

**EASTERN KERN  
AIR POLLUTION CONTROL DISTRICT**



**2021  
ANNUAL AB 2588 AIR TOXICS REPORT**

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## **OVERVIEW OF AIR TOXICS INFORMATION AND ASSESSMENT ACT**

The Air Toxics Information and Assessment Act became law in 1987 when Governor Deukmajian signed Assembly Bill 2588 (AB2588). The purpose of the program is the following: 1) inventory air toxics emissions, 2) determine if these emissions are causing localized ambient concentrations of air toxics high enough to expose individuals or population groups to significant health risk, and 3) inform the public of significant risk.

To accomplish this, an initial inventory of air toxic emissions and assessment of risk was required of all facilities 1) emitting greater than 10 tons/yr of “criteria” pollutants (oxides of nitrogen, volatile organic compounds, oxides of sulfur, and particulate matter) and/or 2) certain “named” categories of facilities emitting less than 10 tons/yr of criteria pollutants, but handling materials which could pose significant risk. (See Page 4 for changes to these requirements.)

During the past 32 years, numerous types of facilities having potential to emit significant levels of air toxics have been identified and their impact on health risk has been quantified. Consequently, the most recent California Air Resources Board (ARB) air toxics guidelines list (August 27, 2007) specific facilities subject to air toxics emissions inventorying and reporting (see Emission Inventory Criteria and Guidelines for the Air Toxics "Hot Spots" Program Report, Appendix C – web site: <http://www.arb.ca.gov/ab2588/2588guid.htm>). These guidelines also place facilities into categories for purposes of update reporting based on calculated risk, and exempt “low priority” facilities from further update reporting. For facilities still subject to the program, these guidelines specify facility information to be reported, toxic substances to be addressed, and test methods to be used for quantifying emissions. The final version of the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments developed by the Office of Environmental Health Hazard Assessment (OEHHA) and ARB was made available to the public in February of 2015. OEHHA had earlier developed three Technical Support Documents (TSDs) which provided the scientific basis for values used in assessing risk from exposure to facility emissions. The three TSDs describe non-cancer risk assessment (derivation of acute, 8-hour and chronic reference exposure levels), derivation of cancer potency factors, and exposure assessment methodology including stochastic risk assessment.

State Guidelines allow local air districts such as Eastern Kern Air Pollution Control District (District) to utilize air toxics analyses conducted as part of its Rule 210.1 New and Modified Source Review (NSR) process, in-lieu of requiring separate quantification of air toxics emissions to satisfy AB2588. Guidelines require the NSR permit contain conditions to ensure calculated toxic risk is not exceeded. Providing integration of the AB2588 with District’s permitting program is a time and cost savings both for the District and affected facilities, while neither public health nor the intent of either program is compromised.

Some of the District’s smallest emitters are subject to the AB2588 program, including auto body shops, dry cleaners, and gasoline retailers. To provide some relief from the burden of reporting, these sources are identified in the Program as “industry-wide” sources. ARB, in cooperation with the California Air Pollution Control Officers Association (CAPCOA), has adopted and continues to develop health risk guidelines, risk reduction plans, and audit plans that Districts may utilize to assess, reduce, and verify toxics emissions from industry-wide sources. The “Auto Body Shop Industry-Wide Risk Assessment Guidelines” was approved

by CAPCOA September 26, 1996, and the “Gasoline Service Station Industry-Wide Risk Assessment Guidelines” was approved in December, 1997 (Appendix E updated in November 2001). The “Perchloroethylene (Perc) Dry Cleaner Industry-Wide Risk Assessment” was never finalized; however, the California Air Resources Board (ARB) approved amendments to the Dry Cleaning Air Toxic Control Measure (ATCM) and adopted requirements for Perc manufacturers and distributors on January 25, 2007. The amendments required phasing out the use of Perc dry cleaning machines and related equipment by January 1, 2023.

## **ASSESSMENT OF HEALTH RISKS**

Potential public health risk of each facility subject to the program is quantified by using dose-response data developed from animal and/or human studies. Dose is calculated using mathematical modeling techniques, and is dependent upon the following data: emission rate of each toxic substance; the toxicity (reference exposure level) of the substance; release point characteristics, including stack height, diameter, gas temperature, and gas velocity; meteorological conditions, including ambient temperature, wind speed, and mixing height; and characteristics of the surrounding terrain. Response is based upon “potency slope factors”, approved by the U.S. Environmental Protection Agency (U.S. EPA) or OEHHA, derived from health impact studies that have undergone public and peer review. Currently, the “Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments” (Guidance Manual), published by OEHHA in 2015, is utilized for preparing health risk assessments. The Guidance Manual is a concise description of algorithms, recommended exposure variables, cancer, and non-cancer health values, and the air modeling protocols needed to perform a health risk assessment. The Guidance Manual updates the previous version (2003), and reflects advances in the field of risk assessment along with explicit consideration of infants and children.

