746792.7	99	3.180E-06	3.1E-04
10908	BLK650503000	374694.5	3746714.6	83	3.340E-06	2.8E-04
10909	BLK650503001	374381.6	3746643.0	232	3.000E-06	7.0E-04
10910	BLK650503002	374280.7	3746544.1	85	2.920E-06	2.5E-04
10911	BLK650503003	374352.7	3746436.5	75	3.000E-06	2.3E-04
10912	BLK650503004	374658.4	3746438.0	124	3.480E-06	4.3E-04
10913	BLK650503005	374694.4	3746492.9	81	3.570E-06	2.9E-04
10914	BLK650503006	374713.0	3746564.6	71	3.540E-06	2.5E-04
10915	BLK650503007	374689.9	3746627.9	148	3.440E-06	5.1E-04
10916	BLK650504000	374657.0	3746327.2	105	3.320E-06	3.5E-04
10917	BLK650504001	374599.7	3746161.2	92	2.840E-06	2.6E-04
10918	BLK650504002	374680.2	3746160.2	92	2.940E-06	2.7E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10919	BLK650504003	374776.5	3746131.4	127	2.980E-06	3.8E-04
10920	BLK650504004	374516.3	3746156.8	79	2.760E-06	2.2E-04
10921	BLK650504005	374435.2	3746157.9	78	2.690E-06	2.1E-04
10922	BLK650505000	374254.1	3746349.0	272	2.760E-06	7.5E-04
10923	BLK650505001	374182.4	3746421.8	40	2.750E-06	1.1E-04
10924	BLK650505002	374142.6	3746241.3	85	2.580E-06	2.2E-04
10925	BLK650505003	374273.4	3746154.5	134	2.540E-06	3.4E-04
10926	BLK650505004	374353.9	3746153.5	89	2.600E-06	2.3E-04
10927	BLK650505005	374257.3	3745999.5	53	2.200E-06	1.2E-04
10928	BLK650506000	373959.7	3746935.0	69	2.280E-06	1.6E-04
10929	BLK650506001	373931.2	3746808.1	79	2.390E-06	1.9E-04
10930	BLK650506002	374051.9	3746751.0	81	2.550E-06	2.1E-04
10931	BLK650506003	374106.1	3746683.5	81	2.650E-06	2.1E-04
10932	BLK650506004	373956.3	3746619.0	74	2.500E-06	1.9E-04
10933	BLK650508000	373567.1	3746923.7	329	2.050E-06	6.7E-04
10934	BLK650508001	373524.1	3746819.0	111	2.080E-06	2.3E-04
10935	BLK650508002	373702.2	3746677.8	60	2.260E-06	1.4E-04
10936	BLK650508003	373845.2	3746598.5	146	2.400E-06	3.5E-04
10937	BLK650508004	373735.5	3746525.9	234	2.320E-06	5.4E-04
10938	BLK650508005	373595.7	3746527.8	140	2.210E-06	3.1E-04
