2014 Northern Baja California Emissions Inventory Project

Final Report

Eastern Research Group, Inc. (ERG)
8950 Cal Center Drive, Suite 230
Sacramento, California 95826

Prepared for

California Air Resources Board (CARB)
1001 I Street, 20th Floor
Sacramento, California 95814

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ACRONYMS AND ABBREVIATIONS

AEDT	Aviation Environmental Design Tool
APU	auxiliary power unit
ARS	Agricultural Research Service
BTS	Bureau of Transportation Statistics
C	climatic factor
CARB	California Air Resources Board
CCF	crop canopy cover factor
CEC	Commission for Environmental Cooperation
CHE	cargo handling equipment
CIMIS	California Irrigation Management Information System
CNG	compressed natural gas
CO	carbon monoxide
DENUE	Directorio Estadístico Nacional de Unidades Económicas
DQO	data quality objective
EDMS	Emissions and Dispersion Modeling System
EGU	electric generating unit
ERG	Eastern Research Group, Inc.
FAA	Federal Aviation Administration
GCF	growing canopy fraction
GSE	ground support equipment
I	nonirrigated soil erodibility
I_{Irr}	irrigated soil erodibility
ICAR	Ingeniería en Control Ambiental y Riesgo Industrial, S. de R.L.
INEGI	Instituto Nacional de Estadística y Geografía
IrrF	irrigation factor
ISRIC	International Soil Reference and Information Centre
K	surface roughness
kg	kilogram
km	kilometer
L	unsheltered field width
L’	unsheltered field width factor
lb	pound
LPG	liquefied petroleum gas
MAG	Maricopa Association of Governments
Mg	megagram (i.e., metric ton)
MNEI	Mexico National Emissions Inventory
NAICS	North American Industry Classification Source
NE	not estimated
NEI	National Emissions Inventory
NH_3	ammonia

NO_x	nitrogen oxides
NRCS	National Resources Conservation Service
PE	precipitation-evaporation
PHPP	postharvest/preplant
PHSCF	postharvest soil cover factor
PM	particulate matter
PM_{10}	particulate matter less than 10 µm in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 µm in aerodynamic diameter
QA	quality assurance
QAPP	Quality Assurance Project Plan
RF	replant fraction
RUSLE2	Revised Universal Soil Loss Equation, Version 2
SADER	Secretaría de Agricultura y Desarrollo Rural
SCC	Source Classification Code
SCF	standard cubic feet
SCIAN	Sistema de Clasificación Industrial de América del Norte
SCT	Secretaría de Comunicaciones y Transportes
SDSU	San Diego State University
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales
SENER	Secretaría de Energía
SIACON	Sistema de Información Agroalimentaria de Consulta
SIAP	Servicio de Información Agroalimentaria y Pesquera
SOW	scope of work
SO_2	sulfur dioxide
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
V’	vegetative cover factor
VOC	volatile organic compound
WEQ	wind erosion equation
µm	micrometer

1.0 Introduction

This final report presents the technical work conducted by Eastern Research Group, Inc. (ERG) under California Air Resources Board (CARB) Contract # 17AQP010.

Imperial County is currently designated nonattainment for the federal ozone, PM_{10}, and $PM_{2.5}$ standards. In an effort to more accurately characterize the impact of pollutant transport from Mexicali and Northern Baja California, CARB sponsored this emissions inventory project, which will improve the quality of future air quality modeling and associated analyses. ERG's work was conducted under 10 tasks:

- Task 1: Project Management
- Task 2: Review and Quality Assure the 2014 Mexico National Emissions Inventory (MNEI)
- Task 3: Revise and Improve the 2014 MNEI
- Task 4: Border Crossings
- Task 5: Agricultural Burning
- Task 6: Brick Kilns
- Task 7: Windblown Dust
- Task 8: State Point Sources
- Task 9: Projections
- Task 10: Reporting

ERG presented preliminary results for some of these tasks in two interim reports (ERG, 2018a; ERG, 2019a). Most of the information contained in the interim reports has been incorporated into this final report. A draft final report was submitted to CARB for review by CARB staff (ERG, 2019b). This final report addresses CARB comments on the draft final report. In addition to the final report, ERG is also submitting base year and projection inventories in FF10 format along with all supporting spreadsheets and data sources.

2.0 Emissions Inventory Scope

The scope of the 2014 Northern Baja California emissions inventory is defined as follows:

- Base year – 2014.
- Geographic domain – All five municipalities in the state of Baja California (i.e., Ensenada, Mexicali, Playas de Rosarito, Tecate, Tijuana) with a focus on those sources located in the northern portion of the municipalities within the CARB modeling domain (see Figure 1).

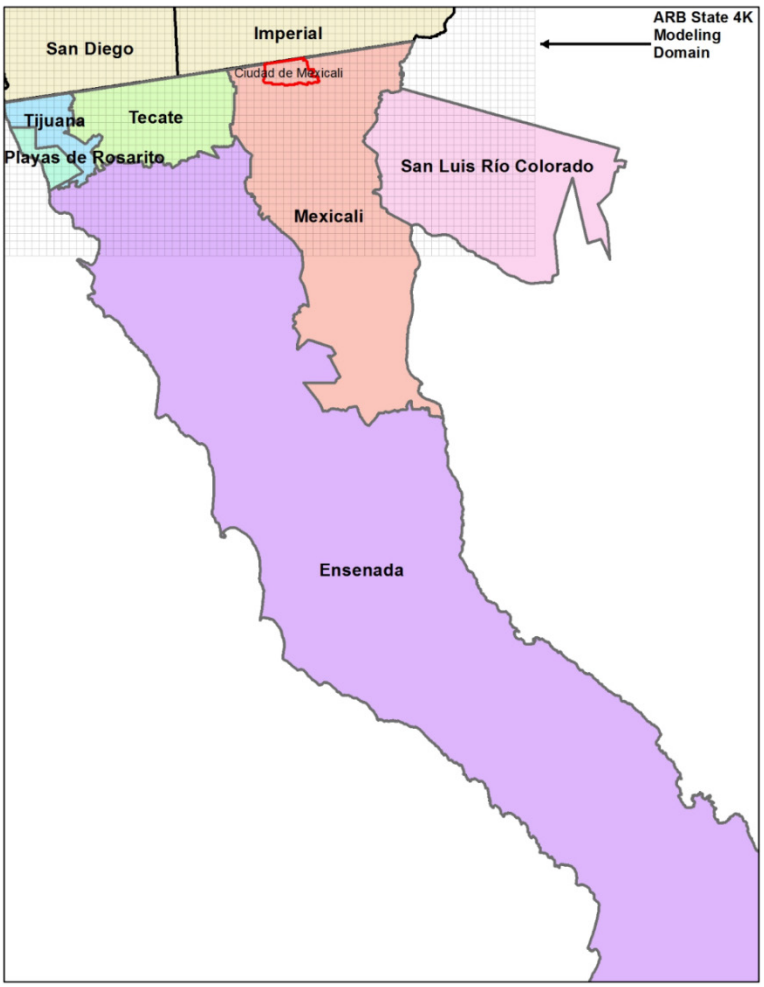

Figure 1. State of Baja California and its Five Municipalities

- Source types – point sources, area sources, on-road motor vehicles, and nonroad mobile sources. Natural source emissions were not included in the scope of this project.
- Pollutants – Criteria pollutants, including nitrogen oxides (NO_x), sulfur dioxide (SO_2), ozone precursor volatile organic compounds (VOC), carbon monoxide (CO), particulate matter (PM) less than 10 micrometers (µm) in aerodynamic diameter (PM_{10}), and PM less than 2.5 µm in aerodynamic diameter ($PM_{2.5}$); and, ammonia (NH_3).
- Geographic resolution – Municipality-level emissions for all source types. Exact location (i.e., Universal Transverse Mercator [UTM] coordinates or latitude/longitude) for point sources. Also, ERG developed spatial surrogates to facilitate emissions modeling of area sources, on-road motor vehicles, and non-road mobile sources within the CARB modeling domain.
- Temporal resolution – Annual (tons per year – original data from the 2014 MNEI presented in this report will be shown in the original units of megagrams [Mg]). ERG also developed temporal (winter day) profiles.
- Inventory projections – Projected inventories for 2020 and 2025.

The starting point for this project was the 2014 Mexico National Emissions Inventory (MNEI), provided by CARB but developed by the Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) (SEMARNAT, 2014). ERG reviewed the overall 2014 MNEI and then, based on this review, revised some of the MNEI estimates, as appropriate. In addition, ERG also estimated emissions for four new key area source categories (i.e., either not contained in or requiring significant changes as reported in the MNEI): border crossings, agricultural burning, brick kilns, and agricultural windblown dust. Taken together, these estimates comprise the 2014 Northern Baja California emissions inventory.

3.0 Review and Quality Assurance of the 2014 Mexico National Emissions Inventory

After receiving the 2014 MNEI spreadsheet files from CARB (SEMARNAT, 2014), ERG extracted the relevant inventory data from these files. The files consisted of calculation spreadsheets for point sources, area sources, and on-road motor vehicles. Additionally, documentation text files were also included along with the area source calculation spreadsheets. ERG reviewed both the calculation spreadsheets and documentation files.

The 2014 MNEI point source data consisted of emissions data for 586 facilities located in Baja California. The data also included information on stack parameters (i.e., geographic coordinates, stack height, diameter, temperature, etc.).

The 2014 MNEI area source data consisted of individual calculation spreadsheets for each area source category. All area source emissions were estimated at the municipality-level.

The 2014 MNEI on-road motor vehicle emissions data were highly aggregated (i.e., state-level emission totals for each pollutant). Unfortunately, documentation regarding the on-road motor vehicle emission calculation methods, data inputs, and data sources was not provided with the 2014 MNEI files. ERG disaggregated the state-level emission totals down to the individual vehicle and fuel types using ratios based on the 2008 on-road motor vehicle emission estimates that were included with the 2014 MNEI files, which had on-road motor vehicle emissions disaggregated by vehicle and fuel types.

Although ERG's scope of work (SOW) for this contract explicitly includes only the three Mexican municipalities that border California (i.e., Mexicali, Tecate, and Tijuana), close examination of CARB's state 4-kilometer (km) modeling domain (see gridded area in Figure 1) indicates that three municipalities are entirely contained within the domain (i.e., Tijuana, Tecate, and Playas de Rosarito), while portions of the municipalities of Mexicali and Ensenada are also included. Therefore, ERG included all five Baja California municipalities (i.e., Ensenada, Mexicali, Playas de Rosarito, Tecate, and Tijuana) in the Task 2 review and QA. Spatial surrogates developed by ERG will allow CARB to spatially allocate the municipality-level emissions within the 4-km modeling domain (see Section 8.2). Note that the municipality of San Luis Río Colorado, located in the Mexican state of Sonora, is also shown in Figure 1 because a portion of it lies within CARB's 4-kilometer modeling domain; however, emissions from San Luis Río Colorado are not included in the 2014 Northern Baja California emissions inventory.

3.1 Point Sources

There are 586 point sources in the 5 Baja California municipalities with emissions data in the 2014 MNEI. Table 1 shows the number of point source facilities by sector and municipality.

Table 1. Number of Baja California Point Source Facilities by Municipality and Industry Sector

Industry Sector	Municipality					Total
	Ensenada	Mexicali	Playas de Rosarito	Tecate	Tijuana	
Automotive	1	2	0	0	4	7
Cement and lime	1	0	0	0	0	1
Chemical	0	1	0	1	8	10
Chemical mixtures	0	1	0	0	0	1
Electric power generation	1	4	1	0	0	6
Electrical generation and electrical equipment and accessories	9	30	2	8	95	144
Food and beverage	7	21	0	3	15	46
Glass	0	2	0	0	1	3
Hazardous waste treatment	0	0	0	0	3	3
Metal products	5	60	0	8	55	128
Metallurgical (including steel)	0	6	0	0	7	13
Nonmetallic minerals	3	16	0	7	13	39
Nonmetallic minerals extraction	2	6	0	1	1	10
Other industries	1	0	0	0	0	1
Paper and paperboard	0	4	0	0	7	11
Petroleum and coal products	1	5	0	0	1	7
Petroleum and petrochemical	1	1	3	0	0	5
Plastic and rubber	6	14	1	5	59	85
Printing	0	3	0	0	5	8
Pulp and paper	0	2	0	0	1	3
Textiles	2	1	1	1	5	10
Waste management and remediation	1	0	0	2	5	8
Wood products	0	3	1	1	32	37
Total	**41**	**182**	**9**	**37**	**317**	**586**

The largest number of point source facilities are located in the urban municipalities of Tijuana and Mexicali. The industry sectors with the largest number of point source facilities are electrical generation and electrical equipment and accessories, metal products, and plastic and rubber. Many of these point source facilities are likely to be maquiladora plants (i.e., facilities that take raw materials and assemble, manufacture, or process them and export the finished product duty- and tariff-free).

The 2014 MNEI point source emissions are shown in Table 2 (combustion emissions only), Table 3 (process emissions only), and Table 4 (total emissions). The emissions presented in Table 2 through Table 4 are presented in units of Mg per year, which are the original units used in the 2014 MNEI.

Table 2. Municipality-level Point Source Emissions (Combustion Only) (Mg/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	657.0	503.2	1.4	95.2	3.3	1.7	0.2
Mexicali	6,805.4	256.1	322.7	4,206.1	701.8	698.8	136.5
Playas de Rosarito	7,593.7	15.1	207.8	1,898.5	722.7	721.5	111.9
Tecate	101.7	744.7	0.4	41.3	14.7	9.4	1.0
Tijuana	867.4	3,111.6	40.9	219.6	65.2	52.7	13.7
Total	**16,025.2**	**4,630.7**	**573.2**	**6,460.7**	**1,507.8**	**1,484.0**	**263.3**

Table 3. Municipality-level Point Source Emissions (Process Only) (Mg/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	0.0	0.0	461.4	0.00	53.9	43.0	0.0
Mexicali	0.0	0.0	4,133.6	30.4	132.7	96.8	0.0
Playas de Rosarito	0.0	0.0	250.0	0.00	2.5	1.8	0.0
Tecate	0.0	0.0	68.6	0.00	2.4	1.7	0.0
Tijuana	0.0	0.0	4,596.9	0.00	174.3	150.7	0.0
Total	**0.0**	**0.0**	**9,510.4**	**30.4**	**365.8**	**294.0**	**0.0**

Table 4. Municipality-level Point Source Emissions (Total) (Mg/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	657.0	503.2	462.8	95.2	57.2	44.6	0.2
Mexicali	6,805.4	256.1	4,456.3	4,236.5	834.5	795.5	136.5
Playas de Rosarito	7,593.7	15.1	457.8	1,898.5	725.3	723.2	111.9
Tecate	101.7	744.7	68.9	41.3	17.2	11.1	1.0
Tijuana	867.4	3,111.6	4,637.8	219.6	239.5	203.4	13.7
Total	**16,025.2**	**4,630.7**	**10,083.6**	**6,491.1**	**1,873.6**	**1,777.9**	**263.3**

As shown in Table 2 through Table 4, point source emissions are primarily from combustion rather than processes. The one notable exception is that VOC emissions are predominantly from processes. Some additional point source detail is provided in Table 5; for each pollutant, the largest five emitting point source facilities in Baja California are listed along with the overall contribution of those facilities relative to the total point source emissions.

Table 5. Largest Emitting Point Source Point Source Facilities, by Pollutant

Pollutant	Top Five Largest Emitting Facilities (Sector, Municipality)	Emissions (Mg/yr)	Emissions (Percentage of Pollutant Total for Baja California Point Source Emissions)
NO_x	• CFE Central Termoelectrica Presidente Juarez (Electric power generation; Playas de Rosarito)	7,573.1	**88.6%**

Table 5. Largest Emitting Point Source Point Source Facilities, by Pollutant

Pollutant	Top Five Largest Emitting Facilities (Sector, Municipality)	Emissions (Mg/yr)	Emissions (Percentage of Pollutant Total for Baja California Point Source Emissions)
	• Termoelectrica de Mexicali (Electric power generation; Mexicali)	3,572.7	
	• Energia Azteca X (Electric power generation; Mexicali)	1,831.0	
	• Vidrio y Cristal del Noroeste (Glass; Mexicali)	793.5	
	• Platinadora Baja (Chemical; Tijuana)	428.9	
	Sum of Top Five Facilities	**14,199.2**	
SO_2	• Espumas del Aguila (Planta II) (Plastic and rubber; Tijuana)	2,834.4	
	• Cerveceria Cuauhtemoc Moctezuma (Food and beverage; Tecate)	727.4	
	• Exportadora de Sal – Planta Punta Morro en Isla de Cedros (Nonmetallic minerals extraction; Ensenada)	308.1	
	• Cemex México (Cement and lime; Ensenada)	190.7	
	• Pasteurizadora Jersey del Norte (Ave H) (Food and beverage; Tijuana)	124.6	
	Sum of Top Five Facilities	**4,185.2**	**90.4%**
VOC	• Zahori (Petroleum and coal products; Mexicali)	1,564.3	
	• Kenworth Mexicana (Automotive; Mexicali)	566.0	
	• Jacuzzi de Mexico (Plastic and rubber; Tijuana)	531.8	
	• RSI Home Products (Planta III) (Nonmetallic minerals; Tijuana)	490.1	
	• Tapicerias Pacifico (Plastic and rubber; Tijuana)	402.2	
	Sum of Top Five Facilities	**3,554.4**	**35.2%**
CO	• CFE Central Termoelectrica Presidente Juarez (Electric power generation; Playas de Rosarito)	1,893.2	
	• Energia Azteca X (Electric power generation; Mexicali)	1,098.6	
	• Termoelectrica de Mexicali (Electric power generation; Mexicali)	893.2	
	• Honeywell Productos Automotrices (Metal products; Mexicali)	738.2	**80.9%**

Table 5. Largest Emitting Point Source Point Source Facilities, by Pollutant

Pollutant	Top Five Largest Emitting Facilities (Sector, Municipality)	Emissions (Mg/yr)	Emissions (Percentage of Pollutant Total for Baja California Point Source Emissions)
	• Energia de Baja California (Electric power generation; Mexicali)	629.2	
	Sum of Top Five Facilities	**5,252.4**	
PM_{10}	• CFE Central Termoelectrica Presidente Juarez (Electric power generation; Playas de Rosarito)	721.3	
	• Termoelectrica de Mexicali (Electric power generation; Mexicali)	340.2	
	• Energia de Baja California (Electric power generation; Mexicali)	240.7	
	• Energia Azteca X (Electric power generation; Mexicali)	99.4	
	• Vidrio y Cristal del Noroeste (Glass; Mexicali)	74.2	
	Sum of Top Five Facilities	**1,475.9**	**78.8%**
$PM_{2.5}$	• CFE Central Termoelectrica Presidente Juarez (Electric power generation; Playas de Rosarito)	721.3	
	• Termoelectrica de Mexicali (Electric power generation; Mexicali)	340.2	
	• Energia de Baja California (Electric power generation; Mexicali)	238.8	
	• Energia Azteca X (Electric power generation; Mexicali)	99.4	
	• Vidrio y Cristal del Noroeste (Glass; Mexicali)	58.8	
	Sum of Top Five Facilities	**1,458.5**	**82.0%**
NH_3	• CFE Central Termoelectrica Presidente Juarez (Electric power generation; Playas de Rosarito)	111.9	
	• Termoelectrica de Mexicali (Electric power generation; Mexicali)	52.8	
	• Energia Azteca X (Electric power generation; Mexicali)	41.9	
	• Energia de Baja California (Electric power generation; Mexicali)	33.8	
	• Platinadora Baja (Chemical; Tijuana)	7.8	
	Sum of Top Five Facilities	**248.2**	**94.2%**

As shown in Table 5, most point source emissions are generated by a small number of facilities for all pollutants, with the exception of VOC. In particular:

- Point source NO_x, CO, PM_{10}, $PM_{2.5}$, and NH_3 emissions are primarily from four electric power generation facilities – one facility located in Playas de Rosarito (i.e., CFE Central Termoelectrica Presidente Juarez) and three facilities located in Mexicali (i.e., Termoelectrica de Mexicali, Energia de Baja California, and Energia Azteca X).
- Point source SO_2 emissions are similarly generated by a small number of facilities; however, these point source facilities are not electric power generation facilities.
- VOC emissions are generated by many more point source facilities than the other pollutant emissions – likely due to VOC emissions mainly being from various manufacturing processes (e.g., solvent use in surface coating, degreasing, and other processes), rather than combustion. Because most emissions are generated by a small number of facilities, proper characterization of these facilities and their associated emissions is an important priority for improving emissions estimates to be used for air quality modeling.

ERG determined that of the 586 Baja California point source facilities, 242 (i.e., 41.3 percent of the facilities) reported combustion emissions, while 344 facilities (i.e., 58.7 percent of the facilities) did not report any combustion emissions. Although 242 facilities reported combustion emissions, only slightly more than half of those facilities (125) reported specific fuel types combusted. The distribution of these reported fuel types is as follows:

- Liquefied petroleum gas (LPG) – 66 facilities
- Natural gas – 30 facilities
- Diesel – 17 facilities
- Light combustoleo (fuel oil) – 4 facilities
- Heavy combustoleo – 1 facility
- Coke (petroleum) – 1 facility
- Coke (coal) + LPG – 1 facility
- Bituminous coal + LPG – 1 facility
- Diesel + LPG – 1 facility
- Diesel + LPG + natural gas – 1 facility
- Diesel + light combustoleo – 1 facility
- Diesel + heavy combustoleo + natural gas – 1 facility

Overall, the combustion emissions for the 125 point source facilities that reported the specific fuel type combusted was fairly complete (e.g., all combustion pollutants were reported). All 125 facilities reported NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions; however, some pollutant emissions were missing:

- SO_2 – 5 facilities (3 LPG facilities; 2 natural gas facilities)
- VOC – 3 facilities (1 LPG facility; 2 natural gas facilities)
- NH_3 – 56 facilities (49 LPG facilities; 4 diesel facilities; 2 natural gas facilities; 1 petroleum coke facility)

For the 117 point source facilities that did not identify the specific fuel type combusted, the number of facilities that did not report specific pollutants varied as listed below:

- NO_x – 20 nonreporting facilities
- SO_2 – 87 nonreporting facilities
- VOC – 106 nonreporting facilities
- CO – 9 nonreporting facilities
- PM_{10} – 99 nonreporting facilities
- $PM_{2.5}$ – 99 nonreporting facilities
- NH_3 – 116 nonreporting facilities

A total of 466 Baja California point source facilities reported process emissions, but 120 sources did not report any process emissions. The following number of facilities reported process pollutant emissions:

- VOC – 376 reporting facilities
- CO – 1 reporting facility
- PM_{10} – 308 reporting facilities
- $PM_{2.5}$ – 308 reporting facilities

No point source facilities reported process emissions for NO_x, SO_2, or NH_3.

In addition to the emissions data, ERG also examined facility geographic locations and stack parameters. In previous work with Mexican point source data for the U.S. Environmental Protection Agency (U.S. EPA) and the Maricopa Association of Governments (MAG), ERG identified several point source facilities with incorrect geographic coordinates that did not correspond with the reported municipality (ERG, 2014a; ERG, 2014b; ERG, 2015a; ERG, 2017). The incorrect coordinates were usually caused by placement in an incorrect municipality, in the United States, or the ocean. Also, in one instance, 60 point source facilities had the identical longitude coordinate – most likely due to a spreadsheet copying error.

CARB provided ERG with work conducted by San Diego State University (SDSU) that revised point source coordinates based upon verification using a variety of methods, including Internet research, telephone contacts, and field investigation (Venecek, 2018). For final confirmation of the SDSU revised point source coordinates, ERG plotted the SDSU coordinates and compared them to the reported municipalities from the 2014 MNEI (see Table 6). A total of 19 point source facilities had inconsistencies between the municipalities reported in the 2014 MNEI and the coordinates from the SDSU data, including 5 facilities with GIS coordinates (according to the SDSU data) that are located in the United States. How ERG resolved these inconsistencies will be discussed in Section 4.1.3.

Table 6. Geographic Coordinate Inconsistencies: 2014 MNEI Reported Municipalities versus SDSU Municipalities Based on Coordinates

Municipality Based on 2014 MNEI	Municipality Based on SDSU Coordinates
Ensenada (2 facilities)	Tijuana (2 facilities)
Mexicali (7 facilities)	Tecate (1 facility), Tijuana (2 facilities), United States (4 facilities)
Tecate (2 facilities)	Tijuana (1 facility), United States (1 facility)
Tijuana (8 facilities)	Playas de Rosarito (1 facility), Tecate (7 facilities)

The 2014 MNEI also includes information for 1,057 stacks located at 255 point source facilities. ERG and ICAR reviewed the stack parameters (i.e., stack height, stack diameter, exit velocity, and temperature) for these facilities and did not identify any obvious outliers. The reported ranges of stack parameters in the 2014 MNEI were as follows:

- Stack height – 1.8 to 56 meters
- Stack diameter – 0.1 to 5.7 meters
- Exit velocity – 0.15 to 26.91 meters/second
- Temperature – 17.9 to 530 degrees Celsius

The stack parameters for these stacks are almost entirely complete. The only exception is three stacks located at PEMEX Refinacion Sector Ductos Rosarito which have only a reported stack height; the stack diameters, exit velocities, and temperatures are missing. ERG gap filled the stack parameters for these three stacks using SCC-based default stack parameters used in the U.S. EPA's National Emissions Inventory (NEI) emissions modeling platform (Pope, 2015).

As expected, a majority of the point source emissions in the 2014 MNEI are emitted from stacks as compared to fugitive emissions. For example, stack emissions range from 63.0 percent of the CO emissions from point sources to 79.7 percent of the total NH_3 emissions from point sources. Also as expected, the quantity of VOC emissions emitted from stacks is considerably less (i.e., 42.5 percent of the point source emissions), which likely indicates emissions coming from smaller sources with non-combustion process emissions.

The 2014 MNEI provides additional information regarding combustion and process emissions. For combustion emissions emitted by the 586 Baja California point source facilities, 855 combustion devices are identified; for the process emissions, 1,931 processes are identified. All point source combustion emissions are assigned to a combustion device; likewise, all point source process emissions are assigned to a process. In addition, individual stacks are cross-referenced to the relevant combustion device and/or non-combustion process.

3.2 Area Sources

The 2014 MNEI contained area source emissions at the municipality-level for all 32 federal entities in Mexico (i.e., 31 states plus the Federal District). The spreadsheets for the 2014 MNEI included individual datasets for each of the various area source categories as follows:

- Fuel combustion
  - Industrial fuel combustion – natural gas, LPG, and distillate oil
  - Commercial fuel combustion – natural gas and LPG
  - Residential fuel combustion – natural gas, LPG, kerosene, and wood
  - Agricultural fuel combustion – diesel and LPG
- Solvent evaporation
  - Architectural coatings
  - Asphalt paving
  - Autobody refinishing
  - Consumer solvent use
  - Degreasing operations
  - Dry cleaning
  - Graphic arts
  - Industrial surface coatings
  - Traffic markings
- Fuel distribution
  - Gasoline (potential double counting of Stage II vehicle refueling due to insufficient documentation of on-road motor vehicle emissions)
  - LPG
- Agricultural
  - Agricultural fertilizer application
  - Agricultural pesticide application
  - Agricultural burning/crop burning
  - Agricultural tilling
  - Cattle feedlots
  - Livestock waste
- Other
  - Construction activities
  - Bakeries
  - Charbroiling
  - Domestic ammonia
  - Municipal wastewater treatment plants
  - Structure fires
  - Forest fires/wildfires
  - Hospital sterilization operations
  - Brick kilns (revised emissions estimated as described in Section 4.2.6)

- Paved road dust (unpaved road dust was NOT included)
- Open burning
- Landfills
- Wild animal waste

ERG performed the following QA activities for the 2014 MNEI area source emissions:

- Confirmed that source-level $PM_{2.5}$ emissions are equal or less than PM_{10} emissions.
- Confirmed that all combustion sources reported emissions for combustion pollutants such as CO, NO_x, and SO_2.
- Confirmed that all solvent evaporation area source categories reported VOC emissions.
- Checked SCC codes for completeness accuracy.;
- Reviewed spreadsheet calculations for accuracy.
- Reviewed emission factors for correctness.

Based on the QA activities listed above, ERG identified the following problems with the 2014 MNEI SCCs:

- Missing SCCs for the following categories – agricultural fuel combustion, traffic markings, LPG distribution, open burning, forest fires, agricultural burning, agricultural tilling, construction activities, and brick kilns.
- Inaccurate SCCs (e.g., area source categories assigned with point source SCCs, open burning SCC assigned to landfills, total consumer solvent usage SCC assigned to individual sub-categories within consumer solvent usage) for the following source categories: industrial fuel combustion, commercial/institutional fuel combustion, residential fuel combustion, beef cattle feedlots, fertilizer application, hospital sterilization, livestock waste, commercial and consumer solvent usage, graphic arts, and landfills.
- Missing sub-category SCCs for categories such as graphic arts (e.g., missing lithography, rotogravure, flexography, and others), consumer solvent usage, and industrial surface coatings. For the categories missing sub-categories, the 2014 MNEI estimated emissions at the sub-category level and summed up emissions and reported them under the "Total – All Processes/All Solvents" SCC.

ERG also reviewed the spreadsheet calculations for all the area source categories. No major errors were identified in the spreadsheet calculations for area sources; however, three minor errors were noted:

- The national-level diesel consumption activity data was incorrectly entered into the calculation spreadsheet for agricultural diesel fuel combustion. Instead of using 63.28 petajoules for the national diesel consumption value, the spreadsheet contained 63.18 petajoules.
- For petroleum storage and distribution, the 2014 MNEI indicated negative emissions for Tecate from Stage I underground tank filling. Since this value was very low (-1.28 E-14), ERG assumed this value should be zero.

- For dry cleaning, the 2014 MNEI estimates were based on national-level perchloroethylene usage and the assumption that all perchloroethylene is assumed to be emitted as VOC. This is incorrect since perchloroethylene is not a VOC (U.S. EPA, 1996).

Also, for gasoline storage and distribution, the 2014 MNEI contained emission estimates from underground tank losses, Stage I operations, and Stage II operations. Typically, in the United States, Stage II emissions (i.e., from vehicle refueling) are included in the on-road mobile source emissions.

Additionally, ERG reviewed the emission factors that were used in developing the area source emissions inventory and verified them for accuracy. Most of the emission factors were from U.S. sources (e.g., U.S. EPA, CARB). ERG verified these emission factors and found most to be accurate. ERG found the following inconsistencies in the emission factors used in the 2014 MNEI:

- Industrial distillate oil combustion – the 2014 MNEI used the NO_x emission factor for commercial boilers (20 lb/1000 gallon) instead of the emission factor for industrial boilers (24 lb/1000 gallon).
- Residential natural gas combustion – the 2014 MNEI used the NO_x and CO emission factors for commercial boilers instead of the emission factors for residential furnaces.
- Degreasing – the 2014 MNEI used the VOC emission factor for industrial surface coatings (36.3 kg/employee) instead of the emission factor for solvent cleaning (39.5 kg/employee).

3.3 On-Road Motor Vehicles

ERG's ability to QA the 2014 MNEI on-road motor vehicle emissions totals was limited because underlying data for activity and emission rates were not available in the inventory documentation. Therefore, ERG reviewed the on-road motor vehicle emissions by comparing Baja California emission totals to independent estimates for 2014 from MOVES-Mexico prepared by ERG for U.S. EPA (ERG, 2017).

The U.S. EPA estimates were produced for each municipality by month and hour, to account for temporal variations in meteorology and vehicle activity. All vehicle activity, emission rates, meteorology, and fuels underlying the U.S. EPA estimate were default information for Baja California. These default values were established when MOVES-Mexico was developed and were generally national averages or activity allocated to the state and municipality from national totals based on roadway miles and/or human population. To provide a means of comparing the 2014 MNEI to estimates derived from direct fuel sales in Baja California, ERG produced a second set of emission estimates by combining fuel-specific emission rates from MOVES-Mexico to Baja California fuel sales estimates compiled by SENER (SENER, 2018a). While the emission rates are the same between the U.S. EPA and fuel-specific inventories, the activity basis is different, thus providing a range by which to assess the accuracy of the 2014 MNEI. Results are shown in Table 7.

Table 7. Comparison of On-Road Motor Vehicle Emissions in Baja California

Inventory Estimates	Total Emissions						
	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2014 MNEI (Baja California) (Mg/yr)	51,783	1,537	9,844	148,946	2,284	2,192	716
MOVES-Mexico 2014 (Baja California, EPA 2016) (Mg/yr)	70,827	1,023	23,676	290,880	2,135	1,510	417
MOVES-Mexico 2014 Difference Relative to 2014 MNEI (%)	+36.8	-33.4	+140.5	+95.3	-6.5	-31.1	-41.8
Fuel-Based w/ MOVES Emission Factors (Mg/yr)	60,036	847	13,839[a]	251,386	1,504	989	383
Fuel-Based w/ MOVES Emission Factors Difference Relative to 2014 MNEI (%)	+15.9	-44.9	+40.6	+68.6	-34.2	-54.9	-46.5

[a]Exhaust emissions only.

As shown in Table 7, results are mixed depending on pollutant. Relative to the MOVES inventories, the 2014 MNEI is higher for PM_{10}, $PM_{2.5}$, SO_2 and NH_3, and lower for CO, NO_x and VOC. Aside from the unknown methodology of the 2014 MNEI, uncertainties in the Baja California on-road inventory include the presence of U.S. domiciled vehicles that crossed the border, the extent of U.S. fuels in both Mexico and U.S. domiciled vehicles, and emissions associated with border crossings (discussed in Section 4.2.4).

3.4 Nonroad Mobile Sources

Nonroad mobile source emissions are not included in the 2014 MNEI. There was one mention of agricultural tractors within the calculation spreadsheet for area source agricultural fuel combustion, but this appears to have been used as a surrogate for allocation rather than for actual emissions estimation.

4.0 Revise and Improve the 2014 MNEI

Based upon the findings of the review and quality assurance of the 2014 MNEI, next ERG revised and improved the 2014 MNEI under Task 3. These revisions and improvements were then combined with the non-revised 2014 MNEI emissions resulting in the 2014 base year Baja California emissions inventory.

4.1 Point Sources

The point source revisions and improvements were focused on three main areas: assignment of missing/incorrect SCCs, gap filling of missing combustion emissions, and investigation and revision of discrepancies of facility and stack locations.

4.1.1 Assign Missing/Incorrect SCCs

ERG found significant discrepancies in the reported Source Classification Code (SCC) data in the point source inventory. In particular, most of the SCC codes did not match the reported sector, equipment types, or fuel types; ERG corrected these errors using U.S. EPA's SCC database (U.S. EPA, 2016). A few examples of the errors and ERG corrective actions are listed below:

- SCC 20200101 (Industrial – Distillate fuel – IC Engine) was used for emissions from Electric Generating Unit (EGU) distillate, IC Engines. ERG assigned SCC 20100101 (EGU – Distillate fuel – IC Engine) for these records.
- SCC 10100401 (EGU – Residual Fuel – Boiler) was used for emissions from EGU natural gas boilers. ERG assigned SCC 10100601 (EGU – Natural Gas – Boiler) for these records.
- SCC 31303501 (Industrial processes – electrical equipment manufacturing – soldering) was used for emissions from coating operations of miscellaneous metal parts. ERG assigned SCC 40202501 (Surface coating operations – Miscellaneous metal parts) for these records.
- SCC 31399999 (Industrial processes – electrical equipment manufacturing – not classified) was used for emissions from grinding/crushing operations at a mineral products manufacturing facility. ERG assigned SCC 30500802 (Clay ceramics manufacturing – Raw material crushing, grinding, and milling) for these records.

Overall, there were 2,785 records in the point source inventory. Out of these, 1,663 records (i.e., nearly 60 percent of the total records) had no reported emissions; ERG excluded these records from the point source inventory. Of the remaining 1,122 records, 296 records had missing SCCs. ERG assigned SCCs based on the available description information on facility sector, equipment, and fuel/process type.

Out of the total 1,122 point source records, 711 records (i.e., 63 percent) had incorrect SCCs. ERG assigned relevant SCCs based on available facility sector, equipment, and fuel/process type description information.

4.1.2 Gap Fill Missing Combustion Emissions

ERG gap filled missing combustion emissions using pollutant ratios from similar facilities (i.e., having similar SCCs or sector) as shown in Equation 1.

$$E_{p,x} = \left(\frac{E_{p,y}}{E_{q,y}}\right) E_{q,x} \qquad \text{Equation 1}$$

Where

$E_{p,x}$ = Emissions for pollutant *p* from facility *x*;
$E_{p,y}$ = Emissions for pollutant *p* from facility *y*;
$E_{q,y}$ = Emissions for pollutant *q* from facility *y*;
$E_{q,x}$ = Emissions for pollutant *q* from facility *x*;

A total of 152 point source combustion unit/stack emission records were gap filled using Equation 1. Most of these (i.e., 129 records) used CO-based pollutant ratios. In addition, 19 SO_2-based pollutant ratios, 3 NO_x-based pollutant ratios, and 1 VOC-based pollutant ratio were also used.

Due to the variability of various industrial processes, this method was not used to gap fill missing point source process emissions. In addition, this method was not used to gap fill point source emissions that were missing for all pollutants; in this situation, point sources with zero emissions for all pollutants were removed from the inventory.

The gap filling of point source combustion emissions resulted in additional emissions added to the inventory. In Table 8, the municipality-level point source emissions before and after gap filling are presented along with the resultant percentage increase. The emissions presented in Table 8 are presented in units of megagrams (Mg) per year, which are the original units used in the 2014 MNEI. As shown in Table 8, point source gap filling resulted in a 23 percent increase in statewide SO_2 emissions, while emissions of PM_{10}, $PM_{2.5}$, and NH_3 increased between 12 and 15 percent. Emissions of NO_x, VOC, and CO were relatively unaffected by gap filling (i.e., less than a 2 percent increase) due to a high level of reporting completeness. Some significant facility-level emission increases due to gap filling include the following:

- Honeywell Productos Automotrices in Mexicali has the highest gap-filled emissions for PM_{10} (133.0 Mg), $PM_{2.5}$ (133.0 Mg), and VOC (73.2 Mg).
- Cerveceria Cuauhtemoc Moctezuma in Tecate has the highest gap-filled emissions for SO_2 (1,044.2 Mg).
- Fanosa in Mexicali has the highest gap-filled emissions for CO (11.0 Mg).
- Greatbatch Tecnologias de Mexico in Tijuana has the highest gap-filled emissions for NO_x (65.6 Mg).
- Honeywell Productos Automotrices in Mexicali has the highest gap-filled emissions for NH_3 (16.7 Mg).