Health risk can be quantified using three different methods: 1) a “prioritization score”, 2) a screening level risk assessment, or 3) refined risk assessment modeling. All three methods make use of mathematical dispersion models approved by ARB as well as U.S. EPA and/or OEHHA approved potency values. Dispersion models are computerized, as several thousand calculations are often necessary to yield significant results. In order to assist the districts in prioritizing facilities, CAPCOA, in cooperation with OEHHA and ARB, developed the Air Toxics “Hot Spots” Program Facility Prioritization Guidelines in July 1990. The guidelines provide suggested procedures in performing risk assessment. In 2015, CAPCOA updated these guidelines to incorporate OEHHA revisions to risk assessment methodology. The final version of CAPCOA Air Toxics “Hot Spots” Facility Prioritization Guidelines was made available to the public in August 2016 (website: <http://www.capcoa.org>).

Determining a facility’s “prioritization score” (PS) is the least complex and most health conservative way of characterizing risk. The procedure incorporates many health conservative assumptions to insure potential risk is not underestimated. The score is calculated using either the Emissions and Potency Procedure (EPP) or the Dispersion Adjustment Procedure (DAP), which are described in the previously mentioned CAPCOA guidelines. The EPP considers only emission rate, pollutant potency, and proximity of receptors, while the DAP also considers dispersion due to release height.

Due to its inherent conservatism, if the prioritization score indicates significant risk, a more detailed risk assessment model is calculated. The next level of assessment is the “screening model”, and includes assumptions to ensure that, regardless of source location or meteorological conditions, assessed risk will not be underestimated. Like the prioritization score model, the “screen model” does not account for multiple release points; however, it does account for dispersion of pollutants using meteorological data and provides for additional detail regarding emission release characteristics. Results of a screening dispersion analysis are used as input for an exposure assessment model to yield carcinogenic (cancerous) and non-carcinogenic health effects.

To best assess air quality impact of a facility on its nearby receptors, a “refined risk assessment model” is used. This model is capable of representing the combined effect of multiple emission points, varying terrain, and multiple receptors at discrete locations. The dispersion model used in refined modeling also utilizes local meteorological data. Refined risk analyses are complex and costly, but produce the most true-to-life assessment of risk. The refined risk assessment also utilizes conservative assumptions; therefore, calculated risk is not underestimated.

### **DISSEMINATION OF TOXIC EMISSIONS AND RISK INFORMATION**

All information collected during this process is disseminated to the public through public meetings where results are presented and discussed. Additionally, the Act specifies all persons located in areas where significant adverse health effects may occur, be individually notified of this risk and permitted an opportunity to discuss estimated risk with the District and the emitting facility. Levels of risk determined by District’s Board of Directors to be significant for purposes of AB2588 public notification are: 1) a cancer risk exceeding 10 in 1 million, or 2) a ratio of the chronic or acute exposure to the recommended exposure level (referred to as a “hazard index”) exceeding 1.0.

These levels of significance have also been chosen by most other California air districts, and are values recommended by CAPCOA. Currently, no facility in the District exceeds cancer risk of 10 in 1 million or a hazard index of 1.0.

As with all emissions information accumulated by the District, Eastern Kern’s air toxic emission inventory is public information and available for public review. The procedure of adoption and modification of the guidelines and fee regulations is a public process and includes noticing, workshops, periods for public comment, and eventual adoption at a public District board meeting. Before District procedures were adopted by the Board in January 1994, the draft was subject to a public process. All affected facilities were notified in writing, and the public was notified (an announcement was published in the District newsletter and “The Bakersfield Californian”) of a workshop in Mojave. Public comments were received for 30 days following the workshop, and the revised document was mailed to all parties attending the workshop. The District adoption hearing was “noticed” in the District newsletter and “The Bakersfield Californian” and public comments were received at the District Board adoption hearing. These Public Notification Procedures provide a mechanism to establish a level of significance for cancerous and non-cancerous health risk and identify the procedure by which individuals exposed to significant risk will be notified of this risk by both the District and the facility. Notified individuals are offered the opportunity to attend a public meeting at which results are further discussed.

This annual report ranks and identifies facilities according to cancer and non-cancer risk posed, and describes toxic control measures. After presentation at a public hearing, it is distributed to the Kern County Board of Supervisors, city councils in the District, the County Health Officer, and ARB.

In the fall of 1998, ARB increased availability of toxics inventory data to the public by posting this data on its web site ([www.arb.ca.gov/ab2588/ab2588.htm](http://www.arb.ca.gov/ab2588/ab2588.htm)), ARB regularly updates this information. The District regularly reviews facility data and revises the inventory to reflect changes made at facilities within the District. This Annual Report includes updates to toxic information and data revisions from the following facilities: Innovative Coating Technology (INCOTEC) Corp., NASA Armstrong Flight Research Center, Scaled Composites, and Stratolaunch LLC.

