

BOARD MEETING DATE: July 7, 2017

AGENDA NO. 40

REPORT: 2016 Annual Report on AB 2588 Air Toxics Hot Spots Program

SYNOPSIS: The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) requires local air pollution control districts to prepare an annual report that provides the public with information regarding SCAQMD's programs to reduce emissions of toxic air contaminants (TACs). This annual update describes the various activities taken in 2016 to satisfy the requirements of AB 2588 and Rule 1402, such as quadrennial emissions reporting and prioritization, and the preparation and review of Health Risk Assessments, Voluntary Risk Reduction Plans and Risk Reduction Plans. This report also provides a summary of additional SCAQMD activities related to TACs, such as toxics rulemaking, toxics emissions inventory development and auditing, monitoring, and permitting.

COMMITTEE: Stationary Source, June 16, 2017, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Natri
Executive Officer

PF:SN:JW:VM

Introduction

As required under the California Health and Safety Code Section 44363, the SCAQMD staff has prepared the 2016 Annual Report on the AB 2588 Air Toxics "Hot Spots" Program. This annual report that summarizes SCAQMD's air toxics program activities in 2016, including Air Toxics "Hot Spots" Information and Assessment Act (or AB 2588) activities, rule development activities, and other air toxic related programs, such as analysis and review of the final version of U.S. EPA's National Air Toxics Assessment for 2014, air toxic source testing and air toxic monitoring efforts. The annual report will be available on SCAQMD's website and distributed to county boards of supervisors, city councils, and local health officers.

Background

The AB 2588 Program, combined with implementation of Rule 1402, includes requirements for toxic emissions inventories, categorizing and prioritizing facilities, and reviewing and approving detailed Air Toxic Inventory Reports (ATIRs), Health Risk Assessments (HRAs), public notifications, and Risk Reduction Plans. Rule 1402 was amended on October 7, 2016 and incorporated two new provisions for: 1) Voluntary Risk Reduction Program (VRRP) and 2) Potentially High Risk Facilities. The Voluntary Risk Reduction Program is an alternative compliance path that allows a facility to use a Modified Public Notification approach provided the facility reduces their health risk to below 10 in a million, which is 60 percent below the action risk level (25 in a million) approximately 16 months earlier than the traditional path. Rule 1402 also added requirements for Potentially High Risk Level facilities that require submittal of an Early Action Risk Reduction Plan, air toxics inventory report, and the concurrent submittal of a Health Risk Assessment and Risk Reduction Plan for those facilities with health risks over 100 in-a-million.

There are two broad classes of facilities within the AB 2588 Program: Core facilities, and facilities in an Industry-wide source category. Industry-wide source category facilities are generally small businesses with relatively similar emission profiles (such as gas stations and dry cleaners using perchloroethylene). Under the AB 2588 Program, Core facilities are required to report their toxic emissions to SCAQMD quadrennially through the web-based Annual Emissions Reporting Program. Currently a total of 340 facilities quadrennially report their toxic emissions; 138 facilities submitted their toxic inventory reports in 2016. Historically, a total of 1,640 facilities have been in SCAQMD's Core AB 2588 Program, but currently there are 340.

From the beginning of the program in 1987 through the end of 2016, staff has reviewed and approved 341 HRAs from 309 facilities. Of these facilities, 55 facilities were required to perform public notification and 26 facilities were required to implement risk reduction measures.

2016 Accomplishments

The attached report summarizes SCAQMD staff activities in 2016 for the AB 2588 Program, implementation of Rules 1401 and 1402, development of Industry-wide source category Health Risk Assessments, air toxic monitoring and source testing projects done in conjunction with AB 2588 and Rule 1402, dispersion modeling support for Rules 1401 and 1420.2, source-specific air toxic rule development efforts, analysis of toxic program impacts from the addition of new or revised air toxics, and upcoming activities.

Summary of Activities for Specific AB 2588 Facilities

In 2016, staff reviewed a variety of work products submitted by 25 different facilities as a requirement of AB 2588 or Rule 1402. Key activities conducted including reviewing and approving Air Toxics Inventory Reports, Health Risk Assessments, and Risk Reduction Plans. Staff also conducted two additional public meetings for an approved Health Risk Assessment and implementation status of a Risk Reduction Plan. In addition, staff notified eight facilities to prepare either an Air Toxics Inventory Report or a Voluntary Risk Reduction Plan and five eligible facilities notified chose the Voluntary Risk Reduction Plan path. Table 1 lists the facilities that had either an Air Toxics Inventory Report, Health Risk Assessment, or Risk Reduction Plan reviewed by staff in 2016. The attached Annual Report provides detailed information regarding AB 2588 activities at each facility.

Table 1 - AB 2588 Facilities - 2016

Facility Name	ID #	Facility Name	ID #
Aerocraft Heat Treating	23752	Owens Corning Roofing and Asphalt *	35302
All American Asphalt	132954	Quemetco	8547
Anaplex Corporation	16951	Chevron El Segundo Refinery *	800030
Bowman Plating Company	18989	Fontana Paper Mills *	11716
Carlton Forge Works	22911	GS Roofing Products *	57094
Hixson Metal Finishing	11818	City of Los Angeles, Hyperion Treatment Plant *	800214
Kaiser Aluminum	16338	Tesoro Refining *	174655, 800436, 174694, 176607, 176370
Gerdau	18931	Tesoro Sulfur Recovery Plant *	151798
Griswold Industries *	800318		

Note: * indicates facilities notified to prepare either an ATIR or a VRRP.

Staff continues to work on incorporating analyses of on-site ambient air quality monitoring data into Health Risk Assessments for several different facilities. Ambient air monitoring data from these sites has provided a new source of information on fugitive toxic emissions that were previously unknown, uncertain, and unquantified.

Air Monitoring and Source Testing Activities to Support the AB 2588 Program

SCAQMD staff also engages in air toxics monitoring and air toxics source testing at and near many facilities. In October 2016, SCAQMD initiated an expanded monitoring effort of hexavalent chromium in the city of Paramount and found high levels of this metal near two facilities: Aerocraft Heat Treating and Anaplex Corporation. Based on the monitoring results, both of these facilities were identified as Potentially High Risk Level Facilities under Rule 1402. In 2016, SCAQMD staff also conducted source testing and monitoring efforts at a variety of facilities in the metal industry including Carlton Forge Works, Gerdau, Quemetco, Hixson, Aerocraft, and Anaplex.

Rules 1401 and 1420.2 Dispersion Modeling Review

In 2016, SCAQMD staff processed approximately 2,200 Rule 1401 applications for 1,400 facilities. Under Rule 1401, SCAQMD staff reviews air dispersion modeling submitted for new and modified permit applications to ensure that the health risk thresholds are not exceeded. Staff also provides air quality and Health Risk Assessment analyses for Hearing Board cases. In 2016, SCAQMD staff reviewed and approved 17 HRAs for permit projects.

Under Rule 1420.2, which sets thresholds for lead from metal melting facilities, air dispersion modeling is used to demonstrate compliance with the ambient air lead concentration limits by determining the maximum ground level lead concentrations caused by facility emissions and find the appropriate location for placement of the ambient air monitors. In 2016, staff reviewed 12 modeling projects under this rule; of these projects, four continued through 2017 with one currently in progress.

Industry-wide Source Categories

The California Air Pollution Control Officers Association (CAPCOA) Toxics Committee has been developing statewide emission inventory and risk assessment guidelines for several of these Industry-wide source categories. The guidelines provide a cost effective and uniform method for calculating facility emissions and estimating toxic risks for these facilities. To date, risk assessments are available for retail gas stations and dry cleaners using perchloroethylene. Detailed maps of estimated cancer risks from these facilities can be found on SCAQMD's website.¹

Updates to Facility Prioritization Procedures and AB 2588 & Rule 1402 Supplemental Guidelines

In August 2016, CAPCOA updated its AB 2588 Prioritization Procedures to incorporate the 2015 OEHHA Risk Assessment Guidelines revisions. During 2016, SCAQMD staff worked on developing an additional update to the Facility Prioritization Procedures to add more refined screening that more accurately identifies high-priority facilities and improves staff's ability to focus more on those high-priority facilities. Staff also updated the AB 2588 and Rule 1402 Supplemental Guidelines regarding the information that must be included in an Air Toxics Inventory Report, and Health Risk Assessment. On November 4, 2016, the Board adopted the revisions to the Facility Prioritization Procedures and the AB 2588 and Rule 1402 Supplemental Guidelines.

¹ <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/iws-facilities>

National Air Toxics Assessment

Every three years, beginning in 1996, the U.S. EPA prepares a National Air Toxics Assessment.² SCAQMD staff coordinates with U.S. EPA staff to ensure that NATA incorporates the best available local emissions data. In December 2016, SCAQMD staff initiated review of emissions data from stationary sources determined by U.S. EPA to be high risk within the SCAQMD's jurisdiction. This effort is ongoing and updated information will be provided in the 2017 Annual Report.

Rules Adopted or Amended in 2016

During 2016, three toxics rules were adopted or amended: 1) Rule 307.1 – Alternative Fees for Air Toxics Emissions Inventory; 2) Rule 1401 – New Source Review of Toxic Air Contaminants; and 3) Rule 1402 – Control of Toxic Air Contaminants from Existing Sources. These rules were amended in October 2016 to incorporate the Voluntary Risk Reduction Program and requirements for Potentially High Risk Facilities. Staff also updated the Public Notification Procedures for Phase I and II Facilities Under the Air Toxics 'Hot Spots' Information and Assessment Act of 1987 (AB 2588)

Toxic Program Impacts with New or Revised Toxic Air Contaminants

Pursuant to Rule 1402, once OEHHA finalizes the identification of new or revised air toxics, staff will analyze the impacts on permitting and AB2588 and incorporate this information in the AB2588 Annual Report. On February 21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation reference exposure levels (RELs) for carbonyl sulfide (CAS No. 463-58-1).³ The revised RELs are not anticipated to result in adverse non-cancer health effects for specified exposure durations in the general population, including sensitive subpopulations.⁴ The adopted RELs cover different types of exposure to carbonyl sulfide in air: infrequent 1-hour exposures, repeated 8-hour exposures, and continuous long-term exposure. For the 2014 and 2015 reporting period, 17 facilities reported annual emissions of carbonyl sulfide. 10 of the 17 facilities have approved HRAs. Based on staff analysis, no impacts to those facilities are expected.

Future Activities

In addition to routine AB 2588 implementation activities, staff has and will continue to:

- Implement the OEHHA Revised Air Toxics Hot Spots Program Risk Assessment Guidelines (2017).
- Notify three high-risk facilities per month to prepare either an ATIR or to participate in the Voluntary Risk Reduction Program, if eligible.
- Use contractors to assist staff with future AB2588 workload.

² The U.S. EPA's web portal to NATA is at: <https://www.epa.gov/national-air-toxics-assessment>

³ The documents are available at: <https://oehha.ca.gov/air/crnrr/notice-adoption-reference-exposure-levels-carbonyl-sulfide>

⁴ OEHHA, 2003 - *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.

- Review of the 2014 NATA emission data.
- Work with contractor to develop a methodology for model-monitor reconciliation.
- Develop proposed Rules 1445 – Control of Toxic Emissions from Laser Arc Cutting, 1407.1 – Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Operations, 1435 – Control of Emissions from Metal Heat Treating Processes, and 1410 – Hydrogen Fluoride Use at Refineries.
- Develop proposed amended Rules 1407 – Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations, 1420 – Emissions Standard for Lead, 1466 – Toxic Air Contaminant Emissions from Decontamination of Soil, 1426 – Emissions from Metal Finishing Operations, 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, and 1401 – New Source Review of Toxic Air Contaminants.
- Expand local air toxics monitoring, with a focus on identifying hexavalent chromium sources that are contributing to the monitored levels and designating Potentially High Risk Level facilities, where appropriate.
- Plan and work towards the deployment of monitors in January 2018 for the Multiple Air Toxics Exposure Study V.