10939	BLK650508006	373481.6	3746597.8	116	2.120E-06	2.5E-04
10940	BLK650508007	373760.9	3746366.5	220	2.310E-06	5.1E-04
10941	BLK650509000	373890.4	3746074.6	103	2.140E-06	2.2E-04
10942	BLK650509001	373769.3	3746200.1	54	2.220E-06	1.2E-04
10943	BLK650509002	373691.1	3746162.2	72	2.130E-06	1.5E-04
10944	BLK650509003	373614.2	3746163.3	71	2.090E-06	1.5E-04
10945	BLK650509004	373535.3	3746181.2	74	2.060E-06	1.5E-04
10946	BLK650509005	373773.7	3746000.4	85	1.960E-06	1.7E-04
10947	BLK650510000	373118.5	3746953.8	628	1.830E-06	1.1E-03
10948	BLK650510001	372870.4	3747034.6	45	1.640E-06	7.4E-05
10949	BLK650510003	373117.5	3746774.5	120	1.830E-06	2.2E-04

Appendix D - Cancer Burden Analysis
ExxonMobil Torrance Refinery
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10950	BLK650510004	373204.5	3746465.7	279	1.780E-06	5.0E-04
10951	BLK650510005	373386.7	3746632.1	101	2.050E-06	2.1E-04
10952	BLK650510006	373258.5	3746284.3	145	1.960E-06	2.8E-04
10953	BLK650510007	372927.5	3746233.3	153	1.730E-06	2.6E-04
10954	BLK650510008	372763.9	3746407.7	121	1.680E-06	2.0E-04
10955	BLK650510009	372643.1	3746506.2	112	1.650E-06	1.8E-04
10956	BLK650510010	372607.8	3746663.2	21	1.670E-06	3.5E-05
10957	BLK650510011	372698.2	3746353.2	94	1.650E-06	1.6E-04
10958	BLK650510012	372740.9	3746062.4	66	1.580E-06	1.0E-04
10959	BLK650510013	372814.2	3746102.0	52	1.620E-06	8.4E-05
10960	BLK650510014	373260.1	3746190.4	169	1.900E-06	3.2E-04
10961	BLK650510015	373310.2	3746078.9	121	1.840E-06	2.2E-04
10962	BLK650510016	373268.5	3746021.9	85	1.750E-06	1.5E-04
10963	BLK650602000	375482.5	3745756.2	557	1.910E-06	1.1E-03
10964	BLK650602001	375211.0	3745881.6	251	2.500E-06	6.3E-04
10965	BLK650602002	375042.2	3745883.8	166	2.470E-06	4.1E-04
10966	BLK650602003	375077.3	3745761.5	173	2.130E-06	3.7E-04
10967	BLK650602004	375207.2	3745648.9	75	1.580E-06	1.2E-04
10968	BLK650602005	375368.5	3745674.3	32	1.700E-06	5.4E-05
10969	BLK650602006	375365.0	3745463.7	58	1.180E-06	6.8E-05