Table 8. Effects of Gap Filling on Municipality-level Point Source Emissions

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada (before gap filling) (Mg)	657.0	503.2	462.8	95.2	57.2	44.6	0.2
Ensenada (after gap filling) (Mg)	657.0	503.2	463.4	95.2	75.1	60.0	0.8
Ensenada (percent change)	0.0%	0.0%	0.1%	0.0%	31.3%	34.4%	232.0%
Mexicali (before gap filling) (Mg)	6,805.4	256.1	4,456.3	4,236.5	834.5	795.5	136.5
Mexicali (after gap filling) (Mg)	6,812.8	264.4	4,601.7	4,254.6	1,057.0	991.5	164.8
Mexicali (percent change)	0.1%	3.2%	3.3%	0.4%	26.7%	24.6%	20.7%
Playas de Rosarito (before gap filling) (Mg)	7,593.6	15.1	457.8	1,898.5	725.3	723.2	111.9
Playas de Rosarito (after gap filling) (Mg)	7,594.0	15.1	457.8	1,898.7	725.3	723.3	112.0
Playas de Rosarito (percent change)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Tecate (before gap filling) (Mg)	101.7	744.7	68.9	41.3	17.2	11.1	1.0
Tecate (after gap filling) (Mg)	200.0	1,788.9	70.4	41.3	33.1	21.8	2.7
Tecate (percent change)	96.6%	140.2%	2.2%	0.0%	93.1%	96.4%	175.9%
Tijuana (before gap filling) (Mg)	867.4	3,111.6	4,637.7	219.6	239.5	203.4	13.7
Tijuana (after gap filling) (Mg)	1,030.7	3,117.3	4,642.5	223.3	249.1	212.3	16.9
Tijuana (percent change)	18.8%	0.2%	0.1%	1.7%	4.0%	4.4%	23.7%
Baja California Total (before gap filling) (Mg)	**16,025.2**	**4,630.7**	**10,083.6**	**6,491.1**	**1,873.6**	**1,777.9**	**263.3**
Baja California Total (after gap filling) (Mg)	**16,294.4**	**5,689.0**	**10,235.8**	**6,513.2**	**2,139.6**	**2,008.8**	**297.2**
Baja California Total (percent change)	**1.7%**	**22.9%**	**1.5%**	**0.3%**	**14.2%**	**13.0%**	**12.9%**

4.1.3 Revise Facility Location Coordinates

Table 9 lists the 19 facilities with incorrect location coordinates. Coordinates from both the 2014 Mexico NEI and SDSU data are provided.

ERG and ERG's Mexicali-based subcontractor (ICAR) confirmed the correct geographic coordinates for these 19 facilities. ICAR confirmed coordinates for some of these facilities based upon their local knowledge of Mexicali facilities. ERG obtained additional information from Google Earth and other online research.

Through Google Earth and online research, ERG confirmed that four facilities were located in the GIS-based municipality rather than the municipality reported in the 2014 MNEI (i.e., Milegon de Mexico, Hudson Respiratory Care, and Dae Duk Plateck in Tecate; and Sanritz Mexico in Playas de Rosarito.

It should be noted that some of the 19 facilities listed in Table 9 appear to be no longer in business or have apparently moved to other locations as of 2019; however, historical facility coordinates from 2014 were used to locate these facilities.

Ultimately, two facilities (i.e., Petreos de la Montaña in Tecate and Super Muros in Mexicali) could not be located using Google Earth. For these, ERG used the default centroid coordinates from Google Earth to gap fill the inaccurate coordinates.

Table 9. 2014 MNEI Facilities with Incorrect Geographic Coordinates.

Facility ID	Facility Name	2014 MNEI Municipality	2014 MNEI Reported Latitude	2014 MNEI Reported Longitude	SDSU GIS-Based Municipality	SDSU GIS-Based Latitude	SDSU GIS-Based Longitude
ENS00299	Leviton de Mexico, S. de R.L. de C.V.	Ensenada	31.90697102	-116.699475	Tijuana	32.484192	-116.948969
MX-033/98	Sony Baja California, S.A. de C.V.	Mexicali	32.6555	-115.533742	Tijuana	32.500155	-116.924777
RS-001/09	Sanritz Mexico, S.A. de C.V.	Tijuana	32.380219	-117.052229	Playas de Rosarito	32.380219	-117.052229
TJ-047/01	Formosa Prosonic Mexico, S.A. de C.V.	Tijuana	32.4930874	-117.0884025	Tecate	32.56869049	-116.6496236
TK003041168	Milegon de Mexico, S de R.L. de C.V.	Tijuana	32.57152278	-116.6389623	Tecate	32.57152278	-116.6389623
BAJ02003082	Petreos de la Montaña, S.P.R de R.L	Tecate	32.58565	-116.619514	United States	32.58565	-116.619514
CESUB0200122	Comision Estatal de Servicios Publicos de Ensenada	Ensenada	32.48608889	-116.8692547	Tijuana	32.48608889	-116.8692547
TJ-039/03	Recolectora de Desechos y Residuos King Kong, S.A. de C.V.	Tijuana	32.48426621	-116.6097062	Tecate	32.48426621	-116.6097062
MX-033/94	Pulidora Los Angeles, S.A. de C.V.	Mexicali	32.59854896	-116.6097062	United States	32.59854896	-116.6097062
MX-039/98	Temcomex, S.A. de C.V.	Mexicali	32.59391394	-116.6097062	United States	32.59391394	-116.6097062
MX-011/98	Strategic Materials Mexicana, S.A. de C.V.	Mexicali	32.61810827	-116.6097062	United States	32.61810827	-116.6097062
MX-024/2005	Cemex Concretos, S.A. de C.V. Planta Mexicali III	Mexicali	32.604272	-115.378189	Tecate	32.574657	-116.611676
MX-040/2001	Super Muros, S.A. de C.V.	Mexicali	32.61027513	-116.6097062	United States	32.61027513	-116.6097062
TJ-039/05	Fabricacion y Manufacturas de Mexico, S.A. de C.V.	Tijuana	32.5688	-116.649713	Tecate	32.56874226	-116.6496342
TJ-050/07	Cemex Concretos, S.A. de C.V. Valle Sur	Tijuana	32.573448	-116.619473	Tecate	32.574669	-116.611673
TK007054451	Bloquera Industrial Tijuana, S.A. de C.V.	Tecate	32.39336332	-116.6476437	Tijuana	32.511682	-116.886682
MX-012/99	KB Foam de Mexicali, S.A. de C.V.	Mexicali	32.5962487	-115.4171406	Tijuana	32.53178	-116.916702
TK-001/04	Hudson Respiratory Care Tecate, S. de R.L. de C.V.	Tijuana	32.56916903	-116.6041023	Tecate	32.56916903	-116.6041023
TK006041182	Dae Duk Plateck, S.A. de C.V.	Tijuana	32.5646939	-116.5834682	Tecate	32.560371	-116.580921

4.1.4 Revise Stack Location Coordinates

ERG (with the assistance of ICAR) closely examined the stack locations of the largest point source emissions (i.e., the 33 facilities that collectively emitted over 90 percent of total point source emissions for Baja California). For most of the 33 facilities, identified stack coordinates were identical to the facility coordinates and did not accurately represent the actual stack location.

ICAR provided more accurate stack location information for most of these 33 facilities to ERG. ICAR was not able to locate six of these facilities, probably due to facility shutdowns since 2014. The stack location review was based on ICAR's local knowledge, field work (for Mexicali facilities), and online research. For five facilities, ICAR provided facility centroid coordinates as they were unable to locate facility stacks, or the satellite imagery displayed numerous stacks in clusters. Based on the information provided by ICAR, ERG revised stack coordinates for 27 facilities.

4.2 Area Sources

As discussed in Section 3.2, the 2014 MNEI area source emissions inventory and the associated methods were thoroughly reviewed and quality assured. Based on this review, ERG revised emissions for three area source categories (i.e., dry cleaning, residential natural gas combustion, and degreasing). Details of these revisions are described below. A description of the development work for the new area source categories (i.e., border crossings, agricultural burning, brick kilns, and windblown dust) is also provided.

4.2.1 Dry Cleaning

Review of the 2014 MNEI calculation spreadsheet indicated that the estimates were based upon national-level perchloroethylene usage and it was assumed that all perchloroethylene was assumed to be emitted as VOC. The total perchloroethylene emissions for the state of Baja California from dry cleaning were estimated to be approximately 300 Mg/year of which 170 Mg/year was from Tijuana and 76 Mg/year was from Mexicali.

During the February 4-8, 2019 Mexicali site visit, ERG interviewed all dry cleaning establishments previously identified by SDSU researchers (Venecek, 2019). Nearly all establishments exclusively used perchloroethylene (Dry Cleaners, 2019). Only one establishment used petroleum solvents; this establishment recently started operation in early 2018. Based on this survey information and because perchloroethylene is not a VOC, ERG excluded the dry cleaning area source category from consideration for the 2014 base year inventory for Baja California.

4.2.2 Residential Natural Gas Combustion.

ERG revised the residential natural gas combustion emissions using the correct emission factors. This revision reduced residential natural gas combustion NO_x emissions by 6 percent (i.e., the commercial boiler emission factor was 100 lb $NO_x/10^6$ standard cubic feet [SCF], while the residential furnace emission factor was 94 lb $NO_x/10^6$ SCF). Similarly, this revision reduced residential natural gas combustion CO emissions by 52 percent (i.e., the commercial boiler emission factor was 84 lb $CO/10^6$ SCF, while the residential furnace emission factor was 40 lb $CO/10^6$ SCF). In both instances, the corrected residential emission factors were obtained from Section 1.4 of *AP-42* (U.S. EPA, 1995a). The effects of these two revisions is shown in Table 10. This revision is only applicable to Mexicali, since there is no residential natural gas usage in the other four Baja California municipalities.

Table 10. Residential Natural Gas Corrected Emission Factors and Emissions.

Source Category	2014 Mexico NEI Emission Factor (lbs/10^6 SCF)	Corrected Emission Factor (lbs/10^6 SCF)	2014 Mexico NEI Emissions (tons/year)	Corrected Emissions (tons/year)
Residential Natural Gas Combustion (NO_x)	100	94	47.2	44.4
Residential Natural Gas Combustion (CO)	84	40	39.7	18.9

4.2.3 Degreasing

Instead of a default per-employee solvent cleaning emission factor (i.e., 39.46 kg/year-employee [or 87 lb/year-employee]) (U.S. EPA, 1997), the industrial surface coatings emission factor (i.e., 36.29 kg/year-employee [or 80 lb/year-employee]) was used to calculate emissions. ERG revised the degreasing emissions using the correct emission factor resulting in an increase to degreasing VOC emissions of 8.7 percent.

4.2.4 Border Crossings

ERG generated new estimates for vehicle emissions at the six U.S.-Mexico border crossings located in California/Baja California: San Ysidro and Otay Mesa in Tijuana; Tecate; and Calexico West, Calexico East, and Andrade in Mexicali.

Emissions generated at border crossings are traditionally underrepresented in vehicle emission inventories but are a growing concern because of the high vehicle crossing volume (nearly 30 million crossings into California in 2014) coupled with long wait time (frequently over an hour) of stop-and-go operation. To develop a detailed inventory of border crossing emissions at the California-Baja California crossings, ERG used the project scale feature of U.S. EPA's MOVES2014a (U.S. EPA, 2015) to estimate total mass emissions of NO_x, SO_2, VOC, CO, PM_{10}, $PM_{2.5}$, and NH_3 for northbound and southbound crossings at the six California-Baja California border crossings. ERG's analysis drew on several studies previously conducted at the U.S.-Mexico border over the past decade but also incorporates new data from U.S. Customs and Border Protection on crossing volume and border wait time for specific types of lanes (i.e., general, expedited) and vehicle types (i.e., passenger, commercial truck, bus). Motorcycles were not included in any of the previous studies and are assumed to not cross the border. This analysis accounts for Mexican vehicle emissions with MOVES-Mexico (USAID, 2016), which reflects significant differences in Mexican vehicle emissions as compared to U.S. vehicle emissions. ERG performed additional analyses to quantify evaporative "running losses" for crossing vehicles, which can be a significant source of air emissions since long waits with the engine running will raise the fuel temperatures that increase these emissions. Also, prior studies suggest highly elevated evaporative emissions are generated by Mexican vehicles.

Using this approach, ERG estimated that the 2014 border crossing emissions were:

- 202 short tons of VOC (2 percent of the 2014 MNEI on-road inventory for Baja California);
- 385 tons of NO_x (1 percent);
- 69 tons of PM_{10} (3 percent); and
- 27 tons of $PM_{2.5}$ (1 percent).

The crossings with the highest emissions were San Ysidro for VOC and CO, due to the high volume of passenger vehicles; and Otay Mesa for NO_x, and PM, due to the high volume of commercial trucks. Non-exhaust emissions were an important contributor to VOC and PM emissions. Evaporative emissions, exacerbated by long wait times, contributed up to half of overall VOC emissions depending on the mix of passenger and commercial vehicles. Brake wear, exacerbated by stop-and-go driving in the queue, was estimated to contribute up to 43 percent of PM_{10} and 85 percent of $PM_{2.5}$ by crossing. Mexico-domiciled passenger vehicles, making up about 40 percent of the passenger vehicle crossings per prior studies, were estimated to contribute about 60 percent of CO and VOC (the latter driven by evaporative emissions), and 80 percent of SO_2 overall.

Details of ERG's border crossing emissions analysis are included in Appendix A.

4.2.5 Agricultural Burning

The basis for estimating air emissions from agricultural burning is multiplying the actual area (i.e., acres) of specific crops grown by crop-specific fuel loadings and emission factors (CARB, 2005) as shown in Equation 2.

$$E_{p,c} = A_c \times FL_c \times EF_{p,c} \qquad \text{Equation 2}$$

Where

$E_{p,c}$	=	Emissions for pollutant *p* from crop *c*;
A_c	=	Acreage for crop *c*;
FL_c	=	Fuel loading for crop *c* (tons residue/acre);
$EF_{p,c}$	=	Emission factor for pollutant *p* from crop *c* (lbs/tons residue)

According to Mexican agricultural statistics, a total of 206,915 hectares (i.e., 1 hectare = 2.471 acres) of agricultural crops were planted in 2014 in the state of Baja California (SIAP, 2014). Of this total, 162,702 hectares (i.e., 78.6 percent of the state total) were planted in the municipality of Mexicali with an additional 42,275 hectares (i.e., 20.4 percent of the state total) planted in the municipality of Ensenada. The remaining agricultural activity in the other three Baja California municipalities (i.e., Playas de Rosarito, Tecate, and Tijuana) was extremely minimal with only 1,938 hectares (i.e., 0.9 percent of the state total) planted. Based on the scope of this project, and the fact that over 75 percent of the total agricultural acreage in Baja California is located within Mexicali, emissions from agricultural burning were only estimated for the municipality of Mexicali.

A total of 71 crop types were included in the 2014 Mexicali agricultural statistics documentation; areas for the most significant crops (i.e., planted area of 500 hectares or greater) are presented in Table 11. The three primary crops are wheat, cotton, and alfalfa which comprise nearly 85 percent of the total planted area.

Table 11. 2014 Mexicali Crops (Hectares)

Crop	Planted Area (Hectares)
Trigo grano (wheat)[a]	81,924
Algodón hueso (cotton)	29,429
Alfalfa achicalada (alfalfa)	26,490
Sorgo forrajero en verde (sorghum – green forage)	4,388
Cebollín (green onions/chives)	3,937
Sorgo grano (sorghum – grain)	1,716
Avena forrajera en verde (oats – green forage)	1,565
Espárrago (asparagus)	1,540
Aceituna (olives)[b]	1,492
Pastos y praderas bermuda (pasture/grassland – Bermuda)	1,289
Pastos y praderas rye grass (pasture/grassland – rye grass)	1,174
Semilla de pastos y praderas Bermuda (Bermuda grass seed)	641
Cártamo (Safflower)	600
Maíz forrajero en verde (corn – green forage)	553
Cilantro (cilantro)	506
Other[c]	5,458
Total	**162,702**

Source – SIAP, 2019

[a] Includes "Trigo grano cristalino", "Trigo grano fuerte", and "Trigo grano medio fuerte".

[b] Includes "Aceituna manzanilla" and "Aceituna mission".

[c] Includes 53 other crop types with planted area less than 500 hectares.

Drawing on discussions with staff from Secretaría de Agricultura y Desarrollo Rural (SADER), ERG determined that post-harvest residues from only three crops are routinely burned in Mexicali: wheat, asparagus, and Bermuda grass (Zambrano Reyes, 2019; SADER, 2019a). SADER staff initially indicated during the February 4-8, 2019 site visit that field-specific shapefiles would be available; however, due to privacy concerns, only Google Earth KMZ files for each of the 14 irrigation modules could be provided (SADER, 2019b). These KMZ files had a number of fields assigned to each data point. ERG modified a shared Python script from Stack Exchange (Warburg, 2019) to create a tool in ArcMap to convert each of the 14 KMZ files to a shapefile while retaining the attribute information available in the KMZ pop-ups. A new column, "ID", was added to the shapefile and using the Calculate Field tool, the irrigation module number and OBJECTID were concatenated to create a unique record ID. A single shapefile combining all 14 irrigation modules was then created using the Merge tool.

Based upon the KMZ files provided by SADER, the spatial distributions of wheat, asparagus, and Bermuda grass are shown in Figure 2, Figure 3, and Figure 4, respectively. Wheat is distributed throughout all of the Mexicali agricultural areas, which is an expected result given that half of the agricultural acreage is planted with wheat. Asparagus is planted in very distinct and limited areas, while much of the Bermuda grass is planted in fields very close to the Mexicali urban area.

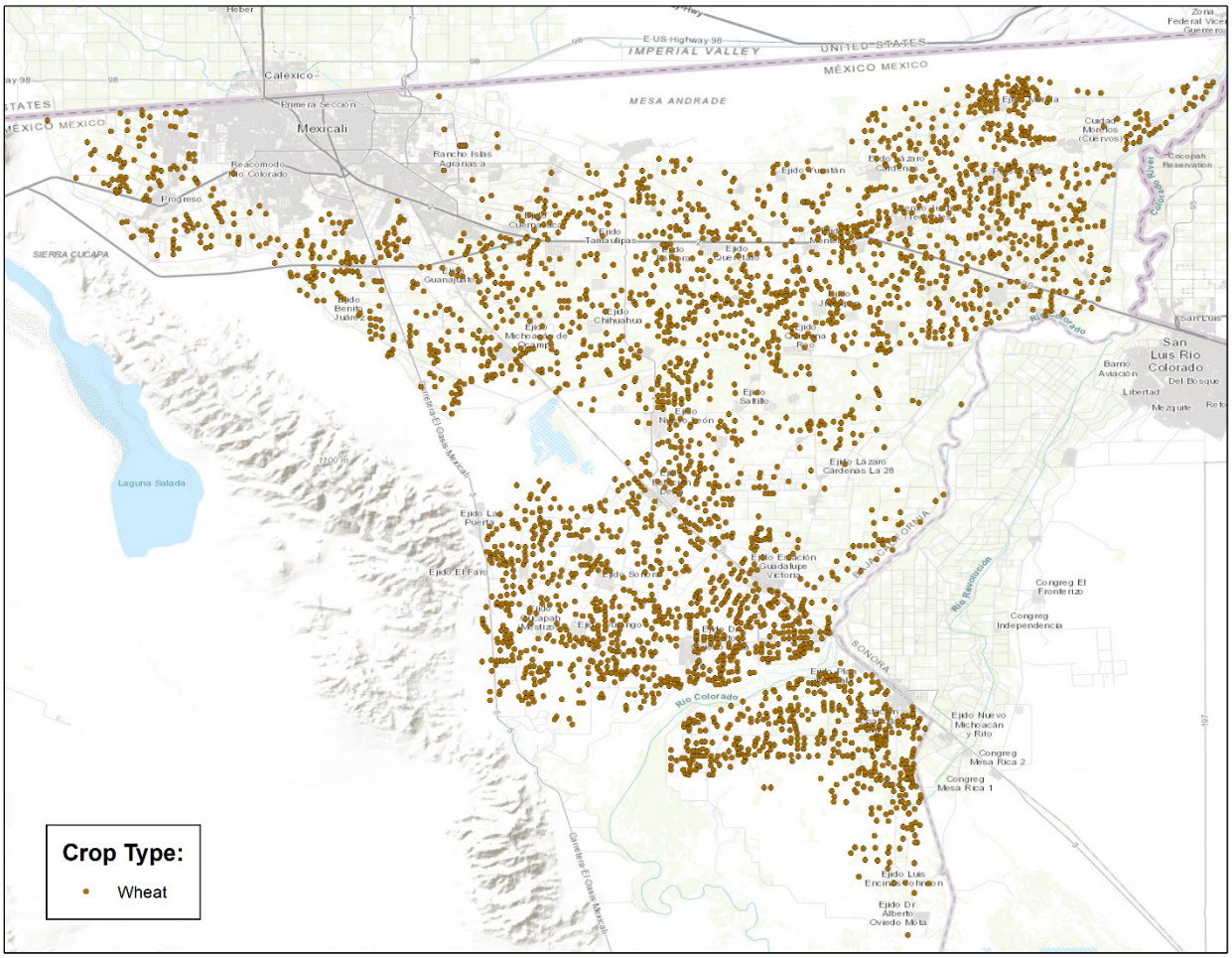

Figure 2. Spatial Distribution of Mexicali Wheat

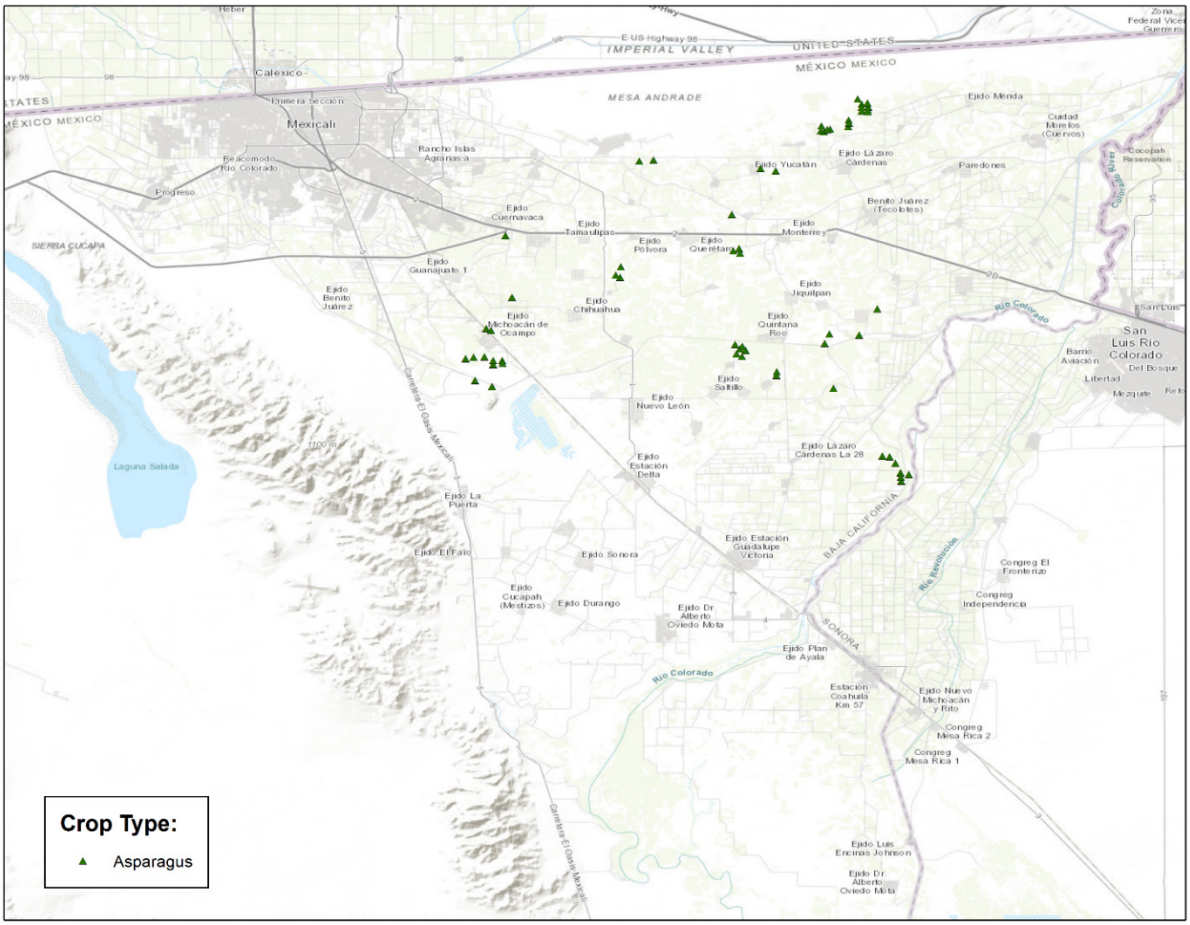

Figure 3. Spatial Distribution of Mexicali Asparagus

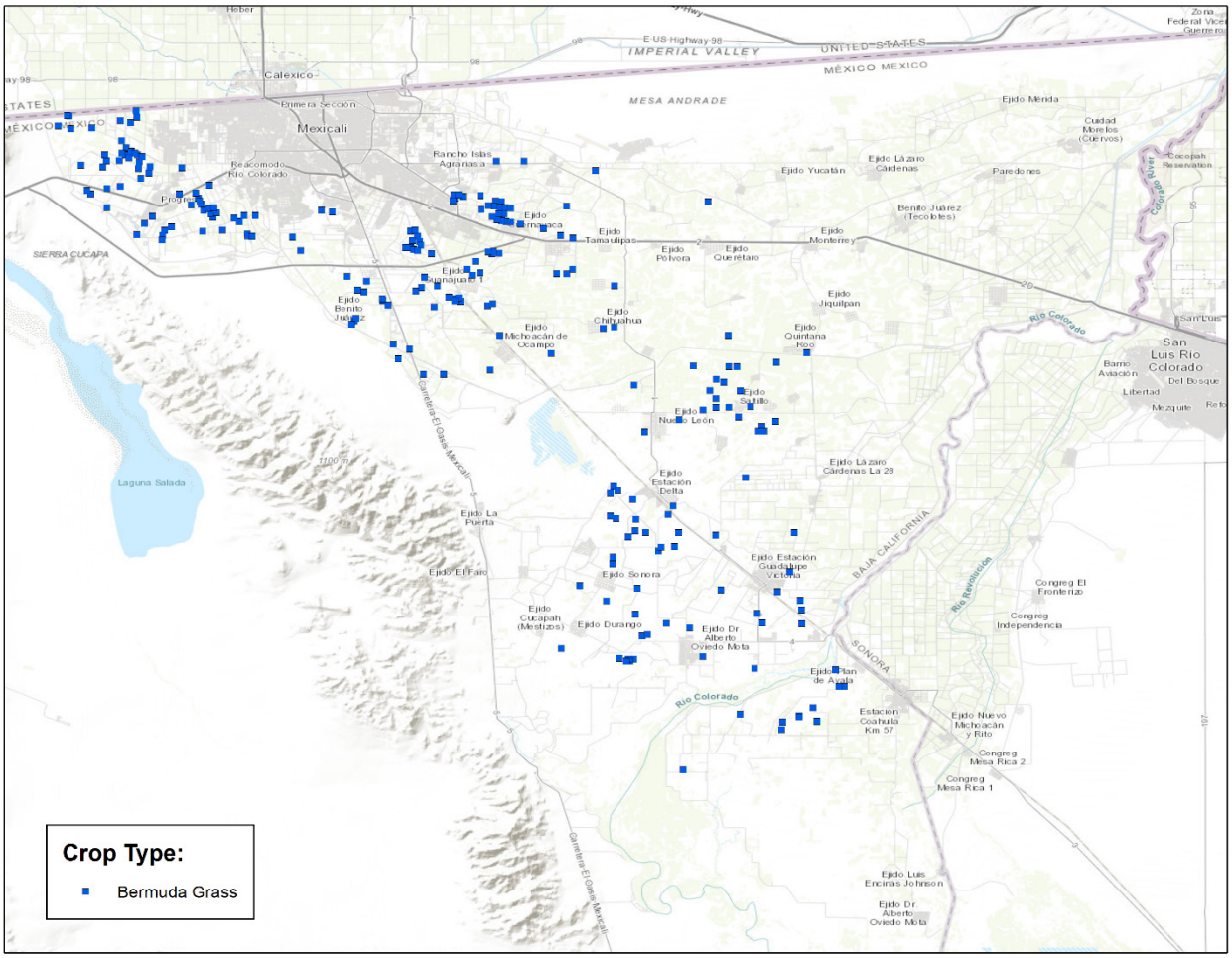

Figure 4. Spatial Distribution of Mexicali Bermuda Grass

Agricultural Burning – Wheat

In general, agricultural burning is not a normal cultivation practice for wheat fields (Zambrano Reyes, 2019). However, burning of an 8 hectare wheat field about 1 mile east of Ejido Jalapa was observed during ERG's site visit (see Figure 5 and Figure 6). As part of a brief interview with the farmer conducting the burn, he indicated that the planted field had failed during 2018 due to elevated soil salinity and that the field was being burned in preparation for field rehabilitation (Ejido Jalapa, 2019). Specific information about the burning of individual wheat fields is not recorded by SADER, so it is not possible to determine the total area of wheat fields burned in any given year. Therefore, in consultation with SADER staff, ERG assumed that 20 percent of the total wheat field area is burned in any year (Zambrano Reyes, 2019). On that basis for 2014, the assumed burned wheat field area was 16,385 hectares.

Figure 5. Agricultural Burning of a Mexicali Wheat Field (from distance)

Figure 6. Agricultural Burning of a Mexicali Wheat Field (up close)

ERG used the following emission factors developed by CARB to estimate emissions (CARB, 2005):

- NO_x – 4.3 lbs/ton residue
- SO_2 – 0.9 lbs/ton residue
- VOC – 7.6 lbs/ton residue
- CO – 123.6 lbs/ton residue
- PM_{10} – 10.6 lbs/ton residue

- $PM_{2.5}$ – 10.1 lbs/ton residue
- NH_3 – 1.95 lbs/ton residue

A default residual fuel loading of 1.9 tons per acre from CARB's *Area Sources Methods*, Section 7.17 was assumed (CARB, 2005).

Emissions from the burning of wheat fields were estimated using Equation 1; the estimated emissions are shown in Table 12.

Table 12. 2014 Agricultural Burning Emissions – Wheat – Mexicali (tons/year)

NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
165.4	34.6	292.3	4,754.0	407.7	388.5	75.0

Agricultural Burning – Asparagus

Unlike wheat, agricultural burning is a normal cultivation practice for asparagus. Agricultural burning is used to eliminate post-harvest crop residue and to stimulate future growth. Based upon a brief interview with an asparagus worker in a field north of Ejido Yucatán, ERG assumed a typical asparagus field in Mexicali has a lifetime of 8 to 10 years. Following each harvest, the field residue is burned (Ejido Yucatán, 2019). SADER staff confirmed that an assumption that all asparagus fields are burned after harvest is appropriate (Zambrano Reyes, 2019). ERG's visual inspection of several post-harvest asparagus fields north of Ejido Bórquez further confirmed this assumption (see Figure 7).

Figure 7. Visual Evidence of Agricultural Burning of Asparagus

ERG used the following emission factors developed by CARB to estimate emissions (CARB, 2005):

- NO_x – 4.49 lbs/ton residue
- SO_2 – 0.61 lbs/ton residue
- VOC – 66 lbs/ton residue
- CO – 150 lbs/ton residue
- PM_{10} – 40 lbs/ton residue
- $PM_{2.5}$ – 39.34 lbs/ton residue
- NH_3 – 2.37 lbs/ton residue

A default residual fuel loading of 1.5 tons per acre from CARB's methodology was assumed (CARB, 2005).

Emissions from the burning of asparagus fields were estimated using Equation 1; the estimated emissions are shown in Table 13.

Table 13. 2014 Agricultural Burning Emissions – Asparagus – Mexicali (tons/year)

NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
12.8	1.7	188.4	428.1	114.2	112.3	6.8

Agricultural Burning – Bermuda Grass

Like asparagus, agricultural burning is a normal cultivation practice for Bermuda grass. SADER staff confirmed that an assumption that all Bermuda grass fields are burned after harvest is appropriate (SADER, 2019a).

Assuming that the grassland crop was equivalent to Bermuda grass, ERG used the following emission factors developed by CARB to estimate emissions (CARB, 2005):

- NO_x – 4.5 lbs/ton residue
- SO_2 – 0.6 lbs/ton residue
- VOC – 10.7 lbs/ton residue
- CO – 114 lbs/ton residue
- PM_{10} – 15.9 lbs/ton residue
- $PM_{2.5}$ – 15.2 lbs/ton residue
- NH_3 – 1.8 lbs/ton residue

A default residual fuel loading of 3.2 tons per acre from CARB's methodology was assumed (CARB, 2005).

Emissions from the burning of Bermuda grass fields were estimated using Equation 1; the estimated emissions are shown in Table 14.

Table 14. 2014 Agricultural Burning Emissions – Bermuda Grass – Mexicali (tons/year)

NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
99.0	13.2	235.3	2,507.1	349.7	334.3	39.6

4.2.6 Brick Kilns

The project scope included ERG estimates for emissions from brick kilns in the municipality of Mexicali. In Mexico, brick kilns are operated by small independent brick makers that form, dry, and fire small batches of bricks; the small brick kilns do not include the larger industrial sources that manufacture commercial bricks. Brick kilns in Mexicali are not actual permanent stationary structures. Instead, unfired bricks are stacked and then a clay kiln covering is built directly over the stacked bricks. The kiln covering is then torn off following a 15-20 hour firing period, followed by a cooling period. The next brick kiln will then be built in a nearby, but different location. The previous Mexicali emissions inventory identified two distinct areas in the municipality of Mexicali with brick kilns: Algodones and Colonia Campestre (ERG, 2009).

- Algodones refers to the town of Los Algodones (or Vicente Guerrero) which lies directly across the Andrade border crossing from the community of Winterhaven, California in the extreme northeastern corner of the municipality of Mexicali. The brick kilns in this area are located about two miles southwest of town in Colonia Ladrillera. ERG observed both brick making and brick firing activities during the February 2-6, 2019 site visit (see Figure 8 and Figure 9). Fuels used at the Colonia Ladrillera brick kilns include logs (Figure 10), scrap wood (Figure 11, and coconut husks. Based on visual observations during the site visit and Google Earth satellite images, ERG estimated there to be about 12 active brick kiln lots within the Colonia Ladrillera area.

Figure 8. Unfired Bricks at Colonia Ladrillera

Figure 9. Firing of a Brick Kiln at Colonia Ladrillera

Figure 10. Colonia Ladrillera Fuel – Logs

Figure 11. Colonia Ladrillera Fuel – Scrap Wood

- Colonia Campestre (labeled as Ladrillera Campestre in Google Maps) is directly across Laguna Mexico from Club Deportivo Campestre de Mexicali. Visual inspection of the site during ERG's February 4-8, 2019 visit indicated no brick kiln activity – instead, it appeared that the area had been cleared with only small amounts of recent illegal dumping. For purposes of this study, ERG considered the Ladrillera Campestre site to be an inactive brick kiln area and did not include it in the inventory.

Three other brick kiln areas were also identified and investigated during ERG's site visit and through subsequent research by ICAR:

- Aguascalientes, located in the west part of Mexicali and west of Calz Manuel Gómez Morin between the unpaved Aguascalientes road and the U.S.-Mexico border. Although ERG found two partially torn down post-burn brick kilns in the Aguascalientes area, ERG was unable to identify any active brick mud piles or fuel piles at this location. The post-burn brick kilns appeared to have been abandoned for some time. Therefore, ERG considered the Aguascalientes site to be an inactive brick kiln area and will not include it in the inventory.
- Colorado, three distinct locations located east of the river flowing Laguna Mexico and Highway 2D and Avenida Valle Verde. Although ERG did not observe active firing during the site visit, brick making activities were observed. Based on subsequent ICAR visits and Google Earth satellite images, ERG estimated there to be about 10 active brick kiln lots within the Colorado location.
- Ricardo Mazón Guerrero, one disperse location centered at the intersection of Highway 3 and Highway 4 in the community of Ricardo Mazón Guerrero. The kilns are located on the east side of Highway 3 leading north towards Guadalupe Victoria and on both sides of Highway 4 leading west towards Alberto Oviedo Mota. Based on Google Earth satellite images, ERG estimated that there to be about eight active brick kiln lots within the Ricardo Mazón Guerrero location.

The locations of these three active brick kiln areas (Colonia Ladrillera, Colorado, and Ricardo Mazón Guerrero) and the two inactive brick kiln areas (Ladrillera Campestre and Aguascalientes) are shown in Figure 12.

Figure 12. Locations of Active and Inactive Brick Kiln Areas in Mexicali.

Based upon an interview with a Colonia Ladrillera brickmaker, ERG determined that each brick kiln burn typically consists of between 8,000 to 30,000 bricks with an average size being 15,000 bricks and that a typical brickmaker can make between 2,000 to 2,500 bricks per week (Colonia Ladrillera, 2019). Using these benchmarks, ERG assumed that each brick kiln lot would have 8 burns per year (i.e., each burn consisting of 6 weeks of brickmaking resulting in a burn batch of 15,000 bricks with time off for winter holidays and rare days of inclement weather). This provides an estimate of 96 total burns at the Colonia Ladrillera brick kiln area, 80 total burns at the Colorado brick kiln area, and 64 total burns at the Ricardo Mazón Guerrero brick kiln area.

ERG assumed per-burn brick kiln fuel use quantities were the same as those estimated during an April 2007 site visit to Colonia Ladrillera by ERG – 16.18 tons of biomass per burn (ENVIRON and ERG, 2007).

Emissions were estimated as shown in Equation 2.

$$E_p = F \times EF_p \qquad \text{Equation 2}$$

Where

E_p	=	Emissions for pollutant *p*;
F	=	Quantity of fuel used (tons fuel); and
EF_p	=	Emission factor for pollutant *p* (lbs/tons fuel)

ERG used the following residential fireplace emission factors from *AP-42* (U.S. EPA, 1995b) to estimate brick kiln emissions:

- NO_x – 2.6 lbs/ton fuel
- SO_2 – 0.4 lbs/ton fuel
- VOC – 229 lbs/ton fuel
- CO – 252.6 lbs/ton fuel
- PM_{10} – 34.6 lbs/ton fuel
- $PM_{2.5}$ – 33.3 lbs/ton fuel

Estimated emissions from the three brick kiln areas are shown in Table 15.

Table 15. 2014 Brick Kiln Emissions – Mexicali (tons/year)

Area	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Colonia Ladrillera	2.0	0.3	177.9	196.2	26.9	25.9
Colorado	1.7	0.3	148.2	163.5	22.4	21.6
Ricardo Mazón Guerrero	1.3	0.2	118.6	130.8	17.9	17.2
Total	**5.0**	**0.8**	**444.6**	**490.4**	**67.2**	**64.7**

4.2.7 Windblown Dust

The project scope specified that windblown dust emissions would be estimated using CARB's windblown dust estimation method (CARB, 1997a; CARB, 1997b; U.S. EPA, 1974). Since this method is limited to agricultural land, the resulting Mexicali windblown dust emission estimates were limited to agricultural lands (i.e., windblown dust from unpaved areas such as unpaved roads, vacant lots, etc.), was not estimated).

The CARB windblown dust estimation method is a modified version of the wind erosion equation (WEQ) developed by the United States Department of Agriculture – Agricultural Research Service (USDA-ARS). The base version of the WEQ was based upon conditions in the Midwest; the CARB modifications attempt to account for the environmental conditions and agricultural practices that are unique to California.

The basic WEQ is shown in Equation 3

$$E_s = AIKCL'V' \qquad \text{Equation 3}$$

Where

Es	=	suspended particulate fraction of wind losses of tilled fields (tons/acre-year);
A	=	portion of total wind erosion losses that would be measured as suspended particulate (assumed 0.025);
I	=	soil erodibility (tons/acre-year);
K	=	surface roughness factors (dimensionless);
C	=	climatic factor (dimensionless);
L'	=	unsheltered field width factor (dimensionless); and
V'	=	vegetative cover factor (dimensionless).

Using the CARB methodology, ERG first estimated the annual climatic factor (C). Climatic variables for 2014 were obtained from California Irrigation Management Information System (CIMIS) Station #87 (Meloland), which is located in Imperial County and is the closest CIMIS station to Mexicali. The annual climatic C factor is a function of mean annual wind speed and Thornthwaite's precipitation-evaporation index as shown in Equation 4.

$$C = 0.3448\left(\frac{WS^3}{PE^2}\right)$$ Equation 4

Where

C	=	climatic factor (dimensionless);
WS	=	mean annual wind speed 10 meters above the ground (miles/hour); and
PE	=	Thornthwaite's precipitation-evaporation index (i.e., sum of monthly PE values [ratios of precipitation to actual evapotranspiration]).