Attachments

- A. Annual Report on AB 2588 Air Toxics “Hot Spots” Program
- B. Board Meeting Presentation

ATTACHMENT A

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT



Annual Report on AB 2588 Air Toxics “Hot Spots” Program

July 2017

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EXECUTIVE SUMMARY

The Air Toxics Hot Spots Information and Assessment Act (AB 2588) is a key statewide program implemented by air districts to address health risks from existing permitted facilities. State law requires the South Coast Air Quality Management District (SCAQMD) to prepare an Annual Report of activities. This report fulfills that requirement and also provides a summary of staff activities in relation to other toxic air contaminant programs in calendar year 2016.

In 2016, staff reviewed a variety of work products submitted by 25 different facilities as a requirement of AB 2588. Staff continues to work on incorporating on-site ambient air quality monitoring data into the HRAs for several facilities. Ambient air monitoring data from these sites has provided information on fugitive toxic emissions that was previously either not known to be present at the location or unquantified. Staff also initiated audit activities for two facilities in the city of Paramount that have been identified as Potentially High Risk Facilities.

In addition to AB 2588 activities, SCAQMD staff worked on a variety of other toxic programs in 2016, including completing rule development work on Rules 1401, 1402, and Rule 307.1 to include a Voluntary Risk Reduction Program to allow facilities that are above the Action Risk Level (25 in-a-million cancer risk) in Rule 1402 to implement early risk reduction measures with an alternative public notification approach. In addition, the 2016 Rule 1402 amendments included new provisions for Potentially High Risk Level facilities. Staff continued its work on the Clean Communities Plan (CCP), and other air toxic related programs such as review of the final version of U.S. EPA's National Air Toxics Assessment (NATA) for 2014, source testing and air monitoring efforts, updating the Facility Prioritization Procedures, and AB 2588 and Rule 1402 Supplemental Guidelines. In addition, staff analyzed changes and potential impacts to permitting and AB 2588 from OEHHA regarding new or revised toxic air contaminant health values, and the impacts are discussed later in this report.

In October 2016, the SCAQMD initiated hexavalent chromium monitoring in the city of Paramount. The monitoring approach used samplers that are battery operated and are attached to light or power poles, allowing greater ease of siting the samplers as well as better distribution of multiple samplers. This expanded monitoring effort was initiated after the SCAQMD had conducted ambient monitoring for multiple metal toxic air contaminants near a metal forging facility called Carlton Forge Works in Paramount. Through the expanded monitoring in Paramount, high levels of hexavalent chromium were found near two facilities: Aerocraft Heat Treating and Anaplex Corporation. Based on the monitoring results, both of these facilities were identified as Potentially High Risk

Facilities under Rule 1402, and both facilities have already taken steps to reduce hexavalent chromium emissions.

1.0 INTRODUCTION

SCAQMD has a comprehensive air toxics program. At the heart of this program are Rule 1401 – New Source Review of Toxic Air Contaminants, to ensure toxic emissions from new and modified sources do not exceed specified risk levels and Rule 1402 – Control of Toxic Air Contaminants from Existing Sources, which implements various aspects of AB 2588. AB 2588 is the Air Toxics “Hot Spots” Information and Assessment Act, Health and Safety (H&S) Code Section 44300 et seq. SCAQMD’s air toxic program also includes a series of source specific rules that address toxic air contaminants for specific industries or equipment categories.

This report summarizes SCAQMD’s air toxics program activities in 2016, including AB 2588 activities, rule development activities, dispersion modeling support for rules and permits, and other air toxic related programs such as ambient monitoring efforts in Paramount, and source testing and air monitoring efforts in support of AB 2588. This report also satisfies Section 44363 of the California H&S Code that requires SCAQMD to annually prepare and publish a status and forecast report of AB 2588 activities.

The AB 2588 Program, combined with implementation of Rule 1402, includes requirements for toxic emissions inventories, categorizing and prioritizing facilities, and reviewing and approving detailed ATIRs, HRAs, public notifications, and RRP. Rule 1402 was amended on October 7, 2016 to include a provision to allow facilities to participate in a Voluntary Risk Reduction Program. The Voluntary Risk Reduction Program is an alternative to complying with the traditional AB 2588 and Rule 1402 approach that provides qualifying facilities an opportunity to reduce health risks below the Notification Risk Level with a Modified Public Notification approach as specified in the recently amended Rule 1402. Qualifying facilities must submit a VRRP for approval. The Voluntary Risk Reduction Program will achieve risk reductions both sooner and beyond what is required in the traditional Rule 1402 process.

1.1 Background

There are two broad classes of facilities within the AB 2588 Program: Core facilities and facilities in the Industry-wide source categories. Industry-wide source facilities are generally small businesses with relatively similar emission profiles (such as gas stations and dry cleaners using perchloroethylene). Facilities that are in Industry-wide source categories have fewer requirements under AB 2588 than Core facilities and are discussed further in Section 2.4 of this report. Core facilities must regularly report their emissions of toxic air contaminants and do the following:

- **Emission Reporting** – Facilities subject to AB 2588’s Core program submit an air toxics inventory every four years through the Annual Emissions Reporting (AER) Program.
- **Prioritization** - From the reported toxic emissions, SCAQMD staff prioritizes facilities, using a procedure approved by the Governing Board, into three categories: high, intermediate, and low. High priority facilities are then asked to prepare an ATIR or elect to prepare a VRRP, if eligible.
- **Health Risk Assessment** - High priority facilities might need to prepare a HRA, if the ATIR indicates that the facility is still considered high priority.
- **Public Notice** - If the risk reported in the HRA exceeds the Notification Risk Levels in Rule 1402, then the facility is required to provide public notice to the affected community.
- **Risk Reduction** - Facilities with health risks above the Action Risk Levels in Rule 1402 must reduce their risks below the action risk levels.

Figure 1 provides an overview of the AB 2588 Program and the different paths an AB 2588 Core facility must follow under Rule 1402. Historically, a total of 1,640 facilities have been in SCAQMD’s Core AB 2588 Program, although currently there are only 340.

SCAQMD staff reviews HRAs to ensure they follow methodologies established by OEHHA and the California Air Resources Board (CARB), as required by H&S Code Section 44360(c). The health risk values presented in this Annual Report that were approved prior to 2015 were calculated using the methodologies available at the time of HRA approval, and have not been recalculated based on more recent guidance.¹ OEHHA’s revised HRA guidance was approved in early 2015 and takes into account more recent science that has documented greater risks when children are exposed to cancer causing compounds, in addition to other changes. This change in methodology results in residential cancer risks that are about two to six times higher for a given level of exposure compared to the previous methodology. The risks in all HRAs finalized by SCAQMD staff in 2015 and later were calculated using the 2015 OEHHA HRA Guidelines.

¹ The potential effect of the 2015 OEHHA HRA Guidelines on SCAQMD’s AB 2588 Program is discussed in detail in the staff report to amended Rules 212, 1401, 1401.1, and 1402 found here: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2015/2015-jun1-028>.

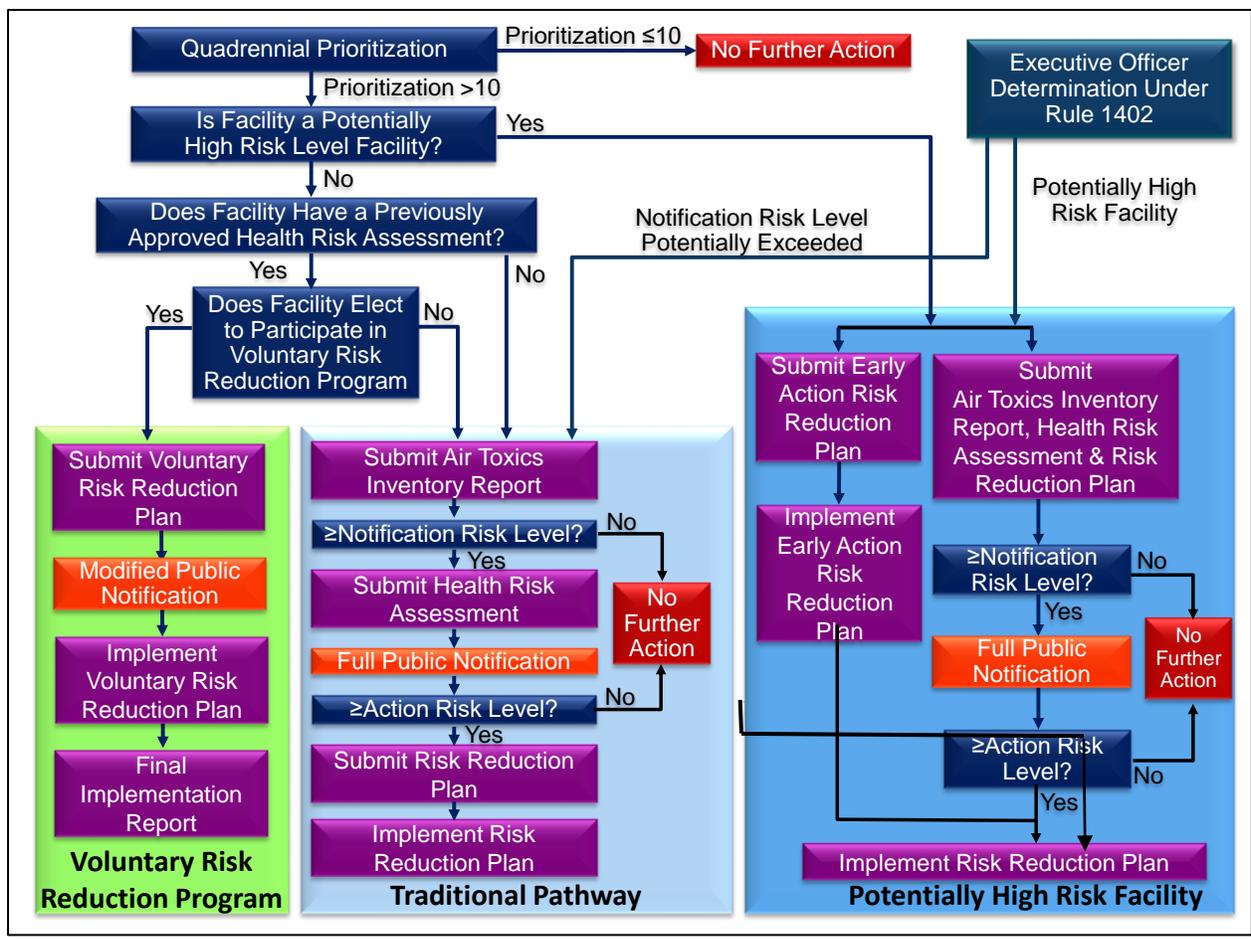
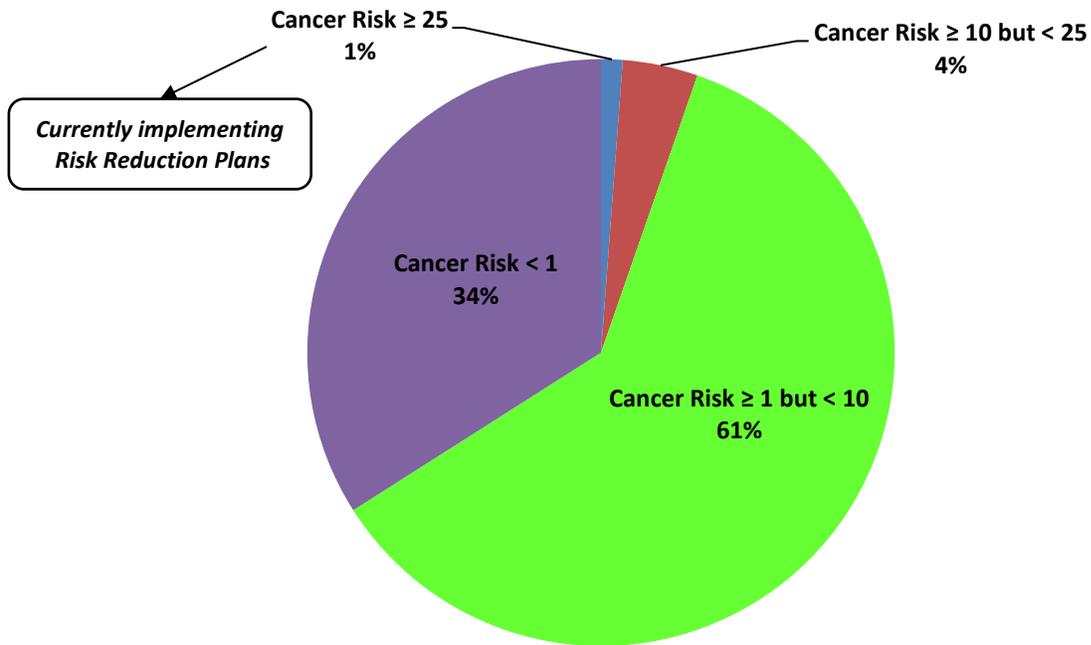
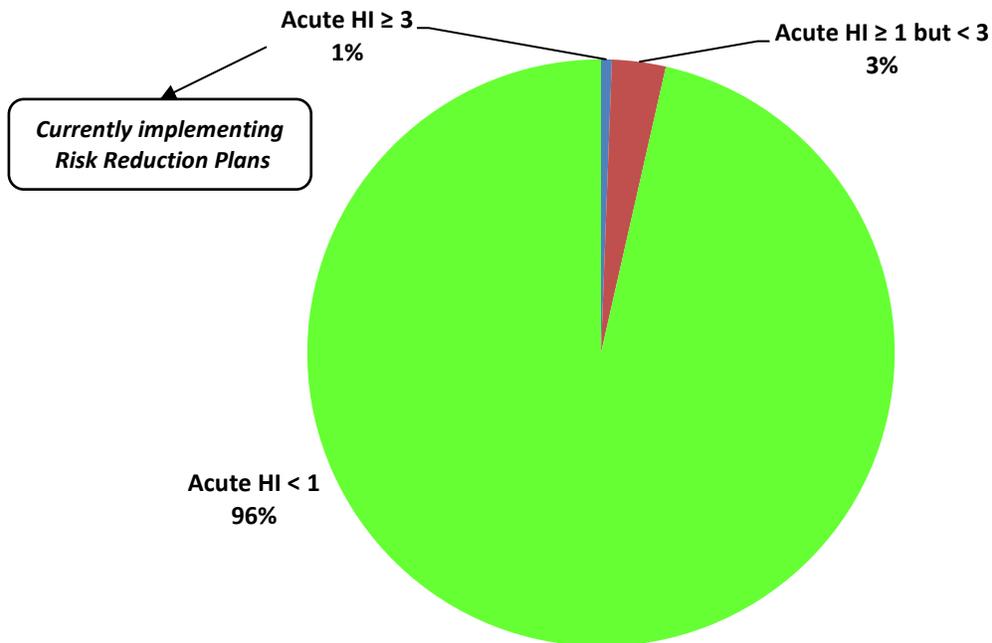