### **EVOLUTION OF AIR TOXICS PROGRAM**

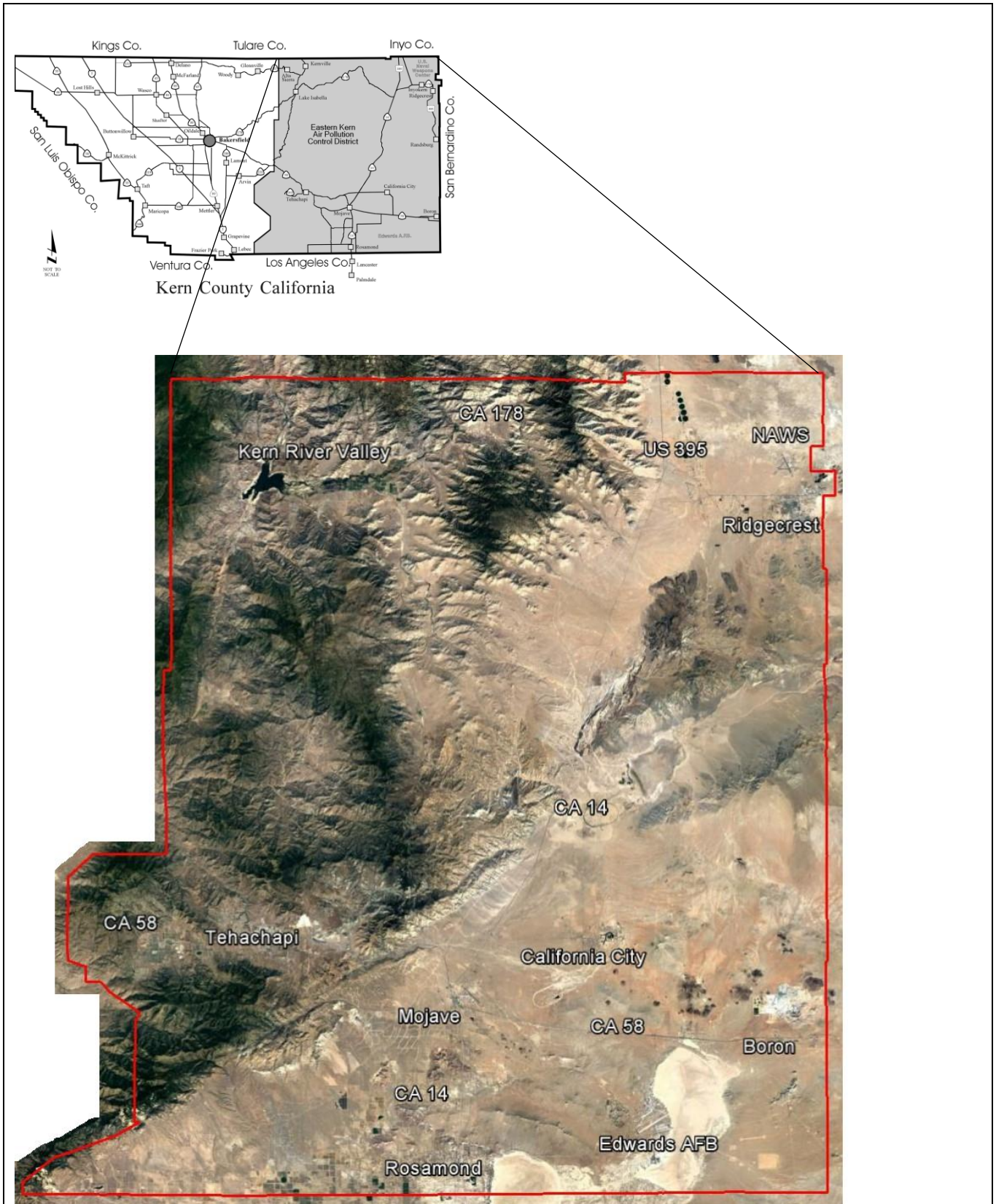
The Air Toxics Program has been implemented for approximately three decades (first reports were submitted in 1990), and much information has been gathered about toxic emission sources and health impacts of air pollutants. The program has been modified over time as better information has become available. In May 1996, the "ARB Emission Inventory Criteria and Guidelines" were modified; in September 1996, Assembly Bill 564 became law exempting additional low risk facilities from the program. Revised guidelines and mandates of AB564 now base air toxic reporting requirements on the calculated health risk associated with a facility's toxic emissions rather than total annual emissions of "criteria" pollutants (oxides of nitrogen, oxides of sulfur, particulate matter, carbon monoxide, and volatile organic compounds). Therefore, after initial submittal of a toxic emission inventory plan and report, only those facilities determined to pose intermediate or high level health risk are required to submit a quadrennial update report. This update report, if required, must quantify the following: 1) emissions from units which have an emission increase of greater than 10%; 2) emissions from units emitting a newly listed air toxic air contaminant; 3) emissions of a pollutant for which the unit risk value has been revised; or 4) emissions from new and modified emission units which may result in the facility changing reporting categories due to increased health risk.

Per the revised guidelines, facilities determined to be low level risk are exempt from future reporting requirements and fees, provided: 1) the nearest receptor is no closer, 2) there are no changes to risk calculation procedures, and 3) there are no changes to health effect values which would result in the facility being reclassified as intermediate or high level risk.

Lastly, if a new or modified facility has been subject to New and Modified Source Review (District Rule 210.1), and as part of the permitting process, the District determined the health risk presented by all potential TAC emissions, that risk assessment may be used in lieu of an air toxic plan and report.