The calculation of wind speed corrected to a standard 10 meter height (WS) is shown in Equation 5.

$$WS = WS_b\left(\frac{10}{Z_b}\right)^p$$ Equation 5

Where

WS	=	mean annual wind speed 10 meters above the ground (miles/hour);
WS_b	=	mean annual wind speed at height Z_b (miles/hour);
Z_b	=	height of climatic station (i.e., 2 meters); and
p	=	0.143 for flat terrain; 0.40 for rough terrain.

The calculation of Thornthwaite's precipitation-evaporation index (PE) is shown in Equation 6.

$$PE = \sum_{m=1}^{12} PE_m$$ Equation 6

Where

PE	=	Thornthwaite's precipitation-evaporation index; and
PE_m	=	monthly PE values (ratios of precipitation to actual evapotranspiration) for month *m*.

The calculation of monthly PE values (PE_m) is shown in Equation 7.

$$PE_m = 115\left(\frac{P_m}{[T_m - 10]}\right)^{1.1111} \quad \text{Equation 7}$$

Where

PE_m = monthly PE values (ratios of precipitation to actual evapotranspiration) for month *m*;
P_m = average monthly precipitation for month *m* (values less than 0.5 inches assigned value of 0.5 inches); and
T_m = average monthly temperature for month *m*.

The calculated annual climatic C factor was 1.9366.

The modified monthly climatic C factor calculation parallels the calculation of the annual climatic C factor, except that instead of summing the monthly PE values for all months of the year, each month's PE value is multiplied by 12 and then entered into the C factor equation along with the mean monthly wind speed for that month, which results in a C factor as if the monthly climate was the year round climate. This is shown in Equation 7.

$$C_m = 0.3448\left(\frac{{WS_m}^3}{[PE_m \times 12]^2}\right) \quad \text{Equation 8}$$

Where

C_m = monthly climatic factor (dimensionless);
WS_m = mean monthly wind speed 10 meters above the ground (miles/hour); and
PE_m = monthly Thornthwaite's precipitation-evaporation index (i.e., sum of monthly PE values [ratios of precipitation to actual evapotranspiration]

Normalized monthly C factors were then estimated by summing the monthly C factors and dividing by each monthly C factor by the sum.

As discussed in Section 4.2.5, agricultural field area KMZ data files were obtained from SADER for each of the 14 Mexicali irrigation modules. Because the total KMZ crop area was less than the reported SADER crop areas, all KMZ crop areas were ratioed up by a crop-specific factor so that the KMZ crop areas matched the SADER crop areas. As indicated in the CARB method, all orchards and vineyards were excluded from the emission estimation calculation.

Specific soil texture classifications were determined using clay, silt, and sand content data from the International Soil Reference and Information Centre (ISRIC) (ISRIC, 2019).

ISRIC SoilGrids data was downloaded for the area of interest using the web-mapping interface at www.soilgrids.org. The three specific GeoTiff layers downloaded included:

- Soil Grids 250m: CLYPPT_M_sl1: Clay content (0-2 micrometer) mass fraction in % at depth 0.00m
- Soil Grids 250m: SLTPPT_M_sl1: Silt content (2-50 micrometer) mass fraction in % at depth 0.00m
- Soil Grids 250m: SNDPPT_M_sl1: Sand content (50-2000 micrometer) mass fraction in % at depth 0.00m

The SoilGrid data and single shapefile containing all crop data points were overlaid in ArcMap 10.6.1. Using the "Extract Multi Values to Points" tool, the crop data points were assigned the cell value for each of the three soil layers where they overlapped. ERG developed an Excel form using VB Script and the Natural Resources Conservation Service (NRCS) Soil Texture Calculator (NRCS, 2019). The percent values for Clay, Silt, and Sand were then input in to the Excel form to get the soil texture for each of the crop data points. The soil texture outputs were linked back to the crop point layer using a Join on the "ID" column in ArcMap. The soil texture classification for each crop data point is shown in Figure 13.

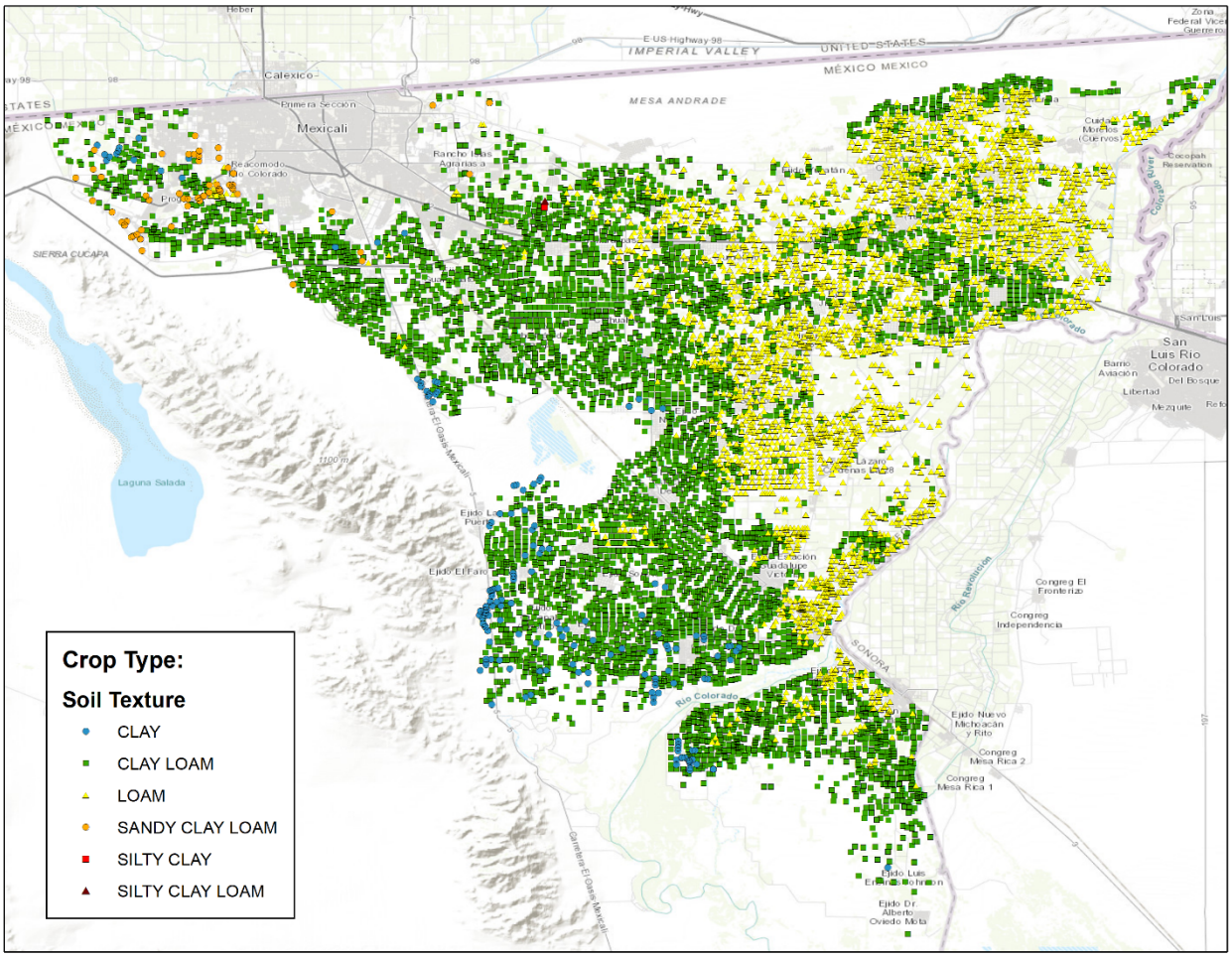

Figure 13. Mexicali Soil Texture Classifications.

The remaining equation variables from the basic WEQ (i.e., Equation 9) were then assigned to each crop point based upon the soil texture and crop type at each crop data point.

Soil erodibilities (I), both irrigated and nonirrigated, for each soil texture type were obtained from the original U.S. EPA method documentation (U.S. EPA, 1974).

Surface roughness factors (K) and unsheltered field width values (L) were also obtained from the original U.S. EPA method documentation (U.S. EPA, 1974).

The unsheltered field width factor (L') was estimated using Figure A-5 from the original U.S. EPA method documentation (U.S. EPA, 1974) based upon the unsheltered field width (L) and the product of soil erodibility (I) and surface roughness (K).

As outlined in the CARB methodology (CARB, 1997a; CARB, 1997b), the vegetative cover factor (V') was developed using an alternative approach using nonclimatic factors. Many of the California conditions that justify such an alternative approach are also present in Mexicali. This approach is described below.

The nonclimatic factors used in this approach include crop canopy, postharvest soil cover, irrigation, and replanting factors.

Based upon crop calendar information provided by SADER (SADER, 2019a), each crop was assigned a planting month and a harvesting month. This assignment is shown in Table 16.

Table 16. Crop-specific Planting and Harvesting Months

Crop	Planting Month	Harvesting Month
Alfalfa	n/a	n/a
Asparagus	n/a	n/a
Barley	December	May
Beets	November	February
Bermuda Grass	n/a	n/a
Broccoli	November	February
Cabbage	October	January
Cantaloupe	March	June
Carrots	November	March
Cauliflower	October	January
Chile	February	May
Cilantro	October	December
Corn	July	November
Cotton	March	September
Garlic	September	April
Green Onions	n/a	n/a
Kale	October	January
Leek	October	April
Lettuce	October	January
Oats	November	April

Table 16. Crop-specific Planting and Harvesting Months

Crop	Planting Month	Harvesting Month
Onions	October	April
Parsley	October	December
Radishes	November	January
Ryegrass	n/a	n/a
Safflower	December	June
Sorghum	March	October
Spinach	September	December
Squash	February	April
Tomatoes	February	June
Watermelon	February	May
Wheat	December	May

Based on the crop calendars, a monthly growing canopy fraction (GCF) and a postharvest/preplant fraction (PHPP) was assigned. For each crop, the GCF was 0.5 for the planting and harvesting months, 1.0 for the months between the planting and harvesting months, and 0.0 for the months between the harvesting and planting months. The PHPP factor is the complement of the GCF (i.e., PHPP = 1 - GCF) for any given month. Crops with an "n/a" were either multi-year pasture-type crops with no discernible planting/harvest (i.e., alfalfa, Bermuda grass, ryegrass), perennial (i.e., asparagus), or planted/harvested throughout the year (i.e., green onions) – all of these crops were assigned a GCF value of 1.0 and a PHPP factor value of 0.0 for all months of the year.

The crop canopy cover factor (CCF) was estimated by Equation 9.

$$CCF = e^{(-0.201[CC^{0.7366}])} \qquad \text{Equation 9}$$

Where

CCF = soil loss ratio due to crop canopy cover; and
CC = crop canopy cover (percent).

Crop canopy cover percentages were obtained from the Revised Universal Soil Loss Equation, Version 2 (RUSLE2) model maintained by the Agricultural Research Service (ARS, 2018). All crops assigned a GCF value of 1.0 (i.e., alfalfa, asparagus, Bermuda grass, green onions, and ryegrass) were assigned a typical crop canopy coverage percentage throughout the year.

The postharvest soil cover factor (PHSCF) was estimated by Equation 10.

$$PHSCF = e^{(-0.0438SC)} \qquad \text{Equation 10}$$

Where

PHSCF = postharvest soil cover factor; and
SC = postharvest soil cover (percent).

Crop-specific postharvest soil cover information could not be obtained for Mexicali, so a postharvest soil cover of 15 percent was assumed.

An irrigation factor (IrrF) of 1.0 was assumed (i.e., all fields in Mexicali are irrigated). In addition, a replant fraction (RF) of 0.0 was assumed (i.e., no fields in Mexicali are replanted immediately after harvest). In reality, there are likely some fields that are replanted after harvest, but no information regarding replanting activities was obtained from SADER, so an RF value of 0.0 was assumed.

ERG calculated windblown dust emissions for each crop data point using three different calculations: crop area, bare area, and border area. These are described below:

- Crop area – defined as the area that has active crop growth and assumed to be 99 percent of the total agricultural area.
- Bare area – defined as the fraction of the planted agricultural area that remains barren due to various reasons (e.g., water accumulation, uneven irrigation, pest damage, soil salinity/toxicity) and assumed to be 0.5 percent of the total agricultural area.
- Border area – defined as the fraction of the total agricultural area that borders agricultural fields (oftentimes roads or ditchbanks) and assumed to be 0.5 percent of the total agricultural area.

Crop Area Emissions

Emissions for crop areas at each crop data point were calculated as shown in Equation 11.

$$IAE_{crop} = AC \times 0.99 \times A \times I_{Irr} \times C \times K \times L' \qquad \text{Equation 11}$$

Where

$IAE_{crop,c}$	=	intermediate annual PM emissions for the crop area of crop *c*;
AC_c	=	total acres of crop *c*;
A	=	suspended fraction (0.025);
I_{Irr}	=	irrigated erodibility;
C	=	annual climatic factor;
K_c	=	surface roughness length for crop *c*; and
L'_c	=	unsheltered width factor for crop *c*.

The monthly crop area emissions at each crop point are then calculated using a growing canopy emissions subtotal and a postharvest emissions subtotal which are shown in Equation 12, Equation 13, and Equation 14.

$$ME_{crop,m,c} = ME_{crop,g,m,c} + ME_{crop,p,m,c} \qquad \text{Equation 12}$$

Where

$ME_{crop,m,c}$	=	monthly PM emissions for the crop area of crop *c* for month *m*;
$ME_{crop,g,m,c}$	=	monthly PM emissions (growing canopy) for the crop area of crop *c* for month *m*; and
$ME_{crop,p,m,c}$	=	monthly PM emissions (postharvest) for the crop area of crop *c* for month *m*.

$$ME_{crop,g,m,c} = IAE_{crop,c} \times NCF_m \times IrrF \times CCF_{m,c} \times GCF_{m,c}$$ Equation 13

Where

$ME_{crop,g,m,c}$ = monthly PM emissions (growing canopy) for the crop area of crop *c* for month *m*;
$IAE_{crop,c}$ = intermediate annual PM emissions for the crop area of crop *c*;
NCF_m = normalized climatic C factor for month *m*;
IrrF = irrigation factor;
$CCF_{m,c}$ = canopy cover factor of crop *c* for month *m*; and
$GCF_{m,c}$ = growing canopy fraction of crop *c* for month *m*.

$$ME_{crop,p,m,c} = IAE_{crop,c} \times NCF_m \times (1 - RF) \times PHSCF \times PHPP_{m,c}$$ Equation 14

Where

$ME_{crop,p,m,c}$ = monthly PM emissions (postharvest) for the crop area of crop *c* for month *m*;
$IAE_{crop,c}$ = intermediate annual PM emissions for the crop area of crop *c*;
NCF_m = normalized climatic C factor for month *m*;
RF = replant fraction;
PHSCF = postharvest soil cover fraction; and
$PHPP_{m,c}$ = postharvest/preplant fraction for crop *c* for month *m*.

Bare Area Emissions

Emissions for bare areas at each crop data point were calculated as shown in Equation 15. The estimation method is similar to the crop area above, except that only 0.5 percent of the acreage is used and the crop canopy and postharvest soil cover adjustment factors are not applied.

$$IAE_{bare,c} = AC_c \times 0.005 \times A \times I_{Irr} \times C \times K_c \times L'_c$$ Equation 15

Where

$IAE_{bare,c}$ = intermediate annual PM emissions for the bare area of crop *c*;
AC_c = total acres of crop *c*;
A = suspended fraction (0.025);
I_{Irr} = irrigated erodibility;
C = annual climatic factor;
K_c = surface roughness length for crop *c*; and
L'_c = unsheltered width factor for crop *c*.

The monthly bare area emissions at each crop point are then calculated using a growing canopy emissions subtotal and a postharvest emissions subtotal which are shown in Equation 16, Equation 17, and Equation 18.

$$ME_{bare,m,c} = ME_{bare,g,m,c} + ME_{bare,p,m,c}$$ Equation 16

Where

$ME_{bare,m,c}$ = monthly PM emissions for the bare area of crop *c* for month *m*;
$ME_{bare,g,m,c}$ = monthly PM emissions (growing canopy) for the bare area of crop *c* for month *m*; and
$ME_{bare,p,m,c}$ = monthly PM emissions (postharvest) for the bare area of crop *c* for month *m*.

$$ME_{bare,g,m,c} = IAE_{bare,c} \times NCF_m \times IrrF \times GCF_{m,c} \quad \text{Equation 17}$$

Where

$ME_{bare,g,m,c}$ = monthly PM emissions (growing canopy) for the bare area of crop *c* for month *m*;
$IAE_{bare,c}$ = intermediate annual PM emissions for the bare area of crop *c*;
NCF_m = normalized climatic C factor for month *m*;
IrrF = irrigation factor; and
$GCF_{m,c}$ = growing canopy fraction of crop *c* for month *m*.

$$ME_{bare,p,m,c} = IAE_{bare,c} \times NCF_m \times (1 - RF) \times PHPP_{m,c} \quad \text{Equation 18}$$

Where

$ME_{bare,p,m,c}$ = monthly PM emissions (postharvest) for the bare area of crop *c* for month *m*;
$IAE_{bare,c}$ = intermediate annual PM emissions for the bare area of crop *c*;
NCF_m = normalized climatic C factor for month *m*;
RF = replant fraction; and
$PHPP_{m,c}$ = postharvest/preplant fraction for crop *c* for month *m*.

Border Area Emissions

Emissions for border areas at each crop data point were calculated as shown in Equation 19. The estimation method is similar to the bare area above, except that nonirrigated erodibility (I) is used instead of irrigated erodibility (I_{Irr}).

$$IAE_{border} = AC \times 0.005 \times A \times I \times C \times K \times L' \quad \text{Equation 19}$$

Where

$IAE_{border,c}$ = intermediate annual PM emissions for the border area of crop *c*;
AC_c = total acres of crop *c*;
A = suspended fraction (0.025);
I = nonirrigated erodibility;
C = annual climatic factor;
K_c = surface roughness length for crop *c*; and
L'_c = unsheltered width factor for crop *c*.

The monthly border area emissions at each crop point are then calculated using a growing canopy emissions subtotal and a postharvest emissions subtotal which are shown in Equation 20, Equation 21, and Equation 22.

$$ME_{border,m,c} = ME_{border,g,m,c} + ME_{border,p,m,c}$$ Equation 20

Where

$ME_{border,m,c}$ = monthly PM emissions for the border area of crop *c* for month *m*;
$ME_{border,g,m,c}$ = monthly PM emissions (growing canopy) for the border area of crop *c* for month *m*; and
$ME_{border,p,m,c}$ = monthly PM emissions (postharvest) for the border area of crop *c* for month *m*.

$$ME_{border,g,m,c} = IAE_{border,c} \times NCF_m \times GCF_{m,c}$$ Equation 21

Where

$ME_{border,g,m,c}$ = monthly PM emissions (growing canopy) for the border area of crop *c* for month *m*;
$IAE_{border,c}$ = intermediate annual PM emissions for the border area of crop *c*;
NCF_m = normalized climatic C factor for month *m*; and
$GCF_{m,c}$ = growing canopy fraction of crop *c* for month *m*.

$$ME_{border,p,m,c} = IAE_{border,c} \times NCF_m \times (1 - RF) \times PHPP_{m,c}$$ Equation 22

Where

$ME_{border,p,m,c}$ = monthly PM emissions (postharvest) for the border area of crop *c* for month *m*;
$IAE_{border,c}$ = intermediate annual PM emissions for the border area of crop *c*;
NCF_m = normalized climatic C factor for month *m*;
RF = replant fraction; and
$PHPP_{m,c}$ = postharvest/preplant fraction for crop *c* for month *m*.

Total Emissions

Total emissions at each crop data point are estimated as shown in Equation 23 and Equation 24.

$$ME_{total,m,c} = ME_{crop,m,c} + ME_{bare,m,c} + ME_{border,m,c}$$ Equation 23

Where

$ME_{total,m,c}$ = monthly PM emissions for crop *c* for month *m*;
$ME_{crop,m,c}$ = monthly PM emissions for the crop area of crop *c* for month *m*;
$ME_{bare,m,c}$ = monthly PM emissions for the bare area of crop *c* for month *m*;
$ME_{border,m,c}$ = monthly PM emissions for the border area of crop *c* for month *m*;

$$E_c = \sum_{m=1}^{12} ME_{total,mc}$$ Equation 24

Where

E_c = annual PM emissions for crop *c*; and
$ME_{total,m,c}$ = monthly PM emissions for crop *c* for month *m*.

Total estimated annual PM emissions for windblown dust in 2014 for Mexicali were 52,038.8 tons from 162,702 hectares (i.e., 402,037 acres) of agricultural land. For a point of comparison, CARB estimated 69,474 tons PM for Imperial County from 490,409 acres of nonpasture agricultural land (CARB, 1997b).

Based upon CARB's PM fractions (i.e., PM_{10} = 45.43 percent of total PM and $PM_{2.5}$ = 7.86 percent of total PM), 2014 PM_{10} emissions were 23,641.2 tons, while 2014 $PM_{2.5}$ emissions were 4,090.2 tons.

Windblown dust emissions were also estimated for the municipality of Tecate. The climatic variables used for Mexicali were also used for Tecate. Detailed agricultural field area KMZ files were not available for Tecate, so overall municipality-wide agricultural statistics from SADER. The total agricultural area for applicable crops in Tecate (i.e., orchards and vineyards were excluded) was 244 hectares. Since the detailed KMZ files were not available, ERG could not determine the crop texture classification associated with specific locations. Examination of ISRIC data identified that Tecate soils were primarily sandy loam. Total 2014 emissions for Tecate were 28.6 tons PM, 13.0 tons PM_{10}, and 2.2 tons $PM_{2.5}$.

It should be noted that the use of a 0.0 replant fraction (RF) in the estimation of windblown dust emissions is conservatively high; nonzero RF values will result in lower emissions. For example, if an overall replant fraction of 0.25 is used in Mexicali (i.e., 25 percent of all Mexicali fields are replanted immediately after harvest), then the resultant PM emissions are 40,723.7 tons of PM (i.e., a 21.7 percent reduction of PM emissions compared to 52,038.8 tons of PM with an RF value of 0.0).

4.3 On-road Motor Vehicles

The 2014 MNEI on-road motor vehicles category estimates were calculated at the state-level; however, the spreadsheets and documentation did not specify details on calculation methodology, activity data, and data sources, so the exact methods were not known.

Since the available data from the 2014 MNEI were state totals, by pollutant (i.e., data not available by SCC, vehicle type, and fuel type), ERG used 2008 emissions data included in the 2014 MNEI data files to allocate the 2014 state-level totals to vehicle type and fuel type. The 2008 MNEI data were available at the municipality-level and were calculated by type of vehicle (e.g., HDDB, HDGB, LDGV, MC, LDDT2, etc.), and fuel type (i.e., diesel, gasoline, LPG, and CNG). ERG developed ratios of 2008 pollutant emissions by vehicle type and fuel type to 2008 state totals. These ratios (by pollutant) were then applied to the 2014 state totals to generate municipality-level emissions by vehicle type and fuel type (see Equation 24). ERG used the PM_{10} ratios to develop both PM_{10} and $PM_{2.5}$ estimates for 2014.

$$E_{2014,m,p,v} = E_{2014,p} \times \left(\frac{E_{2008,m,p,v}}{E_{2008,p}}\right) \qquad \text{Equation 25}$$

Where

$E_{2014,m,p,v}$ = 2014 emissions for pollutant *p* from vehicle class *v* in municipality *m*;
$E_{2014,p}$ = 2014 emissions for pollutant *p* for all vehicle classes in Baja California;

$E_{2008,m,p,v}$ = 2008 emissions for pollutant *p* from vehicle class *v* in municipality *m*; and
$E_{2008,p}$ = 2008 emissions for pollutant *p* for all vehicle classes in Baja California.

ERG then assigned MOVES SCCs to the 2014 base year estimates. Table 17 presents the 2014 base year onroad motor vehicle category estimates developed by ERG. The emissions presented in Table 17 are presented in units of megagrams (Mg) per year, which are the original units used in the 2014 MNEI.

Table 17. On-road Motor Vehicle Emissions for Baja California (2014)

Municipality	Fuel Type	Emissions (Mg/year)						
		NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	CNG	4.3	-	0.1	0.8	-	-	-
Ensenada	Diesel	558.9	18.7	10.5	81.4	76.7	73.7	0.4
Ensenada	Gasoline	7,744.1	202.5	1,400.6	24,048.8	268.7	257.9	97.4
Ensenada	LPG	1.4	-	0.2	0.7	-	-	-
Mexicali	CNG	10.3	-	0.3	2.1	-	-	-
Mexicali	Diesel	847.5	33.1	16.2	115.9	135.8	130.3	0.7
Mexicali	Gasoline	14,650.6	484.7	3,163.6	48,135.0	636.5	611.0	240.8
Mexicali	LPG	2.6	-	0.4	1.2	-	-	-
Tecate	CNG	1.5	-	0.0	0.3	-	-	-
Tecate	Diesel	115.8	4.1	2.3	16.5	17.0	16.3	0.1
Tecate	Gasoline	2,059.8	57.4	437.7	6,594.0	77.1	74.0	27.0
Tecate	LPG	1.3	-	0.1	0.4	-	-	-
Tijuana	CNG	13.9	-	0.4	3.0	-	-	-
Tijuana	Diesel	800.0	35.2	15.7	98.8	144.9	139.1	0.8
Tijuana	Gasoline	23,242.7	652.1	4,459.7	64,860.8	850.3	816.2	327.1
Tijuana	LPG	18.4	-	2.5	7.6	-	-	-
Playas de Rosarito	CNG	1.6	-	0.0	0.2	-	-	-
Playas de Rosarito	Diesel	107.1	4.1	2.3	15.3	17.1	16.4	0.1
Playas de Rosarito	Gasoline	1,599.7	45.1	331.5	4,962.0	59.5	57.1	21.9
Playas de Rosarito	LPG	1.0	-	0.2	0.5	-	-	-
Baja California	**All Fuels**	**51,782.8**	**1,537.1**	**9,844.3**	**148,945.7**	**2,283.5**	**2,192.1**	**716.3**

4.4 Nonroad Mobile Sources

Since the 2014 MNEI did not include nonroad mobile source emissions, ERG estimated these emissions for aircraft, locomotives, commercial marine vessels, construction equipment, and agricultural equipment. The project scope indicated that nonroad mobile source emissions should be estimated by scaling emission estimates from the 2005 Mexicali emissions inventory (ERG, 2009) using appropriate activity surrogates. This approach is described below. It should be noted that the 2005 Mexicali emissions inventory did not include any NH_3 emissions. As a result, ERG did not estimate nonroad mobile source NH_3 emissions for 2014.

4.4.1 Aircraft

The two largest airports in Baja California are the General Abelardo L. Rodriguez International Airport in Tijuana and the General Rodolfo Sánchez Taboada International Airport in Mexicali.

As part of the 2005 Mexicali emissions inventory (ERG, 2009), ERG estimated emissions for the Mexicali Airport using the latest version (at that time) of the Emissions and Dispersion Modeling System (EDMS 5.0.2, release June 29, 2007) model, developed by the Federal Aviation Administration (FAA) and was recommended for use by U.S. EPA. The EDMS model has since been replaced by the Aviation Environmental Design Tool (AEDT) as of May 2015; however, it was not practical to use the AEDT to estimate emissions for the Mexicali and Tijuana airports (primarily due to insufficient data). Therefore, ERG estimated emissions by scaling the 2005 Mexicali aircraft emissions by the number of flight operations at the Mexicali and Tijuana airports in 2014.

The 2005 Mexicali emissions inventory included emissions from aircraft emissions, ground support equipment (GSE), and auxiliary power units (APUs) as shown in Table 18.

Table 18. 2005 Mexicali Airport Emissions

Equipment Type	Emissions (Mg)					
	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Aircraft	13.8	1.7	6.2	28.7	0.3	0.3
GSE	3.4	0.3	1.0	29.4	0.1	0.1
APUs	0.6	0.1	0.0	0.4	0.0	0.0

The 2014 airport-level emissions were estimated by applying the ratio of 2014 flight operations at each airport over the 2005 Mexicali flight operations to the 2005 Mexicali airport emissions as shown in Equation 26.

$$E_{2014,a,p} = E_{2005,Mex,p} \times \left(\frac{F_{2014,a}}{F_{2005,Mex}}\right) \quad \text{Equation 26}$$

Where

$E_{2014,a,p}$ = 2014 emissions for pollutant *p* at airport *a*;
$E_{2005,Mex,p}$ = 2005 emissions for pollutant *p* at Mexicali Airport;
$F_{2014,a}$ = 2014 flight operations at airport *a*; and
$F_{2005,Mex}$ = 2005 flight operation at Mexicali Airport.

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Flight operation data were obtained from the Secretaría de Comunicaciones y Transportes (SCT) (SCT, 2019). Flight operations were disaggregated by departures/arrivals, domestic/international, and regular/chartered flights and are shown in Table 19. The estimated 2014 airport-level emissions are shown in Table 24.

Table 19. 2005 and 2014 Flight Operations at Tijuana and Mexicali Airports

Type of Flight Operation	Tijuana (2005)	Tijuana (2014)	Mexicali (2005)	Mexicali (2014)
Domestic Scheduled Departures	32,752	18,884	4,638	2,617
Domestic Charter Departures	243	208	1	0
International Scheduled Departures	37	247	446	3

Table 19. 2005 and 2014 Flight Operations at Tijuana and Mexicali Airports

Type of Flight Operation	Tijuana (2005)	Tijuana (2014)	Mexicali (2005)	Mexicali (2014)
International Charter Departures	8	0	0	1
Domestic Scheduled Arrivals	33,557	19,021	5,025	2,622
Domestic Charter Arrivals	293	203	2	0
International Scheduled Arrivals	37	109	0	0
International Charter Arrivals	95	3	0	0
Total Flight Operation	**67,022**	**38,675**	**10,112**	**5,243**

Table 20. 2014 Baja California Airport Emissions (tons/year)

Airport	Emission Source	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Mexicali	Aircraft	7.9	1.0	3.5	16.4	0.2	0.2
	GSE	1.9	0.2	0.6	16.8	0.1	0.1
	APUs	0.3	0.0	0.0	0.2	0.0	0.0
Tijuana	Aircraft	58.3	7.3	26.0	121.2	1.3	1.3
	GSE	14.2	1.1	4.3	124.0	0.4	0.4
	APUs	2.5	0.3	0.1	1.7	0.0	0.0

4.4.2 Locomotives

As part of the 2005 Mexicali emissions inventory (ERG, 2009), ERG estimated rail locomotive emissions for each of the five Baja California municipalities. These emissions are shown in Table 21.

Table 21. 2005 Baja California Municipality-Level Locomotive Emissions

Municipality	Emissions (Mg)					
	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Ensenada	0.0	0.0	0.0	0.0	0.0	0.0
Mexicali	187.1	1.7	7.1	18.5	4.6	4.2
Playas de Rosarito	0.0	0.0	0.0	0.0	0.0	0.0
Tecate	62.7	0.6	2.4	6.2	1.6	1.4
Tijuana	109.6	1.0	4.1	10.8	2.7	2.4
Total	**359.3**	**3.2**	**13.6**	**35.5**	**8.9**	**8.0**

ERG estimated the 2014 municipality-level locomotive emissions by applying the ratio of 2014 rail diesel use over 2005 rail diesel use to the 2005 municipality-level locomotive emissions as shown in Equation 27. Historical rail diesel use was obtained from SENER energy forecast documents (SENER, 2016). Historical rail diesel use was only disaggregated to the regional level – the relevant region for Baja California was the Northwest Region consisting of the states of Baja California, Baja California Sur, Sinaloa, and Sonora.

$$E_{2014,m,p} = E_{2005,m,p} \times \left(\frac{DR_{2014,r}}{DR_{2005,r}}\right)$$ Equation 27

Where

$E_{2014,m,p}$ = 2014 emissions for pollutant *p* in municipality *m*;
$E_{2005,m,p}$ = 2005 emissions for pollutant *p* in municipality *m*;
$DR_{2014,r}$ = 2014 rail diesel for region *r* (containing municipality *m*); and
$DR_{2005,r}$ = 2005 rail diesel for region *r* (containing municipality *m*).

The estimated 2014 municipality-level railroad emissions are shown in Table 22.

Table 22. 2014 Baja California Municipality-Level Locomotive Emissions (tons/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Ensenada	0.0	0.0	0.0	0.0	0.0	0.0
Mexicali	274.9	2.4	10.4	27.2	6.8	6.1
Playas de Rosarito	0.0	0.0	0.0	0.0	0.0	0.0
Tecate	92.1	0.8	3.5	9.1	2.3	2.1
Tijuana	161.1	1.4	6.1	15.9	4.0	3.6
Total	**528.2**	**4.7**	**19.9**	**52.2**	**13.1**	**11.8**

4.4.3 Commercial Marine

In support of the Commission for Environmental Cooperation (CEC), ERG developed 2011 emissions and 2030 projected emissions for five ports in Baja California (ERG, 2015b). These ports included El Sauzal, Ensenada, and Isla Cedros in the municipality of Ensenada; San Felipe in the municipality of Mexicali; and Rosarito in the municipality of Playas de Rosarito. Emissions included vessel movement, vessel dockside, and cargo handling equipment (CHE) activity emissions.

ERG estimated the 2014 municipality-level commercial marine emissions by taking a straight-line interpolation between the 2011 emissions and the 2030 projected emissions for each activity at each port as shown in Equation 28.

$$E_{2014,a,t,p} = E_{2011,a,t,p} + \left(\frac{4}{19}\right)\left(E_{2030,a,t,p} - E_{2011,a,t,p}\right)$$ Equation 28

Where

$E_{2014,a,t,p}$ = 2014 emissions for pollutant *p* from activity *a* in port *t*;
$E_{2011,a,t,p}$ = 2011 emissions for pollutant *p* from activity *a* in port *t*; and
$E_{2030,a,t,p}$ = 2030 emissions for pollutant *p* from activity *a* in port *t*.

The estimated 2014 municipality-level commercial marine emissions are shown in Table 23.

Table 23. 2014 Baja California Municipality-Level Commercial Marine Emissions (tons/year)

Activity	Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Vessel Movement	Ensenada	413.5	186.4	14.6	34.0	26.1	24.1
	Mexicali	0.0	0.0	0.0	0.0	0.0	0.0
	Playas de Rosarito	55.9	25.2	2.0	4.6	3.5	3.3
	Tecate	0.0	0.0	0.0	0.0	0.0	0.0
	Tijuana	0.0	0.0	0.0	0.0	0.0	0.0
	Total	**469.3**	**211.6**	**16.5**	**38.6**	**29.7**	**27.3**
Vessel Dockside	Ensenada	31,365.5	14,140.8	1,105.3	2,577.8	1,983.3	1,825.6
	Mexicali	0.2	0.1	0.0	0.0	0.0	0.0
	Playas de Rosarito	4,237.7	1,910.5	149.3	348.3	268.0	246.7
	Tecate	0.0	0.0	0.0	0.0	0.0	0.0
	Tijuana	0.0	0.0	0.0	0.0	0.0	0.0
	Total	**35,603.5**	**16,051.4**	**1,254.7**	**2,926.1**	**2,251.3**	**2,072.3**
Cargo Handling Equipment	Ensenada	3,311.5	338.6	589.6	11,630.5	303.6	303.6
	Mexicali	0.1	0.0	0.0	0.0	0.0	0.0
	Playas de Rosarito	444.5	45.3	79.6	1,577.2	40.6	40.6
	Tecate	0.0	0.0	0.0	0.0	0.0	0.0
	Tijuana	0.0	0.0	0.0	0.0	0.0	0.0
	Total	**3,756.0**	**384.0**	**669.1**	**13,207.8**	**344.2**	**344.2**

4.4.4 Construction Equipment

As part of the 2005 Mexicali emissions inventory (ERG, 2009), ERG estimated construction equipment emissions. These emissions are shown in Table 24.

Table 24. 2005 Mexicali Construction Equipment Emissions

	Emissions (Mg)					
	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Mexicali	3,100.2	41.6	320.4	1,552.3	348.9	338.5

The 2014 municipality-level construction equipment emissions were estimated by applying the ratios of 2014 municipality population over the 2005 Mexicali population as shown in Equation 29.

$$E_{2014,m,p} = E_{2005,Mex,p} \times \left(\frac{P_{2014,m}}{P_{2005,Mex}}\right) \quad \text{Equation 29}$$

Where

$E_{2014,m,p}$ = 2014 emissions for pollutant *p* in municipality *m*;
$E_{2005,Mex,p}$ = 2005 emissions for pollutant *p* in Mexicali;
$P_{2014,m}$ = 2014 population in municipality *m*; and
$P_{2005,Mex}$ = 2005 population in Mexicali.

Municipality-level population estimates for 2005 and 2014 were obtained from the Baja California Comité Estatal de Planeación para el Desarrollo (COPLADE) (COPLADE, 2013).

The estimated 2014 municipality-level construction equipment emissions are shown in Table 25.

Table 25. 2014 Baja California Municipality-Level Construction Equipment Emissions (tons/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Ensenada	1,853.2	24.9	191.5	927.9	208.6	202.3
Mexicali	3,665.5	49.2	378.8	1,835.4	412.5	400.2
Playas de Rosarito	373.0	5.0	38.5	186.8	42.0	40.7
Tecate	396.8	5.3	41.0	198.7	44.7	43.3
Tijuana	6,144.0	82.4	634.9	3,076.4	691.5	670.8
Total	**12,432.5**	**166.7**	**1,284.7**	**6,225.2**	**1,399.3**	**1,357.3**

4.4.5 Agricultural Equipment

As part of the 2005 Mexicali emissions inventory (ERG, 2009), ERG estimated agricultural equipment emissions. These emissions are shown in Table 26.

Table 26. 2005 Mexicali Agricultural Equipment Emissions

	Emissions (Mg)					
2005	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Mexicali	1,158.5	14.6	195.7	785.3	195.7	189.8

The 2014 municipality-level agricultural equipment emissions were estimated by applying the ratios of 2014 municipality planted agricultural area over the 2005 Mexicali agricultural area as shown in Equation 30.

$$E_{2014,m,p} = E_{2005,Mex,p} \times \left(\frac{A_{2014,m}}{A_{2005,Mex}}\right) \qquad \text{Equation 30}$$

Where

$E_{2014,m,p}$ = 2014 emissions for pollutant *p* in municipality *m*;
$E_{2005,Mex,p}$ = 2005 emissions for pollutant *p* in Mexicali;
$A_{2014,m}$ = 2014 planted agricultural area in municipality *m*; and
$A_{2005,Mex}$ = 2005 planted agricultural area in Mexicali.

ERG obtained municipality-level planted agricultural areas for 2005 and 2014 from the Sistema de Información Agroalimentaria de Consulta (SIACON) database maintained by the Servicio de Información Agroalimentaria y Pesquera (SIAP) (SIAP, 2019).

The estimated 2014 municipality-level agricultural equipment emissions are shown in Table 27.

Table 27. 2014 Baja California Municipality-Level Agricultural Equipment Emissions (tons/year)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$
Ensenada	305.1	3.8	51.5	206.8	51.5	50.0
Mexicali	1,174.1	14.8	198.3	795.8	198.3	192.4
Playas de Rosarito	3.6	0.0	0.6	2.5	0.6	0.6
Tecate	7.2	0.1	1.2	4.9	1.2	1.2
Tijuana	3.2	0.0	0.5	2.2	0.5	0.5
Total	**1,493.1**	**18.8**	**252.2**	**1,012.1**	**252.2**	**244.7**

5.0 Data Quality Objectives

As part of the Northern Baja California Emissions Inventory Project's Quality Assurance Project Plan (QAPP) (ERG, 2018b), four data quality objectives (DQOs) were established. This details the specific DQOs and the associated findings.