Figure 1. Overview of the AB 2588 Hot Spots Program

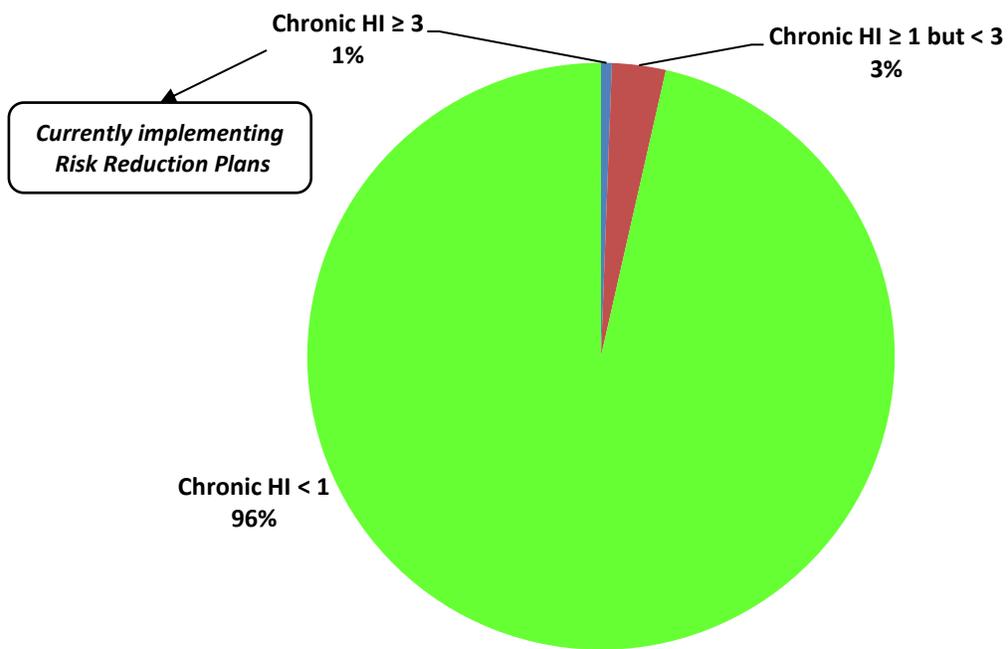
From the beginning of the AB 2588 Program in 1987 through the end of 2016, staff has reviewed and approved 341 HRAs from 309 facilities. There are more approved HRAs than facilities as some facilities have prepared more than one HRA. Of these 309 facilities, 26 facilities were required to implement risk reduction measures, 55 were required to perform public notification activities, and the remaining facilities were below the public notification threshold. As a result of the AB 2588 Program, about 95 percent of 1,640 Core facilities have HRAs demonstrating cancer risks below ten in a million and acute and chronic non-cancer hazard indices of less than 1.0, or their emissions have been low enough to not require an HRA. The approved HRAs illustrated in Figures 2, 3, and 4 are based on the information in Appendix A. Appendix A lists the Core facilities and the risks from their approved HRAs. Appendix A-1 lists the facilities in order of their cancer risks and Appendix A-2 is ordered by facility ID. Appendix A-3 lists facilities which have prepared risk reduction plans for the AB 2588 Program and their corresponding risks [H&S Code 44363(a) (2) and (3)]. Appendix B shows trends in ambient air toxics in the South Coast Air Basin (Basin). Appendix C contains a list of acronyms and abbreviations used in this report.



**Figure 2. AB 2588 Facilities that have an Approved HRA
Distribution of Cancer Risks (Chances in a Million)**



**Figure 3. AB 2588 Facilities that have an Approved HRA
Distribution of Acute Hazard Indices (Acute HI)**



**Figure 4. AB 2588 Facilities that have an Approved HRA
Distribution of Chronic Hazard Indices (Chronic HI)**

2.0 2016 TOXICS ACTIVITIES

This section highlights SCAQMD staff activities in 2016 for various stages of the AB 2588 Program, implementation of Rules 1401 and 1402, air monitoring and source testing projects done in conjunction with AB 2588 and Rule 1402, development of industry-wide source category HRAs, source-specific air toxic rule development efforts that address toxic air contaminants for specific industries or equipment categories, Rule 1401 permitting and HRA modeling review, and Rule 1420.2 modeling review.

2.1 Air Toxic Inventory Reports (ATIR) and Health Risk Assessments (HRAs)

Under the AB 2588 Program, facilities are required to report their toxic emissions to SCAQMD quadrennially (i.e., once every four years) through the web-based AER Program in a streamlined reporting process to obtain a preliminary inventory of toxic air contaminants. During the interim years, facilities continue to report toxic emissions through the AER Program for 23 toxic air contaminants. Under the quadrennial reporting process, facilities report emissions of 177 toxic air contaminants along with the distance to the nearest residential and worker receptor to calculate the cancer and non-cancer priority scores for each facility. Every year, criteria and toxic emissions data for the previous calendar year are posted to SCAQMD's FIND web tool.² In 2016, 138 facilities were subject to reporting their quadrennial toxic emission inventory updates. Based on emissions inventory submittals, SCAQMD staff calculated priority scores for each facility taking into account potency, toxicity, and quantity of hazardous materials released from the facility; the proximity of the facility to potential receptors, including, but not limited to, hospitals, schools, daycare centers, worksites and residences; and any other factors that SCAQMD staff determine would indicate the facility may pose a significant risk to receptors. SCAQMD's prioritization procedures also include adjustment factors for exposure period, averaging times, and the treatment of multi-pathway pollutants.³

Upon initial prioritization of facilities, SCAQMD staff conducts a more detailed evaluation and audit of those facilities with a priority score greater than 10 to confirm use of the correct emission factors, control efficiencies, source test methods, and relative proportions of toxic air contaminants. In addition, staff conducts further analyses to confirm the distance to sensitive receptors and workers, and reviews emissions trends and facility changes such as new or modified permitted equipment or pollution controls. In cases where the facility has a prior HRA, staff compares the priority score results with the last HRA submittal or RRP, if applicable. The additional information obtained through priority score auditing will often negate the need to require an HRA. If, however, the prioritization score remains

² <http://www.aqmd.gov/home/tools/public/find>

³ <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/prioritization>

greater than 10, the facility is asked to prepare a detailed ATIR, a HRA, or a VRRP, if eligible.

Facilities that prepare an ATIR, a HRA, or a VRRP, must submit a detailed inventory of approximately 450 toxic air contaminants as well as provide stack parameters and locations using the latest CARB Hotspots Analysis and Reporting Program (HARP 2)⁴. HARP 2 replaces the prior version and incorporates the methodologies from the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments (2015),⁵ HARP 2 also incorporates United States Environmental Protection Agency (U.S. EPA's) air quality dispersion model called AERMOD⁶ to estimate the concentration of pollutants in place of the previously used ISCST3 model. The ISCST3 dispersion model is no longer allowed for determining toxic air contaminant concentrations under Rule 1402. Meteorological data⁷ for use in HARP 2 and AERMOD can be downloaded from SCAQMD's website.

2.2 Air Monitoring and Source Testing Activities to Support the AB 2588 Program

In addition to collecting and reviewing quadrennial emission inventories based on emission calculations, SCAQMD staff regularly engages in monitoring and source testing of toxic air contaminants at and near many facilities. In 2013, SCAQMD received a series of metallic odor complaints from local community members in the City of Paramount and in response to the complaints, SCAQMD staff began conducting an investigation into local sources of emissions, including initiating a local air sampling study. Metal toxic air contaminants were the focus of the monitoring, consistent with the community complaints and with the emissions from metal processing facilities in the area. The monitoring results indicated that there were two metals of concern: nickel and hexavalent chromium. In 2016, as part of the same ongoing investigation, SCAQMD staff deployed several monitors in mostly industrial areas of the City of Paramount in order to identify the local sources of the hexavalent chromium emissions, and the industrial processes that were generating these emissions. The expanded monitoring effort began after the SCAQMD had conducted initial ambient monitoring for multiple metal toxic air contaminants near Carlton Forge Works. The expanded monitoring found high levels of hexavalent chromium near Aerocraft Heat Treating and Anaplex Corporation. These facilities were identified as Potentially High Risk Level Facilities under Rule 1402. In addition, Orders for Abatement were done to reduce emissions as quickly as possible.