# CURRENT STATUS OF EASTERN KERN TOXIC EMISSION SOURCES

Eastern Kern Air Pollution Control District has jurisdiction of the geographic area shown below.



The District’s jurisdiction encompasses 3,704 square miles and has a population of approximately 174,000. The area includes two military bases (Edwards Air Force Base and Naval Air Weapons Station at China Lake), and the cities and communities of Lake Isabella, Tehachapi, Mojave, Rosamond, California City, Ridgecrest, and Boron in the high desert region of Kern County. Overall, the District’s sparsely populated area provides significant dispersion potential for most sources within the District’s jurisdiction.

The District has assessed potential health risk from facilities through implementation of the August 2007 revision to ARB’s “Emission Inventory Criteria and Guidelines (EICG)” Each air toxics emission source within the District was placed into one of four categories, based upon potential health risk created by the facility.

**Category No. 1 (High Level Risk)**

The following facility has an approved health risk assessment showing an increase non-cancer risk with an acute hazard index exceeding 1.0.

**Table 1**

Facility Name	Health Risk Assessment			Prioritization Score	
	Cancer	Non-Cancer		Cancer	Non-Cancer
		Chronic	Acute		
Innovative Coatings Technology (INCOTEC)	2.7 in 1 million	0.02	1.69	19.50	3.66

**Category No. 2 (Intermediate Level Risk)**

The following facilities have either: 1) an approved health risk assessment showing increased cancer risk is less than 10 in 1 million and a total hazard index (THI) less than 1.0, or 2) a prioritization score less than 10.0, but more than 1.0 for both cancer and non-cancer effects (health risk assessment not required).

**Table 2**

Facility Name	Health Risk Assessment			Prioritization Score	
	Cancer	Non-Cancer		Cancer	Non-Cancer
		Chronic	Acute		
California Correctional Institution (Tehachapi)	Not Required	Not Required		4.52	0.01
California Portland Cement Co.	Not Required	Not Required		4.62	0.81
Edwards Air Force Base	Not Required	Not Required		2.23	3.04
Golden Queen Mining Co.	Not Required	Not Required		3.23	1.12
Lehigh Cement West, Inc.	8.9 in 1 million	0.35	0.27	56.69	0.92
NASA Armstrong Flight Research Center	Not Required	Not Required		7.18	0.01
National Cement Company	0.73 in 1 million	0.03	0.07	HRA Completed In-Lieu of Prioritization Score	
Naval Air Weapons Station	Not Required	Not Required		3.33	2.40



**Table 2 (cont)**

Facility Name	Health Risk Assessment		Prioritization Score		
	Cancer	Non-Cancer		Cancer	Non-Cancer
		Chronic	Acute		
PRC-DeSoto International	Not Required	Not Required		7.01	0.92
Scaled Composites	Not Required	Not Required		1.61	8.92
Tehachapi Cummings County Water District (TCCWD) - Pump Plant #3	Not Required	Not Required		5.09	1.52
U.S. Borax, Incorporated	9.64 in 1 million	0.38		HRA Completed In-Lieu of Prioritization Score	

Additionally, facilities that would be low priority but emit 5 or more tons per year of any one hazardous air pollutant (HAP) or 12.5 tons of total HAP are considered intermediate facilities.

### **Category No. 3 (Low Level Risk)**

The following facilities have either: 1) a prioritization score equal to or less than 1.0 for both carcinogenic and non-carcinogenic pollutants, 2) an approved health risk assessment showing less than 1 in 1 million increased cancer risk and total hazard index less than 0.1 for each toxicological endpoint, 3) a Rule 210.1 health risk analysis showing cancer risk less than 1 in 1 million and total hazard index less than 0.1, or 4) a “de minimis” classification as defined in ARB’s Guidelines.

**Table 3**

Facility Name	Health Risk Assessment		Prioritization Score	
	Cancer	Non-Cancer	Cancer	Non-Cancer
Commodity Resource & Environmental	HRA Not Required		0.08	0.02
Indian Wells Valley Cremation	HRA Not Required		Exempt as “de minimis”	
Kemira Water Solutions	0.11 in 1 million	0.07	23.02	1.22
Kern County Waste Management (Lake Isabella Landfill)	HRA Not Required		0.47	0.02
Kern County Waste Management (Ridgecrest Landfill)	HRA Not Required		0.38	0.02
Kern County Waste Management (Tehachapi Landfill)	HRA Not Required		0.00	0.20
Ridgecrest Regional Hospital	HRA Not Required		Exempt as “de minimis”	
Stratolaunch, LLC	Not Required		0.08	0.04
TCCWD - Pump Plant #2	HRA Not Required		0.90	0.28
TCCWD - Pump Plant #4	HRA Not Required		0.97	0.70
Trical, Inc.	HRA Not Required		0.09	0.89
Wastewater Treatment Plants (All)	HRA Not Required		Exempt as “de minimis”	

De minimis: The probability of the facility to present a health risk the public is very small; therefore, calculating a prioritization score for the facility is not effective use of District resources