- DQO #1. A comprehensive emissions inventory for all source types (i.e., point, area, on-road motor vehicle, and nonroad mobile sources) and all major categories within these source types.
    - ERG Finding: The 2014 base year inventory consists of point, area, on-road motor vehicle, and nonroad source types. All relevant source categories are accounted for in the inventory and any missing source categories were documented in the interim reports to CARB (ERG, 2018a; ERG 2019).
- DQO #2. All point sources will be correctly located in their appropriate location.
    - ERG Finding: ERG performed geographic location analysis for all the reported point source facilities in the 2014 MNEI point source inventory using location data provided by CARB staff (Venecek, 2018). ERG identified facilities that were plotted within the reported municipalities and used the provided coordinate information for these facilities. A total of 19 facilities that were not located within their reported municipalities were flagged for further review. ERG sent a list of these 19 facilities to ICAR (ERG's subcontractor based in Mexicali) to identify geographic locations. ICAR provided coordinates for these facilities based on local knowledge, field work (obtaining GPS information at physical locations for facilities located in Mexicali), and online research. In spite of additional research by ERG and ICAR, 2 of the 19 facilities could not be located – for these facilities, ERG used Google Earth default "pin drop" coordinates as their location.
- DQO #3. Area, On-Road Motor Vehicle, and Nonroad Mobile Sources: Fuel-based emissions estimates with an accuracy of ± 50%.
    - ERG Finding: State-level annual fuel consumption estimates were obtained from SENER energy projection documents for diesel, residual fuel (combustoleo), natural gas, and LPG (SENER, 2018a; SENER, 2018b; SENER, 2018c). According to the SENER documents, there was no residual fuel consumption in Baja California in 2014. Disaggregated fuel consumption data by sector (industrial, services, residential, transportation, and agricultural) for the state of Baja California were not available. ERG used the state-level total fuel consumption and

default U.S. EPA emission factors from AP-42 (U.S. EPA, 1995) to estimate emissions. These estimated emissions were an order of magnitude larger than the 2014 MNEI area source fuel combustion emissions for diesel, natural gas, and LPG. The 2014 MNEI emissions were estimated based on national-level fuel consumption quantities, by sector. The fuel quantity data obtained from the SENER documents were for total fuel consumption across all sectors. In addition, the 2014 MNEI did not include nonroad mobile sources, which are a major consumer of diesel fuel. Also, the estimation methodology for the 2014 MNEI on-road motor vehicles is unknown. Due to these factors, an accurate comparison with fuel-based estimates is not feasible.

- DQO #4. Documentation: All emissions inventory results are transparent and reproducible.
    - ERG Finding: ERG's written and electronic inventory documentation include detailed explanations of data collected, data sources, data analyzed, values estimated, assumptions made, emission factors and sources used so that the results can be duplicated.

6.0 2014 Northern Baja California Emissions Inventory

As described above, the 2014 Northern Baja California emissions inventory is based on: (1) the 2014 MNEI, (2) corrections/improvements to specific source categories within the 2014 MNEI, and (3) new source category estimates made specifically for this inventory. The resulting 2014 Northern Baja California emissions inventory is presented in Table 28 through Table 31. Detailed municipality-level emission estimates are provided in Appendix B (i.e., area sources in Tables B-1 through B-5; on-road motor vehicles in Tables B-6 through B-10; nonroad mobile sources in Tables B-11 through B-15). All emissions have been converted from Mg to tons.

Table 28. 2014 Municipality-Level Point Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	724.2	554.7	510.8	104.9	82.7	66.1	0.8
Mexicali	7,509.8	291.5	5,072.5	4,689.9	1,165.2	1,092.9	181.6
Tecate	220.4	1,971.9	77.6	45.6	36.5	24.0	3.0
Tijuana	1,136.1	3,436.3	5,117.5	246.2	274.6	234.0	18.7
Playas de Rosarito	8,370.9	16.7	504.7	2,093.0	799.5	797.3	123.4
Total	**17,961.5**	**6,271.0**	**11,283.1**	**7,179.5**	**2,358.5**	**2,214.3**	**327.6**

Table 29. 2014 Municipality-Level Area Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	650.7	108.2	9,399.9	11,732.9	2,223.3	1,322.1	1,438.5
Mexicali	984.5	69.1	18,421.8	9,458.0	27,729.6	5,810.6	3,957.0
Tecate	81.8	6.7	2,091.0	758.3	261.8	113.9	319.8
Tijuana	802.8	11.5	30,923.0	2,782.5	1,439.8	586.6	2,131.1
Playas de Rosarito	346.5	96.0	2,334.8	10,389.5	1,129.1	914.0	327.9
Total	**2,866.4**	**291.4**	**63,170.4**	**35,121.1**	**32,783.5**	**8,747.4**	**8,174.3**

Table 30. 2014 Municipality-Level On-Road Motor Vehicle Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	9,158.7	243.9	1,555.8	26,600.7	380.7	365.5	107.8
Mexicali	17,098.0	570.7	3,505.9	53,191.2	851.3	817.2	266.2
Tecate	2,401.2	67.8	485.3	7,287.6	103.7	99.6	29.9
Tijuana	26,538.2	757.7	4,936.4	71,617.3	1,097.0	1,053.1	361.4
Playas de Rosarito	1,884.4	54.3	368.1	5,487.4	84.4	81.0	24.2
Total	**57,080.6**	**1,694.3**	**10,851.5**	**164,184.3**	**2,517.2**	**2,416.4**	**789.5**

Table 31. 2014 Municipality-Level Non-road Mobile Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	37,248.7	14,694.5	1,952.5	15,377.0	2,573.2	2,405.6	NE
Mexicali	5,125.0	67.7	591.6	2,691.9	618.0	598.9	NE
Tecate	496.1	6.2	45.7	212.6	48.2	46.6	NE
Tijuana	6,383.2	92.5	672.0	3,341.3	697.7	676.6	NE
Playas de Rosarito	5,114.7	1,986.1	270.0	2,119.3	354.7	331.8	NE
Total	**54,367.7**	**16,847.1**	**3,531.8**	**23,742.2**	**4,291.7**	**4,059.5**	**NE**

NE = not estimated

7.0 Northern Baja California 2020 and 2025 Emissions Projections

After revising the base year 2014 Northern Baja California emissions inventory, ERG estimated emissions inventories for the future years of 2020 and 2025. Emissions were estimated using projection factors as shown in Equation 31 and Equation 32.

$$E_{p,s,y} = E_{p,s,2014} \times PF_{p,s,y} \qquad \text{Equation 31}$$

Where

$E_{p,s,y}$ = emissions for pollutant *p*, source *s*, and future year *y*;
$E_{p,s,2014}$ = emissions for pollutant *p*, source *s*, and year 2014; and
$PF_{p,s,y}$ = projection factor for pollutant *p*, source *s*, and future year *y*.

$$PF_{p,s,y} = \left(\frac{A_{s,y}}{A_{s,2014}}\right) \qquad \text{Equation 32}$$

Where

$PF_{p,s,y}$ = projection factor for pollutant *p*, source *s*, and future year *y*;
A_y = projected activity for source *s* and future year *y*; and
A_{2014} = activity for source *s* and year 2014.

7.1 Projection Factors

ERG developed projection factors using data sources from other Mexico projected inventories we developed for U.S. EPA and MAG (ERG, 2014a; ERG, 2014b; ERG, 2015a; ERG, 2017). The following data were used for developing projection factors:

- Population – Historical and projected municipal populations (COPLADE, 2013)
- Diesel, natural gas, LPG – Historical and projected quantities for by sector for the Noroeste (Northwest) Region (i.e., states of Baja California, Baja California Sur, Sinaloa, Sonora) (SENER, 2018a; SENER, 2018b; SENER, 2018c)
- Gasoline and aviation fuel – Historical and projected quantities by sector for Baja California (SENER, 2018a)
- Gross domestic product – Historical and projected quantities at the national level (PCIF, 2014)
- Unchanged – a constant projection factor of 1.0000 was used when a source category was not expected to change.

ERG used a constant projection factor of 1.0000 when emissions for a given source category were not expected to change.

The projection factors are presented in Table 32.

Table 32. 2020 and 2025 Activity Data and Projection Factors

Surrogate	Geographic Region	Units	2014 Value	2020 Value	2025 Value	2020 Projection Factor	2025 Projection Factor
Population	Ensenada	People	511,663	557,430	591,938	1.0894	1.1569
Population	Mexicali	People	1,012,048	1,091,604	1,153,342	1.0786	1.1396
Population	Tecate	People	109,565	118,453	125,516	1.0811	1.1456
Population	Tijuana	People	1,696,357	1,847,790	1,965,719	1.0893	1.1588
Population	Playas de Rosarito	People	102,984	113,949	121,363	1.1065	1.1785
Diesel (industrial)	Noroeste	MBD	6.0	6.6	7.0	1.1000	1.1667
Diesel (rail)	Noroeste	MBD	1.6	2.4	2.7	1.5000	1.6875
Diesel (marine)	Noroeste	MBD	5.9	5.4	5.4	0.9153	0.9153
Diesel (auto)	Noroeste	MBD	43.1	44.9	46.9	1.0418	1.0882
Aviation fuel	Baja California	MBD	3.2	4.7	5.5	1.4688	1.7188
Gasoline (total)	Baja California	MBD	37.0	41.1	41.2	1.1108	1.1135
LPG (industrial)	Noroeste	MBD	4.0	4.0	4.3	1.0000	1.0750
LPG (services)	Noroeste	MBD	4.2	4.9	5.3	1.1667	1.2619
LPG (residential)	Noroeste	MBD	13.5	11.3	11.2	0.8370	0.8296
LPG (agricultural)	Noroeste	MBD	0.6	0.7	0.7	1.1667	1.1667
LPG (auto)	Noroeste	MBD	3.1	2.8	2.2	0.9032	0.7097
LPG (total)	Noroeste	MBD	25.4	23.6	23.7	0.9291	0.9331
Natural gas (industrial)	Noroeste	MMPCD	37.1	233.6	264.2	6.2965	7.1213
Natural gas (services)	Noroeste	MMPCD	0.4	0.6	0.8	1.5000	2.0000

Table 32. 2020 and 2025 Activity Data and Projection Factors

Surrogate	Geographic Region	Units	2014 Value	2020 Value	2025 Value	2020 Projection Factor	2025 Projection Factor
Natural gas (residential)	Noroeste	MMPCD	1.2	2.2	2.6	1.8333	2.1667
Natural gas (auto)	Noroeste	MMPCD	n/a	n/a	n/a	1.0000	1.0000
GDP	National	Billion 2011$	1,263	1,449	1,651	1.1473	1.3072
Unchanged	n/a	n/a	n/a	n/a	n/a	1.0000	1.0000

7.2 2020 and 2025 Northern Baja California Emissions Inventories

The 2020 projected emissions inventory is presented in Table 33 through Table 36 and the 2025 projected emissions inventory is presented in Table 37 through Table 40. Detailed municipality-level projected emission estimates for area sources, on-road motor vehicles, and nonroad mobile sources are provided in Appendix B (i.e., Tables B-16 through B-30 for 2020 and Tables B-31 through B-45 for 2025).

Table 33. 2020 Municipality-Level Point Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	830.9	636.3	586.1	120.3	94.9	75.9	1.0
Mexicali	8,615.8	334.4	5,819.5	5,380.6	1,336.8	1,253.9	208.4
Tecate	252.9	2,262.3	89.1	52.3	41.9	27.6	3.5
Tijuana	1,303.4	3,942.3	5,871.1	282.4	315.0	268.4	21.4
Playas de Rosarito	9,603.7	19.1	579.0	2,401.2	917.2	914.7	141.6
Total	**20,606.7**	**7,194.5**	**12,944.7**	**8,236.9**	**2,705.9**	**2,540.4**	**375.8**

Table 34. 2020 Municipality-Level Area Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	642.2	108.4	9,922.0	11,869.8	2,296.5	1,354.7	1,491.5
Mexicali	1,016.7	69.7	19,418.0	9,581.1	27,786.7	5,835.5	4,036.0
Tecate	81.2	6.7	2,236.0	780.8	272.8	118.7	331.6
Tijuana	792.7	12.3	33,159.3	3,023.3	1,579.3	639.4	2,281.5
Playas de Rosarito	345.0	96.0	2,449.9	10,399.2	1,137.2	917.3	342.3
Total	**2,877.7**	**293.2**	**67,185.2**	**35,654.1**	**33,072.6**	**8,865.7**	**8,483.0**

Table 35. 2020 Municipality-Level On-Road Motor Vehicle Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	10,130.2	269.5	1,727.3	29,541.9	417.1	400.4	119.8
Mexicali	18,926.3	631.4	3,893.1	59,076.0	935.3	897.8	295.6
Tecate	2,658.0	75.0	538.8	8,093.8	113.9	109.4	33.2
Tijuana	29,412.1	839.0	5,481.6	79,543.7	1,207.6	1,159.2	401.4

Table 35. 2020 Municipality-Level On-Road Motor Vehicle Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Playas de Rosarito	2,084.6	60.0	408.7	6,094.2	92.5	88.8	26.9
Total	**63,211.4**	**1,874.8**	**12,049.5**	**182,349.5**	**2,766.3**	**2,655.6**	**876.9**

Table 36. 2020 Municipality-Level Non-road Mobile Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	44,357.3	11,674.8	2,201.2	12,926.3	2,149.6	1,999.4	NE
Mexicali	5,555.4	73.3	628.5	2,865.4	653.9	633.6	NE
Tecate	574.3	7.1	50.8	233.3	52.9	51.1	NE
Tijuana	7,047.4	104.7	746.0	3,739.6	762.3	739.0	NE
Playas de Rosarito	6,093.5	1,578.5	305.4	1,795.2	299.6	279.0	NE
Total	**63,627.9**	**13,438.3**	**3,931.9**	**21,559.8**	**3,918.3**	**3,702.0**	**NE**

NE = not estimated

Table 37. 2025 Municipality-Level Point Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	946.7	725.1	667.8	137.1	108.2	86.4	1.1
Mexicali	9,816.9	381.0	6,630.7	6,130.6	1,523.1	1,428.7	237.4
Tecate	288.1	2,577.7	101.5	59.6	47.7	31.4	4.0
Tijuana	1,485.1	4,491.9	6,689.6	321.8	359.0	305.9	24.4
Playas de Rosarito	10,942.5	21.8	659.7	2,736.0	1,045.1	1,042.2	161.4
Total	**23,479.4**	**8,197.5**	**14,749.3**	**9,385.1**	**3,083.1**	**2,894.6**	**428.2**

Table 38. 2025 Municipality-Level Area Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	645.4	108.5	10,453.5	11,973.9	2,314.3	1,370.3	1,531.4
Mexicali	1,045.8	69.9	20,492.8	9,643.7	27,800.4	5,847.0	4,097.2
Tecate	82.2	6.8	2,391.4	795.9	275.5	121.1	341.0
Tijuana	812.5	12.5	35,594.1	3,143.3	1,606.5	661.4	2,398.1
Playas de Rosarito	345.6	96.0	2,559.1	10,405.8	1,138.8	918.5	352.1
Total	**2,931.6**	**293.7**	**71,490.9**	**35,962.6**	**33,135.6**	**8,918.4**	**8,719.7**

Table 39. 2025 Municipality-Level On-Road Motor Vehicle Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	10,181.6	271.0	1,732.0	29,617.5	421.8	404.9	120.1
Mexicali	19,012.7	634.6	3,903.2	59,225.1	944.1	906.3	296.4
Tecate	2,669.8	75.4	540.2	8,114.2	115.0	110.4	33.3
Tijuana	29,518.4	842.7	5,495.1	79,740.3	1,217.5	1,168.8	402.4

Table 39. 2025 Municipality-Level On-Road Motor Vehicle Emissions (tons)

Playas de Rosarito	2,094.7	60.3	409.8	6,109.6	93.5	89.8	27.0
Total	**63,477.2**	**1,884.0**	**12,080.3**	**182,806.8**	**2,792.0**	**2,680.2**	**879.1**

Table 40. 2025 Municipality-Level Non-road Mobile Source Emissions (tons)

Municipality	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Ensenada	50,267.9	9,158.2	2,407.1	10,877.4	1,795.1	1,659.4	NE
Mexicali	5,833.1	77.0	654.6	2,990.8	680.4	659.2	NE
Tecate	617.2	7.6	54.0	247.8	56.2	54.3	NE
Tijuana	7,523.5	112.8	798.9	4,018.2	811.5	786.7	NE
Playas de Rosarito	6,902.9	1,238.8	334.3	1,522.0	252.9	234.3	NE
Total	**71,144.6**	**10,594.4**	**4,248.9**	**19,656.2**	**3,596.2**	**3,393.9**	**NE**

NE = not estimated

8.0 Emissions Inventory Formatting and Reporting

Using the results of the 2014, 2020, and 2025 emissions inventories, ERG prepared the three emission inventory files in the required FF10 format for use by CARB air quality modelers. All data were prepared in the prescribed FF10 units of measure (e.g., annual emissions in short tons, stack diameter and height in feet, stack gas velocity in feet per second, stack gas temperature in degrees Fahrenheit, etc.).

For the point source FF10 file, ERG populated the ERPTYPE field for combustion and fugitive emissions. The fugitive emission records in the point source data did not have any stack IDs and so ERG assigned "FUG" as the stack ID for these records. No issues were encountered during developing the FF10 files for area, on-road motor vehicle, and nonroad mobile source inventories.

8.1 Temporal Profiles

As indicated in Section 2.0, the inventory scope defines the temporal resolution as annual and winter day. CARB has defined winter as the months of November, December, January, and February (i.e., 120 days of the year). Average daily winter temporal profiles were calculated by identifying the fraction of emissions that occurred during the winter (i.e., November to February) and then dividing by 120 days; however, only minimal seasonal information was obtainable during the project's data collection activities.

Two exceptions were for border crossings and some agricultural sources. Monthly border crossing vehicle counts were obtained from the Bureau of Transportation Statistics (BTS, 2019). The seasonality of agricultural burning was determined based upon crop calendar information provided by SADER (SADER, 2019a). Based on the SADER crop calendar information, ERG estimated that 50 percent of the asparagus acreage was burned during the winter months. The growing seasons for both wheat and Bermuda grass indicate that there would not be any burning of these crops during the winter months. The seasonality of agricultural windblown dust was already estimated as part of the windblown dust calculation method described in Section 4.2.7. Only 5.37 percent of the annual agricultural windblown dust occurs from the months of November through February.

The relevant temporal profiles for border crossings, agricultural burning, and agricultural windblown dust are shown in Table 41. ERG assumed that all other area and nonroad mobile source emissions were constant throughout the year (i.e., average daily winter emissions are equivalent to average daily emissions).

Table 41. Temporal Profiles

Source Category	Average Daily Winter Temporal Profile	Notes
Border Crossings – Mexicali – Personal Vehicles	0.0028258	Based upon BTS border crossing statistics for the Andrade, Calexico, and Calexico East border crossings.
Border Crossings – Mexicali – Trucks	0.0027835	
Border Crossings – Mexicali – Buses	0.0026152	
Border Crossings – Tecate – Personal Vehicles	0.0026895	Based upon BTS border crossing statistics for the Tecate border crossing.
Border Crossings – Tecate – Trucks	0.0025781	
Border Crossings – Tecate - Buses	0.0026371	
Border Crossings – Mexicali – Personal Vehicles	0.0028186	Based upon BTS border crossing statistics for the Otay Mesa and San Ysidro border crossings.
Border Crossings – Mexicali – Trucks	0.0025808	
Border Crossings – Mexicali - Buses	0.0026822	
Agricultural Burning - Wheat	0	Winter growing season, so no burning during winter.
Agricultural Burning - Asparagus	0.00416667	Based on planting schedule, assumed that 50 percent of asparagus burned during winter.
Agricultural Burning – Bermuda grass	0	Winter growing season, so no burning during winter.
Windblown dust	0.00044726	5.37 percent of windblown dust occurs during winter.
Constant	0.002739726	Average emissions divided by 365 days.

ERG's Mexicali-based subcontractor (ICAR) indicated that many of their commercial clients report 19 hour per day operations (likely double shifts), Monday through Friday, 52 weeks per year with some companies having a week shutdown between Christmas and New Years. Based on this information, ERG assumed that all point sources operate continually throughout the year and that a constant temporal profile is appropriate for the inventory point sources.

8.2 Spatial Surrogates

ERG assigned relevant spatial surrogates for each category in the 2014, 2020, and 2025 Northern Baja California emissions inventories; see Table 42 below.

Table 42. Spatial Surrogate Assignments for Area and Nonroad Mobile Source Categories.

2014 Area Source Category	Spatial Surrogate
Fuel Combustion; Industrial; Distillate Oil	Population
Fuel Combustion; Industrial; Natural Gas	Population
Fuel Combustion; Industrial; LPG	Population
Fuel Combustion; Commercial/Institutional; Natural Gas	Population
Fuel Combustion; Commercial/Institutional; LPG	Population
Fuel Combustion; Residential; Natural Gas	Population
Fuel Combustion; Residential; LPG	Population
Fuel Combustion; Residential; Wood; Fireplace – General	Population
Fuel Combustion; Residential; Kerosene	Population
Commercial Cooking; Charbroiling	Charbroiling restaurant locations
Industrial Processes; Bakery Products	Bakery locations
Solvent Utilization; Surface Coatings; Architectural Coatings	Population
Solvent Utilization; Auto Refinishing	Autobody shop locations
Solvent Utilization; Surface Coating; Traffic Markings	Population
Industrial Surface Coatings	Population
Solvent Utilization; Degreasing; All Processes/Industries/Solvents	Population
Solvent Utilization; Graphic Arts; Other	Print/publishing shop locations
Solvent Utilization; Graphic Arts; Lithographic	Print/publishing shop locations
Solvent Utilization; Graphic Arts; Rotogravure	Print/publishing shop locations
Solvent Utilization; Graphic Arts; Flexographic	Print/publishing shop locations
Solvent Utilization; Consumer Solvent Use; All Personal Care Products	Population
Solvent Utilization; Consumer Solvent Use; All Household Products	Population
Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products	Population
Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants	Population
Solvent Utilization; Miscellaneous Non-Industrial - Commercial; Asphalt Application - All Processes	Population
Solvent Utilization; Agriculture; All Pesticide Application	Agricultural field locations[a]/ agricultural land use cover
Solvent Utilization; Consumer Solvent Use; Pesticide Application	Population

Table 42. Spatial Surrogate Assignments for Area and Nonroad Mobile Source Categories.

2014 Area Source Category	Spatial Surrogate
Solvent Utilization; Consumer Solvent Use; Miscellaneous Product	Population
Gasoline Service Stations - Stage I, Submerged filling	Gasoline station locations
Gasoline Service Stations - Stage I, Balanced submerged filling	Gasoline station locations
Gasoline Service Stations - Stage II, Refueling losses, uncontrolled	Gasoline station locations
Gasoline Service Stations - Underground tank breathing and emptying	Gasoline station locations
Open Burning - Household waste	Population
Municipal Landfills	Landfill locations
Wastewater treatment (residential/subdivision owned)	Treatment plant locations
Agricultural Tilling Dust	Agricultural field locations[a]/ agricultural land use cover
Agricultural Burning	Agricultural field locations[a]/ agricultural land use cover
Agricultural Fuel Combustion – Diesel	Agricultural field locations[a]/ agricultural land use cover
Agricultural Fuel Combustion – LPG	Agricultural field locations[a]/ agricultural land use cover
Agriculture; Fertilizer Application; Total Fertilizers	Agricultural field locations[a]/ agricultural land use cover
Beef Cattle Feedlots – Fugitive Dust	Feedlot locations[b]/ agricultural land use cover
Livestock waste – Turkeys	Agricultural land use cover
Livestock waste – Milk cows	Agricultural land use cover
Livestock waste – Beef cows	Feedlot locations[b]/ agricultural land use cover
Livestock waste – Poultry	Agricultural land use cover
Livestock waste – Horses and Ponies	Agricultural land use cover
Livestock waste – Swine	Agricultural land use cover
Livestock waste – Sheep and Lambs	Agricultural land use cover
Livestock waste – Goats	Agricultural land use cover
Wild animal waste – Rabbits	Agricultural land use cover
Forest Fires – Total (Flaming and Smoldering)	Land use cover
Structure Fires	Population
Hospitals – Sterilization Operations	Hospital locations
LPG Distribution	Population
Brick Kilns	Brick kiln locations[c]
Domestic Ammonia	Population

Table 42. Spatial Surrogate Assignments for Area and Nonroad Mobile Source Categories.

2014 Area Source Category	Spatial Surrogate
Border Crossings	Border crossing polygons
Windblown Dust	Agricultural field locations[a]/ agricultural land use cover
Aircraft	Airport polygons
Locomotives	Railroad lines
Marine	Port polygons
Construction equipment	Population
Agricultural equipment	Agricultural field locations[a]/ agricultural land use cover

[a]Agricultural field information for Mexicali (SADER, 2019b); land use cover for other municipalities (CEC, 2019).
[b]Specific location information was obtained for Mexicali feedlots during ERG's February 4-8, 2019 site visit.
[c]Specific loocation information was obtained for Mexicali brick kilns during ERG's February 4-8, 2019 site visit.

ERG obtained detailed urban census block-level population and rural point population shapefiles from the Instituto Nacional de Estadística y Geografía (INEGI) as spatial surrogate data for all area source categories that were assigned to population (INEGI, 2019a). The combination of the urban census block population and rural point population shapefiles represent total population and should both be used together.

ERG used previously obtained gasoline service station location data as spatial surrogates for the area source categories assigned to gasoline station locations (Venecek, 2018). Station-level gasoline sales data were not identified, so it is assumed that state-level emissions should be equally allocated among all facilities in that state.

ICAR identified the specific addresses and coordinates of all landfill and wastewater treatment plant locations through personal contacts with the five Baja California municipalities.

ERG developed customized shapefile polygons for the border crossings, airports, and ports using Google Earth and other GIS tools. Shapefile lines for rail locomotives were obtained from publicly available data (ORNL, 2019).

As described in Section 4.2.6, Mexicali brick kiln emissions were assigned to the three active brick kiln areas (i.e., Colonia Ladrillera, Colorado, and Ricardo Mazón). Based upon estimated burn counts, brick kiln emissions were assigned to the three brick kiln areas as follows: Colonia Ladrillera – 40.00 percent; Colorado – 33.33 percent; and Ricardo Mazón – 26.67 percent.

In Mexicali, three beef cattle feedlots were identified during ERG's February 4-8, 2019 field visit: Sukarne, Don Fileto, and Ganaderia Mexicali. Although facility-specific cattle head counts could not be obtained, based on visual observations, ERG assumed that 90 percent of the Mexicali emissions associated with beef cattle should be assigned to the Sukarne facility with the remaining 10 percent assigned equally to the Don Fileto and Ganaderia Mexicali facilities.

In Mexicali, all agricultural emissions were spatially allocated to specific field locations and field acreages (indicated as "superficie") as provided by SADER (SADER, 2019b). Agricultural emissions in the other municipalities were allocated based upon land use cover data from the Commission for Environmental Cooperation's (CEC) North American Environmental Atlas (CEC, 2019). Forest fire emissions were also allocated based upon CEC land use cover data.

ERG used INEGI's Directorio Estadístico Nacional de Unidades Económicas (DENUE) (INEGI, 2019b) to develop the following spatial surrogates: charbroiling restaurants, bakeries, autobody shops, printing shops, and hospitals. The DENUE contains a map-based database of economic establishments (i.e., agricultural, commercial, industrial, trade, services, administration, etc.). These economic establishments are reported by their 6-digit SCIAN codes (Sistema de Clasificación Industrial de América del Norte). The SCIAN codes are the Mexican North American Industry Classification Source (NAICS) codes and are very similar to U.S. NAICS codes. The most relevant SCIAN codes mapped to area source categories as shown in Table 43. Establishment-level activity data were not identified, so it is assumed that state-level emissions should be equally allocated among all establishments in that state.

Table 43. Area Source Categories Mapped to 2018 SCIAN Codes.

2014 MNEI Area Source Category	Spatial Surrogate	2018 SCIAN	SCIAN Description
Commercial Cooking; Charbroiling	Restaurant locations	722511, 722512, 722513, 722514, 722515, 722516, 722517, 722518, 722519, 722310, and 722330	Includes full service restaurants, limited service restaurants, mobile food services, and food service contractors.
Industrial Processes; Bakery Products	Bakery locations	311811 and 311812	Commercial and retail bakeries
Solvent Utilization; Auto Refinishing	Autobody shop locations	811121 and 811129	Automotive body, paint, and interior repair and maintenance
Solvent Utilization; Graphic Arts; Other	Print/publishing shop locations	323111 and 323119	Commercial printing
Solvent Utilization; Graphic Arts; Lithographic	Print/publishing shop locations	323111 and 323119	Commercial printing
Solvent Utilization; Graphic Arts; Rotogravure	Print/publishing shop locations	323111 and 323119	Commercial printing
Solvent Utilization; Graphic Arts; Flexographic	Print/publishing shop locations	323111 and 323119	Commercial printing
Hospitals – Sterilization Operations	Hospital locations	622111, 622112, 622211, 622212, 622311, and 622312	Includes general medical and surgical hospitals, psychiatric and substance abuse hospitals, and specialty hospitals

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Appendix A:
Task 4 (Border Crossings) – Detailed Documentation

A-1 Background

A-1.1 Introduction

Total on-road motor vehicle emissions of NO_x, SO_2, VOC, CO, PM_{10}, $PM_{2.5}$, and NH_3 were estimated for the six U.S.-Mexico border crossings in California (both northbound and southbound traffic) for calendar year 2014. The six crossings, west to east, are San Ysidro, Otay Mesa, Tecate, Calexico West, Calexico East, and Andrade (Figure A-1). The inventory accounts for vehicle volumes and wait times for each crossing, differentiated by type of lane (e.g., general vs. expedited lanes) and type of vehicle (i.e., passenger, bus, commercial truck). The basis of the emissions inventory was the U.S. EPA MOVES model (U.S. EPA, 2015), populated with 2014 crossing and wait time data obtained from U.S. Customs & Border Protection (CBP) supplemented with key vehicle fleet and activity estimates developed in prior studies. MOVES was used rather than California's EMFAC model because 1) there is a Mexico version of the model (MOVES-Mexico) which can be used to represent the sizeable population of Mexico vehicles crossing the border (USAID, 2016), and 2) the project scale feature of MOVES allows customization to the mix of vehicles and wait times at each crossing. Both versions of the MOVES models will be used to represent the mix of U.S. and Mexico domiciled vehicles as observed in prior studies.

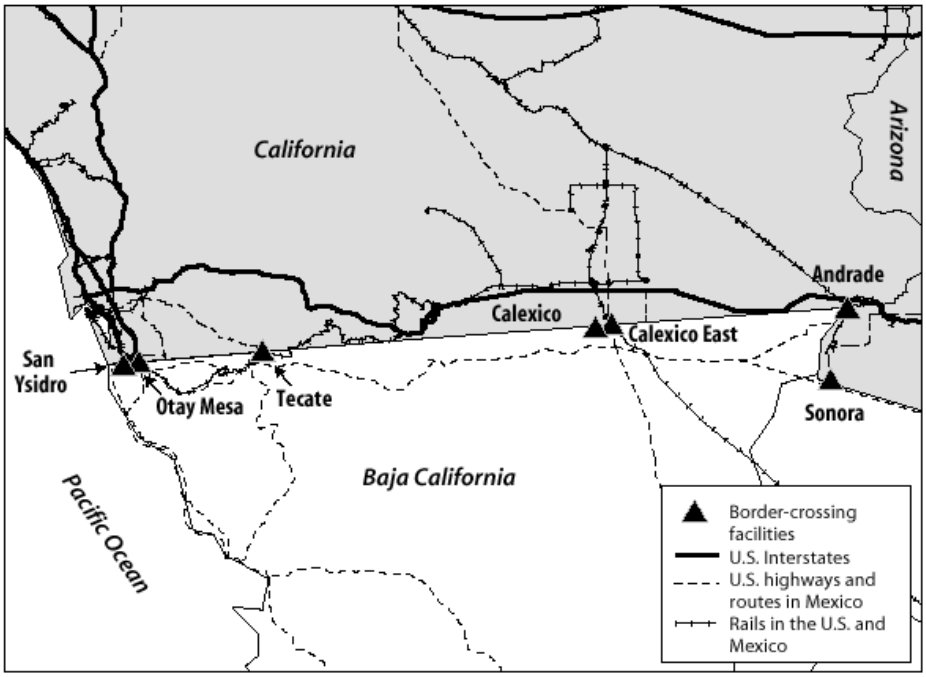


Figure A-1. Location of California Border Crossings (source: BTS)

A-1.2 Prior Studies

Several activity and emissions studies have been conducted at the U.S.-Mexico border over the past decade. While none of the studies provide the breadth of data needed to estimate annual 2014 emissions at all six California crossings, they provide important information not available from CBP alone, mostly from on-site observation of vehicles and activity at the border crossing. The studies summarized were reviewed for applicability to this study, identifying data that can be applied to

improve the 2014 annual inventory. These studies are summarized below with general discussion of the data gleaned for use in the 2014 annual inventory.

A-1.2.1 San Diego State University

Researchers at San Diego State University published two studies of total vehicle emissions for calendar year 2009 for the northbound crossings at the San Ysidro, Otay Mesa, and Tecate crossings focusing on greenhouse gases (Barzee, 2010) and criteria pollutants (Shwayhat, 2011). Both used an earlier version of MOVES (MOVES2010) populated with vehicle volume and wait time data obtained by CBP, supplemented with video observation of driving patterns. These studies provide a useful precedent for the 2014 CARB inventory via the use of MOVES and incorporation of wait times from CBP, though the input data are not directly useful because of significant changes in crossing volumes between 2009 and 2014 and updated data from subsequent studies.

A-1.2.2 Federal Highway Administration

In 2012, U.S. Federal Highway Administration published an "analysis template" for estimating emissions at border crossings (FHWA, 2012), used as a framework for emission studies by the Commission for Environmental Cooperation (CEC) and Imperial County. The template provided emission factors derived from MOVES2010 for different vehicle types and modes of operation (e.g., stop-and-go, uncongested operation), and methods for calculating vehicle miles traveled from observations of vehicle volume and queue length. The template methodology then combines emission factors and vehicle activity to compile an emissions inventory. Because the 2014 ARB inventory will apply MOVES2014a directly at each crossing, the approach put forth in FHWA 2012 is superseded by the internal logic of MOVES; however, MOVES operating mode profiles for stop-and-go operation in border queues presented in FHWA 2012 are a helpful input to the model and were used for the 2014 ARB inventory analysis.

A-1.2.3 Imperial County

Imperial County sponsored a study conducted by HDR, Inc. which estimated daily emissions from northbound traffic at the Calexico East and Calexico West border crossings in 2014 (Imperial County, 2015). Using the FHWA 2012 template as a framework, on-site surveys were conducted over select days in May, August, and December 2014. Volumes were estimated by vehicle type, hour, lane, model year, and country of domicile, which provided valuable detail not available in the CBP volume totals. Queue lengths were estimated to determine the distance traveled in stop-and-go driving leading up to toll booths. The on-site surveys provide details on vehicle fleet and temporal resolution for the Calexico border crossings not available in the CBP volume and wait time data, which will be used for the 2014 ARB inventory.

A-1.2.4 Commission for Environmental Cooperation

Commission for Environmental Cooperation sponsored a study conducted by Kear Transportation Planning, Inc. which estimated daily emissions from northbound traffic at San Ysidro in 2014, again using methods drawn from FHWA analysis template (CEC, 2015). Site surveys of volume and queue length were conducted at the San Ysidro north and southbound lanes for select days in July and December 2014, accounting for the mix of lanes, vehicles, and country of domicile. Vehicle population was also split by vehicle model year, providing a direct source of vehicle age distribution, a key parameter in MOVES.

A-1.2.5 Southern California Association of Governments

This 2012 study (SCAG, 2012) focused on economic impacts of freight movement across the border and included an updated estimate of commercial vehicle crossing times. This study estimated commercial vehicle crossing time at Calexico East based on license plate capture of trucks before and after the entire crossing process. These crossing time data were not used directly, but as a check on SANDAG crossing time estimates used to develop inputs for Calexico East.

A-1.2.6 San Diego Association of Governments

An ongoing study on the border's economic impact by the San Diego Association of Governments by HDR, Inc. includes an updated border survey akin to the CEC and Imperial County studies (SANDAG, 2017). Over 10,000 survey responses were collected at all six border crossings from August through December 2016. Though this study does not supersede the CEC and Imperial County studies for estimating 2014 calendar year emissions, it does provide new detail on vehicle fleet makeup at Otay Mesa and Tecate which will enhance the 2014 annual analysis.

Additional studies provide data on total crossing time for commercial vehicles at the Otay Mesa, Tecate, and Calexico East crossings, accounting not only for wait time tracked by CBP, but also multiple inspections performed on both sides of the border crossing and related queueing. These crossing time data were used in conjunction with 2014 CBP wait times for commercial trucks (a subset of total crossing time) to estimate 2014 annual emissions at Otay Mesa, Tecate, and Calexico East. The SANDAG 2017 crossing times reported for Otay Mesa were comparable to a study conducted by Delcan, Inc. for FHWA (FHWA, 2010). This study instrumented 175 trucks with GPS to track total crossing time on about 50,000 crossings and provided direct data on total crossing time for commercial trucks at Otay Mesa.

A-1.3 MOVES-Mexico

Under the sponsorship of USAID, through the Mexico Low Emissions Development Program (MLED), ERG developed MOVES-Mexico in 2016 with the capability to produce comprehensive national vehicle emission inventories, and to provide a framework for users to create detailed regional emission inventories and microscale emission assessments (USAID, 2016). MOVES-Mexico is the MOVES2014a software with a different underlying database containing Mexico national default information (e.g., emission rates, vehicle ages, activity patterns) instead of U.S. inputs. The model was adapted based on available data on Mexico's vehicle fleet and travel activity, and it reflects significant differences in vehicle emissions standards between Mexico and the U.S. In support of MOVES-Mexico, the Mexican government agency Instituto Nacional de Ecología y Cambio Climatico (INECC) provided data for fundamental model inputs such as vehicle kilometers travelled, vehicle population, age distribution, fuel quality, I/M programs and emission standards. INECC also provided data on over 250,000 roadside remote sensing device (RSD) measurements across 24 Mexican cities, which were analyzed to help calibrate MOVES-Mexico emission rates. MOVES-Mexico provides an updated tool to estimate emissions from the Mexico-domiciled passenger vehicles and trucks crossing the border.

A-2 Modeling Setup

MOVES2014a was used to estimate total mass emissions of NO_x, SO_2, VOC, CO, PM_{10}, $PM_{2.5}$, and NH_3 at each border crossing over the 2014 calendar year (both the U.S. and Mexico versions of MOVES use the

same software platform and input database structure). The project scale feature of MOVES was used to define each crossing as a separate "project". MOVES2014a was run to estimate emissions for U.S. domiciled vehicles and trucks, while MOVES-Mexico was run to account for Mexico domiciled vehicles. In both cases, alternate emission rates were used. For the U.S. runs, California-specific emission inputs developed by U.S. EPA were applied. For Mexico runs, alternate emission rates for passenger cars were run to exclude taxis, which were accounted for in default MOVES-Mexico passenger car emission rates (USAID, 2016).