10970	BLK650602007	375284.6	3745464.7	52	1.220E-06	6.3E-05
10971	BLK650602008	375036.7	3745462.5	1099	1.450E-06	1.6E-03
10972	BLK650602009	375036.9	3745262.4	1176	1.060E-06	1.2E-03
10981	BLK650602018	375446.1	3745457.1	56	1.150E-06	6.4E-05
10982	BLK650602019	375529.4	3745456.0	55	1.110E-06	6.1E-05
10983	BLK650602020	375614.9	3745460.4	50	1.080E-06	5.4E-05
10984	BLK650603000	374629.8	3745767.4	94	2.050E-06	1.9E-04
10985	BLK650603001	374496.4	3745878.7	56	2.120E-06	1.2E-04
10986	BLK650603002	374231.7	3745772.6	820	1.810E-06	1.5E-03
10987	BLK650603003	374228.5	3745373.3	1459	1.380E-06	2.0E-03
10988	BLK650603004	374629.1	3745235.1	380	1.240E-06	4.7E-04

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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
10989	BLK650603005	374745.7	3745398.6	46	1.480E-06	6.8E-05
10994	BLK650603010	374227.3	3745069.5	469	1.090E-06	5.1E-04
10996	BLK650603012	373977.3	3745276.8	423	1.250E-06	5.3E-04
11003	BLK650604000	373870.2	3745932.7	277	1.890E-06	5.2E-04
11004	BLK650604001	373704.6	3745851.5	59	1.700E-06	1.0E-04
11006	BLK650604003	373134.4	3745816.8	107	1.400E-06	1.5E-04
11007	BLK650604004	373177.7	3745886.5	30	1.500E-06	4.5E-05
11008	BLK650604005	372957.6	3745739.6	76	1.360E-06	1.0E-04
11009	BLK650604006	372893.6	3745862.3	76	1.480E-06	1.1E-04
11010	BLK650604007	372860.7	3745942.3	76	1.540E-06	1.2E-04
11011	BLK650604008	372847.9	3745774.5	57	1.430E-06	8.2E-05
11012	BLK650604009	372925.9	3745590.3	142	1.210E-06	1.7E-04
11013	BLK650604010	373108.9	3745441.9	86	1.120E-06	9.6E-05
11014	BLK650604011	373248.5	3745480.6	33	1.110E-06	3.7E-05
11015	BLK650604012	373318.4	3745479.7	68	1.140E-06	7.8E-05
11016	BLK650604013	373401.7	3745478.6	64	1.230E-06	7.9E-05
11017	BLK650604014	373480.1	3745477.6	82	1.260E-06	1.0E-04
11018	BLK650604015	373570.4	3745476.4	68	1.280E-06	8.7E-05
11019	BLK650604016	373825.4	3745378.6	243	1.300E-06	3.2E-04
11020	BLK650604017	373870.5	3745740.6	466	1.600E-06	7.5E-04