**Category No. 4 (New Facilities and Facilities with Increased Emissions)**

During 2021 calendar year, District staff evaluated over 175 applications for projects subject to Rule 210.1 (NSR); the majority of these projects had no significant impact on facility toxic air contaminant (TAC) emissions. Some of the most frequent projects with potentially significant toxic emissions are facilities proposing to install diesel piston engines. Although diesel engines are generally considered an insignificant criteria pollutant emissions source, it was determined by ARB that diesel exhaust presents a significant carcinogenic and non-carcinogenic health risk due to diesel particulate matter (DPM) emissions. All permitted diesel engines have a carcinogenic risk of less than 10 in 1 million and a non-carcinogenic hazard index of less than 1.0. Natural gas and liquefied petroleum gas (LPG) fired engines emit significantly less TAC and also yielded carcinogenic risk of less than 10 in 1 million and a non-carcinogenic hazard index of less than 1.0. A summary of the number of internal combustion engines permitted during calendar year 2021 is listed in Table 3; these do not include agricultural engine registrations.

**Table 4**

<b>Rating Range (Brake horsepower)</b>	<b>Number of units</b>
50 – 99	11
100 - 299	22
300 - 599	20
600 - 699	9
700 - 799	1
800 - 899	0
900 - 999	1
1000 - 4999	2
5000 - 9999	0
10000 or greater	0
<b>Total</b>	<b>66</b>

In addition to piston engines, the following new and modified facilities that emit toxic air contaminants were permitted during 2021:

**Surface Coating Operations:**

Four new surface coating operations were permitted in the District during 2021. Stratolaunch, LLC installed three (3) new aircraft surface coating spray booths located at Mojave Air & Space Port. The proposed coatings used by Stratolaunch contain TACs; therefore, a prioritization score was obtained for each spray coating operation. Prioritization scores showed “low priority” for carcinogenic scores and low priority for non-carcinogenic scores. Therefore, the proposed coating operations were not anticipated to pose a significant health risk to the community at large.

NASA Armstrong Flight Research Center also permitted one new bench-type surface coating spray booth in 2021. The proposed operation would strictly utilize non-refillable aerosol containers. The proposed coatings contain TACs; therefore, a prioritization score was obtained for each spray coating operation. Prioritization scores showed “low priority” for carcinogenic scores and low priority for non-carcinogenic scores. Therefore, the proposed coating operations were not anticipated to pose a significant health risk to the community at large.

## Rocket Engine Testing Operations

ABL Space Systems applied for three new rocket engine test stand Authority to Construct (ATCs) in 2021. TAC emissions are expected to result from RP-1 and Jet-A fuel combustion. RP-1 and Jet-A fuel are refined forms of kerosene. A health risk assessment performed as part of the ATC permit evaluation for ABL's rocket testing operations determined SO<sub>3</sub> emissions would not present a significant health risk to offsite receptors. Emissions proposed from additional test stands do not exceed emissions used in risk assessment; therefore, the additional test stands are not expected to present a significant health risk to offsite receptors. The facility shares a common fuel combustion limit per year across all their test structures.

Stratolaunch, LLC also applied for new rocket engine test stand Authority to Construct (ATCs) in 2021. TAC emissions are expected to result from RP-1 fuel combustion. RP-1 is a refined form of kerosene. Prioritization scores showed "low priority" for carcinogenic and non-carcinogenic scores. Therefore, emissions from the proposed rocket engine testing operation are not anticipated to pose a significant health risk to the community at large.

## Crematory:

Wood Family Funeral Service, Inc. applied for a new crematory retort. The Health Risk Assessment (HRA) conducted showed cancer risk of 6.63 in a million to the nearest receptor. The HRA also showed a maximum hazard index of 0.38 for acute and 0.14 for chronic. Therefore, based on Health Risk Assessment (HRA), no nearby receptors will be exposed to a cancer risk greater than the District public notification levels of 10 in one million. Similarly, calculated health hazard indexes are below District public notification levels of 1. However, the facility has the potential to become an intermediate health risk facility. A facility wide HRA shall be conducted in the future to evaluate potential health risk to nearby receptors based on actual operation data.

## Other Miscellaneous Operations:

Other projects with an increase in TAC emissions include aggregate crushing/screening operations, concrete batching operations, and a rock drilling operations. These projects were deemed low priority, and therefore do not pose significant health risk to the surrounding communities at large.

## **Core Facility Updates**

Core facilities subject to quadrennial updates and updated this year include the following:

### Innovative Coatings Technology (INCOTEC)

INCOTEC is located in Mojave and specializes in providing metal treatments for critical components including fasteners used in the aerospace industry. The nearest worker receptor is located approximately 150-m from the plant and the nearest residential receptor is located at least 700-m from the facility. TAC emissions from the facility were determined based on calendar year 2020 activities. Prioritization score provided by facility was based on emissions from the following sources:

- Paint spray booths
- Dip coating operations
- Vapor spray degreasers
- Distillation units
- Solvent usage

INCOTEC submitted their Toxics Emission Inventory Report (TEIR) in 2021. However, prioritization and subsequent health risk assessment (HRA) results were not completed at the time of publication for the 2020 report. Prioritization results were generated using the Hotspots Analysis and Reporting tool (HARP2). Hence, facility re-prioritization results are summarized in this report. The primary drivers of carcinogenic risk (>79% of prioritization score) are hexavalent chromium and formaldehyde emissions from four paint spray booths. Noncancer risk is driven (>43% of prioritization score) by emissions from four paint spray booths including emissions of isopropyl Alcohol, MEK, toluene, and formaldehyde. Overall, prioritization scores revealed high priority (elevated cancer health risk greater than 10 in a million). Therefore, a health risk assessment (HRA) was required.