Six project scenarios were set up, with multiple project "links" (i.e. roadway links) defined per scenario. For each crossing, 11 on-network links represented northbound (NB) and southbound (SB) lanes as follows:

- NB General, Ready, and SENTRI queue lanes for passenger vehicles, represented as a single lane each (3 links). These are differentiated because of different wait times.
- NB dedicated queue lanes for buses and commercial trucks (2 links)
- NB exit for passenger cars, buses, and commercial trucks (3 links)
- SB lanes for passenger cars, buses, and commercial trucks (3 links).

An additional off-network link was defined to capture vehicle restarts following NB secondary inspections. As detailed in Section A-3, on-network and off-network links are accounted for separately within MOVES. The links defined for the MOVES analysis are not individual lanes per se, but a grouping of lanes with like vehicle activity. As an example, Figure A-2 shows a schematic of the specific lane configuration of San Ysidro, with over 20 individual north and southbound lanes (CEC, 2015). The MOVES links are an amalgamation of these lanes.

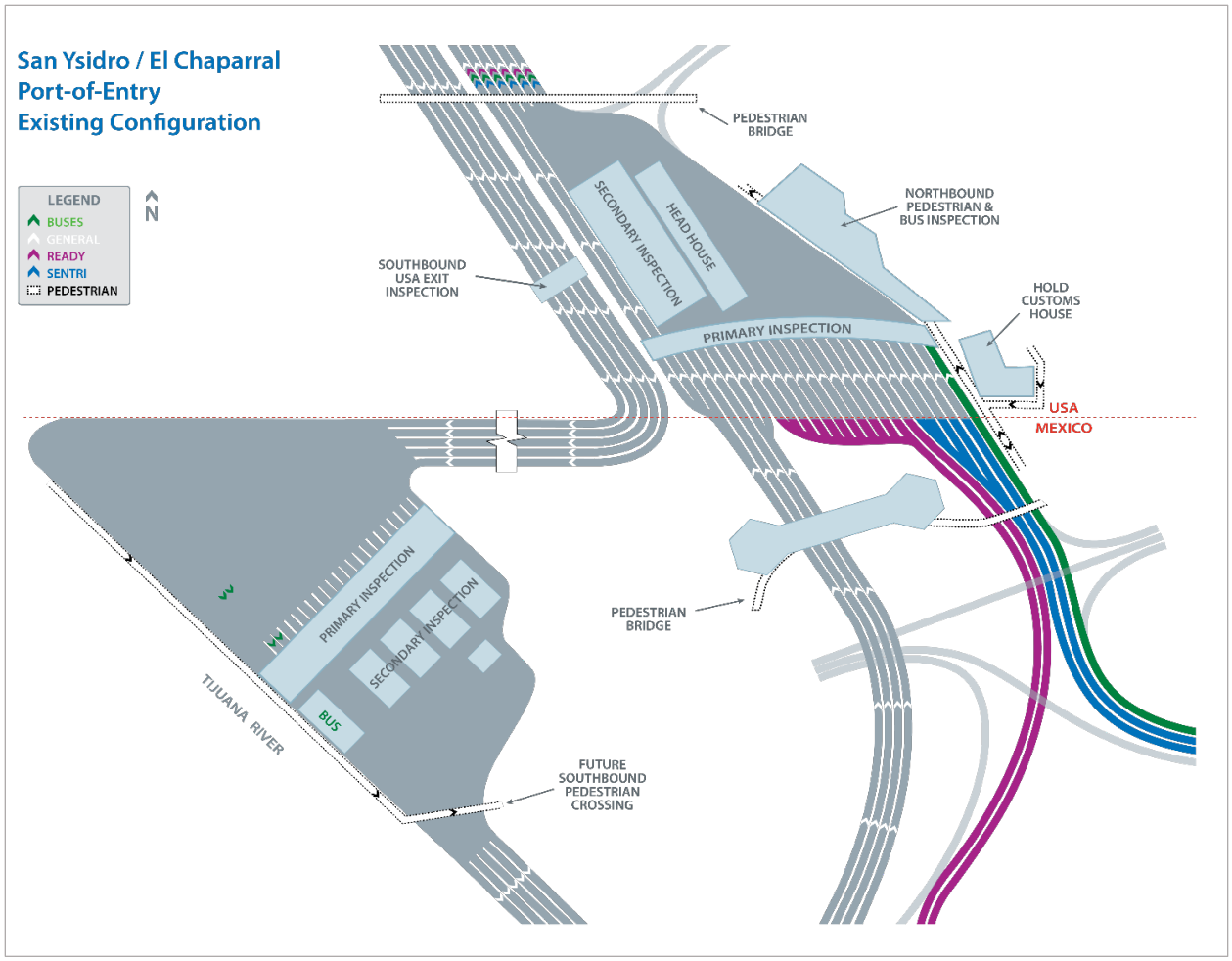


Figure A-2. San Ysidro Lane Schematic (source: CEC, 2015)

MOVES was run to estimate total annual emissions in 2014 for exhaust and brake wear emissions; evaporative emissions were estimated separately as described in Section A-4. For efficiency and reduced model run time, the project databases were set up to define an entire year as one "hour" (the temporal basis of project levels runs), meaning emissions were not be estimated at the monthly or hourly level. However, as discussed on Section A-3, temporal variation in fuel, meteorology, vehicle volumes, and wait times were reflected in model inputs to varying degrees.

For each crossing, separate project databases were required for U.S. fleet and Mexico fleet, to be run separately with MOVES2014a and MOVES-Mexico. In total, 12 project databases (6 crossings × 2 countries) were compiled to cover the entire set of vehicles crossing the border during calendar year 2014, providing unique input to 12 MOVES runs. Populating 12 project databases required data characterizing the number, type, and age of vehicles crossing the border and their activity at each border crossing, with a special emphasis on northbound wait times. The primary inputs needed to populate the MOVES project database are shown in Table A-1, mapped to the specific project database input tables that supply the data in MOVES.

Table A-1. Input Data Parameters Mapped to MOVES Database Tables

Input Data Parameters	Applicable MOVES Project Database Input Table
Vehicle volumes by vehicle type, lane type	Link OffNetworkLink
U.S./Mexico vehicle mix	
Vehicle wait time/crossing time	
Vehicle mix	LinkSourceTypeHour
Vehicle age distribution	SourceTypeAgeDistribution
Driving pattern in queue and exit Inspection engine-off time prior to restart	OpModeDistribution
Fuel	FuelSupply
Meteorology	ZoneMonthHour

The source of inputs was a combination of data obtained in this study, and prior studies summarized in Section A-1.2. New data were obtained from CBP for two primary inputs (northbound vehicle volumes and wait time), but more detailed input such as vehicle age distribution and U.S./Mexico vehicle mix required field survey results from prior studies, since new field work was beyond the scope of this project.

Table A-2 summarizes the data will be used for key MOVES inputs, by border crossing. Since most of the prior studies have focused only a subset of crossings (primarily San Ysidro and Calexico), some data for the smaller border crossings will be drawn from the nearest large crossing – though the primary inputs, vehicle volume and wait time, will be available for all crossings. Section A-3 provides detail on the source, derivation, and final values used for MOVES inputs.

Table A-2. Overview of Data Sources used in ARB 2014 Border Crossing Inventory

	San Ysidro	Otay Mesa	Tecate	Calexico West	Calexico East	Andrade
Vehicle Volume	U.S. CBP, 2014 northbound crossing volumes. Southbound crossing volume assumed the same as Northbound over the year.					
Lane Split	CEC, 2015	SANDAG, 2017		Imperial County, 2015		
Vehicle Class Split	Imperial County, 2015					

Table A-2. Overview of Data Sources used in ARB 2014 Border Crossing Inventory

	San Ysidro	Otay Mesa	Tecate	Calexico West	Calexico East	Andrade
U.S./Mexico Split	CEC, 2015			Imperial County, 2015		
Age Distribution	CEC, 2015			Imperial County, 2015		
Wait Times	Passenger Vehicles and Buses: Requested from CBP via FOIA, by lane, hour and season Commercial trucks: CBP supplemented with SANDAG, 2017 crossing time					
Drive Pattern	FHWA, 2012					
Fuels	MOVES2014a & MOVES-Mexico Default					
Meteorology	Tijuana Historical Weather Data			Mexicali Historical Weather Data		

A-3 Populating MOVES Project Scale Input Tables

New data for this study include northbound volumes and wait times, obtained from CBP (wait times via a Freedom of Information Act request) (CBP, 2018). Other parameters were obtained from prior studies. In many cases as noted, the MOVES inputs were a product of multiple data sources; for example, aggregate volumes from CBP were disaggregated to lane and vehicle fleet based on splits from prior studies. The data source and methods for developing MOVES inputs are provided in this section.

A-3.1 Link

The Link table defines individual links and houses the field LinkVolume. LinkVolume defines the number of vehicles on a given link over one hour (vehicle-hours); for this analysis the field was used to define vehicle-hours as a function of vehicle volumes and wait times. Annual LinkVolumes were calculated for each of the 11 links described in Section A-2 for the U.S. and Mexico-domiciled fleets. Though LinkVolumes represented annual totals, they were developed to account for significant hourly variation in volumes and wait time. The general equation used to calculate LinkVolume is a function of annual

crossing volumes, allocations by lane type and hour, and wait time (crossing time for commercial vehicles) in terms of hours, as shown in Equation A-1 below:

$$LinkVolume_{C,L,F} = \sum_{Hour=1}^{24} Annual\ Volume_{C,V} \times Allocation_{L,H,F} \times Wait_{L,H}$$

Equation A-1

Where:

C	=	Border Crossing
L	=	Link (defined by vehicle class and lane type, including northbound/southbound)
F	=	Fleet (Mexican or U.S.)
V	=	Vehicle class (passenger or commercial)
H	=	Hour

The source and derivation of each of the inputs to LinkVolume is detailed below.

A-3.2 Annual Crossing Volumes

Northbound volumes recorded by CBP are available directly via the Bureau of Transportation Statistics (BTS) website, by crossing, vehicle type and month (BTS, 2014).

Table A-3. Northbound Crossing Volumes in 2014

	Buses	Passenger Vehicles	Commercial Trucks
Andrade	-	453,079	-
Calexico East	2,785	3,399,697	325,243
Calexico West	-	4,071,666	-
Otay Mesa	41,222	6,910,219	810,193
San Ysidro	57,171	11,946,060	-
Tecate	237	812,540	52,239
Total	**101,415**	**27,593,261**	**1,187,675**

Southbound volumes are not tracked by CBP. For this analysis, southbound volumes were assumed to be the same as Northbound volumes (i.e., all vehicles returned to their country of domicile within the year).

Vehicle volumes are not used directly for MOVES input but are used to develop the input parameter LinkVolume within the Link and OffNetworkLink tables, in conjunction with lane splits, U.S./Mexico splits and wait times, as described later in the report.

A-3.3 Allocation by Lane Type

For northbound traffic, three types of passenger vehicle lanes (i.e., General, Ready, SENTRI), two types of commercial truck lanes (i.e., General, FAST) and one bus lane were separately modeled for each applicable crossing (individual lanes within these groups were not separately modeled, however). Some

crossings have only a subset of these lanes; for example, San Ysidro does not have commercial truck lanes, while Tecate does not have SENTRI or FAST lanes.

CBP does not report volumes broken out by these lanes, so survey data from San Diego (SANDAG, 2017) and Imperial County (Imperial County, 2015) were used to split total volumes into lane groups. These surveys gathered data by hour and were used to develop hourly lane allocations for building up an annual estimate of vehicle-hours used in MOVES' link volume input (annual volumes were built from hourly to account for temporal variation in wait times). Hourly allocations are presented in Attachment 1; for brevity, daily average allocations for northbound passenger vehicles and commercial truck are presented in Table A-4. Southbound lanes were not subdivided by these splits beyond passenger vehicles, commercial truck, and bus.

Table A-4. Northbound Lane Allocations from Prior Surveys

	Passenger Vehicles			Commercial Trucks	
	General	Ready	SENTRI	General	FAST
Andrade	1.0	-	-	-	-
Calexico East	0.15	0.68	0.17	0.54	0.46
Calexico West	0.58	-	0.42	-	-
Otay Mesa	0.24	0.53	0.23	0.85	0.15
San Ysidro	0.24	0.34	0.42	-	-
Tecate	1.0	-	-	1.0	-

A-3.4 Allocation by U.S. / Mexico Domicile

Two surveys tracked the origin county of passenger vehicles crossing the border, based on vehicle registration (CEC, 2015; Imperial County, 2015). These splits were used to apportion vehicle volumes in the calculation of LinkVolume for MOVES input databases. The average annual fraction of vehicles domiciled in Mexico was 0.421 for the Imperial County survey (applied to Calexico East, Calexico West, and Andrade crossings) (Imperial County, 2015), and 0.437 for the CEC survey (applied to San Ysidro, Otay Mesa and Tecate crossings) (CEC, 2015).

None of the prior surveys reported the domicile of commercial trucks. The mix of U.S. and Mexico trucks for this analysis instead focused on compliance with California truck emission standards, which all trucks entering California are required to comply with. ARB inspection data near the border confirm that not all trucks do comply; these data were used to determine a noncompliance fraction. Modeled noncomplying trucks as Mexican trucks, which do not require aftertreatment per 2007/2010 U.S. standards

ARB heavy-duty compliance data from checks near the Otay Mesa, Tecate and Calexico crossings were used to determine the fraction of trucks that failed a compliance check. Data from the compliance programs judged to correlate most closely with pre- and post-2007 engine standards were used, including certification label checks (ECL), heavy-duty in-use program (HDVIP), and CA truck-and-bus rule checks (STB). Targeted programs such as idle check, diesel emission fluid check, refrigeration units (TRUs) or offroad were not included. Combining results from the ECL, HDVIP and STB programs across all

locations, 20 percent of 788 trucks failed at least one of these checks. This translated to modeling 20 percent of commercial truck volume as Mexico trucks which aligns with the pre-2007 standards.

A-3.4.1 Allocation by Hour

Surveys conducted by CEC and Imperial County tracked hourly crossing volumes by lane type (CEC, 2015; Imperial County, 2015). These were converted to annual average hourly allocation factors shown in Attachment 1. The hourly allocation factors were applied to the 2014 annual crossing volumes from Table A-3 for the LinkVolume calculation shown in Equation A-1.

A-3.4.2 Vehicle wait time and/or queue length

Passenger Vehicles

Via a Freedom of Information Act (FOIA) request, 2014 northbound passenger vehicle wait times were provided by CBP by border crossing, lane type, month and hour (CBP, 2018). The provided data confirmed very long annual average wait times at the most congested crossings, nearing 80 minutes at certain times of the day for general lanes in San Ysidro, and nearing 1 hour overall. For passenger vehicles, annual averages by hour from CBP were used directly in calculating link volume for MOVES. Annual average hourly values for crossing and lane type are presented in Attachment 2. For brevity, annual averages only are shown in Table A-5.

Table A-5. Northbound Passenger Vehicle Wait Times in 2014 in Minutes (CBP, 2018)

	General	Ready	SENTRI
Andrade	22.18	-	-
Calexico East	36.03	21.37	1.16
Calexico West	49.44	-	5.28
Otay Mesa	39.53	25.81	4.51
San Ysidro	57.87	35.92	9.77
Tecate	31.15	-	-

Commercial Vehicles

Northbound commercial vehicle wait times were provided by CBP as well, but only account for a portion of the overall crossing time. The CBP wait times account for queuing at the primary U.S. immigration and custom inspection, but do not account for queuing and idling associated with secondary inspections on both the Mexican and U.S side of the border. The scale of CBP wait time within the overall crossing process is illustrated in GAO 2013 and is shown in Figure A-3 below.

The intent of this analysis was to account for emissions for the total crossing time. Total crossing times measured in prior studies were found to be roughly 2-3 times longer than the primary inspection wait times reported by CBP (FHWA, 2010; SANDAG, 2017). Data from Otay Mesa was used to supplement the CBP wait time data for an estimate of total crossing time for this analysis (SANDAG, 2017). The CBP data was used as the basis from commercial truck crossing time rather than the data from SANDAG (SANDAG, 2017) because a) it represents 2014, and b) CBP provided data by hour.

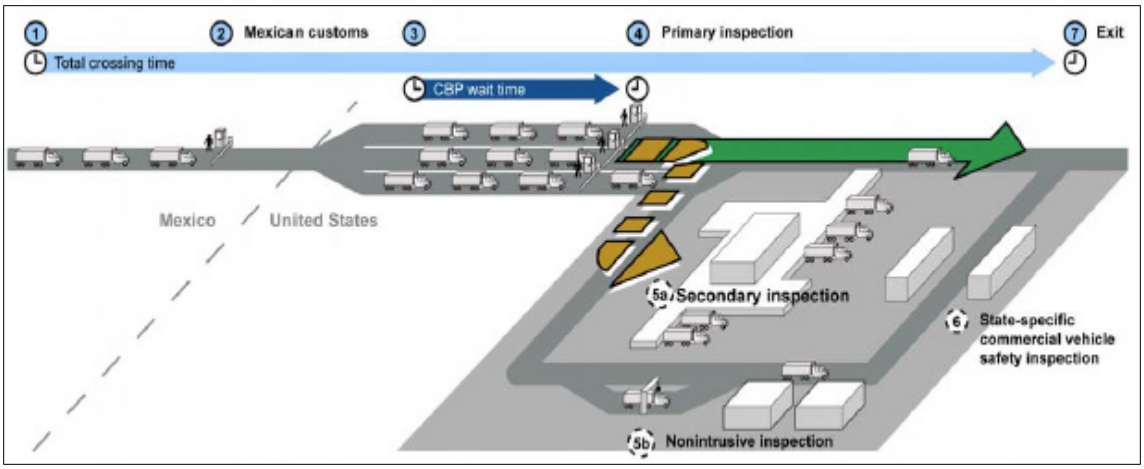


Figure A-3. Commercial Truck Crossing Process (source: GAO, 2013)

The additional time involved with secondary inspections and related queuing was estimated as the difference between total crossing time estimates from SANDAG and the primary inspection wait time provided by CBP. CBP estimates for wait time were aggregated for the hours observed in SANDAG data (8 am - 5 pm) for direct comparison, with the difference identified as additional crossing time. These estimates are shown in Table A-6.

Table A-6. Estimation of "Additional" Commercial Truck Crossing Time (minutes)

	General Lanes			FAST Lanes		
	SANDAG	CBP	"Additional" crossing (SANDAG-CBP)	SANDAG	CBP	"Additional" crossing
Calexico East	60.0	8.6	51.4	31.7	5.8	25.9
Otay Mesa	95.4	33.4	62.0	54.2	12.9	41.3
Tecate	38.0	9.6	28.4	-		

The "additional" crossing times were then added to hourly average CBP wait times for the calculation of MOVES link volume inputs.

The MOVES runs did not define separate links for General and FAST lanes, so an average of crossing times was used, weighted by truck lane allocations as reported by Imperial County (Imperial County, 2015).

Southbound wait times were not provided by CBP but were estimated by the CEC in CEC 2015 for San Ysidro (CEC, 2015)and by SANDAG for other crossings (SANDAG, 2017), so these were used directly in the analysis. CEC estimates of southbound queue length by hour were converted to wait times assuming an average speed of 5 mph. Hourly data were not available in the SANDAG data, so for other crossings the overall averages were used for each hour for the southbound link volume calculations. Southbound crossing times are shown in Table A-7 below.

Table A-7. Southbound Crossing Times (minutes) (SANDAG, 2017)

	Passenger Vehicles	Commercial Trucks
Andrade	0.2	-
Calexico East	3.3	37.3
Calexico West	3.2	-
Otay Mesa	5.8	31.5
San Ysidro	4.9	-
Tecate	0.7	29.2

Buses

Unique bus lane wait times were not provided by CBP. Wait times from passenger vehicle SENTRI lanes were assumed. For southbound traffic, passenger vehicle wait times were used.

A-3.4.3 LinkVolume Results

Incorporating crossing volume, wait times and allocations inputs by fleet, link and hour per Equation A-1, resulted in the LinkVolume tables used for MOVES inputs, shown in Attachment 3 by each of the 11 links described in Section A-2, crossing, and U.S./Mexico fleet.

A-3.5 LinkSourceTypeHour

The LinkSourceTypeHour table provides the allocation of MOVES source types (vehicle classes) within aggregate link volumes, via the field VolumeFraction. Only Imperial County reported this level of detail from survey results (Imperial County, 2015). For passenger vehicles, IC 2015 used a 50/50 split of cars and light trucks based on observation; these were mapped to MOVES source types passenger car and passenger truck for this analysis. For commercial vehicles, IC 2015 used a split of 80 percent heavy-duty Class 8, 14 percent medium -duty, and 6 percent light-duty truck. These were mapped into MOVES source types combination long-haul truck, single-unit long-haul truck, and light commercial truck, respectively. The resulting source type fractions, used directly in the MOVES input table LinkSourceTypeHour, are shown in Table A-8. These fractions were applied for all border crossings, for both the U.S. and Mexico fleets.

Table A-8. MOVES Source Type Fractions

Border Crossing Vehicle	MOVES Source Type	Volume Fraction
Passenger Vehicle	Passenger Car	0.5
	Passenger Truck	0.5
Commercial Vehicle	Light Commercial Truck	0.06
	Single Unit Long-Haul	0.14
	Combination Long-Haul	0.80
Bus	Intercity Bus (U.S. only)	1.0

A-3.6 OffNetworkLink

The OffNetworkLink table provides data used in estimate vehicle start emissions, for the restart following northbound secondary inspection. The field VehiclePopulation provides the count of vehicles

crossing the border. These values directly aligned with annual crossing data from Table A-3, but are allocated by MOVES source type and country of domicile according to the allocation factors presented in Section A-3.4. The resulting VehiclePopulation inputs are shown in Attachment 2.

The field StartFraction provides the fraction of these vehicles that engage in restart at the crossing. The percentage of northbound passenger vehicles undergoing secondary inspection is not publicized for security reasons and is not available in any of the prior studies. For this analysis the percentage was assumed to 5 percent. Because northbound buses and commercial trucks undergo inspections as part of the normal course of crossing, the percentage for these vehicle classes was assumed to be 100 percent.

Restarts were not applied to southbound vehicles for this analysis, as review of prior studies did not provide a basis for quantifying inspection rates on southbound vehicles. Focusing on commercial vehicles, FHWA did not analyze southbound commercial vehicle data (FHWA, 2010); other sources alluded to secondary inspections (FHWA, 2012; SCAG, 2012), but did not provide an estimate or break out queue time from inspection time. Likewise, SANDAG did not mention southbound inspections, providing only total crossing time. The degree of southbound inspection and restarts is an area of uncertainty for this study, in need of further investigation.

A-3.7 SourceTypeAgeDistribution

For a given source type, the SourceTypeAgeDistribution table provides the distribution of ages as the fraction of total population over a 30 year period. The distribution of vehicle age is a product of the proportion of vehicle model years in the CEC (San Ysidro passenger vehicles) and Imperial County (Calexico commercial truck) surveys (CEC, 2015; Imperial, 2015). These distributions are shown in Figure A-4 below and were used directly in the MOVES input table SourceTypeAgeDistribution for all border crossings. The Imperial County survey included passenger vehicles as well, but were not used because of the year-to-year anomalies in the data as a result of small sample size (Imperial County, 2015).

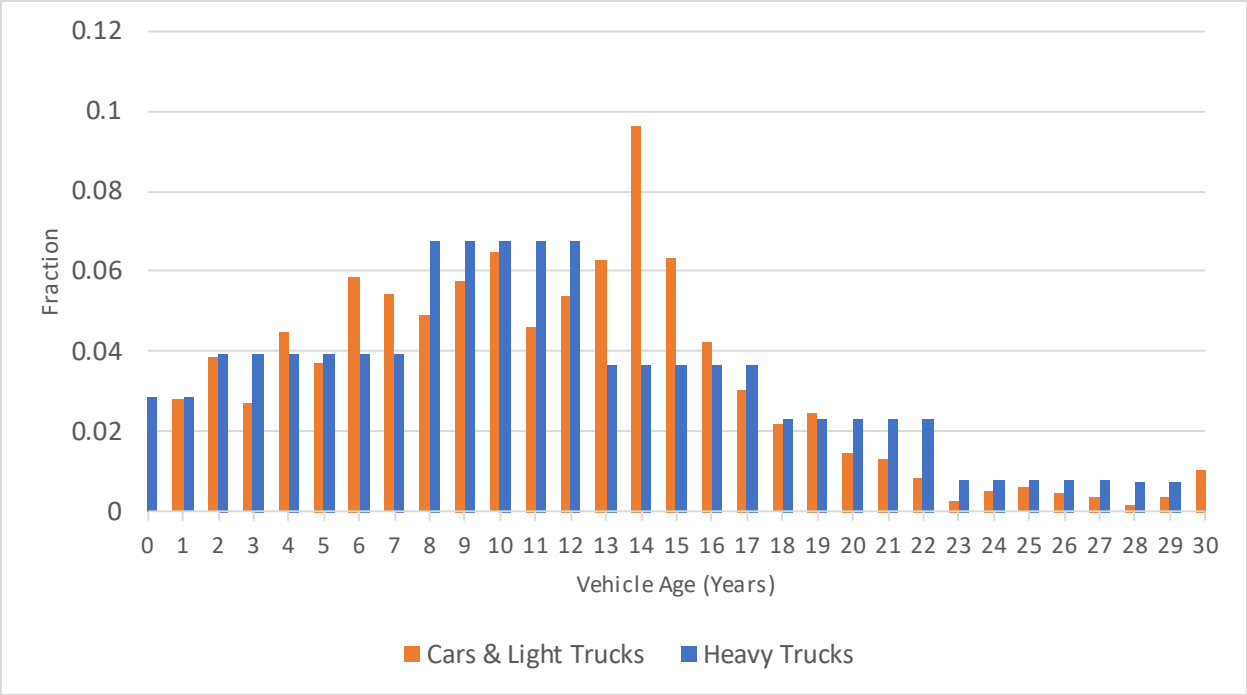


Figure A-4. Age Distributions Derived from CEC 2015 and IC 2015

A-3.8 OpModeDistribution

Vehicle driving patterns (mix of idle, acceleration, cruise, and braking) are characterized in MOVES as a distribution of time spent in discrete operating modes (via the field OpModeFraction), a function of vehicle specific power (VSP), and vehicle speed. The MOVES project scale feature allows customization of vehicle driving pattern through input of the table OpModeDistribution. FHWA developed a set of off-the-shelf MOVES operating mode distributions for U.S.-Mexico border crossings, based on queue modeling. These distributions varied by vehicle type, lane type, and approach phase (i.e., free-flow, creeping approach, queue stop-and-go) (FHWA, 2012). Based on comparison to available video data (Barzee, 2010), for this analysis only the "stop-and-go" distributions were used for northbound crossings (free-flow operation on border crossing feeder roads should be accounted for in the on-road inventory already, and there is not sufficient activity data on "approach" operation). For southbound passenger vehicles, "creeping" distribution was used for passenger cars to match the 5 mph average speed assumption; most passenger vehicles are able to pass through southbound lanes without coming to a dead stop. The FHWA operating mode distributions chosen for this analysis are shown in Table A-9 (FHWA, 2012). Note for the queues only a subset of MOVES operating modes are used for stop-and-go (all under 25 mph). For northbound lanes, an "exit" link was added to represent acceleration from a dead stop at the customs date. Vehicles heading south do not follow the same behavior, so an explicit exit link was not added for southbound.

Table A-9. Operation Mode Distribution (OpModeFraction)

opMode	Description	Northbound OpModeFraction				Southbound	
		General/Ready Queue	SENTRI Queue	HDT/Bus Queue	Exit	Car/Light Truck	HDT/Bus
0	Decel	0.267	0.244	0.212		0.259	0.266
1	Idle	0.629	0.597	0.659		0.507	0.59
11	Increasing VSP Speed<25mph	0.038	0.055	0.042		0.002	0.047
12		0.065	0.095	0.075		0.232	0.089
13		0.001	0.002	0.003		0	0.003
14		0	0.002	0.002		0	0.001
15		0	0.001	0.001		0	0.001
16		0.001	0.003	0.005	0.5	0	0.002
29	25<Speed<50 Acceleration				0.5		

Operating mode distribution is also needed to define the length of time preceding vehicle restarts (soak time). For starts, MOVES operating modes are ranges of time, with one mode for soaks between 6 and 30 minutes. For restarts following secondary inspection 100 percent of the soaks were assumed to fall in this range.

A-3.9 ZoneMonthHour

Temperature and relative humidity are fed into MOVES in the ZoneMonthHour table. For the MOVES runs 2014 annual average values for Tijuana (San Ysidro, Otay Mesa, Tecate) and Mexicali (Calexico, Andrade) were used, based on data pulled from historical weather data. These values were 65.7 °F/53.7% humidity for Tijuana, and 78 °F/25% for Mexicali. MOVES exhaust emissions are less sensitive to meteorology, so use of annual average values will have a minimal effect. Because evaporative emissions are more sensitive to temperature, a different approach was taken for these emissions as discussed in Section A-4.

A-3.10 FuelSupply

Fuel properties were based on default fuels in MOVES2014a (for U.S. vehicles) and MOVES-Mexico (for Mexican vehicles) for California and Baja California. These properties vary by season (summer, winter, transitional months) and for Mexico regular vs. premium gasoline (300 vs. 30 ppm sulfur). For the single run representing a full year, the variation in fuels by season are reflected in the FuelSupply table as a distribution of these fuels. The fuel properties and 2014 market shares are shown in Tables A-10 and A-11. The Mexico fuels shown in Table A-10 assumed no oxygenate; the U.S. fuels in Table A-11 were E10.

Table A-10. Mexico Vehicle Gasoline Properties

Market Share	RVP (psi)	Sulfur (ppm)	Aromatics (%)	Olefins (%)	T50 (°F)	T90 (°F)
0.2145	9	300	25.24	12.98	212.4	338.8
0.2817	11.5	300	25.24	12.98	212.7	339.1

Table A-10. Mexico Vehicle Gasoline Properties

Market Share	RVP (psi)	Sulfur (ppm)	Aromatics (%)	Olefins (%)	T50 (°F)	T90 (°F)
0.0379	9	30	25.25	12.98	212.4	338.8
0.0497	11.5	30	25.25	12.98	212.7	339.1
0.3538	10	300	25.24	12.98	212.4	338.8
0.0624	10	30	25.25	12.98	212.7	338.8

Table A-11. U.S. Vehicle Gasoline Properties

Market Share	RVP (psi)	Sulfur (ppm)	Aromatics (%)	Olefins (%)	T50 (°F)	T90 (°F)
0.4462	7.06	9	21.98	4.44	211	303
0.3850	11.84	9	21.98	4.44	198.5	291.9
0.1688	9.75	9	21.98	4.44	203.9	296.7

Per MOVES and MOVES-Mexico defaults, diesel fuels were 15 ppm, with U.S. fuel using 5 percent biodiesel.

A-3.11 Other Inputs

Alternate emission rates were used for both MOVES2014 and MOVES-Mexico runs, to better reflect the population of passenger vehicles crossing the border. The majority of U.S.-domiciled vehicles crossing the border are assumed to be registered in California, which has stricter emission standards than the default U.S. case MOVES2014a bases emission rates on. To allow modeling of California emission standards in MOVES, U.S. EPA maintains an alternate set of emission rate inputs, in the form of a MySQL database MOVES2014_LEV_Standards. This was used for the MOVES2014a runs for U.S.-domiciled vehicles.

Default MOVES-Mexico passenger car emission rates include taxis, which have much higher emission levels than privately-owned vehicles (SEDEMA, 2018). As part of SEDEMA 2018, separate MOVES emission rate inputs were developed for privately-owned passenger cars and taxis. For this analysis MOVES-Mexico was run with privately-owned passenger car emission rates only (database *Mexico_pc_rates*), under the assumption that taxis do not cross the border.

A-4 Evaporative Emissions

The approach described in Sections A-2 and A-3 does not address evaporative emissions, since MOVES project scale does not include evaporative processes. Evaporative emissions are important to account for, however. During vehicle operation, the evaporative processes of permeation, vapor venting, and liquid leaks are present, and the prolonged periods of operation experienced with border crossing queues will elevate fuel temperatures, exacerbating these emissions. Evaporative emissions from Mexican vehicles are of particular concern due to less stringent evaporative emission standards. Recent

analysis suggests very high levels of running loss evaporative emissions from passenger cars in Mexico City (Koupal and Palacios, 2019), accounted for in MOVES-Mexico.

An off-model approach to estimating evaporative emissions was developed as follows:

- Use MOVES to generate evaporative VOC emission factor per vehicle-hour of operation.
- Separate emission factors for Mexico- and U.S.-domiciled vehicles, using a state-level run for Baja California, and county-level run for San Diego County.
- Age distribution inputs from border studies (Section A-4) were used.
- Emission factors include permeation, tank vapor venting, and liquid leak emission processes. Of these, vapor venting is the majority (roughly 80 percent).
- Emissions generated by running MOVES for entire year, calculating results by hour of the day across all months. This level of detail was used (instead of annual average as done for exhaust) because of the increased sensitivity of evaporative emissions to temperature.
- To mimic fuel temperatures for the unique conditions of border queuing, custom trip inputs were developed to mimic vehicles idling for 38 minutes – the average wait time for passenger vehicles across all border crossings and lanes, weighted by crossing volume. When run through MOVES, the impact of this update was to reflect a more realistic differential between fuel temperature and ambient vs. default trip activity profiles that have vehicles not operating most of the day.
- Trucks on average had crossing times about twice this heading northbound, and close to this heading southbound.
- Emission factors applied to total vehicle-hours.
- Resulting g/vehicle-hr running loss (RL) emissions factors are an annual average across the results by hour of the day and months. The vehicle-hr denominator accounts for the fraction of diesel vehicles which do not produce evaporative emissions, so the emission factor can be applied to total passenger vehicle and commercial vehicle volumes.
- Buses ignored – 100 percent diesel = no evaporative emissions.
- MOVES source types combined based on vehicle mix used for MOVES runs.

Gram/vehicle-hour emission rates by MOVES source type are shown in Table A-12. The difference between “gas only” and “all vehicles” is the addition of diesel vehicles in the vehicle-hour denominator.

Table A-12. 2014 RL VOC Emission Factors by MOVES Source Types (grams VOC per vehicle-hour operating)

MOVES Source Type	Mexican Vehicles		U.S. Vehicles	
	Gas Only	All Vehicles	Gas Only	All Vehicles
Passenger Car	9.85	9.85	1.62	1.61
Passenger Truck	9.85	9.80	1.70	1.67

Table A-12. 2014 RL VOC Emission Factors by MOVES Source Types (grams VOC per vehicle-hour operating)

MOVES Source Type	Mexican Vehicles		U.S. Vehicles	
	Gas Only	All Vehicles	Gas Only	All Vehicles
Light Commercial Truck	9.85	9.80	1.70	1.59
Single Unit Long-Haul	9.71	3.63	5.29	0.26
Combination Long-Haul	-	0.0	-	0.0

Emission factors were aggregated to passenger vehicle and commercial vehicle for direct application to border crossing categories.

Table A-13. Weighting Factors

Border Crossing Vehicle	MOVES Source Type	Volume Fraction
Passenger Vehicle	Passenger Car	0.5
	Passenger Truck	0.5
Commercial Vehicle	Light Commercial Truck	0.06
	Single Unit Long-Haul	0.14
	Combination Long-Haul	0.80

Weighted emission factors are shown in Table A-14.

Table A-14. 2014 Running Loss VOC Emission Factors for Border Vehicles (grams of VOC per vehicle-hour operating)

Border Crossing Vehicle	Mexican Fleet	U.S. Fleet
Passenger Vehicle	9.82	1.64
Commercial Vehicle	1.10	0.13

In the development of MOVES input files for exhaust runs, link volumes produced for the input databases are the equivalent of vehicle-hours (the product of vehicle volume and wait times). Emission inventory for running loss evaporative emissions was calculated directly from these inputs using Equation A-2:

$$EI_{C,V,L,F} = EF_{V,F} \times \text{Link Volume}_{C,V,L,F} \qquad \text{Equation A-2}$$

Where:

- EI = Running Loss VOC emission inventory (grams per year)
- EF = Running Loss VOC emission factor (grams / veh-hour)
- C = Border Crossing
- V = Vehicle class (passenger or commercial)
- L = Lane type (e.g. NB general/ready/SENTRI, SB)

F = Fleet (Mexican or U.S.)

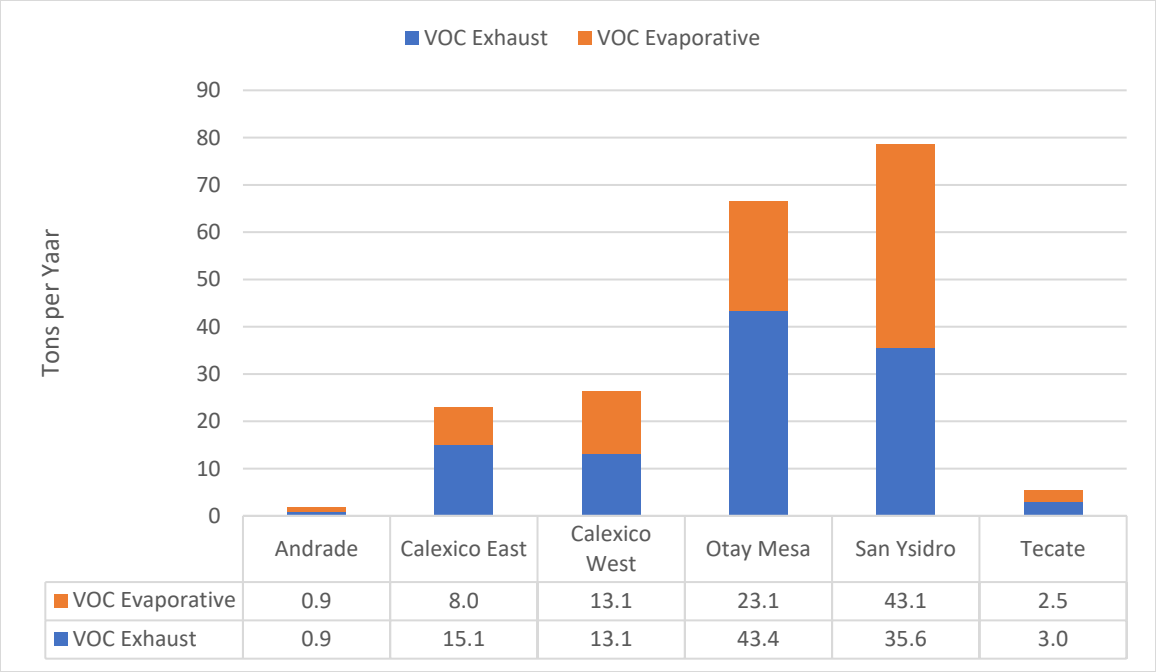
A-5 Results

The analysis produced total motor vehicle emissions of VOC, CO, NO_x, SO_2, PM_{10}, $PM_{2.5}$ and NH_3 calendar year 2014. Table A-15 shows a summary of total emissions by pollutant and crossing, accounting for both northbound and southbound crossings. Emissions are expressed as short tons per year. These emissions will be incorporated into the revised emissions inventory and will be submitted to CARB along with the relevant temporal profiles and spatial surrogates. The analysis estimates that in 2014, vehicles emitted 202 short tons of VOC (2 percent of the 2014 MNEI on-road inventory for Baja California), 385 tons of NO_x (1 percent), 69 tons of PM_{10} (3 percent) and 27 tons of $PM_{2.5}$ (1 percent). The crossings with the highest emissions were San Ysidro for VOC and CO, due to the high volume of passenger vehicles; and Otay Mesa for NOx and PM, due to the high volume of commercial trucks.

