



Guidelines for Preparing Air Toxics Emission Inventory Plans and Reports

AB 2588 Air Toxics “Hot Spots” Program

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I. Introduction

This document explains the requirements for preparing an Air Toxics Emission Inventory Plan (ATEIP) and Report (ATEIR) for the AB 2588 Air Toxics “Hot Spots” Program (1). All references in this document are numbered in parenthesis; links are available in the References section.

An ATEIP and ATEIR is required for any of the following situations:

1. The equipment and processes at your facility emits 10 or more tons per year of total organic gases, particulate matter, nitrogen oxides, or sulfur oxides.
2. Your facility meets as one of the classifications listed in Appendix E of the California Air Resources Board (CARB) Emission Inventory Criteria and Guidelines for the Air Toxics “Hot Spots” Program (2).
3. The Monterey Bay Air Resources District (MBARD) identified your stationary source as posing a concern to public health.

If the ATEIP and/or ATEIR does not comply with the guidelines set forth in this document, the ATEIP and/or ATEIR will be returned, with MBARD comments, to the operator for revision.

Fees

The State’s AB 2588 “Hot Spots” fees are assessed on an annual basis as described by CARB’s “Hot Spots” Fee table (3). Sources in the “Hot Spots” program are assessed fees based on their potential health risk, the fee category, and the number of processes the facility has, or the complexity. A facility is assigned to a fee category based on its Health Risk Assessment (HRA) results, prioritization scores, or if the facility is in a special class (i.e., small business, industrywide).

Purpose of the ATEIP

The purpose of the ATEIP is to ensure the emission factors, calculation methodology, and all parameters used to quantify toxics emissions are provided to MBARD and approved by MBARD prior to implementation in the ATEIR. The ATEIP will include justification for any proposed assumptions in quantifying the toxic emissions. Once approved by MBARD, the ATEIP process is complete.

Purpose of the ATEIR

The purpose of the ATEIR is to execute emission calculation methodology described in the approved ATEIP. The ATEIR will include detailed emission calculation spreadsheets for the annual emissions in pounds per year and both average and maximum hourly emissions in pounds per hour. All calculations within the spreadsheets submitted to MBARD must contain formulas. Once approved by MBARD, the ATEIR process is complete and MBARD will conduct a prioritization score assessment and determine your stationary source’s prioritization score. The prioritization score procedure will be conducted according to the California Air Pollution Control Officers Association (CAPCOA) *Facility Prioritization Guidelines* (4).



CARB's Emission Inventory Criteria and Guidelines

CARB's *Emission Inventory Criteria and Guidelines* (EICG Report) is the statewide resource for preparing an ATEIP and ATEIR (2). CARB's EICG Report contains the following information:

1. Specifies which facilities are subject to AB 2588 and lists exemptions;
2. Specifies information an operator must include in their ATEIP and ATEIR;
3. Specifies sources testing requirements and acceptable emission estimation methods; and,
4. List toxic air contaminants (TACs) that must be inventoried.

Special Situations

Fugitive emissions from haul roads are included in AB 2588 per CARB's direction that "dust emissions from motor vehicle activities at a facility must be reported".

Emission from mobile sources that are not motor vehicles (i.e., self-propelled), must be reported in the ATEIP and ATEIR. Examples of these mobile sources include cranes and auxiliary generators. Temporary equipment and portable equipment, including portable diesel engines, must be included in the ATEIP and ATEIR. This includes equipment registered in the State's Portable Equipment Registration Program and their DOORs program.

All stationary diesel engines, including those less than 50 hp, are required to be included in the ATEIP and ATEIR.

Inventory Year

AB 2588 assessments are based on a specific inventory year. Therefore, all emissions calculated for the ATEIR should reflect actual operations during the inventory year specified by MBARD.

II. Elements of the ATEIP

Written Plan

The ATEIP will include a detailed written plan with stationary source information, detailed emission calculation methodologies with emission factors and all parameters (e.g., load factors, control efficiencies, fuel properties) for each source type.

A printed and a pdf copy of the written ATEIP must submitted to MBARD.