INCOTEC submitted an HRA using calculated emissions along with meteorological, terrain, and stack release data, the carcinogenic and non-carcinogenic risk was quantified for nearby residential and worksite receptors, and the locations of maximum impact for risk were identified. The proposed HRA was then submitted to the Office of Environmental Health Hazard assessment (OEHHA) for review. OEHHA found a number of differences between the input/output files stated in the HRA report and what was actually selected in HARP files sent with the report. OEHHA staff also found some inconsistent cancer/noncancer values between what was reported in the Executive Summary, and what was reported in Tables in the HRA Appendices. The result was different cancer risk and noncancer hazard values between what was stated in the HRA report and what was found in the HARP files. OEHHA staff were able to reconstruct the HARP runs and used the inputs that the HRA report claimed were selected (but were not), and present what are likely the true cancer and noncancer values.

At the points of maximum impact, the carcinogenic risk was estimated at 137 in one million, and the noncancer (acute + chronic) hazard index were estimated at 5.9 and 0.205 respectively. Values for the maximum exposed individual worker (MEIW) and maximum exposed individual resident (MEIR) are summarized below:

**Table 5**

	<b>Cancer Risk (in one million)</b>	<b>Noncancer risk</b>	
		Acute	Chronic
MEIR	0.49	0.08	0.00
MEIW	2.68	1.69	0.02

A total of 66 different TACs were analyzed to determine the health risks from the facility. Based on HRA numerical results above, acute non-cancer risks estimation for nearest off-site workers exceed the Notification Levels (acute risk greater than 1.0) established by AB2588 regulation. Therefore, in accordance with the Air Toxics “Hot Spots” Information and Assessment ACT the operator of a facility must provide notice to all exposed persons if, in the judgment of the local air district, the facility's AB 2588 HRA indicates there is a “significant health risk” associated with air toxic emissions from the facility. Two different buildings are

located within the high risk notification radius. Hence notification letters for these two exposed facilities were mailed out in accordance with AB2588 regulation. One facility is composed of a multi-office building, therefore 16 different notices were distributed for each independent office suite (total of 17 notices mailed out). Additionally, acute non-carcinogenic risk were deemed to be high risk (acute health hazard index greater than 1) based on HRA conducted. Therefore, INCOTEC was classified as a “high level facility” and subject to quadrennial updates to health risk prioritization.

### NASA Armstrong Flight Research Center

The NASA Armstrong Flight Research Center (AFRC) operates a space, research, and technology facility, located in Edwards, CA. This facility generates emissions from multiple sources through various processes. These processes include but are not limited to: Aircraft Ground Support Equipment, Emergency and Supplementary Power Equipment, Aircraft Part Fabrication, Fuel Storage and Dispensing Operations, and Permit Exempt Boilers.

The nearest receptor (worker) is located more than 2,800-m from the facility and the nearest residential receptor is located more than 3,300-m from the facility. TAC emissions from the facility were determined based on calendar year 2021 activities.

Prioritization score was based on emissions from the following sources at the facility:

- Aircraft Ground Support Equipment
- Emergency and Supplementary Power Equipment
- Aircraft Parts Fabrication
- Fuel storage and Dispensing
- Natural Gas Fueled Boilers

Based on toxic emissions submitted, prioritization results were generated using the Hotspots Analysis and Reporting tool (HARP2) Emissions Inventory Module. The primary drivers of carcinogenic risk (>92% of prioritization score) are diesel particulate matter from diesel engines. Similarly, noncancer chronic risk is driven (>90% of prioritization score) by diesel particulate matter from diesel engines. Acute risk is driven primarily by acrolein and formaldehyde from Jet A fuel combustion. Overall, both carcinogenic and non-carcinogenic risk were deemed to be intermediate priority (prioritization score less than 10) based on prioritization score. Therefore, NASA Armstrong Flight Research Center was classified as an “intermediate facility” and subject to quadrennial updates to health risk prioritization.

### Scaled Composites

Scaled Composites operates an aerospace prototyping company involved the design, manufacturing, and flight test of aircraft at the Mojave Air and Space Port. Prioritization score was based on emissions from the following sources at the facility:

- Carbon and Fiberglass Shaping
- Foam Shaping
- Surface Coating
- Aircraft Ground Support Equipment and Backup Generators

The nearest worker receptor is located 100-m from the manufacturing facility and the nearest residential receptor is located at least 275-m from the facility. TAC emissions from the facility were determined based on calendar year 2021 activities.