11021	BLK650604018	373870.5	3745849.7	115	1.750E-06	2.0E-04
11022	BLK650604019	373746.4	3745701.2	76	1.520E-06	1.2E-04
11023	BLK650604020	373748.1	3745618.3	68	1.440E-06	9.8E-05
11024	BLK650604021	372882.7	3745419.1	46	1.100E-06	5.1E-05
11025	BLK650604022	372820.5	3745469.8	61	1.140E-06	7.0E-05
11026	BLK650604023	372797.3	3745528.5	35	1.170E-06	4.1E-05
11027	BLK650605000	373751.0	3745141.4	86	1.140E-06	9.8E-05
11028	BLK650605001	373419.9	3745145.8	110	1.080E-06	1.2E-04
11029	BLK650605002	373421.2	3745247.3	128	1.130E-06	1.4E-04
11030	BLK650605003	373570.4	3745315.6	58	1.200E-06	7.0E-05
11031	BLK650605004	373477.9	3745316.8	27	1.180E-06	3.2E-05

Appendix D - Cancer Burden Analysis
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HARP Receptor No.	HARP Block/ Track No.[1]	UTM E	UTM N	Population	Residential Cancer Risk	Cancer Burden
11032	BLK650605005	373399.0	3745323.4	31	1.150E-06	3.6E-05
11033	BLK650605006	373320.6	3745324.4	34	1.080E-06	3.7E-05
11034	BLK650605007	373192.4	3745187.3	50	1.050E-06	5.3E-05
11035	BLK650605008	373096.3	3745340.5	82	1.090E-06	8.9E-05
11036	BLK650605009	372920.5	3745342.9	97	1.060E-06	1.0E-04
11037	BLK650605010	372952.9	3745229.5	20	1.020E-06	2.0E-05
11040	BLK650605013	373416.7	3745062.5	106	1.040E-06	1.1E-04
11041	BLK650605014	373747.8	3745058.1	74	1.090E-06	8.1E-05
11136	BLK650902003	377310.8	3745787.8	79	1.380E-06	1.1E-04
11137	BLK650902004	377768.9	3745777.7	173	1.470E-06	2.5E-04
11138	BLK650902005	378111.4	3745783.0	4	1.470E-06	5.9E-06
			Total Population	91,824	**Cancer Burden**	0.152

[1] Eliminated census blocks with a zero population value

Appendix E
Sensitive Receptors

ExxonMobil Torrance Refinery
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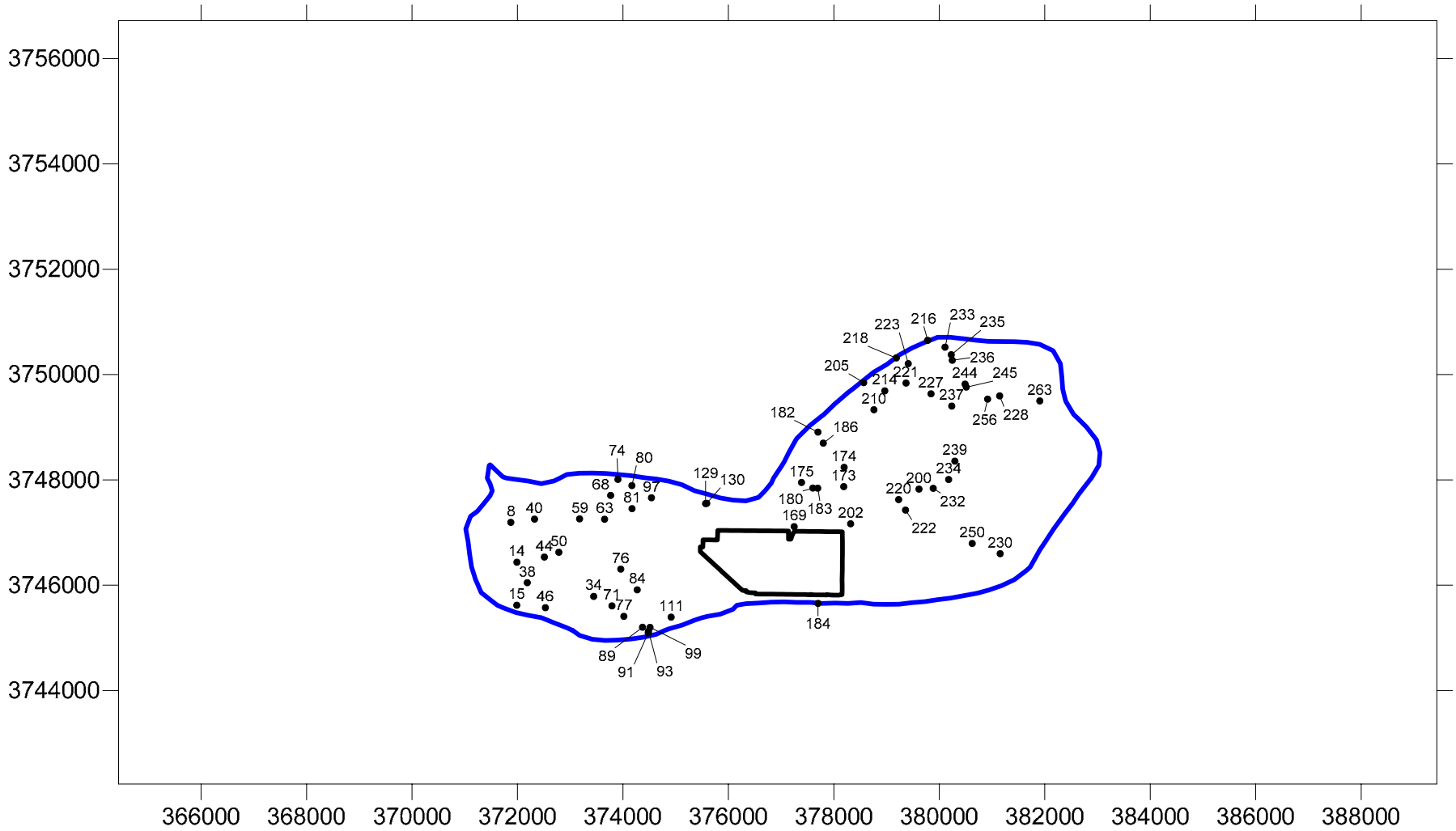
Figure E-1
Sensitive Receptors Within Zone of Impact



*Isopleth plotted in Surfer v9.11.947 using the Modified Shepard's Method to interpolate 1x10-6 cancer risk.

DAVENPORT ENGINEERING, INC.