Facility Information

Include the following information regarding the facility and its surroundings:

- Facility name
- Facility ID
- Location (street address and Latitude/Longitude coordinates)
- Description of operations
- Process flow diagram consisting of a comprehensive schematic drawing of the process flows which affect the nature or quantity of emissions.
- Plot plan showing a plan view of the facility site and structure(s)



- Aerial photo image (Google earth), with the following features labeled:
 - Property boundary
 - Buildings (labeled by ID)
 - Emitting sources (labeled by source ID or name)

Source Parameters Tables

Include the following information for each emitting source:

- Source identification number
- Source name/description
- Source permit number
- Source type (point, area, open pit, volume, line)
- Source Latitude/Longitude coordinates

Device Tables

Include the following tables in the ATEIP:

- Device operational schedule table with the following information for each device:
 - Device name and identification number
 - Device description
 - Number of operating hours, days, or weeks per year.
- TAC Device Table with the following information for each device:
 - Device name and identification number
 - All Toxic Air Contaminants (TACs) emitted by device (see example in Appendix A of this document), including the CAS number.

Emission Calculation Methodology

MBARD does not have an approved list of TAC emission factors for various source types. However, MBARD accepts the following approved TAC emission factors for various types:

- Site-specific emission factors from MBARD approved source tests;
- Continuous emissions monitoring systems;
- Manufacture-guaranteed emission factors;
- Mass balance site-specific generated emission factors;
- San Joaquin Valley Air Pollution Control District AB 2588 “Hot Spots” Air Toxic Profiles (5);
- United States of Environmental Protection Agency AP-42: Compilation of Air Emission Factors (6); and
- Other representative emission factors and approved methods from such sources as CARB and other local air districts.

The ATEIP must include the emission calculation equations for each emissions source type, with all variables defined, including conversion factors. All equations should be numbered, and all terms should be defined with proper units identified directly below the equation. Parameters such as higher heating factor (HHV) of fuel, load factors, and control efficiencies must be specified in the plan for each applicable device. Documentation must be submitted for any parameter not using MBARD’s default value. Load factors are not allowed for maximum hourly calculations unless hourly records are kept that demonstrate the proposed load value was not exceeded at any time during the entire inventory year.



When non-default factors are used, include the factor reference in the applicable ATEIP section, along with the emission calculation equations and any required parameters.

Source Testing

If source testing will be conducted, submit the source test plan as a document, and reference the source test plan in the ATEIP.

MBARD uses CARB's policy outlined in Appendix B of the EICG Report (2) for handling non-detect values. CARB's policy allows for non-detect results to be reported as zero emission only if three or more samples/runs are conducted, which all show non-detect. If one or more of the samples/runs had a value below the method detection limit (MDL), while at least one sample/run showed a value above the MDL, all non-detect results must be reported as one-half of the MDL. For the emission calculations, the values reported as one-half of the MDL must be averaged together with the other runs that were above the MDL. If only one sample/run is conducted and result is below the MDL, the results must be reported at the MDL for emission calculations. The MDL for each method must be included in the source test plan and approved by MBARD prior to source testing. Failure to receive approval of the MDL prior to source testing may invalidate the test results.

III. Elements of the ATEIR

Written Report

The ATEIR will include a brief written report with facility information (described below), reference to the approved ATEIP, source test results (if applicable), and any other necessary documentation. Include a paper copy and PDF copy of the written report along with all emission calculations in Excel spreadsheets.

Facility Information

Include the following information regarding the facility:

- Facility name
- Facility ID
- Location (street address and Latitude/Longitude coordinates)
- Description of operations and a list of emitted substances, including a table of the total annual emissions and both the total average and maximum hourly TAC emissions emitted from the facility.

Emission Quantification

Detailed emission calculation spreadsheet for the annual and both the average annual and maximum hourly emissions must be included with formulas, assumptions and parameters for all calculations. **Excel spreadsheets are required.** Report the following information for each device in a spreadsheet format:

- Emission factor for each TAC, grouped by device and emitting source
- Device ID(s) and name(s)
- TAC name and CAS number (without dashes, matching the HARP 2 CAS number format)
- Annual emissions for each TAC in lb/yr
- Average annual emissions for each TAC in lb/hr
- Maximum hourly emissions for each TAC in lb/hr
- Emission control equipment and efficiency by device and TAC



Summarize emissions for the entire facility in the written report and Excel spreadsheet, and by device in a format required for HARP 2 (i.e., Emission Inventory Data in a CSV file) as described in Section 5.A.2, Emission Inventory, of CARB's *User Manual for the Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool Version 2* (7).

IV. Required Forms

MBARD does not require the forms described in Section VII.C, Reporting Formats and Forms, of the EICG Report (2) from CARB. Instead, the following information must be submitted: 1) ATEIP and ATEIR, 2) Excel spreadsheets, and 3) HARP 2 files.