Scaled Composites submitted prioritization results using the Hotspots Analysis and Reporting tool (HARP2) Emissions Inventory Module. The primary drivers of carcinogenic risk (>59% of prioritization score) are diesel particulate matter from diesel engines. Additionally, approximately 38% of carcinogenic risk is driven by strontium chromate emission found in coating formulations. Similarly, noncancer chronic risk is driven (>90% of prioritization score) by diesel particulate matter from diesel engines. The noncancer (acute) risk is driven primarily by nickel emissions (>94% of prioritization score) found in coating formulations utilized at the facility. Overall, both carcinogenic and non-carcinogenic risk were deemed to be intermediate priority (prioritization score less than 10) based on prioritization score. Therefore, Scaled Composites was classified as an “intermediate facility” and subject to quadrennial updates to health risk prioritization.

### Stratolaunch, LLC

Stratolaunch operates an aerospace prototyping company involved the design, manufacturing, and flight test of aircraft at the Mojave Air and Space Port. Prioritization score was based on emissions from the following sources at the facility:

- Composite part manufacturing
- Thermal protection material manufacturing
- Insulation material processing
- Vehicle assembly
- Surface Coating
- Aircraft Ground Support Equipment and Backup Generators

The nearest worker receptor is located 450-m from the manufacturing facility and the nearest residential receptor is located at least 1,500-m from the facility. TAC emissions from the facility were determined based on calendar year 2021 activities.

Stratolaunch submitted prioritization results using the Hotspots Analysis and Reporting tool (HARP2) Emissions Inventory Module. The primary drivers of carcinogenic risk (>98% of prioritization score) are diesel particulate matter from diesel engines. The noncancer chronic risk is driven (>98% of prioritization score) by methanol and acrolein emission from natural gas combustion. Noncancer (acute) risk is expected to be negligible due to toxic emissions and receptor proximity. Overall, both carcinogenic and non-carcinogenic risk were deemed to be low priority (prioritization score less than 1) based on prioritization score. Therefore, Stratolaunch was classified as a “low risk facility” and subject to quadrennial updates to health risk prioritization.

### **Industry-Wide Sources**

The three industry-wide source categories determined by ARB are: auto body shops, gasoline dispensing facilities (GDF), and dry cleaning facilities. ARB has developed individual industry-wide risk assessment procedures for those three facilities.

Auto body Shops: No new auto body shops were permitted in 2020, and there were no modifications to existing auto body shops. Based on last “Auto Body Shop Industry-Wide Risk Assessment Guidelines”, all auto body facilities located in the District have been found to be “low priority” for health risk.

GDF: In December 2013, ARB updated the emission factors for gasoline dispensing facilities (GDF). The updated GDF emissions factors lowered calculated emissions for all GDFs; however, high priority facilities remain unchanged based on last prioritization. In 2021, the District processed 5 applications to modify existing GDFs. Based on the maximum allowable throughputs and receptor proximity for each GDF, all modified facilities received low prioritization scores.

Dry cleaning facilities: Toxic health risk is primarily associated with facilities using perchloroethylene (Perc) as cleaning fluid. A Phase out of perchloroethylene (Perc) dry cleaning machines by District permitted facilities was recently completed. All dry cleaning facilities in operation within the District have phased out Perc. All four dry cleaning facilities located in the District now use hydrocarbon cleaning fluid only. Hydrocarbon based cleaning fluid has little or no toxicity associated with its use. Therefore, cleaning facilities in the District no longer present a significant health risk to the surrounding community at large.

## **RISK REDUCTION REQUIREMENTS**

Senate Bill 1731, health risk reduction requirements, was signed into law in 1992 as an adjunct to the Air Toxics "Hot Spots" inventory and assessment requirements. This law requires facilities that pose a significant risk to prepare Risk Reduction and Audit Plans. Risk Reduction and Audit Plans are usually prepared on a facility-by-facility basis; however, ARB has developed ATCM for certain industry types. State law provides these ATCM to be enforced by each local district. Categories identified for ATCM include, for example, diesel piston engines, dry cleaners, medical waste incinerators, nonferrous metal melting, cooling towers using hexavalent chromium, and ethylene oxide sterilizers. Affected sources within the District are now complying with these ATCM. Internet links to ARB’s ATCM regulations can be found at <http://www.arb.ca.gov/toxics/atcm/atcm.htm>.

To date, no sources in the District have been required to prepare Risk Reduction and Audit Plans as no facility to date has exceeded Board-adopted significance levels requiring public notification and preparation of Risk Reduction and Audit Plans. (See Pages 3-4 for discussion of risk notification guidelines.)

Exposure to diesel exhaust emissions continue to be a primary public health concern in California. District requirements to utilize tiered engines, ARB approved diesel fuel, and assisting businesses to replace older diesel engines with newer, less polluting engines through the Carl Moyer Grant Program will reduce the exposure of eastern Kern County residents to diesel exhaust.