Table A-15. 2014 Vehicle Emissions at California Border Crossings (Tons per Year)

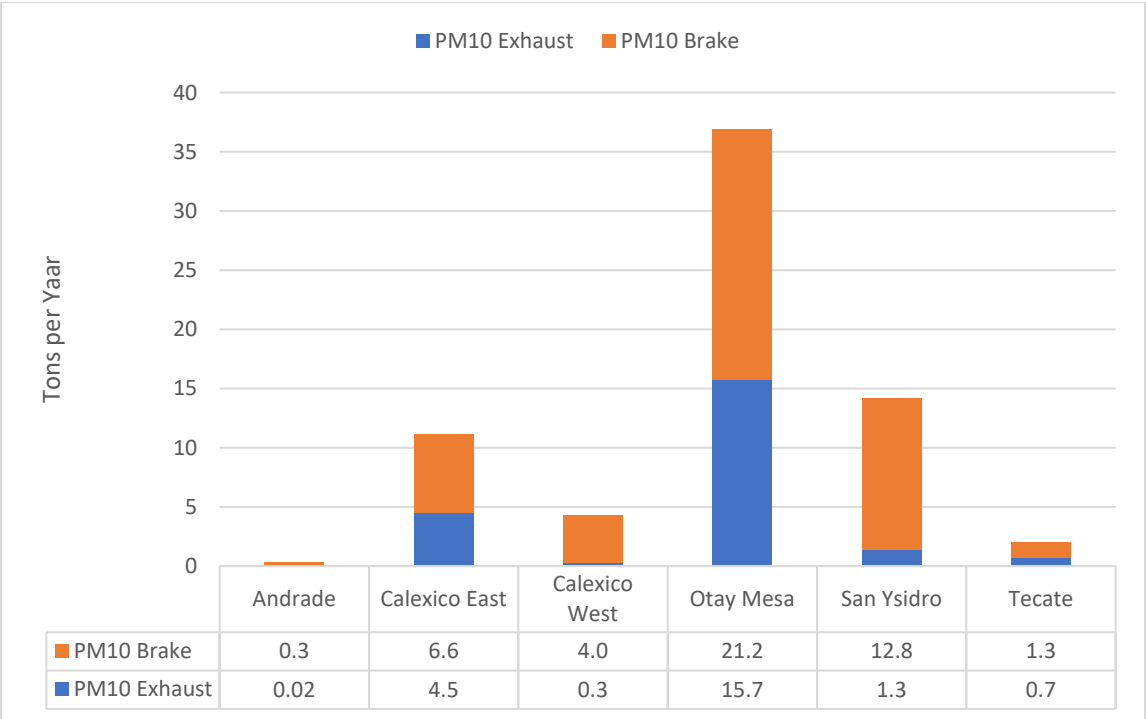
	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
Andrade	1.9	0.1	1.8	14.8	0.3	0.1	0.1
Calexico East	75.6	0.7	23.1	151.4	11.1	5.0	0.9
Calexico West	24.2	1.1	26.3	200.8	4.3	0.8	1.2
Otay Mesa	227.1	1.9	66.5	357.5	36.9	17.1	2.6
San Ysidro	47.0	3.2	78.7	516.9	14.2	2.8	3.7
Tecate	10.9	0.2	5.5	32.4	2.0	0.8	0.2
Total	**384.8**	**7.0**	**201.9**	**1,273.8**	**68.8**	**26.6**	**8.7**

Full emission results broken down by crossing, fleet (U.S./Mexico) and vehicle type (passenger, commercial, bus) are presented in Attachment 4. Additional discussion of results relative to existing emissions inventories will be provided in the final report. Some key breakdowns are summarized from this in Figures A-5 through A-7 by emission process for VOC (exhaust vs. evaporative emissions) and PM (exhaust vs. brake wear emissions). For both pollutants, non-exhaust emissions are shown to contribute a substantial share. Evaporative emissions, exacerbated by long wait times, contributed about 45 percent of overall VOC emissions, with the contribution at a specific crossing depending on the mix of passenger and commercial vehicles. Brake wear, exacerbated by stop-and-go driving in the queue, was estimated to contribute 67 percent of PM_{10} and 22 percent of $PM_{2.5}$ overall, with contributions higher at crossings without commercial vehicles.



	Andrade	Calexico East	Calexico West	Otay Mesa	San Ysidro	Tecate
VOC Evaporative	0.9	8.0	13.1	23.1	43.1	2.5
VOC Exhaust	0.9	15.1	13.1	43.4	35.6	3.0

Figure A-5. VOC Breakdown by Exhaust/Evaporative



	Andrade	Calexico East	Calexico West	Otay Mesa	San Ysidro	Tecate
PM10 Brake	0.3	6.6	4.0	21.2	12.8	1.3
PM10 Exhaust	0.02	4.5	0.3	15.7	1.3	0.7

Figure A-6. PM_{10} Breakdown by Exhaust/Brake

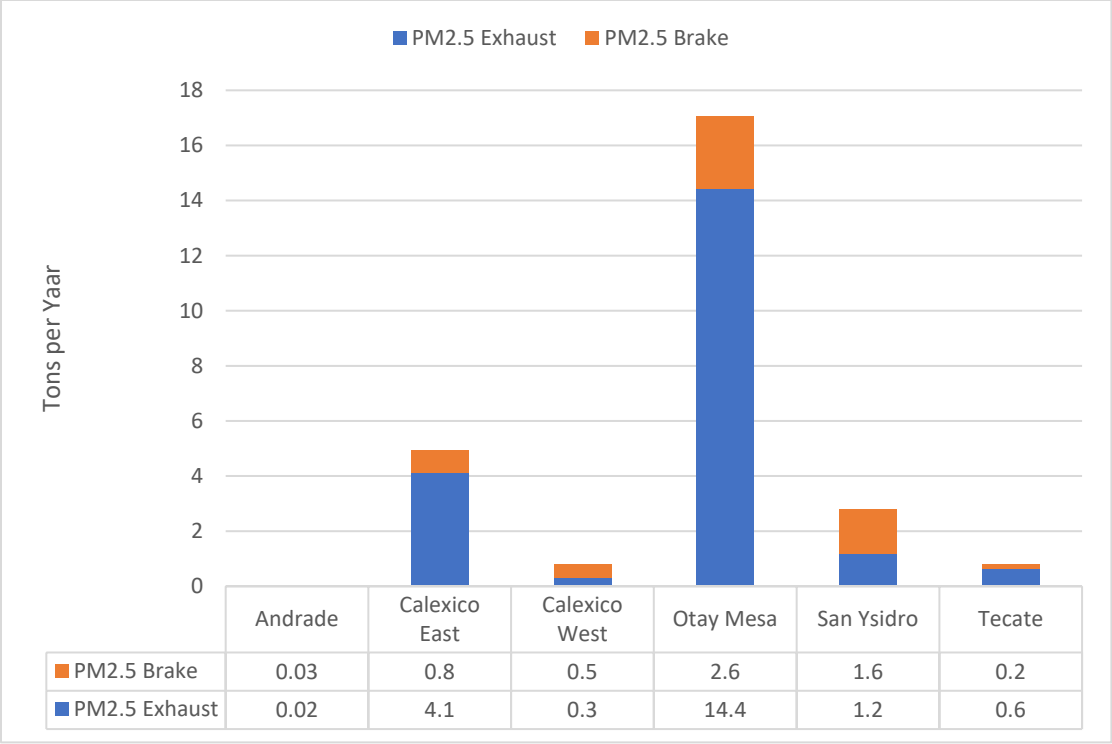


Figure A-7. $PM_{2.5}$ Breakdown by Exhaust/Brake

Figure A-8 shows the relative contribution of fleet and vehicle class. Buses, making up less than 1 percent of total emissions overall, are grouped with passenger vehicles for this chart; emissions are disaggregated in Attachment 4. Mexico-domiciled passenger vehicles, making up about 40 percent of the passenger vehicle crossings per prior studies, were estimated to contribute about 60 percent of CO and VOC (the latter driven by evaporative emissions), and 80 percent of SO_2 overall.

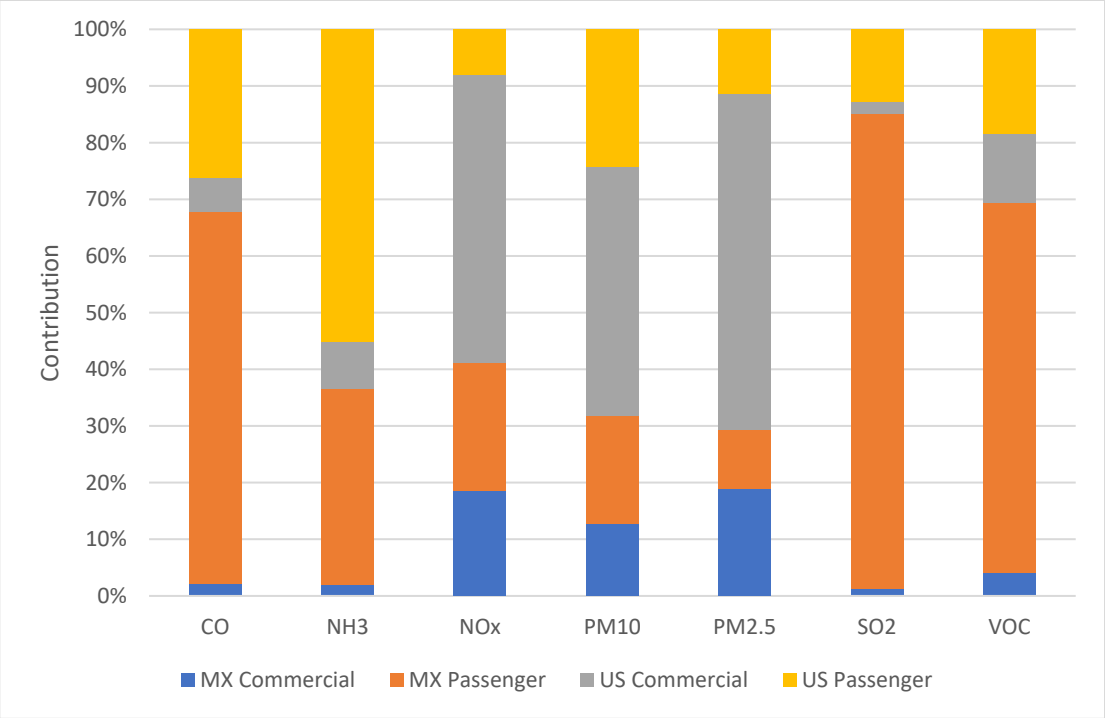


Figure A-8. Contribution by U.S./Mexico Fleet and Vehicle Class

A-6 References

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Attachment 1
Hourly Vehicle Volume Allocations

Table 1-1. San Ysidro Hourly Volume Allocations

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	0.006293	0.0084	0.0098	-	0.0245	0.0137	-	0.0137
1-2am	0.005905	0.0079	0.0093	-	0.023	0.0078	-	0.0078
2-3am	0.006687	0.009	0.0106	-	0.0263	0.0055	-	0.0055
3-4am	0.00741	0.01	0.0119	-	0.0292	0.005	-	0.005
4-5am	0.009001	0.0121	0.0145	-	0.0356	0.0047	-	0.0047
5-6am	0.009979	0.0135	0.016	-	0.0395	0.0081	-	0.0081
6-7am	0.011072	0.0149	0.0178	-	0.0437	0.0154	-	0.0154
7-8am	0.011952	0.0161	0.0191	-	0.0471	0.0288	-	0.0288
8-9am	0.014656	0.0252	0.0111	-	0.0509	0.038	-	0.038
9-10am	0.015061	0.0174	0.0156	-	0.048	0.0437	-	0.0437
10-11am	0.011928	0.0185	0.0177	-	0.0481	0.0464	-	0.0464
11-12pm	0.012488	0.0168	0.0195	-	0.0487	0.0478	-	0.0478
12-1pm	0.011295	0.0157	0.0238	-	0.0508	0.0506	-	0.0506
1-2pm	0.010143	0.0145	0.0264	-	0.051	0.0561	-	0.0561
2-3pm	0.013463	0.0147	0.0241	-	0.0522	0.065	-	0.065
3-4pm	0.013454	0.014	0.0229	-	0.0504	0.0858	-	0.0858
4-5pm	0.012261	0.0174	0.0208	-	0.0504	0.0873	-	0.0873
5-6pm	0.012387	0.0164	0.0199	-	0.0487	0.0881	-	0.0881
6-7pm	0.011848	0.0159	0.0188	-	0.0465	0.0794	-	0.0794
7-8pm	0.010972	0.0147	0.0174	-	0.043	0.0651	-	0.0651
8-9pm	0.010246	0.0137	0.0162	-	0.0402	0.0531	-	0.0531
9-10pm	0.009705	0.013	0.0153	-	0.038	0.0446	-	0.0446
10-11pm	0.008916	0.0119	0.014	-	0.0349	0.0348	-	0.0348
11-12am	0.007498	0.01	0.0117	-	0.0292	0.025	-	0.025

Table 1-2. Otay Mesa Hourly Volume Allocations

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	0.00646	0.01392	0	0	0.0245	0.0137	0	0.0137
1-2am	0.00606	0.01308	0	0	0.023	0.0078	0	0.0078
2-3am	0.00686	0.01491	0	0	0.0263	0.0055	0	0.0055
3-4am	0.0076	0.01655	0	0	0.0292	0.005	0	0.005
4-5am	0.00923	0.02014	0	0	0.0356	0.0047	0	0.0047
5-6am	0.01024	0.02233	0.00947	0	0.0395	0.0081	0	0.0081
6-7am	0.01136	0.02476	0.01049	0.0289	0.0437	0.0154	0.02892	0.0154
7-8am	0.01226	0.02667	0.01127	0.0434	0.0471	0.0288	0.04338	0.0288
8-9am	0.01503	0.04181	0.00653	0.056	0.0509	0.038	0.05597	0.038
9-10am	0.01545	0.02886	0.00919	0.0536	0.048	0.0437	0.05364	0.0437
10-11am	0.01224	0.03066	0.01045	0.0602	0.0481	0.0464	0.06017	0.0464
11-12pm	0.01281	0.02787	0.0115	0.0695	0.0487	0.0478	0.0695	0.0478
12-1pm	0.01159	0.02614	0.01404	0.0779	0.0508	0.0506	0.07789	0.0506
1-2pm	0.0104	0.02405	0.01559	0.0676	0.051	0.0561	0.06763	0.0561
2-3pm	0.01381	0.02434	0.01424	0.0676	0.0522	0.065	0.06763	0.065
3-4pm	0.0138	0.0232	0.01355	0.0849	0.0504	0.0858	0.08489	0.0858
4-5pm	0.01258	0.02887	0.01227	0.1017	0.0504	0.0873	0.10168	0.0873
5-6pm	0.01271	0.02715	0.01176	0.0942	0.0487	0.0881	0.09422	0.0881
6-7pm	0.01215	0.02637	0.01109	0.0793	0.0465	0.0794	0.07929	0.0794
7-8pm	0.01125	0.0244	0.01025	0.0583	0.043	0.0651	0.0583	0.0651
8-9pm	0.01051	0.02278	0.00957	0.0569	0.0402	0.0531	0.0569	0.0531
9-10pm	0.00996	0.02156	0.00905	0	0.038	0.0446	0	0.0446
10-11pm	0.00915	0.01979	0.00829	0	0.0349	0.0348	0	0.0348
11-12am	0.00769	0.01661	0.00693	0	0.0292	0.025	0	0.025

Table 1-3. Tecate Hourly Volume Allocation

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	0	-	-	0	0	0	0	0
1-2am	0	-	-	0	0	0	0	0
2-3am	0	-	-	0	0	0	0	0
3-4am	0	-	-	0	0	0	0	0
4-5am	0	-	-	0	0	0	0	0
5-6am	0.045499	-	-	0.018	0.0458	0.0084	0.01801	0.0084
6-7am	0.050482	-	-	0.026	0.0508	0.016	0.02597	0.016
7-8am	0.054495	-	-	0.039	0.0547	0.0299	0.03896	0.0299
8-9am	0.066825	-	-	0.0503	0.0591	0.0395	0.05027	0.0395
9-10am	0.068669	-	-	0.0482	0.0557	0.0453	0.04818	0.0453
10-11am	0.054387	-	-	0.054	0.0558	0.0482	0.05404	0.0482
11-12pm	0.056937	-	-	0.0624	0.0566	0.0496	0.06242	0.0496
12-1pm	0.051499	-	-	0.07	0.059	0.0526	0.06996	0.0526
1-2pm	0.046246	-	-	0.0607	0.0592	0.0583	0.06075	0.0583
2-3pm	0.061384	-	-	0.0607	0.0606	0.0675	0.06075	0.0675
3-4pm	0.061344	-	-	0.0762	0.0585	0.089	0.07625	0.089
4-5pm	0.055903	-	-	0.0913	0.0585	0.0907	0.09133	0.0907
5-6pm	0.056478	-	-	0.0846	0.0565	0.0914	0.08463	0.0914
6-7pm	0.054021	-	-	0.0712	0.054	0.0824	0.07122	0.0824
7-8pm	0.050026	-	-	0.0524	0.0499	0.0676	0.05237	0.0676
8-9pm	0.046715	-	-	0.0511	0.0466	0.0552	0.05111	0.0552
9-10pm	0.044251	-	-	0.0482	0.0441	0.0463	0.04818	0.0463
10-11pm	0.040653	-	-	0.0356	0.0405	0.0361	0.03561	0.0361
11-12am	0.034188	-	-	0	0.0339	0.026	0	0.026

Table 1-4. Calexico West Hourly Volume Allocation

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	0.02105	-	0.01335	-	-	0.0137	-	-
1-2am	0.01683	-	0.0107	-	-	0.0078	-	-
2-3am	0.01705	-	0.01079	-	-	0.0055	-	-
3-4am	0.01705	-	0.01079	-	-	0.005	-	-
4-5am	0.02227	-	0.01409	-	-	0.0047	-	-
5-6am	0.02449	-	0.01553	-	-	0.0081	-	-
6-7am	0.02627	-	0.01666	-	-	0.0154	-	-
7-8am	0.02866	-	0.01814	-	-	0.0288	-	-
8-9am	0.02357	-	0.02562	-	-	0.038	-	-
9-10am	0.03079	-	0.02231	-	-	0.0437	-	-
10-11am	0.02975	-	0.01888	-	-	0.0464	-	-
11-12pm	0.02514	-	0.01596	-	-	0.0478	-	-
12-1pm	0.02336	-	0.01479	-	-	0.0506	-	-
1-2pm	0.02327	-	0.02949	-	-	0.0561	-	-
2-3pm	0.02031	-	0.02344	-	-	0.065	-	-
3-4pm	0.02127	-	0.02492	-	-	0.0858	-	-
4-5pm	0.02966	-	0.01879	-	-	0.0873	-	-
5-6pm	0.02749	-	0.01862	-	-	0.0881	-	-
6-7pm	0.0251	-	0.0227	-	-	0.0794	-	-
7-8pm	0.02997	-	0.02027	-	-	0.0651	-	-
8-9pm	0.02031	-	0.01983	-	-	0.0531	-	-
9-10pm	0.02014	-	0.02362	-	-	0.0446	-	-
10-11pm	0.01514	-	0.0137	-	-	0.0348	-	-
11-12am	0.02931	-	0.00879	-	-	0.025	-	-

Table 1-5. Calexico East Hourly Volume Allocation

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial				
	General	Ready	SENTRI	Truck	Bus	Passenger	Truck	Bus
12-1am	0	0	0	0	0	0	0	0
1-2am	0	0	0	0	0	0	0	0
2-3am	0	0	0	0	0	0	0	0
3-4am	0.00386	0.0161	0	0	0.0316	0.0052	0	0.0316
4-5am	0.00527	0.02203	0	0	0.0384	0.0049	0	0.0384
5-6am	0.0048	0.02005	0	0	0.0426	0.0084	0	0.0426
6-7am	0.00762	0.03973	0.00998	0.0432	0.0472	0.0159	0.04319	0.0472
7-8am	0.00725	0.03012	0.01883	0.0406	0.0508	0.0296	0.04058	0.0508
8-9am	0.0064	0.02673	0.01666	0.0537	0.055	0.0391	0.05366	0.055
9-10am	0.00687	0.03022	0.00885	0.0537	0.0518	0.0449	0.05366	0.0518
10-11am	0.00791	0.0369	0.01026	0.0654	0.0519	0.0477	0.06545	0.0519
11-12pm	0.00791	0.03285	0.01026	0.0628	0.0526	0.0491	0.06283	0.0526
12-1pm	0.00932	0.03888	0.01214	0.0929	0.0549	0.052	0.09293	0.0549
1-2pm	0.00904	0.03756	0.01177	0.089	0.0551	0.0577	0.08901	0.0551
2-3pm	0.00932	0.0434	0.01205	0.0798	0.0564	0.0668	0.07984	0.0564
3-4pm	0.00875	0.03634	0.01139	0.0982	0.0544	0.0881	0.09817	0.0544
4-5pm	0.00913	0.03794	0.01186	0.1008	0.0544	0.0898	0.10079	0.0544
5-6pm	0.01007	0.04726	0.01318	0.0825	0.0525	0.0905	0.08246	0.0525
6-7pm	0.00828	0.0386	0.01073	0.072	0.0502	0.0816	0.07199	0.0502
7-8pm	0.00725	0.03408	0.00951	0.051	0.0465	0.0669	0.05105	0.0465
8-9pm	0.00687	0.03558	0	0.0144	0.0434	0.0546	0.0144	0.0434
9-10pm	0.00461	0.02419	0	0	0.041	0.0458	0	0.041
10-11pm	0.00499	0.02579	0	0	0.0377	0.0357	0	0.0377
11-12am	0.00866	0.024	0	0	0.0316	0.0257	0	0.0316

Table 1-6. Andrade Hourly Volume Allocation

Hour	Northbound					Southbound		
	Passenger (sums to 1)			Commercial				
	General	Ready	SENTRI	Truck	Bus	Passenger	Truck	Bus
12-1am	0.03705	-	-	-	-	0.0137	-	-
1-2am	0.02962	-	-	-	-	0.0078	-	-
2-3am	0.03	-	-	-	-	0.0055	-	-
3-4am	0.03	-	-	-	-	0.005	-	-
4-5am	0.03919	-	-	-	-	0.0047	-	-
5-6am	0.04309	-	-	-	-	0.0081	-	-
6-7am	0.04623	-	-	-	-	0.0154	-	-
7-8am	0.05044	-	-	-	-	0.0288	-	-
8-9am	0.04148	-	-	-	-	0.038	-	-
9-10am	0.05419	-	-	-	-	0.0437	-	-
10-11am	0.05235	-	-	-	-	0.0464	-	-
11-12pm	0.04424	-	-	-	-	0.0478	-	-
12-1pm	0.0411	-	-	-	-	0.0506	-	-
1-2pm	0.04095	-	-	-	-	0.0561	-	-
2-3pm	0.03574	-	-	-	-	0.065	-	-
3-4pm	0.03743	-	-	-	-	0.0858	-	-
4-5pm	0.0522	-	-	-	-	0.0873	-	-
5-6pm	0.04837	-	-	-	-	0.0881	-	-
6-7pm	0.04416	-	-	-	-	0.0794	-	-
7-8pm	0.05274	-	-	-	-	0.0651	-	-
8-9pm	0.03574	-	-	-	-	0.0531	-	-
9-10pm	0.03544	-	-	-	-	0.0446	-	-
10-11pm	0.02664	-	-	-	-	0.0348	-	-
11-12am	0.05159	-	-	-	-	0.025	-	-

Attachment 2
Vehicle Wait/Crossing Times Used in Analysis

Table 2-1. San Ysidro Wait Times (Minutes)

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	34.8	17.3	3.1	-	3.1	0.2	-	0.2
1-2am	30.3	12.8	1.7	-	1.7	0.2	-	0.2
2-3am	25.4	10.7	0.9	-	0.9	0.2	-	0.2
3-4am	26.8	13.7	0.9	-	0.9	0.2	-	0.2
4-5am	32.5	19.1	2.8	-	2.8	0.2	-	0.2
5-6am	39.8	25.8	6.6	-	6.6	0.2	-	0.2
6-7am	49.8	34.2	10.0	-	10.0	0.2	-	0.2
7-8am	60.1	41.5	12.5	-	12.5	0.2	-	0.2
8-9am	67.0	45.9	12.9	-	12.9	0.2	-	0.2
9-10am	67.6	45.0	12.2	-	12.2	0.2	-	0.2
10-11am	68.3	44.3	13.6	-	13.6	0.2	-	0.2
11-12pm	67.5	44.9	14.7	-	14.7	0.2	-	0.2
12-1pm	70.0	46.7	14.3	-	14.3	0.2	-	0.2
1-2pm	73.1	49.6	15.2	-	15.2	0.6	-	0.6
2-3pm	76.6	52.2	15.1	-	15.1	0.2	-	0.2
3-4pm	79.1	52.5	14.0	-	14.0	3.9	-	3.9
4-5pm	77.2	49.8	12.6	-	12.6	7.4	-	7.4
5-6pm	74.1	45.2	11.9	-	11.9	11.4	-	11.4
6-7pm	70.8	42.5	12.3	-	12.3	11.6	-	11.6
7-8pm	68.9	40.2	11.8	-	11.8	11.1	-	11.1
8-9pm	66.2	37.9	10.8	-	10.8	5.7	-	5.7
9-10pm	61.8	34.9	9.2	-	9.2	4.4	-	4.4
10-11pm	55.7	31.8	8.6	-	8.6	0.2	-	0.2
11-12am	46.3	24.3	6.6	-	6.6	0.2	-	0.2

Table 2-2. Otay Mesa Wait Times (Minutes). Commercial Trucks reflect total crossing time. "-" denotes hours when lanes closed

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	19.8	10.4	-	-	0.0	5.8	-	5.8
1-2am	18.1	9.7	-	-	0.0	5.8	-	5.8
2-3am	17.0	9.2	-	-	0.0	5.8	-	5.8
3-4am	18.8	11.2	-	-	0.0	5.8	-	5.8
4-5am	25.6	16.3	-	-	0.0	5.8	-	5.8
5-6am	32.0	21.9	4.4	-	4.4	5.8	-	5.8
6-7am	42.3	31.0	5.8	110.5	5.8	5.8	31.5	5.8
7-8am	48.1	36.2	7.3	87.8	7.3	5.8	31.5	5.8
8-9am	51.1	38.7	8.0	85.3	8.0	5.8	31.5	5.8
9-10am	49.6	35.3	5.9	86.5	5.9	5.8	31.5	5.8
10-11am	48.1	33.1	5.8	87.5	5.8	5.8	31.5	5.8
11-12pm	46.9	31.4	5.7	88.4	5.7	5.8	31.5	5.8
12-1pm	47.5	32.4	6.4	89.7	6.4	5.8	31.5	5.8
1-2pm	50.7	34.0	6.6	90.7	6.6	5.8	31.5	5.8
2-3pm	51.5	34.1	6.5	90.7	6.5	5.8	31.5	5.8
3-4pm	49.7	32.2	6.0	87.1	6.0	5.8	31.5	5.8
4-5pm	47.9	30.3	5.8	91.4	5.8	5.8	31.5	5.8
5-6pm	47.0	29.7	7.4	97.9	7.4	5.8	31.5	5.8
6-7pm	46.1	29.3	7.3	95.4	7.3	5.8	31.5	5.8
7-8pm	45.7	27.4	6.5	75.2	6.5	5.8	31.5	5.8
8-9pm	43.3	26.2	5.2	62.1	5.2	5.8	31.5	5.8
9-10pm	39.8	24.4	4.7	-	4.7	5.8	-	5.8
10-11pm	35.5	20.8	1.8	-	1.8	5.8	-	5.8
11-12am	27.3	14.5	1.1	-	1.1	5.8	-	5.8

Table 2-3. Tecate Wait Time (Minutes)

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	0.0	-	-	-	0.0	0.7	29.2	0.7
1-2am	0.0	-	-	-	0.0	0.7	29.2	0.7
2-3am	0.0	-	-	-	0.0	0.7	29.2	0.7
3-4am	0.0	-	-	-	0.0	0.7	29.2	0.7
4-5am	0.0	-	-	-	0.1	0.7	29.2	0.7
5-6am	29.6	-	-	57.8	4.6	0.7	29.2	0.7
6-7am	24.0	-	-	45.4	6.1	0.7	29.2	0.7
7-8am	21.4	-	-	37.4	7.6	0.7	29.2	0.7
8-9am	24.1	-	-	37.1	8.3	0.7	29.2	0.7
9-10am	27.1	-	-	34.7	5.8	0.7	29.2	0.7
10-11am	29.8	-	-	34.3	5.6	0.7	29.2	0.7
11-12pm	33.2	-	-	34.3	5.4	0.7	29.2	0.7
12-1pm	37.3	-	-	36.9	6.2	0.7	29.2	0.7
1-2pm	38.7	-	-	35.2	6.4	0.7	29.2	0.7
2-3pm	40.3	-	-	36.0	6.2	0.7	29.2	0.7
3-4pm	40.1	-	-	39.8	5.6	0.7	29.2	0.7
4-5pm	38.6	-	-	44.2	5.5	0.7	29.2	0.7
5-6pm	36.3	-	-	51.5	7.1	0.7	29.2	0.7
6-7pm	33.9	-	-	62.2	7.1	0.7	29.2	0.7
7-8pm	31.6	-	-	57.7	6.5	0.7	29.2	0.7
8-9pm	30.1	-	-	62.5	5.0	0.7	29.2	0.7
9-10pm	26.1	-	-	60.7	4.3	0.7	29.2	0.7
10-11pm	19.3	-	-	81.7	1.2	0.7	29.2	0.7
11-12am	5.0	-	-	-	0.7	0.7	29.2	0.7

Table 2-4. Calexico West Wait Times

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	29.3	-	0.9	-	-	3.2	-	-
1-2am	33.4	-	4.9	-	-	3.2	-	-
2-3am	38.0	-	1.1	-	-	3.2	-	-
3-4am	41.5	-	0.0	-	-	3.2	-	-
4-5am	44.0	-	1.3	-	-	3.2	-	-
5-6am	44.6	-	0.7	-	-	3.2	-	-
6-7am	44.1	-	1.5	-	-	3.2	-	-
7-8am	46.7	-	6.6	-	-	3.2	-	-
8-9am	50.5	-	9.4	-	-	3.2	-	-
9-10am	53.5	-	4.8	-	-	3.2	-	-
10-11am	53.9	-	6.8	-	-	3.2	-	-
11-12pm	55.0	-	8.1	-	-	3.2	-	-
12-1pm	57.9	-	9.9	-	-	3.2	-	-
1-2pm	61.6	-	10.7	-	-	3.2	-	-
2-3pm	64.2	-	10.1	-	-	3.2	-	-
3-4pm	65.0	-	9.1	-	-	3.2	-	-
4-5pm	61.5	-	7.1	-	-	3.2	-	-
5-6pm	54.7	-	4.6	-	-	3.2	-	-
6-7pm	50.8	-	6.1	-	-	3.2	-	-
7-8pm	48.4	-	6.2	-	-	3.2	-	-
8-9pm	48.9	-	6.8	-	-	3.2	-	-
9-10pm	51.4	-	7.3	-	-	3.2	-	-
10-11pm	48.8	-	4.8	-	-	3.2	-	-
11-12am	39.3	-	2.0	-	-	3.2	-	-

Table 2-5. Calexico East Wait Times

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	-	-	-	-	-	-	-	-
1-2am	-	-	-	-	-	-	-	-
2-3am	-	-	-	-	-	-	-	-
3-4am	22.7	12.5	-		0.9	3.3		3.3
4-5am	20.0	11.4	-	44.7	2.8	3.3	37.3	3.3
5-6am	23.5	13.1	-	44.6	6.6	3.3	37.3	3.3
6-7am	27.4	15.4	0.6	44.7	10.0	3.3	37.3	3.3
7-8am	31.5	19.6	1.7	44.1	12.5	3.3	37.3	3.3
8-9am	35.5	22.7	4.0	45.9	12.9	3.3	37.3	3.3
9-10am	38.9	26.0	0.7	47.6	12.2	3.3	37.3	3.3
10-11am	42.1	27.4	1.2	47.9	13.6	3.3	37.3	3.3
11-12pm	45.1	28.2	2.0	48.2	14.7	3.3	37.3	3.3
12-1pm	45.1	28.6	2.2	47.9	14.3	3.3	37.3	3.3
1-2pm	45.5	28.3	2.3	47.5	15.2	3.3	37.3	3.3
2-3pm	46.1	28.9	2.2	47.3	15.1	3.3	37.3	3.3
3-4pm	46.4	28.6	2.1	47.1	14.0	3.3	37.3	3.3
4-5pm	46.6	28.5	1.9	46.9	12.6	3.3	37.3	3.3
5-6pm	42.7	23.3	1.5	47.0	11.9	3.3	37.3	3.3
6-7pm	37.1	20.8	1.4	47.5	12.3	3.3	37.3	3.3
7-8pm	37.0	20.6	1.4	46.9	11.8	3.3	37.3	3.3
8-9pm	35.9	19.8	-	43.0	10.8	3.3	37.3	3.3
9-10pm	32.2	16.1	-	44.7	9.2	3.3	37.3	3.3
10-11pm	25.7	12.6	-	-	8.6	3.3	-	3.3
11-12am	17.9	8.9	-	-	6.6	3.3	-	3.3

Table 2-6. Andrade Wait Times

Hour	Northbound					Southbound		
	Passenger			Commercial Truck	Bus	Passenger	Truck	Bus
	General	Ready	SENTRI					
12-1am	29.3	-	-	-	-	0.2	-	-
1-2am	33.4	-	-	-	-	0.2	-	-
2-3am	38.0	-	-	-	-	0.2	-	-
3-4am	41.5	-	-	-	-	0.2	-	-
4-5am	44.0	-	-	-	-	0.2	-	-
5-6am	44.6	-	-	-	-	0.2	-	-
6-7am	44.1	-	-	-	-	0.2	-	-
7-8am	46.7	-	-	-	-	0.2	-	-
8-9am	50.5	-	-	-	-	0.2	-	-
9-10am	53.5	-	-	-	-	0.2	-	-
10-11am	53.9	-	-	-	-	0.2	-	-
11-12pm	55.0	-	-	-	-	0.2	-	-
12-1pm	57.9	-	-	-	-	0.2	-	-
1-2pm	61.6	-	-	-	-	0.2	-	-
2-3pm	64.2	-	-	-	-	0.2	-	-
3-4pm	65.0	-	-	-	-	0.2	-	-
4-5pm	61.5	-	-	-	-	0.2	-	-
5-6pm	54.7	-	-	-	-	0.2	-	-
6-7pm	50.8	-	-	-	-	0.2	-	-
7-8pm	48.4	-	-	-	-	0.2	-	-
8-9pm	48.9	-	-	-	-	0.2	-	-
9-10pm	51.4	-	-	-	-	0.2	-	-
10-11pm	48.8	-	-	-	-	0.2	-	-
11-12am	39.3	-	-	-	-	0.2	-	-

Attachment 3
LinkVolume and OffNetworkLink Inputs

Table 3-1. On-Network LinkVolume Values (Vehicle-Hours)

Link	Description	Andrade		Calexico West		Calexico East		Otay Mesa		San Ysidro		Tecate	
		U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico
10	nb pv general	218300	158730	1114926	810411	187124	136061	712519	553056	1747923	1356736	232426	180409
11	nb pv ready	0	0	0	0	493146	358574	1025364	795886	1475010	1144901	0	0
12	nb pv sentri	0	0	104487	75949	10447	7596	78102	60623	489727	380125	0	0
13	nb truck	0	0	0	0	203886	50971	955680	238920	0	0	32057	8014
14	nb bus	0	0	0	0	531	0	3487	0	10238	0	23	0
15	nb pv exit	1093	795	9824	7141	8202	5964	16754	13004	28023	21752	1906	1479
16	nb truck exit	0	0	0	0	1084	271	2701	675	0	0	174	44
17	nb bus exit	0	0	0	0	12	0	172	0	238	0	1	0
100	sb pv	874	636	125751	91405	108263	78720	376077	291911	478269	371232	5337	4143
101	sb truck	0	0	0	0	161754	40439	340281	85070	0	0	20338	5085
102	sb bus	0	0	0	0	153	0	3985	0	4066	0	3	0

Table 3-2. OffNetworkLink Vehicle Populations

Link	Description	Andrade		Calexico West		Calexico East		Otay Mesa		San Ysidro		Tecate	
		U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico	U.S.	Mexico
21	Pass Car	131166	95373	1178912	856921	984212	715636	2010471	1560525	3362816	2610214	228730	177540
31	Pass Truck	131166	95373	1178912	856921	984212	715636	2010471	1560525	3362816	2610214	228730	177540
41	Bus	0	0	0	0	2785	0	41222	0	57171	0	237	0
53	Box Truck	0	0	0	0	36427	9107	90742	22685	0	0	5851	1463
62	Combo Truck	0	0	0	0	208156	52039	518524	129631	0	0	33433	8358

Attachment 4
Detailed Emission Inventory Results

Table 4-1. Detailed 2014 Emission Results (Tons/Year)

	CO	CO2	NH3	NOx	PM10 Brake	PM10 Exh	PM2.5 Brake	PM2.5 Exh	SO2	VOC Evap	VOC Exh
Andrade	**14.8**	**731**	**0.08**	**1.86**	**0.28**	**0.02**	**0.034**	**0.022**	**0.074**	**0.90**	**0.94**
MX	**9.8**	**309**	**0.03**	**1.36**	**0.12**	**0.01**	**0.014**	**0.013**	**0.064**	**0.73**	**0.61**
Bus	0.0	0	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00
Commercial	0.0	0	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00
Passenger	9.8	309	0.03	1.36	0.12	0.01	0.014	0.013	0.064	0.73	0.61
US	**5.0**	**422**	**0.05**	**0.50**	**0.16**	**0.01**	**0.020**	**0.009**	**0.010**	**0.17**	**0.34**
Bus	0.0	0	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00
Commercial	0.0	0	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.00	0.00
Passenger	5.0	422	0.05	0.50	0.16	0.01	0.020	0.009	0.010	0.17	0.34
Calexico East	**151.4**	**13565**	**0.88**	**75.64**	**6.60**	**4.50**	**0.825**	**4.13**	**0.697**	**7.98**	**15.10**
MX	**91.2**	**4326**	**0.295**	**27.49**	**1.84**	**1.18**	**0.23**	**1.083**	**0.572**	**6.47**	**6.89**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	6.1	1259	0.038	16.11	0.85	1.06	0.106	0.973	0.02	0.11	1.69
Passenger	85.1	3068	0.257	11.37	0.99	0.12	0.124	0.11	0.552	6.36	5.21
US	**60.2**	**9238**	**0.585**	**48.16**	**4.76**	**3.31**	**0.595**	**3.047**	**0.125**	**1.51**	**8.21**
Bus	0.0	12	0	0.10	0.01	0.01	0.001	0.007	0	0.00	0.01
Commercial	17.2	5033	0.156	43.84	3.40	3.22	0.424	2.962	0.037	0.05	5.32
Passenger	43.0	4194	0.429	4.22	1.36	0.09	0.17	0.078	0.088	1.46	2.88
Calexico West	**200.8**	**11955**	**1.151**	**24.22**	**3.98**	**0.33**	**0.497**	**0.293**	**1.054**	**13.11**	**13.15**

Table 4-1. Detailed 2014 Emission Results (Tons/Year)