⁴ <http://www.arb.ca.gov/toxics/harp/harp.htm>

⁵ <https://oehha.ca.gov/air/crn/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk>

⁶ http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod

⁷ <http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/data-for-aermod>

2.3 Summary of SCAQMD Staff Activities on Specific AB 2588 Facilities in 2016

In 2016, staff addressed facilities in various stages of the AB 2588 process, initiated audit activities on facilities with priority scores greater than 10 and continues to work on incorporating analyses of on-site ambient air quality monitoring data into the HRAs for several different facilities. The monitoring data from these sites provides a new source of information on fugitive emissions of toxics that was previously uncertain or unquantified. Staff also initiated audit activities on two Potentially High Risk Level facilities in the Paramount area and as a result conducted one town hall meeting. Table 1 presents a summary of key activities associated with each facility.

Table 1 - Disposition of AB 2588 Facilities in 2016

Facility Name	ID #	Potentially High Risk Level	ATIR			HRA			RRP			Public Meeting	Source Testing	VRRP
			R	C	A	R	C	A	R	C	A			
Aerocraft	23752	x											x	
All American Asphalt	132954			x			x							
Anaplex	16951	x											x	
Bowman Plating Company	18989							x	x			x		
Carlton Forge Works	22911							x				x		
Chevron Products Co.*	800030													x
City of Los Angeles, Hyperion Treatment Plant*	800214													x
Fontana Paper Mills *	11716													
Gerdau (Tamco)	18931							x	x	x	x			
Griswold Industries *	800318		x											
GS Roofing, Inc.*	183567													x
Hixson Metal Finishing	11818											x		
Kaiser Aluminum	16338			x									x	
Owens Corning Roofing and Asphalt, LLC *	35302		x		x									
Quemetco	8547							x	x	x			x	
Tesoro Refineries *	800436													x
	174655													
	174694													
	174703													
Tesoro Sulfur Recovery Plant *	151798													x

For ATIRs, HRAs, and RRP: R=Report Received; C=Comment letter sent to facility; A=Report Approved.

*Indicates facilities notified to prepare either an ATIR or a VRRP.

Note that both the Potentially High Risk Level facilities listed here are under an Order for Abatement.

A description of these activities for each facility which had an ATIR, HRA, RRP, Public Notification, or Source Test is listed below.

2.3.1 Aircraft Heat Treating Company (ID 23752) – Paramount⁸

Aerocraft operates a facility in the City of Paramount that processes forgings, castings, bar, plate and rough-machined parts. The facility uses various heat treating furnaces, quench tanks, and metal grinding equipment, as well as engaging in plasma cutting operations.

As part of the investigation into the elevated hexavalent chromium concentration in Paramount, SCAQMD staff visited Aerocraft on October 26, November 3, 9, 10, and 17 of 2016, and identified some potential sources of hexavalent chromium emissions including, but not limited to: metal heat treating, cooling, cutting, and grinding operations. In addition, during a meeting on December 1, 2016, Aerocraft representatives identified other possible sources of hexavalent chromium emissions after further evaluation of their processes. These sources include but are not limited to water quench tanks, cooling towers, and fugitive dust from various operations or lack of housekeeping.

SCAQMD staff obtained samples from different processes from various locations on the facility property. These results demonstrate that there are several sources of hexavalent chromium present at Aerocraft. Each of these processes and sources has the potential to be emitted to the air. On November 18, 2016, Aerocraft was notified by SCAQMD that the facility may be designated as a Potentially High Risk Level facility under Rule 1402(g). An Order for Abatement was filed on November 29, 2016 by SCAQMD requiring Aerocraft to cease violation of Rules 402 and H&S Code Section 41700. On December 1, 2016, a Notice of Violation (P64520) was issued to Aerocraft for discharge of hexavalent chromium. On December 16, 2016, the Hearing Board granted a Stipulated Order for Abatement requiring Aerocraft to temporarily shut down various processes including the use of heat treating furnaces and plasma cutting operations. Aerocraft drained and cleaned the water quench tanks, enclosed all metal grinding operations, and adopted various improved housekeeping measures, including use of vacuums using high efficiency particulate arrestor filters and wet cleaning, to control airborne dust.

Aerocraft was officially designated as a Potentially High Risk Level facility on December 14, 2016. As part of this designation, Aerocraft was required to submit an Early Action Reduction Plan by March 14, 2017, an ATIR by May 16, 2017, a HRA and a RRP by June 13, 2017. These items have been submitted in accordance to the required timeline and are under review.

⁸ Information regarding Aerocraft and compliance-related activities in Paramount can be found at the following link:
<http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities>

2.3.2 All American Asphalt (ID 132954) – San Fernando

All American Asphalt operates a recycled asphalt product processing plant in the City of San Fernando. The company is contracted by the Department of Public Works to recycle and manufacture asphalt for repaving of city streets and roads. The operations include asphalt batching and blending, an asphalt storage tank, storage silos for crumb rubber, baghouses and an electrostatic precipitator to control particulate emissions.

All American Asphalt was required to prepare and submit an ATIR on September 21, 2011, based on their 2010 quadrennial emissions inventory. The draft ATIR was submitted on March 19, 2012. A source test was requested by SCAQMD staff for the hot mix dryer baghouse, which was conducted from November 12 through November 14, 2013, and approved on March 18, 2014. An ATIR submitted to the SCAQMD on December 17, 2013 was approved on March 6, 2017. The corresponding draft HRA was submitted to SCAQMD on July 9, 2014. Health risks reported in the draft HRA were mainly generated from arsenic, naphthalene and hexavalent chromium emissions. Health risks estimated in the draft HRA were less than the AB 2588 and Rule 1402 notification levels. This draft HRA was finalized and approved on February 1, 2017.

2.3.3 Anaplex Corporation (ID 16951) - Paramount ⁹

Anaplex Corporation (Anaplex) operates a metal processing and finishing company in the City of Paramount. The facility processes parts for commercial and defense aerospace applications. The processes include anodizing and plating process lines which use hexavalent chromium, nickel and cadmium.

As described earlier, SCAQMD expanded its monitoring efforts in the industrial areas of Paramount beginning on October 15, 2016. On March 7, 2016 Anaplex received a Notice of Violation (P64514) for using chromate containing coatings inside their spray booths. On November 16, 2016, SCAQMD staff collected several samples of air above three hexavalent chromium containing tanks at Anaplex. The tanks were classified as three types: electrolytic tanks, heated dichromate seal tanks, and agitated tanks. Two days later Anaplex was notified that the facility may be designated as a Potentially High Risk Level facility under Rule 1402(g). On November 29, 2016, Anaplex was issued another Notice of Violation (P64519) for air sparging in chromic acid and anodizing tank when electroplating was not occurring, operating sparging tanks in the aluminum etching line; operating a pickling tank without venting to air pollution control equipment without valid permit, and installing and altering equipment without a permit. An Order for Abatement was filed on November 29, 2016 by SCAQMD requiring Anaplex to cease violation of

⁹ Information regarding Anaplex and compliance-related activities in Paramount can be found at the following link: <http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities>

Rules 1469, 201 and 203. Results of the samples confirmed the presence of hexavalent chromium.

Additionally, on December 14, 2016, SCAQMD staff designated Anaplex as a Potentially High Risk Level facility specifically based on high levels of hexavalent chromium found at monitors adjacent to Anaplex. Following litigation in Superior Court, the Hearing Board granted a Stipulated Order for Abatement relative to Anaplex in January 2017. The levels of hexavalent chromium recorded nearest to Anaplex were substantially higher than typical background levels, which, over many years, could present a cancer risk to residents substantially higher than the Rule 1402 Significant Risk Levels. As part of this designation, Anaplex was required to submit an Early Action Reduction Plan by March 14, 2017, an ATIR by May 16, 2017, a HRA and a RRP by June 13, 2017. These items have been submitted in accordance to the required timeline and are under review.

2.3.4 Bowman Plating Company, Inc. (ID 18989) – Unincorporated LA County

Bowman Plating Company (Bowman), located near the City of Compton, has been in operation since 1945, provides metal finishing and non-destructive testing, and processes materials including aluminum, titanium, composite, steel, and stainless steel for aerospace, defense and related industries. Bowman's previously approved HRA from 2007 showed a maximum cancer risk of 14.2 in a million, mainly due to hexavalent chromium emissions from paint spraying operation. Since then, Bowman has continued to report its toxic air contaminant emissions every four years pursuant to AB 2588. SCAQMD staff compared the facility's 2010 quadrennial inventory update with the 2007 approved HRA which resulted in similar risk numbers. However, subsequent annual emission reports submitted by the facility for calendar years 2011 through 2013 showed increased use of hexavalent chromium containing spray paints and lower control efficiencies, and consequently the 2007 HRA (using 2006 emissions inventory year) was no longer representative of the facility's current health risks. As a result, staff required Bowman to submit an updated HRA using the 2013 emission inventory.

Bowman submitted an HRA using their 2013 emission inventory on October 24, 2014. This HRA was then updated by SCAQMD staff to incorporate the 2015 OEHHA HRA Guidelines resulting in a maximum residential cancer risk of 110 in a million for the maximum residential receptor, and 17 in a million for the maximum exposed worker receptor, both primarily from hexavalent chromium emissions. SCAQMD staff approved the HRA on December 11, 2015, and since the cancer risks exceeded Action Risk Levels specified in Rule 1402, Bowman was required to conduct public notification and to submit a RRP. Notices of the public notification meeting were sent out to 118 people in the area where there were potential health risks above the risk levels established in Rule 1402. SCAQMD staff held a public notification meeting at the Corps Community Center to present the results of the HRA on February 9, 2016.

On June 8, 2016, Bowman submitted a RRP based on their 2013 emission inventory. After review of the RRP, SCAQMD staff requested that it be revised to address SCAQMD staff comments on acute and chronic health risks. A revised RRP was submitted by Bowman Plating on October 26, 2016. SCAQMD staff reviewed the proposed risk reduction measures, emission calculations, and modeling analysis which projected a potential maximum residential cancer health risk of 5.01 in one million, once the revised RRP was fully implemented. However, the HRA submitted with the revised RRP did not properly account for the maximum potential hexavalent chromium emissions from three spray booths based on their permitted emission limits. Adding these emissions increased the total risk from the facility to approximately 17.02 in one million. The revised RRP was conditionally approved on February 10, 2017, noting that sufficient information was not available on fugitive dust emissions. If information regarding fugitive emissions becomes known to SCAQMD that would substantially impact health risks to exposed persons, implementation, or effectiveness of the plan, SCAQMD may require the RRP to be updated and resubmitted pursuant to Rule 1402(k)(1).

2.3.5 Carlton Forge Works (ID 22911) – Paramount¹⁰

Carlton Forge Works (Carlton) manufactures forged high-temperature alloy rings for aerospace industries, gas turbine manufacturers and other industries, using principal alloy metals such as nickel, titanium, aluminum, cobalt, zirconium, niobium, and iron. The facility is located in a mixed residential/industrial area in the City of Paramount.

Complaints of burnt metallic odors reported by local community members led SCAQMD staff to supplement ongoing complaint investigations, inspections, and surveillance activities with preliminary air sampling in mid-2013 to investigate potential health impacts from exposure to gaseous and particulate pollutants emitted by Carlton operations. Because the major activities at Carlton are forging, abrasive blasting, coating, and grinding, particular attention was given to the monitoring of the metallic components of particulate emissions to better characterize the emissions and potential exposure in the community.