V. References

- (1) California Air Resources Board. April 25, 2016. AB 2588 Air Toxics "Hot Spots" Program. <https://www.arb.ca.gov/ab2588/ab2588.htm>.
- (2) California Air Resources Board. August 27, 2007. Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program. <https://www.arb.ca.gov/ab2588/2588guid.htm>.
- (3) California Air Resources Board. November 27, 2013. "Hot Spots" State Fees. <https://ww3.arb.ca.gov/ab2588/2588feetable.htm>.
- (4) California Air Pollution Control Officers Association. April 2016. Facility Periodization Guidelines. <http://www.capcoa.org/wp-content/uploads/2016/04/CAPCOA%20Prioritization%20Guidelines%20-%20April%202016%20Draft.pdf>.
- (5) San Joaquin Valley Air Pollution Control District. March 27, 2017. AB 2588 "Hot Spots" Air Toxics Profile. <https://www.valleyair.org/busind/pto/AB-2588-Toxics-Profiles.docx>.
- (6) United States of Environmental Protection Agency. Latest Edition. AP-42: Compilation of Air Emission Factors. <https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors>.
- (7) California Air Resources Board. March 17, 2015. User Manual for the Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool Version 2. <https://www.arb.ca.gov/toxics/harp/docs2/harp2admrtuserguide.pdf>.

Appendix A – Example Toxic Air Contaminant Device Table

CAS #	Substance Name	TAC Emissions (lb/yr)										Total TAC Emissions (lb/yr)
		Permit Number										
		Steam Generators			tion Proce	GDF	Natrual Gas Turbines		Diesel Engines			
		12905	12906	12907	10895	16163	GNR-017296	GNR-017393	GNR-0017098	9022A	9842	
106990	1,3-Butadiene											0.00
83329	Acenaphthene	3.46E-04	3.62E-04	3.68E-04	4.20E-06		2.63E-03	2.82E-03				0.01
208968	Acenaphthylene	2.37E-04	2.48E-04	2.52E-04	4.20E-05		1.00E-03	1.07E-03				0.00
75070	Acetaldehyde	8.96E+00	9.38E+00	9.54E+00	9.10E-02		2.05E+01	2.20E+01				70.53
107028	Acrolein	8.96E+00	9.38E+00	9.54E+00	3.89E-02		2.05E+01	2.20E+01				70.48
7664417	Ammonia											0.00
120127	Anthracene	1.54E-03	1.61E-03	1.64E-03	4.90E-06		8.42E-03	9.04E-03				0.02
7440382	Arsenic											0.00
56553	Benz[a]anthracene	8.32E-04	8.71E-04	8.86E-04	3.50E-06		1.53E-03	1.64E-03				0.01
71432	Benzene	1.02E+00	1.07E+00	1.09E+00	5.95E-03	6.97E-02	1.84E+00	1.98E+00				7.08
50328	Benzo[a]pyrene	2.37E-04	2.48E-04	2.52E-04	1.96E-06		7.90E-04	8.47E-04				0.00
205992	Benzo[b]fluoranthene	2.37E-04	2.48E-04	2.52E-04	1.96E-06		7.90E-04	8.47E-04				0.00
191242	Benzo[g,h,i]perylene	2.37E-04	2.48E-04	2.52E-04	3.05E-06		7.90E-04	8.47E-04				0.00
205823	Benzo[j]fluoranthene				4.20E-05							0.00
207089	Benzo[k]fluoranthene	2.37E-04	2.48E-04	2.52E-04	1.96E-06		7.90E-04	8.47E-04				0.00
7440417	Beryllium											0.00
7440439	Cadmium											0.00
56235	Carbon tetrachloride											0.00
108907	Chlorobenzene											0.00
67663	Chloroform											0.00
7440473	Chromium											0.00
18540299	Chromium, hexavalent (& compounds)											0.00
218019	Chrysene	7.23E-04	7.57E-04	7.70E-04	3.50E-06		1.95E-03	2.09E-03				0.01
53703	Dibenz[a,h]anthracene	2.37E-04	2.48E-04	2.52E-04	1.96E-06		7.90E-04	8.47E-04				0.00
25321226	Dichlorobenzenes (mixed isomers)											0.00
9901	Diesel PM								0.00E+00	0.00E+00	0.00E+00	0.00
100414	Ethyl benzene	7.68E+00	8.04E+00	8.18E+00	3.85E-03	3.72E-01	2.53E+00	2.71E+00				29.52
107062	Ethylene dichloride {EDC}											0.00
206440	Fluoranthene	8.96E-04	9.38E-04	9.54E-04			5.26E-03	5.65E-03				0.01
86737	Fluorene	1.54E-03	1.61E-03	1.64E-03	1.61E-05		1.00E-02	1.07E-02				0.03