	CO	CO2	NH3	NOx	PM10 Brake	PM10 Exh	PM2.5 Brake	PM2.5 Exh	SO2	VOC Evap	VOC Exh
MX	**133.4**	**5051**	**0.43**	**17.64**	**1.68**	**0.19**	**0.209**	**0.173**	**0.91**	**10.66**	**8.52**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Passenger	133.4	5051	0.43	17.64	1.68	0.19	0.209	0.173	0.91	10.66	8.52
US	**67.4**	**6905**	**0.721**	**6.58**	**2.31**	**0.13**	**0.288**	**0.12**	**0.144**	**2.45**	**4.62**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Passenger	67.4	6905	0.721	6.58	2.31	0.13	0.288	0.12	0.144	2.45	4.62
Otay Mesa	**357.5**	**38535**	**2.616**	**227.12**	**21.17**	**15.71**	**2.645**	**14.437**	**1.85**	**23.14**	**43.41**
MX	**225.7**	**12062**	**0.886**	**72.83**	**5.78**	**4.10**	**0.723**	**3.757**	**1.514**	**18.96**	**20.44**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	21.3	4005	0.136	53.69	2.90	3.71	0.363	3.408	0.062	0.39	5.95
Passenger	204.3	8057	0.75	19.14	2.88	0.39	0.36	0.349	1.452	18.56	14.49
US	**131.9**	**26474**	**1.73**	**154.29**	**15.39**	**11.62**	**1.922**	**10.68**	**0.336**	**4.18**	**22.97**
Bus	0.5	133	0.003	1.16	0.07	0.08	0.008	0.078	0.001	0.00	0.13
Commercial	59.0	16018	0.551	147.82	11.60	11.28	1.45	10.379	0.119	0.19	18.62
Passenger	72.4	10322	1.176	5.32	3.72	0.25	0.464	0.223	0.216	3.99	4.21
San Ysidro	**516.9**	**35022**	**3.685**	**47.05**	**12.83**	**1.34**	**1.603**	**1.204**	**3.157**	**43.08**	**35.64**
MX	**380.7**	**15251**	**1.433**	**35.14**	**5.55**	**0.73**	**0.694**	**0.65**	**2.747**	**35.46**	**27.43**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00

Table 4-1. Detailed 2014 Emission Results (Tons/Year)

	CO	CO2	NH3	NOx	PM10 Brake	PM10 Exh	PM2.5 Brake	PM2.5 Exh	SO2	VOC Evap	VOC Exh
Passenger	380.7	15251	1.433	35.14	5.55	0.73	0.694	0.65	2.747	35.46	27.43
US	**136.2**	**19772**	**2.252**	**11.91**	**7.27**	**0.62**	**0.909**	**0.554**	**0.41**	**7.62**	**8.21**
Bus	0.8	233	0.006	2.06	0.12	0.15	0.015	0.139	0.002	0.00	0.25
Commercial	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Passenger	135.4	19538	2.246	9.84	7.15	0.46	0.894	0.415	0.408	7.62	7.96
Tecate	**32.4**	**2791**	**0.236**	**10.86**	**1.34**	**0.69**	**0.166**	**0.629**	**0.185**	**2.47**	**3.02**
MX	**22.3**	**1026**	**0.086**	**4.21**	**0.44**	**0.20**	**0.055**	**0.178**	**0.157**	**2.03**	**1.81**
Bus	0.0	0	0	0.00	0.00	0.00	0	0	0	0.00	0.00
Commercial	0.9	166	0.005	2.20	0.12	0.15	0.015	0.14	0.003	0.02	0.24
Passenger	21.4	860	0.081	2.02	0.32	0.04	0.04	0.038	0.154	2.01	1.57
US	**10.1**	**1765**	**0.15**	**6.65**	**0.89**	**0.49**	**0.111**	**0.451**	**0.028**	**0.44**	**1.21**
Bus	0.0	1	0	0.01	0.00	0.00	0	0	0	0.00	0.00
Commercial	2.4	663	0.022	6.08	0.48	0.46	0.06	0.427	0.005	0.01	0.76
Passenger	7.7	1102	0.128	0.57	0.41	0.03	0.051	0.024	0.023	0.43	0.46
Grand Total	**1273.8**	**102599**	**8.65**	**386.8**	**46.19**	**22.59**	**5.77**	**20.71**	**7.02**	**90.68**	**111.26**

Appendix B:
2014, 2020, and 2025 Detailed Area Source, On-Road Motor Vehicle, and Nonroad Area Source Emissions

Table B-1. 2014 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	1.1	0.0	0.0	0.3	0.1	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	0.4	0.0	0.0	0.3	0.0	0.0	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.4	0.0	0.0	0.1	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	26.5	0.0	0.5	4.5	0.8	0.8	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	112.6	0.0	1.9	19.1	3.4	3.4	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	14.8	2.3	1,304.4	1,438.9	197.1	189.7	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					466.8	112.9	
2302002000	Commercial Cooking; Charbroiling, Total	1.7		5.8	89.8	45.1	36.0	
2302050000	Industrial Processes; Bakery Products; Total			21.3				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			258.5				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			142.0				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			62.8				
2401015000	Industrial Surface Coating - Factory Finished Wood			32.3				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			0.7				
2401080000	Industrial Surface Coating - Marine			19.2				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			38.6				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			1,242.9				
2425000000	Solvent Utilization; Graphic Arts; Other			8.9				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			89.6				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			107.5				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			75.8				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			618.3				

Table B-1. 2014 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			203.1				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			344.1				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			146.7				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			77.4				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			12.5				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			456.9				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			16.9				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			16.1				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			564.2				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			48.4				
2610030000	Open Burning - Household waste	0.1	0.0	0.1	0.9	0.4	0.4	
2620030000	Municipal Landfills	0.0	0.0	23.6	0.4	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			601.7				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					413.5	91.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	180.4	11.9	0.1	38.8	12.7	12.7	
2801520010	Agricultural Fuel Combustion - LPG	10.1	0.0	0.2	1.7	0.3	0.3	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							183.5
2805001000	Beef Cattle feedlots - Fugitive Dust					61.2	7.0	
2805010200	Livestock waste - Turkeys							0.0

Table B-1. 2014 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							186.9
2805020002	Livestock waste - Beef cows							158.8
2805030000	Livestock waste - Poultry, NEC							31.5
2805035000	Livestock waste - Horses and Ponies, NEC							53.5
2805039000	Livestock waste - Swine							19.5
2805040000	Livestock waste - Sheep and Lambs							37.2
2805045000	Livestock waste - Goats, NEC							66.0
2807040000	Wild animal waste - Birds							8.2
2810001000	Forest Fires - Total (Flaming and Smoldering)	302.5	94.0	707.6	10,133.6	1,021.6	866.9	101.6
2810030000	Structure Fires	0.1		0.3	4.4	0.3	0.3	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			2,148.8				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							591.8

Table B-2. 2014 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	3.9	0.0	0.0	1.0	0.2	0.0	0.2
2102006000	Fuel Combustion; Industrial; Natural Gas	1.4	0.0	0.1	1.2	0.1	0.1	0.0
2102007000	Fuel Combustion; Industrial; LPG	1.3	0.0	0.0	0.2	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	12.5	0.1	0.7	10.5	0.9	0.9	0.1
2103007000	Fuel Combustion; Comm/Inst; LPG	49.3	0.0	0.8	8.4	1.5	1.5	
2104006000	Fuel Combustion; Residential; Natural Gas	44.4	0.3	2.6	18.9	3.6	3.6	0.2
2104007000	Fuel Combustion; Residential; LPG	227.1	0.0	3.9	38.5	6.9	6.9	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	6.1	0.9	534.9	590.0	80.8	77.8	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.4	0.0	0.2	1.1	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	15.9	0.7	7.7	135.5	0.3	0.2	1.0
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					3.1	0.4	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			10.9				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.5	0.0	0.2	1.8	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	22.0	1.0	13.5	201.3	0.2	0.1	1.0
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					3.4	0.4	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			10.9				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	1.4	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-2. 2014 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.2	2.7	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.1	0.9	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	2.8	0.0	0.5	3.0	0.1	0.1	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-2. 2014 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.0	0.0	1.2	2.4	0.5	0.5	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.4	0.0	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	52.3	0.0	5.4	16.7	3.7	3.4	0.2
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					3.8	0.5	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					354.8	85.8	
2302002000	Commercial Cooking; Charbroiling, Total	3.3		11.5	177.6	89.2	71.2	
2302050000	Industrial Processes; Bakery Products; Total			31.3				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			511.2				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			274.1				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			30.5				

Table B-2. 2014 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			57.2				
2401040000	Industrial Surface Coating - Metal Can Coating			7.4				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			3.7				
2401080000	Industrial Surface Coating - Marine			43.8				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			75.0				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			3,393.3				
2425000000	Solvent Utilization; Graphic Arts; Other			19.0				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			190.0				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			228.0				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			160.8				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			1,222.7				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			401.6				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			680.5				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			290.1				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			60.0				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			98.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			903.7				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			33.5				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			34.4				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,205.7				

Table B-2. 2014 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			103.3				
2610030000	Open Burning - Household waste	0.1	0.0	0.2	1.8	0.8	0.7	
2620030000	Municipal Landfills	0.0	0.0	47.3	0.9	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			2,232.9				
2730100000	Wind Erosion					23,641.2	4,090.3	
2801000003	Agricultural Tilling Dust					2,363.5	524.0	
2801500120	Agricultural Burning - Asparagus	12.8	1.7	188.4	428.1	114.2	112.3	6.8
2801500170	Agricultural Burning - Grasses	99.0	13.2	235.3	2,507.1	349.7	334.3	39.6
2801500262	Agricultural Burning - Wheat (Backfiring)	165.4	34.6	292.3	4,754.0	407.7	388.5	75.0
2801520004	Agricultural Fuel Combustion - Diesel	237.6	15.6	0.1	51.1	16.7	16.7	
2801520010	Agricultural Fuel Combustion - LPG	13.3	0.0	0.2	2.3	0.4	0.4	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1,151.5
2805001000	Beef Cattle feedlots - Fugitive Dust					213.8	24.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							653.4
2805020002	Livestock waste - Beef cows							555.0
2805030000	Livestock waste - Poultry, NEC							285.9
2805035000	Livestock waste - Horses and Ponies, NEC							29.5
2805039000	Livestock waste - Swine							21.8
2805040000	Livestock waste - Sheep and Lambs							52.9
2805045000	Livestock waste - Goats, NEC							80.5
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2810030000	Structure Fires	0.2		0.6	9.0	0.6	0.5	
2850000010	Hospitals - Sterilization Operations			0.3				
3333333333	LPG Distribution			4,315.0				
4444444444	Brick Kilns	5.0	0.8	444.6	490.4	67.2	64.7	0.0
5555555555	Domestic NH3 - Total							999.6

Table B-3. 2014 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.6	0.0	0.0	0.2	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	0.2	0.0	0.0	0.2	0.0	0.0	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.2	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	4.6	0.0	0.1	0.8	0.1	0.1	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	22.8	0.0	0.4	3.9	0.7	0.7	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	2.1	0.3	188.6	208.1	28.5	27.4	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.9	0.1	0.7	11.7	0.0	0.0	0.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					0.3	0.0	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.2				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.1	0.0	0.0	0.2	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	1.4	0.1	1.2	16.7	0.0	0.0	0.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					0.4	0.0	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.2				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.2	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-3. 2014 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.4	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.0	0.3	0.0	0.0	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-3. 2014 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	1.0	0.0	0.2	0.3	0.1	0.1	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.2	0.0	0.8	2.4	0.5	0.5	0.0
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					0.5	0.1	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					70.4	17.0	
2302002000	Commercial Cooking; Charbroiling, Total	0.4		1.2	19.2	9.7	7.7	
2302050000	Industrial Processes; Bakery Products; Total			5.6				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			55.3				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			22.5				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			5.2				

Table B-3. 2014 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			7.4				
2401040000	Industrial Surface Coating - Metal Can Coating			0.7				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			3.3				
2401080000	Industrial Surface Coating - Marine			6.8				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			14.1				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			570.1				
2425000000	Solvent Utilization; Graphic Arts; Other			1.6				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			15.8				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			19.0				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			13.4				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			132.4				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			43.5				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			73.7				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			31.4				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			7.4				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			97.8				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			3.6				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			3.4				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			119.3				

Table B-3. 2014 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			10.2				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	5.2	0.1	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			159.6				
2730100000	Wind Erosion					78.3	13.5	
2801000003	Agricultural Tilling Dust					5.4	1.2	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	24.0	1.6	0.0	5.2	1.7	1.7	
2801520010	Agricultural Fuel Combustion - LPG	1.3	0.0	0.0	0.2	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							2.0
2805001000	Beef Cattle feedlots - Fugitive Dust					15.5	1.8	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							47.3
2805020002	Livestock waste - Beef cows							40.2
2805030000	Livestock waste - Poultry, NEC							16.4
2805035000	Livestock waste - Horses and Ponies, NEC							24.2
2805039000	Livestock waste - Swine							4.4
2805040000	Livestock waste - Sheep and Lambs							10.5
2805045000	Livestock waste - Goats, NEC							21.2
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	14.7	4.6	34.0	487.0	49.2	41.8	4.9
2810030000	Structure Fires	0.0		0.1	0.9	0.1	0.1	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			432.4				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							145.4

Table B-4. 2014 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	9.0	0.0	0.1	2.3	0.5	0.1	0.4
2102006000	Fuel Combustion; Industrial; Natural Gas	3.2	0.0	0.2	2.7	0.2	0.2	0.0
2102007000	Fuel Combustion; Industrial; LPG	3.1	0.0	0.1	0.5	0.1	0.1	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	83.0	0.0	1.4	14.1	2.5	2.5	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	367.7	0.0	6.3	62.4	11.1	11.1	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	13.3	2.0	1,173.0	1,293.9	177.2	170.6	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	1.0	0.0	0.5	3.3	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	25.6	2.0	19.8	317.8	0.9	0.8	2.8
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					9.0	1.1	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			32.8				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	1.4	0.0	0.7	5.4	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	37.4	2.8	31.6	456.4	0.5	0.5	2.8
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					10.1	1.3	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			32.8				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.3	3.8	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-4. 2014 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.3				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.9	0.0	0.8	9.2	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.2				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.2	2.3	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	4.0	0.0	1.3	7.6	0.4	0.3	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	0.4	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-4. 2014 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.3	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	3.2	0.0	0.4	1.0	0.2	0.2	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	23.7	0.0	4.2	8.4	1.9	1.8	0.1
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					1.3	0.2	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	176.5	0.1	19.2	58.4	13.0	12.0	0.5
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					13.1	1.6	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					962.5	232.9	
2302002000	Commercial Cooking; Charbroiling, Total	5.5		19.2	297.6	149.5	119.3	
2302050000	Industrial Processes; Bakery Products; Total			59.3				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			856.8				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			362.0				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			29.8				

Table B-4. 2014 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			102.8				
2401040000	Industrial Surface Coating - Metal Can Coating			11.9				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			18.9				
2401080000	Industrial Surface Coating - Marine			49.3				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			158.3				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			9,297.7				
2425000000	Solvent Utilization; Graphic Arts; Other			31.4				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			314.6				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			377.5				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			266.3				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			2,049.5				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			673.2				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			1,140.7				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			486.2				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			28.1				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			1,514.7				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			56.1				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			45.1				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,579.1				

Table B-4. 2014 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			135.3				
2610030000	Open Burning - Household waste	0.2	0.0	0.3	3.1	1.4	1.3	
2620030000	Municipal Landfills	0.0	0.0	91.9	1.7	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			2,827.2				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.2	0.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	35.0	2.3	0.0	7.5	2.5	2.5	
2801520010	Agricultural Fuel Combustion - LPG	2.0	0.0	0.0	0.3	0.1	0.1	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.4
2805001000	Beef Cattle feedlots - Fugitive Dust					55.6	6.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							169.9
2805020002	Livestock waste - Beef cows							144.3
2805030000	Livestock waste - Poultry, NEC							49.4
2805035000	Livestock waste - Horses and Ponies, NEC							20.5
2805039000	Livestock waste - Swine							17.4
2805040000	Livestock waste - Sheep and Lambs							18.9
2805045000	Livestock waste - Goats, NEC							16.9
2807040000	Wild animal waste - Birds							7.4
2810001000	Forest Fires - Total (Flaming and Smoldering)	6.6	2.0	15.5	221.9	22.4	19.0	2.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.2				
3333333333	LPG Distribution			6,997.6				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							1,676.1

Table B-5. 2014 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.4	0.0	0.0	0.1	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	0.1	0.0	0.0	0.1	0.0	0.0	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.1	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	6.1	0.0	0.1	1.0	0.2	0.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	21.1	0.0	0.4	3.6	0.6	0.6	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	0.7	0.1	64.5	71.1	9.7	9.4	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					55.8	13.5	
2302002000	Commercial Cooking; Charbroiling, Total	0.3		1.2	18.1	9.1	7.3	
2302050000	Industrial Processes; Bakery Products; Total			4.2				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			52.1				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			29.5				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			2.9				
2401015000	Industrial Surface Coating - Factory Finished Wood			17.4				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			0.4				
2401080000	Industrial Surface Coating - Marine			0.0				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			6.7				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			338.3				
2425000000	Solvent Utilization; Graphic Arts; Other			1.1				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			11.4				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			13.6				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			9.6				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			124.5				

Table B-5. 2014 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			40.9				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			69.3				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			29.5				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			4.2				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			92.0				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			3.4				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			4.2				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			145.9				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			12.5				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	6.8	0.1	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			121.2				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.6	0.8	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	10.8	0.7	0.0	2.3	0.8	0.8	
2801520010	Agricultural Fuel Combustion - LPG	0.6	0.0	0.0	0.1	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.6
2805001000	Beef Cattle feedlots - Fugitive Dust					12.1	1.4	
2805010200	Livestock waste - Turkeys							0.0

Table B-5. 2014 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							37.0
2805020002	Livestock waste - Beef cows							31.4
2805030000	Livestock waste - Poultry, NEC							1.1
2805035000	Livestock waste - Horses and Ponies, NEC							7.0
2805039000	Livestock waste - Swine							1.1
2805040000	Livestock waste - Sheep and Lambs							3.9
2805045000	Livestock waste - Goats, NEC							5.1
2807040000	Wild animal waste - Birds							1.0
2810001000	Forest Fires - Total (Flaming and Smoldering)	306.1	95.2	718.7	10,292.7	1,037.0	880.0	103.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.0				
3333333333	LPG Distribution			408.1				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							135.5

Table B-6. 2014 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	17.5	0.8	46.5	174.9	2.5	2.4	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	5,960.0	135.1	876.7	14,608.7	170.0	163.2	77.6
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	1,344.4	56.3	440.6	8,727.9	70.1	67.3	25.2
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	97.0	6.2	44.7	908.7	5.2	5.0	2.1
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	329.3	4.8	40.0	745.6	9.3	9.0	0.5
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	8.6	0.2	1.0	12.8	0.4	0.4	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	779.6	19.8	94.4	1,330.6	38.5	37.0	1.9
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	1.2	0.1	0.1	0.2	0.7	0.6	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	7.4	0.8	0.5	1.0	3.3	3.1	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.6	0.1	0.1	0.1	0.3	0.3	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	335.4	9.0	5.8	55.9	37.0	35.6	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	3.5	0.3	0.1	0.3	1.1	1.0	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	112.7	6.5	2.2	11.2	26.5	25.5	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	155.3	3.8	2.8	21.0	15.7	15.1	0.1
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	2.5	0.0	0.1	0.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2.2	0.0	0.0	0.2	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Table B-6. 2014 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.2	0.0	0.2	0.6	0.0	0.0	0.0

Table B-7. 2014 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	59.8	3.0	115.3	464.2	9.9	9.5	0.4
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	11,663.0	348.7	2,116.3	30,583.7	438.9	421.3	200.2
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	2,468.1	127.3	958.9	17,254.1	158.1	151.7	56.7
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	150.4	11.3	76.8	1,414.8	9.6	9.2	3.8
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	383.1	5.9	52.7	1,034.6	11.5	11.0	0.6
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	14.3	0.3	1.9	26.1	0.7	0.6	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1,410.8	37.6	165.4	2,282.2	73.1	70.1	3.6
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	2.1	0.2	0.2	0.4	1.2	1.1	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	14.6	1.8	1.0	2.2	7.1	6.8	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.8	0.1	0.1	0.1	0.5	0.5	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	296.2	7.9	5.1	56.3	32.3	31.0	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	4.0	0.3	0.1	0.5	1.1	1.0	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	301.0	18.0	5.9	27.1	74.0	71.1	0.4
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	315.5	8.1	5.5	41.1	33.4	32.1	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	6.4	0.0	0.2	2.0	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	5.0	0.0	0.1	0.4	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.3	0.0	0.1	0.2	0.0	0.0	0.0

Table B-7. 2014 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.5	0.0	0.1	0.2	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2.2	0.0	0.3	1.0	0.0	0.0	0.0

Table B-8. 2014 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	8.2	0.4	18.5	74.1	1.3	1.3	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,520.4	36.0	264.0	3,778.9	45.3	43.5	20.7
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	376.5	17.2	143.1	2,515.9	21.4	20.6	7.8
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	21.2	1.6	12.7	236.2	1.3	1.3	0.5
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	55.3	0.8	7.7	154.3	1.6	1.6	0.1
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	8.9	0.2	1.3	17.8	0.4	0.4	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	280.1	7.0	35.3	491.4	13.6	13.1	0.7
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.3	0.0	0.0	0.1	0.1	0.1	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.0	0.2	0.1	0.3	0.9	0.8	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.1	0.1	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	29.5	0.8	0.5	5.3	3.1	3.0	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	1.1	0.1	0.0	0.2	0.3	0.2	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	41.4	2.2	0.9	4.9	9.0	8.6	0.0
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	53.3	1.3	1.0	7.5	5.3	5.1	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.9	0.0	0.0	0.3	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.7	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-8. 2014 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.3	0.0	0.1	0.4	0.0	0.0	0.0

Table B-9. 2014 On-Road Motor Vehicle Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	106.6	5.1	230.8	936.1	17.0	16.3	0.7
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	19,632.5	482.3	3,092.7	43,791.9	606.9	582.6	276.9
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	3,474.8	153.6	1,181.2	20,275.2	191.2	183.5	69.0
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	387.5	26.4	180.0	3,211.6	22.4	21.5	9.0
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	208.6	3.2	22.3	422.8	6.3	6.0	0.3
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	13.9	0.3	1.7	23.2	0.7	0.6	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1,796.8	47.8	207.1	2,835.9	92.9	89.2	4.5
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	3.0	0.3	0.2	0.6	1.7	1.6	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	12.0	1.3	0.8	1.7	5.2	5.0	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	1.9	0.3	0.2	0.3	1.1	1.0	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	145.2	3.8	2.6	29.7	15.5	14.9	0.1
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	2.7	0.2	0.1	0.3	0.8	0.8	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	431.9	25.6	8.6	40.2	105.1	100.9	0.6
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	285.3	7.4	4.8	36.0	30.4	29.2	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	7.9	0.0	0.3	2.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	7.4	0.0	0.1	0.5	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.3	0.0	0.1	0.1	0.0	0.0	0.0

Table B-9. 2014 On-Road Motor Vehicle Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	3.4	0.0	0.5	1.4	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	16.6	0.0	2.2	6.8	0.0	0.0	0.0

Table B-10. 2014 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	4.8	0.2	13.3	50.9	0.8	0.7	0.0
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,225.2	29.5	202.6	2,880.0	37.1	35.7	16.9
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	305.8	13.7	112.1	1,956.1	17.1	16.4	6.2
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	19.3	1.4	10.3	187.2	1.2	1.1	0.5
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	16.4	0.3	2.3	46.8	0.5	0.5	0.0
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	2.0	0.0	0.3	3.5	0.1	0.1	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	190.0	4.6	24.6	345.2	8.8	8.5	0.4
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.5	0.0	0.0	0.1	0.3	0.3	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.2	0.2	0.2	0.3	0.9	0.9	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	14.2	0.4	0.3	3.3	1.5	1.4	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	57.0	2.9	1.2	7.2	12.0	11.5	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	44.0	1.0	0.8	6.0	4.1	4.0	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.5	0.0	0.0	0.2	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.3	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-10. 2014 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.1	0.0	0.2	0.5	0.0	0.0	0.0

Table B-11. 2014 Nonroad Mobile Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	1,853.2	24.9	191.5	927.9	208.6	202.3	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	3,311.5	338.6	589.6	11,630.5	303.6	303.6	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	305.1	3.8	51.5	206.8	51.5	50.0	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	31,365.5	14,140.8	1,105.3	2,577.8	1,983.3	1,825.6	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	413.5	186.4	14.6	34.0	26.1	24.1	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	

Table B-12. 2014 Nonroad Mobile Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	3,665.5	49.2	378.8	1,835.4	412.5	400.2	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.1	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	1,174.1	14.8	198.3	795.8	198.3	192.4	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	1.9	0.2	0.6	16.8	0.1	0.1	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	7.9	1.0	3.5	16.4	0.2	0.2	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.3	0.0	0.0	0.2	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.2	0.1	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	274.9	2.4	10.4	27.2	6.8	6.1	

Table B-13. 2014 Nonroad Mobile Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	396.8	5.3	41.0	198.7	44.7	43.3	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	7.2	0.1	1.2	4.9	1.2	1.2	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	92.1	0.8	3.5	9.1	2.3	2.1	

Table B-14. 2014 Nonroad Mobile Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	6,144.0	82.4	634.9	3,076.4	691.5	670.8	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.2	0.0	0.5	2.2	0.5	0.5	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	14.2	1.1	4.3	124.0	0.4	0.4	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	58.3	7.3	26.0	121.2	1.3	1.3	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	2.5	0.3	0.1	1.7	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	161.1	1.4	6.1	15.9	4.0	3.6	

Table B-15. 2014 Nonroad Mobile Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	373.0	5.0	38.5	186.8	42.0	40.7	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	444.5	45.3	79.6	1,577.2	40.6	40.6	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.6	0.0	0.6	2.5	0.6	0.6	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	4,237.7	1,910.5	149.3	348.3	268.0	246.7	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	55.9	25.2	2.0	4.6	3.5	3.3	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	

Table B-16. 2020 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	1.2	0.0	0.0	0.3	0.1	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	2.5	0.0	0.1	2.1	0.2	0.2	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.4	0.0	0.0	0.1	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	30.9	0.0	0.5	5.2	0.9	0.9	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	94.2	0.0	1.6	16.0	2.9	2.9	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	16.1	2.5	1,421.1	1,567.6	214.7	206.7	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					518.6	125.5	
2302002000	Commercial Cooking; Charbroiling, Total	1.8		6.3	97.8	49.1	39.2	
2302050000	Industrial Processes; Bakery Products; Total			23.2				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			281.6				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			154.7				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			68.4				
2401015000	Industrial Surface Coating - Factory Finished Wood			37.1				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			0.9				
2401080000	Industrial Surface Coating - Marine			22.0				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			44.3				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			1,426.0				
2425000000	Solvent Utilization; Graphic Arts; Other			9.7				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			97.6				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			117.1				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			82.6				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			673.6				

Table B-16. 2020 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			221.3				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			374.9				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			159.8				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			84.4				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			12.5				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			497.8				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			18.4				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			17.9				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			626.7				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			53.7				
2610030000	Open Burning - Household waste	0.1	0.0	0.1	1.0	0.4	0.4	
2620030000	Municipal Landfills	0.0	0.0	25.7	0.5	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			655.5				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					413.5	91.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	180.4	11.9	0.1	38.8	12.7	12.7	
2801520010	Agricultural Fuel Combustion - LPG	11.8	0.0	0.2	2.0	0.4	0.4	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							183.5
2805001000	Beef Cattle feedlots - Fugitive Dust					61.2	7.0	
2805010200	Livestock waste - Turkeys							0.0

Table B-16. 2020 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							186.9
2805020002	Livestock waste - Beef cows							158.8
2805030000	Livestock waste - Poultry, NEC							31.5
2805035000	Livestock waste - Horses and Ponies, NEC							53.5
2805039000	Livestock waste - Swine							19.5
2805040000	Livestock waste - Sheep and Lambs							37.2
2805045000	Livestock waste - Goats, NEC							66.0
2807040000	Wild animal waste - Birds							8.2
2810001000	Forest Fires - Total (Flaming and Smoldering)	302.5	94.0	707.6	10,133.6	1,021.6	866.9	101.6
2810030000	Structure Fires	0.1		0.3	4.8	0.3	0.3	
2850000010	Hospitals - Sterilization Operations			0.2				
3333333333	LPG Distribution			1,996.5				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							644.7

Table B-17. 2020 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	4.3	0.0	0.0	1.1	0.2	0.1	0.2
2102006000	Fuel Combustion; Industrial; Natural Gas	8.7	0.1	0.5	7.3	0.7	0.7	0.0
2102007000	Fuel Combustion; Industrial; LPG	1.3	0.0	0.0	0.2	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	18.7	0.1	1.0	15.7	1.4	1.4	0.1
2103007000	Fuel Combustion; Comm/Inst; LPG	57.5	0.0	1.0	9.8	1.7	1.7	
2104006000	Fuel Combustion; Residential; Natural Gas	81.4	0.5	4.8	34.6	6.6	6.6	0.4
2104007000	Fuel Combustion; Residential; LPG	190.1	0.0	3.3	32.3	5.8	5.8	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	6.6	1.0	576.9	636.4	87.2	83.9	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.4	0.0	0.2	1.2	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	17.7	0.8	8.5	150.5	0.3	0.3	1.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					3.4	0.4	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			12.1				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.5	0.0	0.3	2.0	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	24.5	1.1	15.0	223.6	0.2	0.2	1.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					3.8	0.5	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			12.1				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	1.6	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-17. 2020 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.3	3.0	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.1	0.9	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	2.9	0.0	0.5	3.1	0.1	0.1	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-17. 2020 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.3	0.0	1.2	2.5	0.6	0.5	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.4	0.0	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	54.4	0.0	5.7	17.4	3.9	3.6	0.2
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					4.0	0.5	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					394.1	95.4	
2302002000	Commercial Cooking; Charbroiling, Total	3.5		12.4	191.5	96.2	76.8	
2302050000	Industrial Processes; Bakery Products; Total			33.7				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			551.4				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			295.7				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			32.9				

Table B-17. 2020 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			65.6				
2401040000	Industrial Surface Coating - Metal Can Coating			8.5				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			4.3				
2401080000	Industrial Surface Coating - Marine			50.3				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			86.1				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			3,893.0				
2425000000	Solvent Utilization; Graphic Arts; Other			20.5				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			204.9				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			246.0				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			173.5				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			1,318.9				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			433.2				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			734.0				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			312.9				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			64.7				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			98.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			974.7				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			36.1				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			38.3				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,339.3				

Table B-17. 2020 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			114.8				
2610030000	Open Burning - Household waste	0.1	0.0	0.2	2.0	0.9	0.8	
2620030000	Municipal Landfills	0.0	0.0	51.0	1.0	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			2,408.4				
2730100000	Wind Erosion					23,641.2	4,090.3	
2801000003	Agricultural Tilling Dust					2,363.5	524.0	
2801500120	Agricultural Burning - Asparagus	12.8	1.7	188.4	428.1	114.2	112.3	6.8
2801500170	Agricultural Burning - Grasses	99.0	13.2	235.3	2,507.1	349.7	334.3	39.6
2801500262	Agricultural Burning - Wheat (Backfiring)	165.4	34.6	292.3	4,754.0	407.7	388.5	75.0
2801520004	Agricultural Fuel Combustion - Diesel	237.6	15.6	0.1	51.1	16.7	16.7	
2801520010	Agricultural Fuel Combustion - LPG	15.6	0.0	0.3	2.6	0.5	0.5	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1,151.5
2805001000	Beef Cattle feedlots - Fugitive Dust					213.8	24.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							653.4
2805020002	Livestock waste - Beef cows							555.0
2805030000	Livestock waste - Poultry, NEC							285.9
2805035000	Livestock waste - Horses and Ponies, NEC							29.5
2805039000	Livestock waste - Swine							21.8
2805040000	Livestock waste - Sheep and Lambs							52.9
2805045000	Livestock waste - Goats, NEC							80.5
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2810030000	Structure Fires	0.2		0.6	9.7	0.6	0.6	
2850000010	Hospitals - Sterilization Operations			0.3				
3333333333	LPG Distribution			4,009.2				
4444444444	Brick Kilns	5.0	0.8	444.6	490.4	67.2	64.7	0.0
5555555555	Domestic NH3 - Total							1,078.2

Table B-18. 2020 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.7	0.0	0.0	0.2	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	1.4	0.0	0.1	1.1	0.1	0.1	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.2	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	5.3	0.0	0.1	0.9	0.2	0.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	19.1	0.0	0.3	3.2	0.6	0.6	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	2.3	0.4	203.9	225.0	30.8	29.7	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.2	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	1.1	0.1	0.8	12.9	0.0	0.0	0.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					0.4	0.0	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.4				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.1	0.0	0.0	0.3	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	1.5	0.1	1.3	18.6	0.0	0.0	0.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					0.4	0.1	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.4				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.2	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-18. 2020 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.4	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	0.3	0.0	0.0	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-18. 2020 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	1.0	0.0	0.2	0.4	0.1	0.1	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.5	0.0	0.8	2.5	0.6	0.5	0.0
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					0.6	0.1	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					78.2	18.9	
2302002000	Commercial Cooking; Charbroiling, Total	0.4		1.3	20.8	10.4	8.3	
2302050000	Industrial Processes; Bakery Products; Total			6.0				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			59.8				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			24.3				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			5.6				

Table B-18. 2020 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			8.5				
2401040000	Industrial Surface Coating - Metal Can Coating			0.9				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			3.8				
2401080000	Industrial Surface Coating - Marine			7.9				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			16.2				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			654.0				
2425000000	Solvent Utilization; Graphic Arts; Other			1.7				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			17.1				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			20.5				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			14.5				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			143.1				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			47.0				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			79.7				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			34.0				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			8.0				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			105.8				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			3.9				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			3.8				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			132.5				

Table B-18. 2020 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			11.4				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	5.6	0.1	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			172.6				
2730100000	Wind Erosion					78.3	13.5	
2801000003	Agricultural Tilling Dust					5.4	1.2	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	24.0	1.6	0.0	5.2	1.7	1.7	
2801520010	Agricultural Fuel Combustion - LPG	1.6	0.0	0.0	0.3	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							2.0
2805001000	Beef Cattle feedlots - Fugitive Dust					15.5	1.8	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							47.3
2805020002	Livestock waste - Beef cows							40.2
2805030000	Livestock waste - Poultry, NEC							16.4
2805035000	Livestock waste - Horses and Ponies, NEC							24.2
2805039000	Livestock waste - Swine							4.4
2805040000	Livestock waste - Sheep and Lambs							10.5
2805045000	Livestock waste - Goats, NEC							21.2
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	14.7	4.6	34.0	487.0	49.2	41.8	4.9
2810030000	Structure Fires	0.0		0.1	1.0	0.1	0.1	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			401.7				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							157.2

Table B-19. 2020 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	9.9	0.0	0.1	2.5	0.5	0.1	0.4
2102006000	Fuel Combustion; Industrial; Natural Gas	20.3	0.1	1.1	17.0	1.5	1.5	0.1
2102007000	Fuel Combustion; Industrial; LPG	3.1	0.0	0.1	0.5	0.1	0.1	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	96.8	0.0	1.7	16.4	2.9	2.9	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	307.8	0.0	5.3	52.2	9.3	9.3	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	14.5	2.2	1,277.7	1,409.4	193.1	185.9	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	1.1	0.0	0.5	3.7	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	28.5	2.3	22.0	353.1	1.0	0.9	3.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					10.0	1.3	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			36.4				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	1.5	0.0	0.8	6.0	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	41.5	3.1	35.1	506.9	0.6	0.5	3.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					11.2	1.4	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			36.5				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.3	4.3	0.0	0.0	0.1
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-19. 2020 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.4				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	1.0	0.0	0.9	10.2	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.3				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.2	2.4	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	4.1	0.0	1.4	7.9	0.4	0.3	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.1	0.4	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-19. 2020 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.3	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	3.3	0.0	0.4	1.0	0.2	0.2	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	24.7	0.0	4.3	8.7	2.0	1.8	0.1
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					1.3	0.2	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	183.8	0.1	20.0	60.9	13.6	12.5	0.6
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					13.6	1.7	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					1,069.1	258.7	
2302002000	Commercial Cooking; Charbroiling, Total	6.0		20.9	324.2	162.9	130.0	
2302050000	Industrial Processes; Bakery Products; Total			64.6				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			933.3				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			394.3				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			32.5				

Table B-19. 2020 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			118.0				
2401040000	Industrial Surface Coating - Metal Can Coating			13.6				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			21.7				
2401080000	Industrial Surface Coating - Marine			56.6				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			181.6				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			10,666.9				
2425000000	Solvent Utilization; Graphic Arts; Other			34.2				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			342.6				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			411.2				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			290.0				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			2,232.5				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			733.3				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			1,242.5				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			529.6				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			30.6				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			1,649.9				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			61.1				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			50.1				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,754.1				

Table B-19. 2020 Area Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			150.3				
2610030000	Open Burning - Household waste	0.2	0.0	0.3	3.3	1.5	1.4	
2620030000	Municipal Landfills	0.0	0.0	100.1	1.9	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			3,079.6				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.2	0.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	35.0	2.3	0.0	7.5	2.5	2.5	
2801520010	Agricultural Fuel Combustion - LPG	2.3	0.0	0.0	0.4	0.1	0.1	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.4
2805001000	Beef Cattle feedlots - Fugitive Dust					55.6	6.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							169.9
2805020002	Livestock waste - Beef cows							144.3
2805030000	Livestock waste - Poultry, NEC							49.4
2805035000	Livestock waste - Horses and Ponies, NEC							20.5
2805039000	Livestock waste - Swine							17.4
2805040000	Livestock waste - Sheep and Lambs							18.9
2805045000	Livestock waste - Goats, NEC							16.9
2807040000	Wild animal waste - Birds							7.4
2810001000	Forest Fires - Total (Flaming and Smoldering)	6.6	2.0	15.5	221.9	22.4	19.0	2.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.3				
3333333333	LPG Distribution			6,501.7				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							1,825.7

Table B-20. 2020 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.4	0.0	0.0	0.1	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	0.8	0.0	0.0	0.7	0.1	0.1	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.1	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	7.1	0.0	0.1	1.2	0.2	0.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	17.7	0.0	0.3	3.0	0.5	0.5	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	0.8	0.1	71.4	78.7	10.8	10.4	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					62.0	15.0	
2302002000	Commercial Cooking; Charbroiling, Total	0.4		1.3	20.0	10.1	8.0	
2302050000	Industrial Processes; Bakery Products; Total			4.7				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			57.6				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			32.7				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			3.2				
2401015000	Industrial Surface Coating - Factory Finished Wood			20.0				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			0.4				
2401080000	Industrial Surface Coating - Marine			0.0				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			7.7				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			388.2				
2425000000	Solvent Utilization; Graphic Arts; Other			1.3				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			12.6				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			15.1				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			10.7				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			137.8				

Table B-20. 2020 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			45.3				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			76.7				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			32.7				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			4.6				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			101.8				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			3.8				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			4.6				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			162.1				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			13.9				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	7.5	0.1	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			134.1				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.6	0.8	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	10.8	0.7	0.0	2.3	0.8	0.8	
2801520010	Agricultural Fuel Combustion - LPG	0.7	0.0	0.0	0.1	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.6
2805001000	Beef Cattle feedlots - Fugitive Dust					12.1	1.4	
2805010200	Livestock waste - Turkeys							0.0

Table B-20. 2020 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							37.0
2805020002	Livestock waste - Beef cows							31.4
2805030000	Livestock waste - Poultry, NEC							1.1
2805035000	Livestock waste - Horses and Ponies, NEC							7.0
2805039000	Livestock waste - Swine							1.1
2805040000	Livestock waste - Sheep and Lambs							3.9
2805045000	Livestock waste - Goats, NEC							5.1
2807040000	Wild animal waste - Birds							1.0
2810001000	Forest Fires - Total (Flaming and Smoldering)	306.1	95.2	718.7	10,292.7	1,037.0	880.0	103.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			379.2				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							150.0