Davenport
ENVIRONMENTAL SERVICES

Appendix E - Sensitive Receptors Analysis
ExxonMobil Torrance Refinery
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Rec No.	Sensitive Receptor	Type	Address	City	Zip Code	UTM E	UTM N	Cancer Risk	Chronic HI	Acute HI
8	OUR LADY OF GUADALUPE CATHOLIC SCHOOL	School	340 Massey Avenue	Hermosa Beach	90254	371876	3747191	1.6E-06	1.4E-01	3.3E-02
14	BERYL HEIGHTS ELEMENTARY SCHOOL	School	920 Beryl Street	Redondo Beach	90277	371990	3746434	1.4E-06	1.4E-01	3.4E-02
15	REDONDO UNION HIGH SCHOOL	High School	631 Vincent Park	Redondo Beach	90277	371988	3745617	1.1E-06	1.1E-01	3.4E-02
34	WEST HIGH SCHOOL	High School	20401 Victor Street	Torrance	90503	373447	3745785	1.5E-06	1.3E-01	4.5E-02
38	REDONDO SHORES HIGH SCHOOL	High School	1000 Del Amo Street	Redondo Beach	90277	372186	3746045	1.4E-06	1.3E-01	3.6E-02
40	JEFFERSON ELEMENTARY SCHOOL	School	600 Harkness Lane	Redondo Beach	90278	372324	3747253	1.7E-06	1.5E-01	3.6E-02
44	SOUTH BAY MEDICAL CENTER	Hospital	514 N. Prospect Avenue	Redondo Beach	90277	372512	3746532	1.8E-06	1.6E-01	3.8E-02
46	PARRAS MIDDLE SCHOOL	School	200 N. Lucia Avenue	Redondo Beach	90277	372530	3745572	1.1E-06	1.1E-01	3.8E-02
50	TOWERS ELEMENTARY SCHOOL	School	5600 Towers Street	Torrance	90503	372786	3746624	1.7E-06	1.4E-01	3.8E-02
59	COAST CHRISTIAN ELEMENTARY SCHOOL	School	525 Earle Lane	Redondo Beach	90278	373180	3747257	1.5E-06	1.2E-01	3.9E-02
63	TORRANCE COOPERATIVE PRESCHOOL	Preschool	4917 Emerald Street	Torrance	90503	373654	3747251	1.7E-06	1.4E-01	4.6E-02
68	WASHINGTON ELEMENTARY SCHOOL	School	1100 Lilienthal Lane	Redondo Beach	90278	373768	3747703	1.3E-06	1.1E-01	4.6E-02
71	VICTOR ELEMENTARY SCHOOL	School	4820 Spencer Street	Torrance	90503	373793	3745606	1.4E-06	1.1E-01	4.8E-02
74	ADAMS MIDDLE SCHOOL	School	2600 Ripley Avenue	Redondo Beach	90278	373906	3748007	1.1E-06	8.8E-02	4.6E-02
76	LYNN MIDDLE SCHOOL	School	5038 Halison Street	Torrance	90503	373961	3746305	2.5E-06	2.0E-01	5.1E-02
77	ST. JAMES CATHOLIC SCHOOL	School	4625 Garnet Street	Torrance	90503	374018	3745407	1.4E-06	1.1E-01	5.0E-02
80	REDONDO BEACH UNIFIED SCHOOL	School	1401 Ingelwood Avenue	Redondo Beach	90278	374171	3747889	1.2E-06	9.4E-02	4.8E-02
81	COAST CHRISTIAN PRE-SCHOOL	Preschool	850 Inglewood Avenue	Redondo Beach	90278	374173	3747451	1.7E-06	1.3E-01	5.2E-02
84	SBJA DISCOVERYLAND PRE-SCHOOL & INFANT CARE	Preschool	4400 Del Amo Blvd.	Torrance	90503	374272	3745911	2.0E-06	1.6E-01	5.7E-02
89	SALVATION ARMY CHILD CARE CENTER	Daycare	4223 Emerald Avenue	Torrance	90503	374373	3745200	1.2E-06	1.1E-01	5.5E-02