In addition, a series of source tests were conducted in the summer of 2013 to better assess the locations and levels of emissions. Starting in August 2013, based on the preliminary air and soil sampling results, SCAQMD began ambient field measurements for the monitoring of the metallic components of particulate emissions at two nearby downwind sites. Nickel and hexavalent chromium were observed at higher levels than background. One of the monitoring sites was relocated to a location slightly farther away in November 2013 to collect gradient information. Reductions in ambient levels have been observed since sampling began due to improvements at the facility.

Based on elevated levels of metals found at nearby monitors and preliminary risk estimates using Carlton's draft ATIR, Carlton was asked to prepare an ATIR, a HRA, and a RRP on

¹⁰ <http://www.aqmd.gov/home/library/public-information/2014-news-archives/carlton-forge-works-information>

March 21, 2014 based on its 2012 ATIR. The HRA prepared for this request was submitted on August 18, 2014, with a revised HRA submitted on October 28, 2014. This revised HRA was subsequently reviewed by SCAQMD staff and OEHHA. Although Carlton was required to prepare its HRA using its 2012 emissions inventory, monitoring data was not available from that time period. SCAQMD staff therefore reviewed the oldest monitoring data available, from August 8, 2013 through August 7, 2014, as part of its evaluation of the dispersion modeling analysis in the HRA. Importantly, early in this time period, Carlton voluntarily installed controls to reduce fugitive emissions from its grinding operations. Some metals, such as nickel (a key component of some alloys processed by Carlton), showed a notable reduction in concentration at the same time that the fugitive emission controls were installed at Carlton. This clear relationship indicated that before controls were installed (e.g., in the 2012 base year), fugitive emissions from the grind shop were a much larger contributor to ambient pollutant levels measured at the nearby monitor than today.

The revised HRA was approved on September 9, 2016 and showed a maximum residential cancer health risk of 15.4 in a million, acute non-cancer hazard index of 1.76 and residential non-cancer chronic hazard index of 1.04. These values were above the Public Notification Levels of 10 in one million for cancer risk and 1.0 for non-cancer hazard indices. A public notification meeting to discuss the health risks from Carlton was held on November 10, 2016 at the Gateway Cities Council of Government.

SCAQMD is continuing to investigate metal emissions in the City of Paramount, in particular with respect to hexavalent chromium. In October 2016, as part of its ongoing investigation to identify and address sources of hexavalent chromium that may be impacting the nearby communities, SCAQMD staff deployed several monitors in the mostly industrial areas of the City of Paramount. Initial results showed elevated levels of hexavalent chromium upwind of Carlton.

2.3.6 Gerdau (ID 18931) - Rancho Cucamonga ¹¹

Gerdau North America located in the City of Rancho Cucamonga acquired the TAMCO steel mini mill in October 2010. The company produces steel reinforcing bars that are commonly used in construction. Ferrous steel scrap is recycled and delivered to the Mill by trucks and rail, and then melted in an electric arc furnace to produce steel billets. The billets are reheated in a reheat furnace to form concrete reinforcing bar (rebar). The primary pollutants for this facility are hexavalent chromium, nickel, manganese, mercury, and arsenic.

On April 24, 2013, Gerdau was required to prepare and submit an HRA and SCAQMD staff asked for revisions prior to approval. A revised HRA was submitted by Gerdau on April 21, 2014. On November 20, 2014, staff asked Gerdau to revise its HRA to evaluate

¹¹ <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/gerdau>

the facility's impact relative to the lead National Ambient Air Quality Standard (NAAQS), among other changes. This revised HRA was submitted on January 20, 2015.

SCAQMD staff recalculated the risks using the 2015 OEHHA HRA Guidelines and approved Gerdau's HRA on October 8, 2015. Several health risks in the recalculated HRA exceed levels specified in Rule 1402. The maximum residential cancer risk (52.7 per million), mainly from hexavalent chromium, dioxins, and diesel particulate matter (DPM), the cancer burden (3.08), the maximum worker chronic hazard index (3.19) mainly from manganese and arsenic, and the maximum acute hazard index (3.04) mainly from nickel, all exceed the Action Risk Levels in Rule 1402. Another pollutant of concern from Gerdau's operation is lead. Gerdau was therefore required to notify the public regarding the results of its HRA, and also submit a RRP. Notices of public notification meeting were sent out to 118 people in the area where the health risks were above the levels established in Rule 1402. SCAQMD staff held a public notification meeting at the Victoria Gardens Cultural Center in the City of Rancho Cucamonga on November 30, 2015 to explain the impact of Gerdau's emissions on public health and to discuss next steps. Gerdau also provided a presentation of their facility's operations at this meeting.

Gerdau submitted its first RRP on April 5, 2016. After review of the RRP and several meetings with facility representatives, SCAQMD staff provided comments on the RRP and on July 1, 2016, Gerdau submitted a revised RRP which proposed eight risk reduction measures. However, the revised RRP did not account for hexavalent chromium emissions from ladle heaters, billet reheat furnace, and spray chamber stack. SCAQMD staff added these emissions which resulted in a projected potential maximum residential cancer risk of 8.7 in a million. The cancer burden and acute and chronic hazard indices remain below 1 after full implementation of the RRP. After making these revisions, SCAQMD staff conditionally approved Gerdau's RRP on July 5, 2016. These levels are below the Action Risk Levels.

2.3.7 Griswold Industries (ID 800318) – Costa Mesa

Griswold Industries, Inc., also known as Cla-Val Co. is a 20-acre production/foundry complex located in the City of Costa Mesa. Griswold Industries manufactures automatic control valves and electronic products for waterworks, fire protection, aviation ground fueling, and marine and industrial customers. Potential air toxic emission sources include natural gas combustion; furnaces; abrasive blasting; sand handling, mixing, and reclamation; metal grinding; metal cutting; and metal coating. Potential health risks from Griswold Industries are primarily from hexavalent chromium emissions related to foundry operations. In February 10, 2016, SCAQMD staff required Griswold Industries to prepare and submit an ATIR based on the facility's 2014 quadrennial emissions inventory. SCAQMD staff conducted a site visit to verify the emission sources and to identify potential sources of fugitive emissions. Griswold Industries submitted an ATIR on December 23, 2016, which is currently under review.

2.3.8 Hixson Metal Finishing (ID 11818) - Newport Beach ¹²

Hixson Metal Finishing (Hixson) located in the City of Newport Beach, is a metal finishing facility that conducts anodizing, testing, plating, coating, and painting operations on various parts for use in the aerospace and defense industries. Some of the potential onsite sources of emissions include the chrome anodizing line, nickel and cadmium plating, curing and drying ovens, paint spray booths, abrasive blasting equipment, wastewater treatment system and miscellaneous natural gas combustion sources. The major source of concern with Hixson's operation is fugitive dust containing hexavalent chromium. On April 3, 2014 SCAQMD staff required Hixson to prepare and submit a HRA and a RRP, in conjunction with a Stipulated Order for Abatement approved by SCAQMD's Hearing Board that limited Hixson's activities, and required shutdown of certain operations using hexavalent chromium if monitored ambient levels exceeded specified hexavalent chromium levels at adjacent residential or worker exposure sites.

Hixson submitted their HRA to SCAQMD on November 13, 2014. Upon detailed review and use of the 2015 OEHHA HRA Guidelines, SCAQMD staff finalized the submitted HRA on May 8, 2015. The approved HRA showed a maximum residential cancer risk of 1,502 per million mainly from hexavalent chromium emissions. The calculated risk was based on emissions occurring before the facility instituted various control measures and today's level of risk is substantially lower. Since the HRA results were above the Significant Risk Levels of Rule 1402, Hixson was required to notify the public about the health risk in addition to conducting annual public notification meetings until Rule 1402 Action Risk Levels were achieved pursuant to Rule 1402(p). Notices of the public notification meeting were sent out to over 7,300 people in the area of impact. SCAQMD staff held a public notification meeting at the Hoag Conference Center on June 18, 2015.

Hixson submitted its first RRP on March 2, 2015. On May 8, 2015, SCAQMD staff rejected Hixson's first RRP and required resubmittal. Hixson subsequently submitted a second RRP on June 5, 2015. On June 26, 2015, SCAQMD staff rejected Hixson's second RRP due to its failure to demonstrate that the proposed controls reduce risks below Rule 1402 thresholds. Hixson resubmitted a revised RRP on July 1, 2015, and SCAQMD staff conditionally approved it on July 24, 2015. Staff subsequently approved a Mitigated Negative Declaration. The associated permits to construct implementing the RRP were approved on December 11, 2015 and a second public notification meeting was held on February 11, 2016 at Hoag Conference Center to inform interested parties regarding the key activities surrounding the RRP. The RRP was fully implemented as of December 31, 2016 and the potential cancer risk has been reduced to less than 25 in a million.

¹² <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/hixson-metal-finishing>

2.3.9 Kaiser Aluminum Fabricated Products, LLC (ID 16338) – Los Angeles

Kaiser Aluminum Fabricated Products located in the City of Los Angeles, develops fabricated aluminum products for major suppliers and manufacturers in the aerospace, general automotive, engineering and custom industrial markets. They also manufacture aluminum extrusions, cast logs, billets, and semi-fabricated products. The facility was required to prepare and submit an ATIR based on the facility's 2010 quadrennial emissions inventory. SCAQMD staff conducted a site visit in October 2014 to verify the sources of emissions identified in the ATIR and is continuing to review the facility's emissions profile. Staff completed most of the review of the ATIR in 2015 and approval of the facility's ATIR is pending final approval of their source testing results.

2.3.10 Owens Corning Roofing and Asphalt, LLC (ID 35302) - Compton

Owens Corning Roofing and Asphalt, LLC (Owens Corning) operates a facility in the City of Compton which produces air blown asphalt and manufactures roofing shingles. The facility processes raw asphalt, which is applied to fiberglass mats. Granular igneous rock is then applied to the surface of the asphalt coated fiberglass mats. Adhesive table is applied to the back of the mats for application to roofs. Owens Corning was required to prepare and submit an ATIR based on their 2015 quadrennial emissions inventory which resulted in a priority score greater than 100, mostly from polychlorinated dibenzo-furan emissions.

SCAQMD staff conducted a site visit on October 27, 2016 to verify sources of emissions and proximity to receptors. During the site visit, Owens Corning representatives provided documentation detailing calculation methodologies from asphalt blowing specific to the facility demonstrating that no chloride compounds were used at the Compton plant. As a result, SCAQMD staff recalculated the priority score for Owens Corning which decreased to 6.98 and an ATIR was no longer required from the facility.

2.3.11 Quemetco (ID 8547) – City of Industry¹³

Quemetco operates a battery recycling and lead recovery facility in the City of Industry. At this facility, used batteries are received, fragmented and the lead-containing materials are recovered and purified. The primary pollutants for this facility are arsenic, lead, benzene, and 1,3-butadiene.

Multiple AB 2588 HRAs have been approved for Quemetco in the past, most recently in 2010. In October and November 2013, SCAQMD staff conducted source tests at Quemetco. The results of the 2013 source tests showed elevated arsenic, benzene, and 1,3-butadiene emissions compared to previous 2009, 2010, and 2012 source tests. As a result, on December 10, 2013, SCAQMD staff requested that Quemetco prepare and submit an

¹³ <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/quemetco>

HRA pursuant to Rule 1402. Quemetco submitted an HRA on May 9, 2014. SCAQMD staff has commented on and asked for multiple revisions of the HRA. On September 16, 2015, SCAQMD sent Quemetco a tentative approval of the staff-modified revised HRA. Quemetco subsequently commented that the monitoring data collected onsite required revision before incorporating into the HRA. SCAQMD staff subsequently evaluated Quemetco's monitoring data in late 2015 and early 2016. Onsite fence-line monitoring data was corrected for pre-existing arsenic on blank filters and the dispersion modeling source parameters were subsequently adjusted.