Table B-21. 2020 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	19.4	0.8	51.6	194.3	2.8	2.7	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	6,620.5	150.1	973.9	16,227.5	188.9	181.3	86.2
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	1,493.4	62.6	489.4	9,695.1	77.8	74.7	28.0
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	107.7	6.9	49.7	1,009.4	5.8	5.6	2.3
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	365.8	5.3	44.4	828.2	10.4	10.0	0.5
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	9.5	0.2	1.1	14.3	0.5	0.5	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	866.0	22.0	104.9	1,478.0	42.8	41.1	2.1
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	1.2	0.1	0.1	0.2	0.7	0.7	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	7.7	0.9	0.5	1.1	3.4	3.3	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.7	0.1	0.1	0.1	0.4	0.3	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	349.4	9.4	6.1	58.2	38.6	37.0	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	3.6	0.3	0.1	0.3	1.1	1.1	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	117.4	6.7	2.3	11.7	27.6	26.5	0.2
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	161.8	4.0	2.9	21.8	16.3	15.7	0.1
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	2.5	0.0	0.1	0.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2.2	0.0	0.0	0.2	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Table B-21. 2020 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.1	0.0	0.2	0.5	0.0	0.0	0.0

Table B-22. 2020 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	66.5	3.3	128.1	515.7	11.0	10.6	0.4
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	12,955.3	387.4	2,350.8	33,972.7	487.5	468.0	222.4
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	2,741.6	141.4	1,065.1	19,166.1	175.6	168.6	63.0
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	167.1	12.6	85.3	1,571.6	10.7	10.2	4.3
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	425.5	6.6	58.6	1,149.2	12.7	12.2	0.6
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	15.9	0.4	2.1	29.0	0.7	0.7	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1,567.1	41.8	183.8	2,535.1	81.2	77.9	4.0
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	2.2	0.2	0.2	0.4	1.2	1.2	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	15.3	1.9	1.1	2.3	7.4	7.1	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.8	0.1	0.1	0.1	0.5	0.5	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	308.6	8.2	5.4	58.6	33.7	32.3	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	4.2	0.3	0.1	0.5	1.1	1.1	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	313.6	18.8	6.2	28.2	77.1	74.0	0.4
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	328.7	8.5	5.7	42.8	34.8	33.4	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	6.4	0.0	0.2	2.0	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	5.0	0.0	0.1	0.4	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.2	0.0	0.1	0.1	0.0	0.0	0.0

Table B-22. 2020 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.4	0.0	0.1	0.2	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2.0	0.0	0.3	0.9	0.0	0.0	0.0

Table B-23. 2020 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	9.1	0.4	20.6	82.4	1.5	1.4	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,688.8	40.0	293.2	4,197.7	50.3	48.3	22.9
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	418.2	19.1	159.0	2,794.7	23.8	22.8	8.6
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	23.6	1.8	14.2	262.4	1.5	1.4	0.6
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	61.5	0.9	8.5	171.4	1.8	1.8	0.1
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	9.9	0.2	1.4	19.8	0.4	0.4	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	311.1	7.8	39.2	545.8	15.1	14.5	0.7
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.3	0.0	0.0	0.1	0.1	0.1	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.1	0.2	0.1	0.3	0.9	0.9	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.1	0.1	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	30.7	0.8	0.5	5.5	3.3	3.1	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	1.2	0.1	0.0	0.2	0.3	0.3	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	43.1	2.3	0.9	5.1	9.3	9.0	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	55.5	1.3	1.0	7.8	5.5	5.3	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.9	0.0	0.0	0.3	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.7	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-23. 2020 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.2	0.0	0.1	0.4	0.0	0.0	0.0

Table B-24. 2020 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	118.4	5.7	256.4	1,039.8	18.9	18.1	0.8
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	21,808.0	535.7	3,435.4	48,644.6	674.1	647.2	307.6
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	3,859.9	170.6	1,312.1	22,521.9	212.3	203.8	76.7
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	430.4	29.3	199.9	3,567.5	24.9	23.9	10.0
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	231.7	3.6	24.8	469.7	7.0	6.7	0.3
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	15.5	0.4	1.9	25.7	0.7	0.7	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1,995.9	53.1	230.1	3,150.1	103.2	99.0	5.0
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	3.1	0.3	0.3	0.6	1.8	1.7	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	12.5	1.4	0.9	1.8	5.4	5.2	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	1.9	0.3	0.2	0.4	1.1	1.1	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	151.2	3.9	2.7	31.0	16.1	15.5	0.1
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	2.9	0.2	0.1	0.3	0.8	0.8	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	449.9	26.7	8.9	41.9	109.5	105.1	0.6
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	297.2	7.7	5.0	37.5	31.7	30.4	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	7.9	0.0	0.3	2.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	7.4	0.0	0.1	0.5	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.2	0.0	0.1	0.1	0.0	0.0	0.0

Table B-24. 2020 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	3.1	0.0	0.4	1.3	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	15.0	0.0	2.0	6.1	0.0	0.0	0.0

Table B-25. 2020 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	5.3	0.3	14.7	56.5	0.8	0.8	0.0
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,360.9	32.8	225.0	3,199.1	41.3	39.6	18.8
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	339.7	15.3	124.5	2,172.9	19.0	18.2	6.9
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	21.4	1.5	11.4	208.0	1.3	1.2	0.5
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	18.2	0.3	2.6	52.0	0.6	0.5	0.0
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	2.2	0.1	0.3	3.9	0.1	0.1	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	211.1	5.1	27.4	383.4	9.8	9.4	0.5
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.5	0.0	0.0	0.1	0.3	0.3	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.3	0.2	0.2	0.3	0.9	0.9	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	14.8	0.4	0.3	3.4	1.5	1.5	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	59.4	3.0	1.2	7.5	12.5	12.0	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	45.8	1.1	0.8	6.2	4.3	4.1	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.5	0.0	0.0	0.2	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.3	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-25. 2020 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.0	0.0	0.2	0.5	0.0	0.0	0.0

Table B-26. 2020 Nonroad Mobile Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	2,018.9	27.1	208.6	1,010.9	227.2	220.4	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	2,209.6	222.0	421.7	8,167.1	197.7	197.7	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	305.1	3.8	51.5	206.8	51.5	50.0	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	39,305.6	11,273.3	1,499.6	3,495.4	1,651.4	1,511.3	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	518.1	148.6	19.8	46.1	21.8	19.9	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	

Table B-27. 2020 Nonroad Mobile Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	3,953.6	53.0	408.5	1,979.7	445.0	431.6	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	1,174.1	14.8	198.3	795.8	198.3	192.4	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	2.8	0.2	0.9	24.7	0.1	0.1	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	11.6	1.4	5.2	24.1	0.3	0.3	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.5	0.1	0.0	0.3	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.3	0.1	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	412.4	3.7	15.6	40.7	10.2	9.2	

Table B-28. 2020 Nonroad Mobile Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	429.0	5.8	44.3	214.8	48.3	46.8	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	7.2	0.1	1.2	4.9	1.2	1.2	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	138.2	1.2	5.2	13.6	3.4	3.1	

Table B-29. 2020 Nonroad Mobile Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	6,692.5	89.8	691.6	3,351.0	753.2	730.6	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.2	0.0	0.5	2.2	0.5	0.5	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	20.8	1.7	6.4	182.1	0.6	0.6	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	85.6	10.7	38.3	178.0	1.9	1.9	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	3.6	0.4	0.1	2.4	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	241.7	2.1	9.1	23.9	6.0	5.4	

Table B-30. 2020 Nonroad Mobile Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	412.7	5.5	42.6	206.7	46.5	45.1	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	296.7	29.7	56.9	1,107.6	26.5	26.5	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.6	0.0	0.6	2.5	0.6	0.6	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	5,310.5	1,523.1	202.6	472.3	223.1	204.2	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	70.0	20.1	2.7	6.2	2.9	2.7	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	

Table B-31. 2025 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	1.3	0.0	0.0	0.3	0.1	0.0	0.1
2102006000	Fuel Combustion; Industrial; Natural Gas	2.8	0.0	0.2	2.4	0.2	0.2	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.4	0.0	0.0	0.1	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	33.4	0.0	0.6	5.7	1.0	1.0	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	93.4	0.0	1.6	15.8	2.8	2.8	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	17.1	2.6	1,509.1	1,664.6	228.0	219.5	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					519.8	125.8	
2302002000	Commercial Cooking; Charbroiling, Total	1.9		6.7	103.9	52.2	41.6	
2302050000	Industrial Processes; Bakery Products; Total			24.6				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			299.0				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			164.3				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			72.6				
2401015000	Industrial Surface Coating - Factory Finished Wood			42.2				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			1.0				
2401080000	Industrial Surface Coating - Marine			25.1				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			50.5				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			1,624.8				
2425000000	Solvent Utilization; Graphic Arts; Other			10.3				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			103.7				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			124.4				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			87.7				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			715.3				

Table B-31. 2025 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			234.9				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			398.1				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			169.7				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			89.6				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			12.5				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			528.6				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			19.6				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			18.0				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			628.3				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			53.9				
2610030000	Open Burning - Household waste	0.1	0.0	0.1	1.1	0.5	0.4	
2620030000	Municipal Landfills	0.0	0.0	27.2	0.5	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			696.1				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					413.5	91.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	180.4	11.9	0.1	38.8	12.7	12.7	
2801520010	Agricultural Fuel Combustion - LPG	11.8	0.0	0.2	2.0	0.4	0.4	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							183.5
2805001000	Beef Cattle feedlots - Fugitive Dust					61.2	7.0	
2805010200	Livestock waste - Turkeys							0.0

Table B-31. 2025 Area Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							186.9
2805020002	Livestock waste - Beef cows							158.8
2805030000	Livestock waste - Poultry, NEC							31.5
2805035000	Livestock waste - Horses and Ponies, NEC							53.5
2805039000	Livestock waste - Swine							19.5
2805040000	Livestock waste - Sheep and Lambs							37.2
2805045000	Livestock waste - Goats, NEC							66.0
2807040000	Wild animal waste - Birds							8.2
2810001000	Forest Fires - Total (Flaming and Smoldering)	302.5	94.0	707.6	10,133.6	1,021.6	866.9	101.6
2810030000	Structure Fires	0.1		0.3	5.1	0.3	0.3	
2850000010	Hospitals - Sterilization Operations			0.2				
3333333333	LPG Distribution			2,004.9				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							684.6

Table B-32. 2025 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	4.5	0.0	0.0	1.1	0.2	0.1	0.2
2102006000	Fuel Combustion; Industrial; Natural Gas	9.9	0.1	0.5	8.3	0.8	0.8	0.0
2102007000	Fuel Combustion; Industrial; LPG	1.4	0.0	0.0	0.2	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	25.0	0.1	1.4	21.0	1.9	1.9	0.1
2103007000	Fuel Combustion; Comm/Inst; LPG	62.2	0.0	1.1	10.6	1.9	1.9	
2104006000	Fuel Combustion; Residential; Natural Gas	96.2	0.6	5.6	40.9	7.8	7.8	0.5
2104007000	Fuel Combustion; Residential; LPG	188.4	0.0	3.2	32.0	5.7	5.7	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	6.9	1.1	609.5	672.4	92.1	88.7	
2104011000	Fuel Combustion; Residential; Kerosene	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.4	0.0	0.2	1.2	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	17.7	0.8	8.5	150.9	0.3	0.3	1.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					3.4	0.4	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			12.1				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.5	0.0	0.3	2.0	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	24.5	1.1	15.1	224.1	0.2	0.2	1.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					3.8	0.5	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			12.2				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	1.6	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-32. 2025 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.3	3.0	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.1				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.1	1.0	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	3.1	0.0	0.5	3.3	0.1	0.1	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-32. 2025 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.6	0.0	1.3	2.6	0.6	0.5	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.4	0.1	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	56.9	0.0	5.9	18.1	4.1	3.7	0.2
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					4.2	0.5	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					395.1	95.6	
2302002000	Commercial Cooking; Charbroiling, Total	3.7		13.1	202.4	101.7	81.1	
2302050000	Industrial Processes; Bakery Products; Total			35.6				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			582.5				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			312.4				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			34.8				

Table B-32. 2025 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			74.7				
2401040000	Industrial Surface Coating - Metal Can Coating			9.7				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			4.9				
2401080000	Industrial Surface Coating - Marine			57.3				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			98.1				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			4,435.7				
2425000000	Solvent Utilization; Graphic Arts; Other			21.6				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			216.5				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			259.9				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			183.3				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			1,393.5				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			457.7				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			775.6				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			330.6				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			68.4				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			98.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			1,029.8				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			38.1				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			38.4				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,342.5				

Table B-32. 2025 Area Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			115.1				
2610030000	Open Burning - Household waste	0.1	0.0	0.2	2.1	0.9	0.9	
2620030000	Municipal Landfills	0.0	0.0	53.9	1.0	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			2,544.6				
2730100000	Wind Erosion					23,641.2	4,090.3	
2801000003	Agricultural Tilling Dust					2,363.5	524.0	
2801500120	Agricultural Burning - Asparagus	12.8	1.7	188.4	428.1	114.2	112.3	6.8
2801500170	Agricultural Burning - Grasses	99.0	13.2	235.3	2,507.1	349.7	334.3	39.6
2801500262	Agricultural Burning - Wheat (Backfiring)	165.4	34.6	292.3	4,754.0	407.7	388.5	75.0
2801520004	Agricultural Fuel Combustion - Diesel	237.6	15.6	0.1	51.1	16.7	16.7	
2801520010	Agricultural Fuel Combustion - LPG	15.6	0.0	0.3	2.6	0.5	0.5	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1,151.5
2805001000	Beef Cattle feedlots - Fugitive Dust					213.8	24.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							653.4
2805020002	Livestock waste - Beef cows							555.0
2805030000	Livestock waste - Poultry, NEC							285.9
2805035000	Livestock waste - Horses and Ponies, NEC							29.5
2805039000	Livestock waste - Swine							21.8
2805040000	Livestock waste - Sheep and Lambs							52.9
2805045000	Livestock waste - Goats, NEC							80.5
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2810030000	Structure Fires	0.2		0.6	10.3	0.6	0.6	
2850000010	Hospitals - Sterilization Operations			0.3				
3333333333	LPG Distribution			4,026.2				
4444444444	Brick Kilns	5.0	0.8	444.6	490.4	67.2	64.7	0.0
5555555555	Domestic NH3 - Total							1,139.2

Table B-33. 2025 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.7	0.0	0.0	0.2	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	1.5	0.0	0.1	1.3	0.1	0.1	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.2	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	5.8	0.0	0.1	1.0	0.2	0.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	18.9	0.0	0.3	3.2	0.6	0.6	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	2.5	0.4	216.1	238.4	32.7	31.4	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.2	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	1.1	0.1	0.8	13.0	0.0	0.0	0.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					0.4	0.0	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.4				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	0.1	0.0	0.0	0.3	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	1.5	0.1	1.3	18.6	0.0	0.0	0.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					0.4	0.1	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			1.4				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.2	0.0	0.0	0.0
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-33. 2025 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.4	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.0				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	0.2	0.0	0.1	0.3	0.0	0.0	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-33. 2025 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	1.1	0.0	0.2	0.4	0.1	0.1	0.0
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	7.9	0.0	0.8	2.6	0.6	0.5	0.0
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					0.6	0.1	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					78.4	19.0	
2302002000	Commercial Cooking; Charbroiling, Total	0.4		1.4	22.0	11.1	8.8	
2302050000	Industrial Processes; Bakery Products; Total			6.4				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			63.4				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			25.8				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			6.0				

Table B-33. 2025 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			9.7				
2401040000	Industrial Surface Coating - Metal Can Coating			1.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			4.4				
2401080000	Industrial Surface Coating - Marine			9.0				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			18.5				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			745.2				
2425000000	Solvent Utilization; Graphic Arts; Other			1.8				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			18.1				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			21.7				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			15.3				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			151.7				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			49.8				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			84.4				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			36.0				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			8.5				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			112.1				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			4.2				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			3.8				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			132.9				

Table B-33. 2025 Area Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			11.4				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	6.0	0.1	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			182.9				
2730100000	Wind Erosion					78.3	13.5	
2801000003	Agricultural Tilling Dust					5.4	1.2	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	24.0	1.6	0.0	5.2	1.7	1.7	
2801520010	Agricultural Fuel Combustion - LPG	1.6	0.0	0.0	0.3	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							2.0
2805001000	Beef Cattle feedlots - Fugitive Dust					15.5	1.8	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							47.3
2805020002	Livestock waste - Beef cows							40.2
2805030000	Livestock waste - Poultry, NEC							16.4
2805035000	Livestock waste - Horses and Ponies, NEC							24.2
2805039000	Livestock waste - Swine							4.4
2805040000	Livestock waste - Sheep and Lambs							10.5
2805045000	Livestock waste - Goats, NEC							21.2
2807040000	Wild animal waste - Birds							2.9
2810001000	Forest Fires - Total (Flaming and Smoldering)	14.7	4.6	34.0	487.0	49.2	41.8	4.9
2810030000	Structure Fires	0.0		0.1	1.0	0.1	0.1	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			403.4				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							166.5

Table B-34. 2025 Area Source Emissions – Tijuana

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	10.5	0.0	0.1	2.6	0.5	0.1	0.4
2102006000	Fuel Combustion; Industrial; Natural Gas	22.9	0.1	1.3	19.3	1.7	1.7	0.1
2102007000	Fuel Combustion; Industrial; LPG	3.3	0.0	0.1	0.6	0.1	0.1	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	104.7	0.0	1.8	17.8	3.2	3.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	305.1	0.0	5.2	51.8	9.2	9.2	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	15.4	2.4	1,359.3	1,499.4	205.4	197.7	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201210102	Gasoline - Passenger Car - Off-Network - Start Exhaust	1.1	0.0	0.5	3.7	0.0	0.0	0.0
2201210501	Gasoline - Passenger Car - Urban Unrestricted Access - Running Exhaust	28.5	2.3	22.0	353.9	1.0	0.9	3.1
2201210509	Gasoline - Passenger Car - Urban Unrestricted Access - Brakewear					10.0	1.3	
2201210510	Gasoline - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201210512	Gasoline - Passenger Car - Urban Unrestricted Access - Evap Fuel Vapor Venting			36.5				
2201310102	Gasoline - Passenger Truck - Off-Network - Start Exhaust	1.5	0.0	0.8	6.0	0.0	0.0	0.0
2201310501	Gasoline - Passenger Truck - Urban Unrestricted Access - Running Exhaust	41.6	3.1	35.2	508.2	0.6	0.5	3.1
2201310509	Gasoline - Passenger Truck - Urban Unrestricted Access - Brakewear					11.2	1.4	
2201310510	Gasoline - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201310512	Gasoline - Passenger Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			36.6				
2201320102	Gasoline - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2201320501	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.3	4.3	0.0	0.0	0.1
2201320509	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-34. 2025 Area Source Emissions – Tijuana

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201320510	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201320512	Gasoline - Light Commercial Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.4				
2201530102	Gasoline - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2201530501	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	1.0	0.0	0.9	10.2	0.0	0.0	0.0
2201530509	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					0.1	0.0	
2201530510	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2201530512	Gasoline - Single Unit Long-haul Truck - Urban Unrestricted Access - Evap Fuel Vapor Venting			0.3				
2202210102	Diesel Fuel - Passenger Car - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202210501	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Running Exhaust	0.1	0.0	0.2	2.5	0.0	0.0	0.0
2202210509	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Brakewear					0.0	0.0	
2202210510	Diesel Fuel - Passenger Car - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202310102	Diesel Fuel - Passenger Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202310501	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Running Exhaust	4.3	0.0	1.4	8.3	0.4	0.4	0.0
2202310509	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202310510	Diesel Fuel - Passenger Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202320102	Diesel Fuel - Light Commercial Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202320501	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Running Exhaust	0.3	0.0	0.1	0.4	0.0	0.0	0.0
2202320509	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Brakewear					0.0	0.0	

Table B-34. 2025 Area Source Emissions – Tijuana

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2202320510	Diesel Fuel - Light Commercial Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202410102	Diesel Fuel - Intercity Bus - Off-Network - Start Exhaust	0.0	0.0	0.0	0.3	0.0	0.0	0.0
2202410501	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Running Exhaust	3.5	0.0	0.4	1.1	0.3	0.2	0.0
2202410509	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Brakewear					0.2	0.0	
2202410510	Diesel Fuel - Intercity Bus - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202530102	Diesel Fuel - Single Unit Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Running Exhaust	25.8	0.0	4.5	9.1	2.1	1.9	0.1
2202530509	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Brakewear					1.4	0.2	
2202530510	Diesel Fuel - Single Unit Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2202620102	Diesel Fuel - Combination Long-haul Truck - Off-Network - Start Exhaust	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2202620501	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Running Exhaust	192.0	0.1	20.9	63.6	14.2	13.0	0.6
2202620509	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Brakewear					14.3	1.8	
2202620510	Diesel Fuel - Combination Long-haul Truck - Urban Unrestricted Access - Tirewear					0.0	0.0	
2294000000	Paved Roads - Fugitive Dust					1,071.7	259.3	
2302002000	Commercial Cooking; Charbroiling, Total	6.4		22.3	344.9	173.2	138.3	
2302050000	Industrial Processes; Bakery Products; Total			68.8				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			992.8				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			419.5				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			34.5				

Table B-34. 2025 Area Source Emissions – Tijuana

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2401015000	Industrial Surface Coating - Factory Finished Wood			134.4				
2401040000	Industrial Surface Coating - Metal Can Coating			15.5				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			24.7				
2401080000	Industrial Surface Coating - Marine			64.5				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			206.9				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			12,154.0				
2425000000	Solvent Utilization; Graphic Arts; Other			36.4				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			364.5				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			437.5				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			308.6				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			2,374.9				
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			780.1				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			1,321.8				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			563.4				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			32.5				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.0				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			1,755.2				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			65.0				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			50.2				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			1,758.3				

Table B-34. 2025 Area Source Emissions – Tijuana

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			150.7				
2610030000	Open Burning - Household waste	0.2	0.0	0.4	3.5	1.6	1.4	
2620030000	Municipal Landfills	0.0	0.0	106.5	2.0	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			3,276.1				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.2	0.7	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	35.0	2.3	0.0	7.5	2.5	2.5	
2801520010	Agricultural Fuel Combustion - LPG	2.3	0.0	0.0	0.4	0.1	0.1	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.4
2805001000	Beef Cattle feedlots - Fugitive Dust					55.6	6.4	
2805010200	Livestock waste - Turkeys							0.0
2805020001	Livestock waste - Milk cows							169.9
2805020002	Livestock waste - Beef cows							144.3
2805030000	Livestock waste - Poultry, NEC							49.4
2805035000	Livestock waste - Horses and Ponies, NEC							20.5
2805039000	Livestock waste - Swine							17.4
2805040000	Livestock waste - Sheep and Lambs							18.9
2805045000	Livestock waste - Goats, NEC							16.9
2807040000	Wild animal waste - Birds							7.4
2810001000	Forest Fires - Total (Flaming and Smoldering)	6.6	2.0	15.5	221.9	22.4	19.0	2.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.3				
3333333333	LPG Distribution			6,529.3				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							1,942.2

Table B-35. 2025 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2102004000	Fuel Combustion; Industrial; Distillate Oil	0.4	0.0	0.0	0.1	0.0	0.0	0.0
2102006000	Fuel Combustion; Industrial; Natural Gas	0.9	0.0	0.0	0.8	0.1	0.1	0.0
2102007000	Fuel Combustion; Industrial; LPG	0.1	0.0	0.0	0.0	0.0	0.0	
2103006000	Fuel Combustion; Comm/Inst; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2103007000	Fuel Combustion; Comm/Inst; LPG	7.7	0.0	0.1	1.3	0.2	0.2	
2104006000	Fuel Combustion; Residential; Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2104007000	Fuel Combustion; Residential; LPG	17.5	0.0	0.3	3.0	0.5	0.5	
2104008100	Fuel Combustion; Residential; Wood; Fireplace - General	0.9	0.1	76.0	83.8	11.5	11.1	
2104011000	Fuel Combustion; Residential; Kerosene	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2294000000	Paved Roads - Fugitive Dust					62.1	15.0	
2302002000	Commercial Cooking; Charbroiling, Total	0.4		1.4	21.3	10.7	8.5	
2302050000	Industrial Processes; Bakery Products; Total			5.0				
2311030000	Fugitive Dust; Construction Activities; Road Construction					0.0	0.0	
2401001000	Solvent Utilization; Surface Coatings; Architectural Coatings			61.3				
2401005000	Solvent Utilization; Auto Refinishing - SIC 7532			34.8				
2401008000	Solvent Utilization; Surface Coating; Traffic Markings			3.4				
2401015000	Industrial Surface Coating - Factory Finished Wood			22.8				
2401040000	Industrial Surface Coating - Metal Can Coating			0.0				
2401065000	Industrial Surface Coating - Electronic/other Electric Coat'g			0.5				
2401080000	Industrial Surface Coating - Marine			0.0				
2401090000	Industrial Surface Coating - Miscellaneous Manufacturing			8.7				
2415000000	Solvent utilization; Degreasing; All Processes/Industries/Solvents			442.3				
2425000000	Solvent Utilization; Graphic Arts; Other			1.3				
2425010000	Solvent Utilization; Graphic Arts; Lithographic			13.4				
2425030000	Solvent Utilization; Graphic Arts; Rotogravure			16.1				
2425040000	Solvent Utilization; Graphic Arts; Flexographic			11.3				
2460100000	Solvent Utilization; Consumer Solvent Use; All Personal Care Products			146.7				

Table B-35. 2025 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2460200000	Solvent Utilization; Consumer Solvent Use; All Household Products			48.2				
2460400000	Solvent Utilization; Consumer Solvent Use; All Automotive Aftermarket Products			81.7				
2460600000	Solvent Utilization; Consumer Solvent Use; All Adhesives and Sealants			34.8				
2461020000	Solvent Utilization; Misc Non-Indsutrial - Commercial; Asphalt Application - All Processes			4.9				
2461850000	Solvent Utilization; Agriculture; All Pesticide Application			0.1				
2465800000	Solvent Utilization; Consumer Solvent Use; Pesticide Application			108.5				
2465900000	Solvent Utilization; Consumer Solvent Use; Miscellaneous Products: NEC			4.0				
2501060051	Gasoline Service Stations - Stage I, Submerged filling			0.0				
2501060053	Gasoline Service Stations - Stage I, Balanced submerged filling			4.6				
2501060101	Gasoline Service Stations - Stage II, Refueling losses, uncontrolled			162.5				
2501060201	Gasoline Service Stations - Underground tank breathing and emptying			13.9				
2610030000	Open Burning - Household waste	0.0	0.0	0.0	0.2	0.1	0.1	
2620030000	Municipal Landfills	0.0	0.0	8.0	0.2	0.0	0.0	0.0
2630030000	Wastewater treatment (residential/subdivision owned)			142.8				
2730100000	Wind Erosion					0.0	0.0	
2801000003	Agricultural Tilling Dust					3.6	0.8	
2801500120	Agricultural Burning - Asparagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500170	Agricultural Burning - Grasses	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801500262	Agricultural Burning - Wheat (Backfiring)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2801520004	Agricultural Fuel Combustion - Diesel	10.8	0.7	0.0	2.3	0.8	0.8	
2801520010	Agricultural Fuel Combustion - LPG	0.7	0.0	0.0	0.1	0.0	0.0	
2801700000	Agriculture; Fertilizer Application; Total Fertilizers							1.6
2805001000	Beef Cattle feedlots - Fugitive Dust					12.1	1.4	
2805010200	Livestock waste - Turkeys							0.0

Table B-35. 2025 Area Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2805020001	Livestock waste - Milk cows							37.0
2805020002	Livestock waste - Beef cows							31.4
2805030000	Livestock waste - Poultry, NEC							1.1
2805035000	Livestock waste - Horses and Ponies, NEC							7.0
2805039000	Livestock waste - Swine							1.1
2805040000	Livestock waste - Sheep and Lambs							3.9
2805045000	Livestock waste - Goats, NEC							5.1
2807040000	Wild animal waste - Birds							1.0
2810001000	Forest Fires - Total (Flaming and Smoldering)	306.1	95.2	718.7	10,292.7	1,037.0	880.0	103.2
2810030000	Structure Fires	0.0		0.0	0.0	0.0	0.0	
2850000010	Hospitals - Sterilization Operations			0.1				
3333333333	LPG Distribution			380.8				
4444444444	Brick Kilns	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5555555555	Domestic NH3 - Total							159.7

Table B-36. 2025 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	19.4	0.8	51.7	194.8	2.8	2.7	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	6,636.6	150.5	976.3	16,267.0	189.3	181.8	86.4
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	1,497.0	62.7	490.6	9,718.7	78.0	74.9	28.1
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	108.0	6.9	49.8	1,011.8	5.8	5.6	2.3
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	366.7	5.4	44.5	830.2	10.4	10.0	0.5
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	9.5	0.2	1.1	14.3	0.5	0.5	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	868.1	22.1	105.2	1,481.6	42.9	41.2	2.1
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	1.3	0.1	0.1	0.2	0.7	0.7	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	8.1	0.9	0.5	1.1	3.6	3.4	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.7	0.1	0.1	0.1	0.4	0.4	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	365.0	9.8	6.3	60.8	40.3	38.7	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	3.8	0.3	0.1	0.3	1.1	1.1	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	122.6	7.0	2.4	12.2	28.9	27.7	0.2
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	169.0	4.2	3.0	22.8	17.1	16.4	0.1
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	2.5	0.0	0.1	0.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2.2	0.0	0.0	0.2	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Table B-36. 2025 On-Road Motor Vehicle Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.9	0.0	0.1	0.4	0.0	0.0	0.0

Table B-37. 2025 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	66.6	3.3	128.4	516.9	11.0	10.6	0.4
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	12,986.9	388.3	2,356.6	34,055.4	488.7	469.1	223.0
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	2,748.3	141.7	1,067.7	19,212.7	176.0	169.0	63.2
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	167.5	12.6	85.5	1,575.4	10.7	10.3	4.3
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	426.5	6.6	58.7	1,152.0	12.8	12.3	0.6
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	15.9	0.4	2.1	29.1	0.7	0.7	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1,570.9	41.9	184.2	2,541.2	81.3	78.1	4.0
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	2.3	0.2	0.2	0.4	1.3	1.2	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	15.9	2.0	1.1	2.4	7.7	7.4	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.8	0.1	0.1	0.2	0.5	0.5	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	322.3	8.6	5.6	61.2	35.2	33.8	0.2
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	4.4	0.3	0.1	0.5	1.2	1.1	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	327.6	19.6	6.5	29.5	80.5	77.3	0.4
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	343.3	8.9	5.9	44.7	36.4	34.9	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	6.4	0.0	0.2	2.0	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	5.0	0.0	0.1	0.4	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0

Table B-37. 2025 On-Road Motor Vehicle Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.3	0.0	0.0	0.1	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.5	0.0	0.2	0.7	0.0	0.0	0.0

Table B-38. 2025 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	9.2	0.4	20.6	82.6	1.5	1.4	0.1
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,692.9	40.1	293.9	4,207.9	50.4	48.4	23.0
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	419.2	19.2	159.4	2,801.5	23.8	22.9	8.7
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	23.6	1.8	14.2	263.0	1.5	1.4	0.6
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	61.6	0.9	8.5	171.8	1.8	1.8	0.1
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	9.9	0.2	1.4	19.8	0.4	0.4	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	311.9	7.8	39.3	547.2	15.2	14.5	0.7
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.3	0.0	0.0	0.1	0.2	0.1	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.2	0.2	0.1	0.3	1.0	0.9	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.1	0.1	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	32.1	0.8	0.6	5.7	3.4	3.3	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	1.2	0.1	0.0	0.2	0.3	0.3	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	45.0	2.4	0.9	5.3	9.8	9.4	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	58.0	1.4	1.1	8.2	5.7	5.5	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.9	0.0	0.0	0.3	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.7	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-38. 2025 On-Road Motor Vehicle Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.9	0.0	0.1	0.3	0.0	0.0	0.0

Table B-39. 2025 On-Road Motor Vehicle Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	118.7	5.7	257.0	1,042.3	18.9	18.2	0.8
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	21,861.1	537.0	3,443.8	48,762.9	675.8	648.7	308.4
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	3,869.3	171.1	1,315.3	22,576.7	212.9	204.3	76.9
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	431.4	29.4	200.4	3,576.2	24.9	23.9	10.1
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	232.2	3.6	24.8	470.8	7.0	6.7	0.3
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	15.5	0.4	1.9	25.8	0.8	0.7	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	2,000.7	53.3	230.7	3,157.8	103.4	99.3	5.1
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	3.3	0.3	0.3	0.6	1.9	1.8	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	13.0	1.4	0.9	1.9	5.6	5.4	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	2.0	0.3	0.2	0.4	1.1	1.1	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	158.0	4.1	2.9	32.4	16.9	16.2	0.1
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	3.0	0.2	0.1	0.3	0.9	0.8	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	470.0	27.9	9.3	43.8	114.4	109.8	0.6
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	310.4	8.1	5.2	39.2	33.1	31.8	0.2
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	7.9	0.0	0.3	2.8	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	7.4	0.0	0.1	0.5	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.1	0.0	0.0	0.0

Table B-39. 2025 On-Road Motor Vehicle Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	2.4	0.0	0.3	1.0	0.0	0.0	0.0
2204520501	LPG - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	11.8	0.0	1.6	4.8	0.0	0.0	0.0

Table B-40. 2025 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2201110501	Gasoline - Motorcycle - Urban unrestricted access - Running exhaust	5.3	0.3	14.8	56.6	0.8	0.8	0.0
2201210501	Gasoline - Passenger car - Urban unrestricted access - Running exhaust	1,364.3	32.9	225.6	3,206.9	41.4	39.7	18.9
2201310501	Gasoline - Passenger truck - Urban unrestricted access - Running exhaust	340.5	15.3	124.8	2,178.2	19.0	18.3	6.9
2201320501	Gasoline - Light commercial truck - Urban unrestricted access - Running exhaust	21.4	1.5	11.4	208.5	1.3	1.2	0.5
2201420501	Gasoline - Transit bus - Urban unrestricted access - Running exhaust	18.2	0.3	2.6	52.1	0.6	0.5	0.0
2201520501	Gasoline - Single unit short-haul truck - Urban unrestricted access - Running exhaust	2.2	0.1	0.3	3.9	0.1	0.1	0.0
2201530501	Gasoline - Single unit long-haul truck - Urban unrestricted access - Running exhaust	211.6	5.1	27.4	384.4	9.9	9.5	0.5
2202210501	Diesel - Passenger car - Urban unrestricted access - Running exhaust	0.6	0.0	0.0	0.1	0.3	0.3	0.0
2202310501	Diesel - Passenger truck - Urban unrestricted access - Running exhaust	2.4	0.2	0.2	0.3	1.0	0.9	0.0
2202320501	Diesel - Light commercial truck - Urban unrestricted access - Running exhaust	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2202420501	Diesel - Transit bus - Urban unrestricted access - Running exhaust	15.4	0.4	0.3	3.5	1.6	1.5	0.0
2202520501	Diesel - Single unit short-haul truck - Urban unrestricted access - Running exhaust	0.2	0.0	0.0	0.0	0.0	0.0	0.0
2202530501	Diesel - Single unit long-haul truck - Urban unrestricted access - Running exhaust	62.0	3.2	1.3	7.8	13.0	12.5	0.1
2202620501	Diesel - Combination long-haul truck - Urban unrestricted access - Running exhaust	47.9	1.1	0.9	6.5	4.5	4.3	0.0
2203210501	CNG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2203320501	CNG - Light commercial truck - Urban unrestricted access - Running exhaust	0.5	0.0	0.0	0.2	0.0	0.0	0.0
2203530501	CNG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	1.3	0.0	0.0	0.1	0.0	0.0	0.0
2204210501	LPG - Passenger car - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table B-40. 2025 On-Road Motor Vehicle Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2204320501	LPG - Light commercial truck - Urban unrestricted access - Running exhaust	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2204530501	LPG - Single unit long-haul truck - Urban unrestricted access - Running exhaust	0.8	0.0	0.1	0.4	0.0	0.0	0.0

Table B-41. 2025 Nonroad Mobile Source Emissions – Ensenada (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	2,143.9	28.8	221.5	1,073.5	241.3	234.1	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	1,291.4	124.7	281.7	5,280.9	109.4	109.4	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	305.1	3.8	51.5	206.8	51.5	50.0	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	45,922.2	8,883.8	1,828.2	4,260.1	1,374.8	1,249.4	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	605.4	117.1	24.1	56.2	18.1	16.5	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	

Table B-42. 2025 Nonroad Mobile Source Emissions – Mexicali (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	4,177.3	56.0	431.7	2,091.6	470.1	456.0	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	1,174.1	14.8	198.3	795.8	198.3	192.4	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	3.3	0.3	1.0	28.9	0.1	0.1	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	13.6	1.7	6.1	28.2	0.3	0.3	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.6	0.1	0.0	0.4	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.3	0.1	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	464.0	4.1	17.5	45.8	11.5	10.4	

Table B-43. 2025 Nonroad Mobile Source Emissions – Tecate (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	454.6	6.1	47.0	227.6	51.2	49.6	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	7.2	0.1	1.2	4.9	1.2	1.2	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	155.4	1.4	5.9	15.4	3.9	3.5	

Table B-44. 2025 Nonroad Mobile Source Emissions – Tijuana (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	7,119.6	95.5	735.7	3,564.9	801.3	777.3	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	0.0	0.0	0.0	0.0	0.0	0.0	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.2	0.0	0.5	2.2	0.5	0.5	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	24.3	1.9	7.4	213.1	0.7	0.7	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	100.2	12.5	44.8	208.3	2.2	2.2	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	4.3	0.5	0.2	2.9	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	0.0	0.0	0.0	0.0	0.0	0.0	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	271.9	2.4	10.3	26.9	6.8	6.1	

Table B-45. 2025 Nonroad Mobile Source Emissions – Playas de Rosarito (tons/year)

SCC	SCC Description	NO_x	SO_2	VOC	CO	PM_{10}	$PM_{2.5}$	NH_3
2270002022	Mobile Sources - Off-highway Vehicle Diesel - Construction Equipment - Diesel Construction Equipment	439.6	5.9	45.4	220.1	49.5	48.0	
2270003022	Mobile Sources - Off-Highway Vehicle Diesel - Industrial Equipment - Diesel Industrial Equipment	173.5	16.7	38.0	716.3	14.7	14.7	
2270005022	Mobile Sources - Off-highway Vehicle Diesel - Agricultural Equipment - Diesel Agricultural Equipment	3.6	0.0	0.6	2.5	0.6	0.6	
2270008005	Mobile Sources - Off-Highway Vehicle Diesel - Airport GSE - Diesel	0.0	0.0	0.0	0.0	0.0	0.0	
2275020000	Mobile Sources - Commercial Aircraft - Total, All Types	0.0	0.0	0.0	0.0	0.0	0.0	
2275070000	Mobile Sources - Aircraft - Aircraft APUs - Total	0.0	0.0	0.0	0.0	0.0	0.0	
2280002101	Mobile Sources - CMV - Diesel - C1C2 Port Emissions: Main Engine	6,204.4	1,200.3	247.0	575.6	185.7	168.8	
2280002201	Mobile Sources - CMV - Diesel - C1C2 Underway Emissions: Main Engine	81.8	15.8	3.3	7.6	2.4	2.2	
2285002006	Mobile Sources - Railroad Equipment - Diesel - Line Haul Locomotives: Class I Operations	0.0	0.0	0.0	0.0	0.0	0.0	