91	SPRING LIVING AND RETIREMENT CENTER	Convalescence	20900 Earl Street	Torrance	90503	374480	3745094	1.1E-06	9.3E-02	5.6E-02
93	THE EARLWOOD	Convalescence	20820 Earl Street	Torrance	90503	374486	3745123	1.1E-06	9.8E-02	5.7E-02
97	HEAD START - EL NIDO PARK	Preschool	18301 Kingsdale Avenue	Torrance	90278	374542	3747659	1.4E-06	1.1E-01	5.3E-02
99	DRIFTWOOD HEALTH CARE CENTER	Convalescence	4109 Emerald Street	Torrance	90503	374515	3745198	1.2E-06	1.1E-01	5.9E-02
111	BAY CREST CARE CENTER	Daycare	3750 Garnet Street	Torrance	90503	374916	3745391	1.4E-06	1.2E-01	6.5E-02
129	FRIENDSHIP'S CHILDREN'S CENTER	Preschool	4120 West 185th Street	Torrance	90504	375568	3747548	1.3E-06	9.2E-02	7.4E-02
130	MAGRUDER MIDDLE SCHOOL	School	4100 West 185th Street	Torrance	90504	375590	3747553	1.3E-06	9.1E-02	7.9E-02

Appendix E - Sensitive Receptors Analysis
ExxonMobil Torrance Refinery
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Rec No.	Sensitive Receptor	Type	Address	City	Zip Code	UTM E	UTM N	Cancer Risk	Chronic HI	Acute HI
169	CRENSHAW CHILDREN'S CENTER	Daycare	18909 Crenshaw Blvd.	Torrance	90504	377249	3747110	8.2E-06	4.1E-01	6.3E-02
173	BYB ENGLISH CENTER	Daycare	18183 Van Ness Ave.	Torrance	90504	378188	3747869	3.6E-06	2.9E-01	5.8E-02
174	ARLINGTON ELEMENTARY SCHOOL	School	17800 Van Ness Avenue	Torrance	90504	378196	3748237	2.7E-06	2.3E-01	5.3E-02
175	WOMEN'S CARE CENTER MEDICAL CLININC	Hospital	18051 Crenshaw Blvd. #C	Redondo Beach	90505	377388	3747948	2.4E-06	1.9E-01	6.4E-02
180	NORTH TORRANCE PRE-SCHOOL & KINDERGARTEN	Preschool	2806 West 182nd Street	Torrance	90504	377603	3747842	3.2E-06	2.6E-01	6.7E-02
182	GOLDEN SUNSET HAVEN	Convalescence	17104 Wilkie Avenue	Torrance	90504	377701	3748906	1.2E-06	9.4E-02	3.9E-02
183	SUIKA PRE-SCHOOL	Preschool	2706 West 182nd Street	Torrance	90504	377696	3747841	3.4E-06	2.7E-01	6.5E-02
184	ACCXEL HOME HEALTH AGENCY	Convalescence	370 Amapola Avenue #203	Torrance	90501	377700	3745653	1.1E-06	4.9E-02	1.3E-01
186	CASIMIR MIDDLE SCHOOL	School	17220 Casimir Avenue	Torrance	90504	377801	3748696	1.6E-06	1.3E-01	4.8E-02
200	GARDENA VALLEY CHRISTIAN SCHOOL	School	1473 West 182nd Street	Gardena	90248	379615	3747823	2.5E-06	2.0E-01	4.3E-02
202	SOAR WITH YOUR OWN WINGS	Convalescence	18825 Wilton Place	Torrance	90504	378320	3747165	5.8E-06	4.0E-01	7.1E-02
205	JCI GARDENS	Convalescence	2000 W 162nd Street	Torrance	90504	378568	3749845	1.0E-06	8.5E-02	3.2E-02
210	THERAPEUTIC ARTS PROGRAM II	School	1903 West 169th Street	Gardena	90247	378761	3749330	1.5E-06	1.2E-01	3.4E-02
214	GARDENA CHRISTIAN ACADEMY & PRE-SCHOOL	Preschool	16401 S. Western Avenue	Gardena	90247	378967	3749689	1.3E-06	1.1E-01	3.2E-02