## **MINIMIZING AIR TOXIC EMISSIONS FROM NEW AND MODIFIED FACILITIES**

In 1974, the District’s Board of Supervisors adopted Rule 210.1 (New and Modified New Source Review), last revised in May of 2000. Implementation of this rule has been instrumental in minimizing toxic emissions from new and modified facilities, because Rule

210.1 requires all new and modified facilities to utilize Best Available Control Technology (BACT). BACT is applied to criteria pollutant emissions, including oxides of nitrogen (NO<sub>x</sub>), volatile organic compounds (VOC) and PM. By early 1982, six years before passage of AB2588, the District was actively involved in assessing expected health risk associated with new and modified facilities pursuant to Rule 419 and Section 41700 of the California Health & Safety Code. Since June of 1993, the District has utilized Cal EPA "Guidelines for New and Modified Sources of Toxic Pollutants" to determine if a project is approvable in terms of health risk. This analysis meets criteria specified in the 1997 revision to Cal EPA's "Emission Inventory Criteria and Guidelines for the Air Toxics Hot Spots Program" which allow a district to conduct an alternate evaluation for new and modified sources subject to District permits (i.e., a non-AB2588 process evaluation). Where applicable, the District gives applicants of new projects the choice of complying with the Air Toxics Program either through the permitting process or through submission of an inventory plan and report.

### **FUTURE OF THE AIR TOXICS PROGRAM**

Minimizing TAC emissions continue to be an important part of the District's mission. In August 2016, the Toxics and Risk Managers Committee (TARMAC) of CAPCOA revised Air Toxic "Hot Spots" Program Facility Prioritization Guidelines. These guidelines were revised in response to revisions to the State's underlying health risk assessment procedure guidelines. The Committee consulted with ARB and OEHHA staff in updating these guidelines.

The revised guidelines are intended to provide air pollution control and air quality management districts with suggested procedures in prioritizing facilities into high, intermediate, and low priority categories as required by the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Air Toxics "Hot Spots" Act) in accordance with Health and Safety Code §44344.4(c). This law established a statewide program for inventory of air toxics emissions from individual facilities as well as requirements for risk assessment and public notification.

According to CAPCOA progress reports, TAC emissions have decreased by 80% over the past 30 years. The District plans to continue to assist in this effort by implementing applicable guidelines and regulations set by state and federal agencies.

CARB is recently finish revising the Emission Inventory Criteria and Guidelines (EICG) for the air toxics inventory in response to the updated OEHHA guidance and the passing of the Criteria Pollutant and Toxics Emissions Reporting (CTR) regulation in 2022. On November 19, 2020, CARB adopted amendments to the (EICG) to harmonize with the (CTR). CARB Staff incorporated revisions to the EICG through a public "15-day" revisions process, including a workshop on February 11, 2021 (see below). The final 2022 EICG rulemaking package was approved by the Office of Administrative Law and filed with the Secretary of State on March 21, 2022. When the amendments to the EICG become effective, they will: (1) provide additional consideration factors for exempting facilities and reinstating previously-exempt facilities; (2) require reporting of 900+ new substances and three broad functional groups of chemicals found in the emissions from facilities; update risk screening modeling approaches; and (3) align with the reporting requirements in the CTR. These amendments, especially the addition of many new substances in emissions, will also require additional work and tracking effort for both businesses and the District. Like the CTR, the District is currently assessing how to implement the EICG updates.



## SUMMARY

The District's goal and the purpose of air toxics control measures is to reduce health risks to levels deemed acceptable when weighed against the benefit to the public of the activity producing the risk. When weighing risk versus benefit, overall health risk posed by a facility must be considered rather than the fact an individual process may use or emit a substance that has very high unit risk value such as dioxins or hexavalent chromium. In other words, even though a facility may emit a highly toxic substance, if the emission rate is low and dispersion is good, the public health risk can be considered low (i.e. acceptable).

Dispersion is a function of air flow (wind patterns) and distance to a receptor (person). Any facility with potential to emit toxic substances in significant quantities is required to provide highly effective methods of controlling these emissions as well as provide a method of continuously monitoring and ensuring compliance with required air pollution control measures. A facility with potential to emit toxic substances in very small quantities presents no greater health risk (and often much less) to nearby residents than what residents expose themselves to by engaging in day-to-day activities. For example, the health risk presented from living adjacent to a freeway, walking across the street, riding in a car, flying in an airplane, practicing poor eating and/or drinking habits, or by smoking exceed health risk posed by Eastern Kern industrial facilities.

No facility in Eastern Kern County currently poses an increase in cancer risk of more than 10 in 1 million, based on an assessment of 30 years of exposure to carcinogenic emissions. This value can be put into perspective by considering risk posed by some other active and passive events in our lives. Using information from the National Center for Health Statistics, it was determined: the risk of death by falls is 112 per 1 million, the risk of death by firearms discharge is 122 per 1 million, and the rate of death from motor vehicle accidents is 124 per 1 million.

Generally, development of the unit risk value for a toxic pollutant consists of identifying carcinogenic, chronic, or acute effects on the most sensitive animal species tested and then using this as the expected impact on humans. Consequently, unit risk values are very health-conservative, and, as a result, health risk assessment procedures required to be followed for the District's Air Toxics Program result in a health conservative assessment of risk.

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