Additionally, in 2014, SCAQMD staff initiated a technology demonstration pilot study for in-stack continuous emissions monitoring system (CEMS) and fence-line/perimeter ambient air monitoring for multi-metals. Contracts with Cooper Environmental Services, the only manufacturer of these types of continuous monitors, were initiated to implement the study. The pilot study was conducted at Quemetco and Gerdau in 2015. Preliminary findings from 2015 for ambient multi-metal monitor showed favorable results for lead and less quantitative results for other metals, but most results were useful for trend detection. Quemetco purchased the in-stack CEMS.

SCAQMD staff approved the HRA on May 17, 2016 with some revisions. The approved HRA showed residential cancer health risk was 16 in one million, the worker chronic hazard index was 1.28, and the cancer burden was 2.0. These values exceeded the Action Risk Levels of Rule 1402 and public notification and a RRP was required. A public notice was sent to approximately 8,000 residents and businesses within the public notification area. A public notification meeting was held on June 23, 2016 at La Puente High School.

Quemetco submitted an RRP on November 16, 2016. As part of the RRP, Quemetco has proposed using in-stack multi-metals CEMS to ensure that Rule 1402 risk thresholds are not exceeded. Quemetco's RRP was conditionally approved on June 22, 2017.

In addition, Quemetco has requested a permit modification to allow a 25% increase in their daily throughput. SCAQMD staff is processing this permit request, and is also preparing an Environmental Impact Report (EIR) as required by the California Environmental Quality Act (CEQA). The EIR will evaluate the potential environmental impacts of this proposed permit modification and will include an analysis of the health risks associated with the throughput increase. There will be multiple opportunities for the public to provide input on the EIR. The Final EIR will include responses to all comments received and must be certified before the permit modification request can be considered for approval.

2.4 Industry-wide Source Category Sources

Industry-wide source categories are smaller facilities that share the same Standard Industrial Classification code, and thus can be easily and generically characterized. For the most part, these facilities are small businesses that would suffer economic hardships by individual compliance, if HRAs were required. SCAQMD has identified seven Industry-wide categories:

- Retail Gasoline Dispensing;
- Perchloroethylene Dry Cleaning;
- Auto Body Shops;
- Fiberglass Molding;
- Printing;
- Metal Plating, and
- Wood Stripping / Refinishing.

An advantage for Industry-wide source categories is that compliance can be handled collectively. H&S Code 44323 states that an air district may prepare an Industry-wide source emission inventory and health risk assessment for the Industry-wide source facilities. CAPCOA has been developing statewide emission inventory and risk assessment guidelines for several of these Industry-wide source categories. The guidelines provide a cost-effective and uniform method for calculating facility emissions and estimating toxic risks for these facilities under SCAQMD's jurisdiction.

Eventually, Industry-wide risk assessments will be prepared for all the categories listed above. To date, risk assessments are available for retail gas stations and dry cleaners using perchloroethylene. Detailed maps of estimated cancer risks from these facilities can be found on SCAQMD's website.¹⁴ CARB provided a report dated December 23, 2013 on revised emission factors for gasoline dispensing operations. SCAQMD staff evaluated this document in conjunction with CAPCOA in 2016 and will use the information to update the Industry-wide source category HRA for gas stations. Due to Rule 1421 – Control of Perchloroethylene Emissions from Dry Cleaning Systems, the number of dry cleaners in the Basin has substantially decreased and no perchloroethylene will be used in the industry after December 31, 2020.

¹⁴ <http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588/iws-facilities>

2.5 Updates to Facility Prioritization Procedures and Supplemental Guidelines for AB 2588 Program

On June 5, 2015, the Governing Board adopted revisions to the Facility Prioritization Procedures and AB 2588 Supplemental Guidelines in conjunction with amendments to Rules 1401, 1401.1 – Requirements for New and Relocated Facilities Near Schools, 1402 and 212 – Standards for Approving Permits and Issuing Public Notice, that incorporated the 2015 OEHHA’s HRA Guidelines, which took into account recent scientific research that found children are more susceptible to cancer-causing compounds than previously considered. Subsequently, On August 17, 2016, CAPCOA updated its own AB 2588 Prioritization Procedures to incorporate the 2015 OEHHA’s HRA Guideline revisions. In addition, on October 7, 2016 the Governing Board approved additional amendments to Rule 1402 to incorporate a Voluntary Risk Reduction Program, among other changes.

During 2016, SCAQMD staff worked on developing an additional update to the Facility Prioritization Procedures to add more refined screening that more accurately identifies high priority facilities and improves staff’s ability to focus more on those high priority facilities. The updated procedure uses meteorological data consistent with the closest station to the facility instead of the worst-case meteorological stations in the Basin. In addition, actual receptor distance in the downwind direction is used instead of assuming the closest receptor is located in the downwind direction. As required by H&S Code Section 44344.4(c), the Facility Prioritization Procedures update was consistent with the August 17, 2016 Facility Prioritization Guidelines developed by CAPCOA.

SCAQMD staff also updated the AB 2588 and Rule 1402 Supplemental Guidelines regarding the information that must be included in an ATIR, a HRA, and added guidance on the elements that must be included in RRP, RRP Progress Reports, and Early Action Reduction Plans submitted under AB 2588 and Rule 1402.

On November 4, 2016, the Governing Board adopted revisions to the Facility Prioritization Procedures and the AB 2588 and Rule 1402 Supplemental Guidelines.

2.6 Rule 1401 Permitting and HRA Modeling Projects

Under Rule 1401, any new, relocated, or modified permit units which emit toxic air contaminants as specified in the rule are subject to specific allowable limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute and chronic hazard index (HI). In 2016, SCAQMD staff processed approximately 2,200 Rule 1401 applications for 1,400 facilities. Under Rule 1401, SCAQMD staff reviews air dispersion modeling submitted for new and modified permit applications to ensure that the health risk levels are not exceeded. Staff also provides air quality and HRA analyses for Hearing Board cases. In 2016, SCAQMD staff reviewed and approved 17 HRAs for permit applications.

2.7 Rule 1420.2 Modeling Projects

Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities, was adopted on October 2, 2015 to protect public health by minimizing public exposure to lead emissions and preventing exceedances of the NAAQS for lead in the Basin. The rule established ambient lead monitoring requirements, stricter ambient lead thresholds, enclosure requirements, and more comprehensive housekeeping provisions for lead-acid battery manufacturers, secondary smelters, scrap recyclers, and an iron and steel mini-mill. Under this rule, air dispersion modeling is used to demonstrate compliance with the ambient lead concentration limits by determining the maximum ground level lead concentrations caused by facility emissions and to find the appropriate location for placement of the ambient air monitors. In 2016, SCAQMD staff reviewed dispersion modeling for 12 facilities under this rule; four out of the 12 projects continued through 2017 with one project currently in progress. Table 2 shows the facilities evaluated under this rule.

Table 2 – Rule 1420.2 Facilities with Dispersion Modeling Review

Facility Name	ID #	Status
Ace Clearwater Enterprises	17325	Completed in 2016
Atlas Pacific	77271	Completed in 2016
Exide Technologies	124805	Completed in 2016
Interspace Battery Corp.	7238	Completed in 2016
Liberty Mfg. Inc.	140878	Completed in 2016
Ramcar Batteries Inc.	79682	Completed in 2016
Trojan Battery Company, LLC	21872	Completed in 2016
U. S. Battery Manufacturing. Co.	71160	Completed in 2016
P. Kay Metal , Inc.	72937	Completed in 2017
Senior Aerospace, SSP	105598	Completed in 2017
Teledyne Battery Products	173302	Completed in 2017
Industrial Battery Engineering, Inc.	3277	In progress

2.8 Rules Adopted or Amended in 2016

2.8.1 Amended Rule 307.1 – Alternative Fees for Air Toxics Emissions Inventory (October 2016)

Amended Rule 307.1 includes a fee category for facilities participating in the Voluntary Risk Reduction Program, a new provision adopted under Amended Rule 1402. Under the Voluntary Risk Reduction Program, eligible facilities implement voluntary risk reduction measures and are allowed an alternative public notification approach. Amended Rule 307.1 establishes fees for the facility owner or operator to pay for costs associated with public notification meetings required by Rule 1402 and updates the reference to the most current Facility Prioritization Procedures for the AB 2588 Program.

2.8.2 Amended Rule 1401 – New Source Review of Toxic Air Contaminants (October 2016)

Amended Rule 1401 removed provisions that require staff to bring changes from OEHHA regarding new or revised toxic air contaminant health values to the Governing Board for adoption. The changes and potential impacts to permitting and AB 2588 will be discussed in the AB 2588 Annual Report for the relevant year.

2.8.3 Amended Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (October 2016)

Amended Rule 1402 included a Voluntary Risk Reduction Program to allow facilities that go beyond the Action Risk Levels in Rule 1402 to implement early risk reduction measures with an alternative public notification approach. In addition, Amended Rule 1402 streamlined implementation, and included new provisions for Potentially High Risk Level facilities and other amendments to improve clarity. The “Public Notification Procedures for Phase I and II Facilities Under the Air Toxics ‘Hot Spots’ Information and Assessment Act of 1987 (AB 2588)” were revised. The “SCAQMD Guidelines for Participating in the Rule 1402 Voluntary Risk Reduction Program” was also updated to reflect the changes adopted in Rule 1402.

2.9 Toxic Program Impacts with New or Revised Toxic Air Contaminants

Pursuant to Rule 1402, once OEHHA finalizes the identification of a new toxic air contaminant or revises a risk value for an existing toxic air contaminant, SCAQMD staff provides notice to the Governing Board and affected industries annually through the AB 2588 Annual Report. This report also includes a preliminary estimate of Rule 1402 program impacts. Rule 1401 includes additional requirements for reporting to the Governing Board on permitting impacts. The report for Rule 1401 impacts will be provided later in 2017.

Background

On February 21, 2017, OEHHA adopted new acute, 8-hour, and chronic inhalation reference exposure levels (RELs) for carbonyl sulfide (CAS No. 463-58-1).¹⁵ RELs are airborne concentrations of a chemical that are not anticipated to result in adverse non-cancer health effects for specified exposure durations in the general population, including sensitive subpopulations.¹⁶ The adopted RELs cover different types of exposure to carbonyl sulfide in air: infrequent 1-hour exposures, repeated 8-hour exposures, and continuous long-term exposure.

Carbonyl Sulfide – Carbonyl sulfide is found in crude oil, salt marshes, soil, decomposition of fungal spores and volcanic gases. Carbonyl sulfide is used in the synthesis of some pesticides and herbicides, and flexible waterproof coatings. It can be generated from sulfur combustion at refineries, coal combustion and is a component of cigarette smoke. Carbonyl sulfide is used to fumigate grain and has the potential to replacement methyl bromide, which is an ozone depleting compound, and to supplement phosphine gas, which is experiencing increased insect resistance. The OEHHA updated RELs are summarized in Table 3.