216	DREAM TREE EDUCATION CENTER	Daycare	1416 W. Redondo Beach Blvd.	Gardena	90247	379780	3750649	1.0E-06	8.5E-02	2.7E-02
218	GARDENA VALLEY TOWERS	Convalescence	1715 W 158th Street	Gardena	90247	379185	3750313	1.0E-06	8.4E-02	2.9E-02
220	RILEY HIGH SCHOOL	High School	1618 West 184th Street	Gardena	90248	379231	3747623	3.1E-06	2.3E-01	4.8E-02
221	DENKER ELEMENTARY SCHOOL	School	1620 West 162nd Street	Gardena	90247	379371	3749838	1.3E-06	1.1E-01	3.0E-02
222	186TH ELEMENTARY STREET SCHOOL	School	1581 186th Street	Gardena	90248	379361	3747424	3.0E-06	2.3E-01	4.8E-02
223	GARDENA VALLEY BAPTIST PRE-SCHOOL	Preschool	1630 West 158th Street	Gardena	90247	379412	3750206	1.1E-06	9.4E-02	2.9E-02
227	PEARY JUNIOR HIGH SCHOOL	School	1415 W. Gardena Blvd.	Gardena	90247	379844	3749633	1.4E-06	1.1E-01	3.0E-02
228	GARDENA ELEMENTARY SCHOOL	School	647 W. Gardena Blvd.	Gardena	90247	381145	3749593	1.3E-06	1.1E-01	2.6E-02
230	A ACRES CALIFORNIA	Convalescence	19300 S Hamilton Ave.	Gardena	90248	381156	3746596	1.2E-06	9.8E-02	3.2E-02
232	GARDENA VALLEY CHRISTIAN PRE-SCHOOL	Preschool	1409 West 182nd Street	Gardena	90248	379886	3747839	2.3E-06	1.8E-01	4.0E-02
233	COMMUNITY HOSPITAL OF GARDENA	Hospital	1246 West 155th Street	Gardena	90247	380110	3750519	1.1E-06	8.9E-02	2.6E-02
234	GARDENA HIGH SCHOOL	High School	1301 West 182nd Street	Gardena	90248	380178	3748005	2.0E-06	1.6E-01	3.7E-02
235	LOS ANGELES UNIFIED SCHOOL	School	1208 Magnolia Avenue	Gardena	90247	380227	3750374	1.1E-06	9.1E-02	2.6E-02

Appendix E - Sensitive Receptors Analysis
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Rec No.	Sensitive Receptor	Type	Address	City	Zip Code	UTM E	UTM N	Cancer Risk	Chronic HI	Acute HI
236	SELLERY SPECIAL EDUCATION SCHOOL	School	15805 S. Budlong Avenue	Gardena	90247	380247	3750270	1.1E-06	9.3E-02	2.7E-02
237	LYDIA'S GUEST HOME	Convalescence	1220 W 166th Street	Gardena	90247	380236	3749398	1.5E-06	1.2E-01	2.9E-02
239	MONETA HIGH SCHOOL	High School	1230 West 177th Street	Gardena	90248	380297	3748355	1.8E-06	1.5E-01	3.4E-02
244	ST. ANTHONY OF PADUA CATHOLIC SCHOOL	School	1003 West 163rd Street	Gardena	90247	380490	3749818	1.3E-06	1.1E-01	2.7E-02
245	ST. ANTHONY OF PADUA DAY NURSERY	Daycare	1044 West 163rd Street	Gardena	90247	380513	3749760	1.3E-06	1.1E-01	2.7E-02
250	UNIVERSTY OF REDLANDS SCHOOL	School	19191 S Vermont Avenue #450	Torrance	90502	380624	3746791	1.5E-06	1.2E-01	3.6E-02
256	HEAD START - GARDENA	Preschool	812 West 165th Place	Gardena	90247	380917	3749531	1.4E-06	1.1E-01	2.7E-02
263	GREENFIELD CARE CENTER OF GARDINA	Convalescence	16530 S Broadway Street	Gardena	90248	381908	3749497	1.1E-06	9.2E-02	2.4E-02