Table 3 - Adopted Health Risk Values for Carbonyl Sulfide

Acute REL µg/m³	8-Hour Chronic REL µg/m³	Chronic REL µg/m³
660	10	10

Assessment of Impacts to Existing Facilities

For the 2014 and 2015 reporting period, 17 facilities reported annual emissions of carbonyl sulfide. Only two facilities reported these compounds in quantities sufficient to exceed a screening level which could trigger a requirement to submit an HRA; however, these facilities would have been required to prepare an HRA even if they did not emit carbonyl sulfide. Both of these facilities are categorized as petroleum refining facilities. A breakdown of the types of facilities and the number of those types of facilities that reported carbonyl sulfide emissions are presented in Table 4.

¹⁵The documents are available at: <https://oehha.ca.gov/air/crnr/notice-adoption-reference-exposure-levels-carbonyl-sulfide>

¹⁶OEHHA, 2003 - *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.

Table 4 –Facilities Reporting Carbonyl Sulfide Emissions from 2014 to 2015

Facility Description	Number of Facilities
Amusement Parks	2
Asphalt Felts And Coatings	1
Fabricated Rubber Products	1
Petroleum Refining	8
Refuse Systems	4
Reg, Admin Of Utilities	1
Total:	17

Ten of the 17 facilities have approved HRAs. Other more potent toxic air contaminants contribute to the majority of these facilities’ total risk and the new carbonyl sulfide health risk values would have negligible effect on the overall health risks from these facilities, with the exception of the two petroleum refinery facilities described previously.

Analysis of one facility with reported emissions of carbonyl sulfide showed that the non-cancer risk from carbonyl sulfide compounds was the main risk driver, however, this facility has already agreed to enter into the Voluntary Risk Reduction Program. Under the Voluntary Risk Reduction Program, the facility would need to reduce health risks to below a MICR of ten in one million and total acute or chronic HI of 1.0. Once the VRRP is approved and implemented, the facility is not expected to generate a significant health risk to nearby receptors. The other facility also has a priority score greater than 10 and was notified in 2017 to either submit an ATIR or participate in the Voluntary Risk Reduction Program. This facility has also informed staff of their intent to participate in the Voluntary Risk Reduction Program. Therefore, no additional impacts are expected.

2.10 National Air Toxics Assessment (NATA)

Every three years, beginning in 1996, U.S. EPA prepares a National Air Toxics Assessment (NATA).¹⁷ The purpose of NATA is to: (1) identify and prioritize toxic air contaminants of greatest concern, (2) determine the risk contribution from each of the major source categories (i.e., on-road, off-road, point, and area), and (3) identify local areas (i.e., census tracts) with potentially elevated risks. As part of this process, SCAQMD staff coordinates with U.S. EPA staff to ensure that NATA incorporates the best available local emissions data. The current triennial inventory process began in September 2016 for the purpose of reviewing 2014 data. In December 2016, SCAQMD staff initiated review of emissions data from stationary sources determined by U.S. EPA to be high risk within the

¹⁷The U.S. EPA’s web portal to NATA is at: <https://www.epa.gov/national-air-toxics-assessment>

SCAQMD's jurisdiction. This effort is currently ongoing and additional information will be provided in the 2017 Annual Report.

3.0 FUTURE ACTIVITIES

3.1 AB 2588 Activities

In 2017, staff will prioritize approximately 200 facilities and notify those with high priority scores to prepare ATIRs, HRAs, or VRRPs, if eligible. There are substantial number of ATIRs and VRRPs that are expected to be reviewed in 2017. Staff has notified 27 facilities in late 2016 and so far in 2017 to prepare either an ATIR or a VRRP, if eligible. Approximately 18 additional notification requests are anticipated to be sent for ATIRs (VRRPs for eligible facilities) through the end of 2017. Public notification will also occur for multiple facilities including Aerocraft Heat Treating Co. (ID 23752) and Anaplex Corporation (ID 16951), and potentially others.

3.2 Model-Monitor Reconciliation

In response to community concerns regarding fugitive emissions and difficulties quantifying those emissions, SCAQMD staff will continue to investigate options regarding model-monitor reconciliation. Often, modeling analysis predicts concentrations that are substantially lower than those found in the monitoring results. This difference may be due to fugitive emissions that are not captured in traditional emission inventories.

At its June 3, 2016 meeting, the Governing Board approved a contract for Protocol Development for Reconciling Air Quality Monitoring Data with Dispersion Modeling Results to provide support in developing a consistent methodology for facilities to use when preparing AB 2588 HRAs. Staff will continue to work on this project throughout 2017.

3.3 Rulemaking

Proposed Rule 1430 - Control of Emissions from Grinding Operations at Metal Forging Facilities – Prior to this rule, there were currently no SCAQMD regulatory requirements for metal grinding operations, and this activity is exempt from permitting. In March 2017, the Board adopted Rule 1430 to control toxic metal particulate emissions from grinding operations at forging facilities. The purpose of this rule is to reduce toxic and particulate matter emissions, in addition to odors, from metal grinding and cutting operations at metal forging facilities.

Proposed Amended Rule 1420 - Emission Standard for Lead - In October 2008, U.S. EPA lowered the NAAQS for lead from 1.5 to 0.15 $\mu\text{g}/\text{m}^3$ and revised the averaging period from a calendar quarter to a 3-month rolling average. Proposed Rule 1420 will establish requirements for lead-emitting sources that are not covered under Rules 1420.1 - Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-acid Battery

Recycling Facilities, and Rule 1420.2 - Emission Standards for Lead from Metal Melting Facilities, to ensure compliance with the lead NAAQS. Proposed language will also clarify New Source Review for stationary lead sources and modify the ambient lead concentration to be consistent with Rules 1420.1 and 1420.2. Other concepts under consideration are to require periodic source testing rather than one-time source testing, enclosures for sources, and more prescriptive housekeeping measures. Lowering the threshold for exemptions from the rule are also under consideration.

Proposed Amended Rule 1466 - Toxic Air Contaminant Emissions from Decontamination of Soil¹⁸ - Proposed Rule 1466 will establish requirements to control toxic particulate emissions from activities involving storing, handling and transporting soils during soil decontamination activities. The purpose of the rule is to minimize the amount of offsite fugitive dust emissions containing arsenic, asbestos, cadmium, hexavalent chromium, lead, mercury, nickel, and polychlorinated biphenyls. Measures under consideration are either to reduce the fugitive dust or to mitigate the impacts of fugitive dust. Some examples are: surrounding the perimeter with fencing and windscreens; ceasing operations during periods of high winds; and covering or chemically stabilizing stockpiles at the end of a workday. A requirement to conduct continuous ambient monitoring of PM10 concentrations in areas undergoing earth-moving activities is also being proposed.

Proposed Amended Rule 1401 - New Source Review of Toxic Air Contaminants - On June 5, 2015, Rule 1401 was amended to reference the 2015 OEHHA HRA Guidelines. At the time, provisions were included to allow additional time for spray booths and gasoline dispensing facilities to continue to use SCAQMD Risk Assessment Procedures for Rule 1401 and 212 (Version 7.0, July 1, 2005) while staff analyzed the potential impacts. SCAQMD staff has completed its analysis and is recommending that spray booths and gasoline dispensing stations use the most recent version of SCAQMD Risk Assessment Procedures. The proposed rule will also update the list of applicable toxic air contaminants.

Proposed Rules 1407 - Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Operations - Proposed Rule 1407 will establish additional requirements to minimize air toxics from metal melting operations. SCAQMD staff is analyzing sources subject to Rule 1407 and considering adding additional toxic air contaminants to the applicability as well as including ferrous metal melting operations. No specific control strategies have been identified since working group meetings have not been held thus far.

Proposed Rule 1435 - Control of Emissions from Metal Heat Treating Processes - Proposed Rule 1435 will establish requirements to reduce metal particulate emissions from heat treating processes. SCAQMD staff is currently evaluating metal heat treating

¹⁸ <http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1466/pr-1466-draft-staff-report.pdf>

processes to determine the significance of hexavalent chromium emissions. No specific control strategies have been identified at this time.

Proposed Rule 1445 - Control of Toxic Emissions from Laser and Plasma Cutting

Operations - The proposed rule will control metal particulate emissions from laser and plasma cutting operations. The intense energy of both the laser and plasma cutting process creates fumes and smoke from vaporizing the molten material. Uncontrolled vaporized metals such as cadmium and nickel present environmental and health concerns. Additionally, high energy processes, such as laser and plasma cutting can oxidize the elemental chrome in stainless steel into hexavalent chrome. Control measures under consideration include improved filter technologies such as high efficiency particulate arrestor filters, ultra-low particulate air filters, or possibly other pollution controls.

Proposed Amended Rule 1426 - Emissions from Metal Finishing Operations

– Rule 1426 applies to facilities performing chromium, nickel, cadmium, lead or copper electroplating operations, or chromic acid anodizing. This rule also applies to facilities with process tanks containing sulfuric acid, nitric acid, hydrochloric acid, chromic acid (excluding chromic acid used in electroplating and anodizing tanks), and sodium hydroxide used in spraying operation. Proposed amendments will establish requirements to reduce nickel, cadmium and other toxic air contaminants from these operations.

Proposed Amended Rule 1469 - Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

– Rule 1469 applies to facilities performing chrome electroplating or chromic acid anodizing. Current monitoring near Rule 1469 facilities have shown high levels of hexavalent chromium and Proposed Amended Rule 1469 will strengthen requirements to address potential fugitive emissions from these operations. The rule will be updated to address inconsistencies with the 2012 National Emission Standard for Hazardous Air Pollutants for chromium electroplating and anodizing tanks and also to account for the 2015 OEHHA HRA Guidelines.

Proposed Rule 1410 - Hydrogen Fluoride Use at Refineries

- Proposed Rule 1410 will establish requirements for use of hydrogen fluoride at refineries and phase out use. Hydrogen fluoride is a chemical compound used in petroleum alkylation processes to make higher octane gasolines. When contacted with moisture, it converts to hydrofluoric acid, which is highly corrosive and toxic. Current working group discussions involve identifying alternative alkylation technologies, methods to transition from hydrogen fluoride to other alkylation technologies, and monitoring methodologies, and mitigation of the effects of any releases. There are currently two refineries within SCAQMD jurisdiction which would be subject to this rule.

Appendix A

Health Risks from Facilities with an Approved Health Risk Assessment (HRA)

The tables in Appendix A list the facilities and the risks identified in their HRAs or RRP as reviewed and approved by SCAQMD staff. Risks presented in this table were calculated based on guidance that was available from OEHHA at the time of HRA approval. For example, the risks presented in this appendix for facilities with HRA approval date prior to 2015 do not include the health risk calculation methodologies (OEHHA, 2015) that account for the differences in children's breathing rates and place greater emphasis on their susceptibility to cancer risk in comparison to adults. The risks in all HRAs finalized by SCAQMD staff in 2015 were recalculated to reflect the 2015 OEHHA HRA Guidelines.

Appendix A-1 lists the facilities in order of their cancer risks and Appendix A-2 lists the facilities ordered by facility ID. The listed risks are from an approved HRA, unless an approved RRP has been fully implemented. In those instances, the listed risks reflect the risks after the implementation of the RRP. Appendix A-3 lists the status of the facility's RRP and is presented by Facility ID. Attention should also be given to the other footnotes in the table denoting facilities with updated HRAs pending approval and facilities with risk including emergency diesel internal combustion engines. It also provides the current status of each facility as follows:

- A – Active (note that facilities with “Active” status within SCAQMD’s database might not be in operation currently)
- I – Inactive
- OB – Out of business

“Inactive” and “out of business” facilities have been retained for historical purposes since staff occasionally receives public inquiries regarding “inactive” or “out of business” facilities. Facilities that have gone through change of ownership could have different name and facility ID numbers. The following risk levels are identified in SCAQMD Rule 1402 – Control of Toxic Air Contaminants from Existing Sources:

- **Action Risk Levels:** Cancer risk ≥ 25 in a million; Acute HI ≥ 3.0 ; Chronic HI ≥ 3.0 , Cancer Burden ≥ 0.5
- **Public Notification Levels:** Cancer risk ≥ 10 in a million; Acute HI > 1.0 ; Chronic HI > 1.0
- **Exemption Levels:** Cancer risk < 1 in a million; Acute HI < 0.1 ; Chronic HI < 0.1

Appendix A-1. Continued.

APPENDIX A-1
Health Risks from Facilities with an Approved HRA
 (Listed in descending order by cancer risk)

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
11818	A	HIXSON METAL FINISHING	NEWPORT BEACH	1502.0	1.09	0.2	0.1	2015
124838	OB	EXIDE TECHNOLOGIES	LOS ANGELES	156.0	10	3.8	63.0	2013
18989	A	BOWMAN PLATING CO INC	COMPTON	97.72	0.10	0.07	0.10	2015
18931	A	GERDAU	RANCHO CUCAMONGA	52.7	3.08	3.0	3.2	2015
171107	A	PHILLIPS 66 CO/LA REFINERY WILMINGTON PL	WILMINGTON	23.2	0.29	0.1	0.7	2013
122822	I	CONSOLIDATED FILM INDUSTRIES	HOLLYWOOD	21.0	ND	0.1	0.4	2000
176967	A	GAS RECOVERY SYSTEMS, INC	IRVINE	20.1	0.18	0.6	0.3	2009
14495	A	VISTA METALS CORP	FONTANA	19.8	0.06	0.0	0.3	2008
165192	A	TRIUMPH AEROSTRUCTURES, LLC (b)	HAWTHORNE	19.7	ND	0.6	0.2	1999
11142	OB	KEYSOR-CENTURY CORP	SAUGUS	17.0	ND	0.5	0.1	2000
8547	A	QUEMETCO INC (c)	INDUSTRY	16.0	2	0.22	1.28	2016
22911	A	CARLTON FORGE WORKS	PARAMOUNT	15.4	ND	1.76	1.04	2016
35302	A	OWENS CORNING (c)	COMPTON	14.0	0.02	0.1	0.1	2000
41229	A	LUBECO INC	LONG BEACH	14.0	ND	0.0	0.1	2002
48323	A	SIGMA PLATING CO INC	LA PUENTE	13.8	ND	0.0	0.7	2001
23907	A	JOHNS MANVILLE CORP	CORONA	13.0	ND	0.4	2.7	1999
18648	OB	CROWN CITY PLATING CO.	EL MONTE	12.0	ND	0.4	0.1	2000
29110	A	ORANGE, COUNTYOF - SANITATION DISTRICT (d)	HUNTINGTON BEACH	10.7	ND	1.8	0.5	2007
800436	A	TESORO REFINING AND MARKETING CO	WILMINGTON	10.7	0.37	0.3	0.4	2013
155828	A	GARRETT AVIATION SVCS. LLC DBA STANDARD	LOS ANGELES	< 10	0.001	0.2	0.3	2002
106797	OB	SAINT-GOBAIN CONTAINERS LLC	LOS ANGELES	9.9	ND	0.0	0.1	2000
101380	OB	GENERAL DYNAMICS OTS (DOWNEY) INC	DOWNEY	9.8	ND	0.0	0.1	2000
148925	A	CHERRY AEROSPACE LLC	SANTA ANA	9.7	ND	0.1	0.2	1999
800373	I	CENCO REFINING COMPANY	SANTA FE SPRINGS	9.7	ND	0.3	0.1	2000
800183	A	PARAMOUNT PETR CORP (EIS USE)	PARAMOUNT	9.6	ND	0.0	0.0	2002
800318	A	GRISWOLD INDUSTRIES	COSTA MESA	9.5	0.01	0.1	0.0	2001
15504	A	SCHLOSSER FORGE CO	RANCHO CUCAMONGA	9.5	ND	1.6	1.1	2002
800149	A	US BORAX INC	WILMINGTON	9.5	ND	0.0	0.0	2000
10510	A	GREGG INDUSTRIES INC	EL MONTE	9.4	ND	0.6	0.6	2008
62897	OB	NORTHROP GRUMMAN CORP, MASD	PICO RIVERA	9.4	ND	1.0	0.5	2000
42922	OB	CMC PRINTED BAG INC	WHITTIER	9.0	ND	0.0	0.0	1995
174710	A	TESORO LOGISTICS OP LLC, VINVALE MARKETI	SOUTH GATE	9.0	ND	0.0	0.0	1994

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
169990	A	SPS TECHNOLOGIES, LLC	GARDENA	8.9	ND	0.1	0.1	1999
800184	A	GOLDEN WEST REF CO	SANTA FE SPRINGS	8.8	ND	0.2	0.1	1997
1744	A	KIRKHILL RUBBER CO	BREA	8.7	0.001	0.2	0.1	2007
175124	A	AEROJET ROCKETDYNE OF DE, INC.	CANOCA PARK	8.7	ND	0.0	0.0	1995
44454	A	STRUCTURAL COMPOSITES IND	POMONA	8.6	0.001	0.0	0.2	2002
107168	I	ADVANCED SPA DESIGNS	LA HABRA	8.6	ND	0.0	0.0	1995
2680	A	LA CO., SANITATION DISTRICT	WHITTIER	8.6	ND	0.0	0.0	1999
15736	A	HENRY CO	HUNTINGTON PARK	8.5	ND	0.0	0.0	2000
800057	A	KINDER MORGAN LIQUIDS TERMINALS, LLC	CARSON	8.5	ND	0.0	0.1	1999
800079	A	PETRO DIAMOND TERMINAL CO	LONG BEACH	8.3	ND	0.0	0.2	1998
125281	OB	MODERN PLATING, ALCO CAD-NICKEL PLATING	LOS ANGELES	8.2	ND	0.1	0.0	1995
21615	OB	PERKINELMER OPTOELECTRONICS SC, INC	AZUSA	8.1	ND	0.2	0.1	1998
110924	A	WESTWAY TERMINAL COMPANY	SAN PEDRO	8.0	ND	0.3	0.5	1997
3609	I	AL'S PLATING CO INC	LOS ANGELES	7.8	ND	0.3	0.2	1999
37603	A	SGL TECHNIC INC, POLYCARBON DIVISION	VALENCIA	7.8	ND	0.0	0.4	1998
800182	A	RIVERSIDE CEMENT CO (c)	RIVERSIDE	7.8	0.11	0.1	0.1	2001
13920	A	ST. JOSPEH HOSPITAL	ORANGE	7.7	0.004	0.8	0.3	2008
800089	A	EXXONMOBIL OIL CORPORATION	TORRANCE	7.7	0.15	0.2	0.5	2013
18294	A	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	EL SEGUNDO	7.6	ND	0.1	0.1	1999
113170	A	SANTA MONICA - UCLA MEDICAL CENTER (b)	SANTA MONICA	7.6	0.14	0.2	0.0	1997
800214	A	LA CITY, SANITATION BUREAU (c)	PLAYA DEL REY	7.6	ND	0.1	0.0	1999
20197	A	LAC/USC MEDICAL CENTER	LOS ANGELES	7.5	ND	0.7	0.4	2007
800032	A	CHEVRON U.S.A. INC (EIS USE)	MONTEBELLO	7.5	0.14	0.0	0.2	1999
800150	A	US GOVT, AF DEPT, MARCH AFB (NSR USE)	RIVERSIDE	7.4	0.02	0.3	0.0	2008
108701	A	SAINT-GOBAIN CONTAINERS LLC	EL MONTE	7.3	ND	0.1	0.1	2000
117560	A	EQUILON ENTER, LLC-SHELL OIL PROD. US	WILMINGTON	7.3	ND	0.0	0.1	1998
174655	A	TESORO REFINING & MARKETING CO, LLC	CARSON	7.3	ND	0.3	0.1	2000
800026	A	ULTRAMAR INC (NSR USE ONLY)	WILMINGTON	7.2	0.18	0.7	0.2	2012
800113	A	ROHR, INC	RIVERSIDE	7.2	0.01	0.9	0.0	2007
800236	A	LA CO. SANITATION DIST	CARSON	7.2	ND	0.2	0.1	2007
49387	A	UNIV CAL, RIVERSIDE	RIVERSIDE	7.1	ND	0.0	0.0	1999
27343	OB	CON AGRA INC, GILROY FOODS DBA	SANTA ANA	7.1	ND	0.2	0.1	1995
57094	A	GS ROOFING PRODUCTS CO, INC/CERTAINTEED (c)	WILMINGTON	7.0	ND	0.0	0.0	2000
140499	A	AMERESCO HUNTINGTON BEACH, L.L.C.	HUNTINGTON BEACH	7.0	ND	0.0	0.0	1995
800209	A	BKK CORPORATION, LANDFILL DIVISION GNRL	WEST COVINA	6.9	ND	0.0	0.1	2000
800372	A	EQUILON ENTER. LLC, SHELL OIL PROD. US	CARSON	6.9	ND	0.4	0.1	2001

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
20280	A	METAL SURFACES INC	BELL GARDENS	6.8	0	0.9	0.3	2011
5723	A	DUCOMMUN AEROSTRUCTURES INC	ORANGE	6.7	ND	0.0	0.1	1999
173913	A	TRIUMPH PROCESSING, EMBEE DIV, INC.	SANTA ANA	6.6	ND	0.2	0.6	2000
17301	A	ORANGE, COUNTY OF - SANITATION DISTRICT	FOUNTAIN VALLEY	6.6	0.001	0.4	0.3	2007
118998	OB	CYTEC FIBERITE INC	CULVER CITY	6.6	ND	0.0	0.2	1997
171109	A	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	CARSON	6.6	0.11	0.0	0.3	2011
6643	A	TECHNICOLOR INC	NORTH HOLLYWOOD	6.5	ND	0.0	0.1	2007
34764	A	CADDOCK ELECTRONICS INC	RIVERSIDE	6.5	ND	0.0	0.1	
168088	A	PCCR USA	LYNWOOD	6.5	ND	0.1	1.6	1995
11726	A	GE ENGINE SERVICES	ONTARIO	6.5	ND	0.1	0.6	1999
2852	A	THE WALT DISNEY COMPANY	BURBANK	6.4	0.03	0.0	0.0	1997
800066	A	HITCO CARBON COMPOSITES INC	GARDENA	6.4	ND	0.3	0.0	1995
16660	A	THE BOEING COMPANY	HUNTINGTON BEACH	6.4	0.02	0.01	0.08	2015
4477	A	SO CAL EDISON CO	AVALON	6.3	0.02	0.0	0.0	2012
1226	A	HYATT DIE CAST & ENGINEERING CORP	CYPRESS	6.2	ND	0.0	0.1	1996
800067	A	BOEING SATELLITE SYSTEMS INC	EL SEGUNDO	6.2	ND	0.0	0.1	2000
146570	A	ROHM AND HAAS CHEMICALS LLC	LA MIRADA	6.2	ND	0.5	0.8	1999
45262	A	LA CO, SANITATION DISTRICT UNIT NO.02	GLENDALE	6.2	ND	0.0	0.1	1998
140961	A	GKN AEROSPACE TRANSPARENCY SYS INC	GARDEN GROVE	6.0	ND	0.0	0.5	1996
800022	A	CALNEV PIPE LINE CO (NSR USE)	BLOOMINGTON	5.9	ND	0.0	0.1	1999
800047	I	FLETCHER OIL & REF CO	CARSON	5.9	ND	0.0	0.0	1998
800198	A	ULTRAMAR INC (NSR USE ONLY)	WILMINGTON	5.9	ND	0.0	0.1	1999
800279	A	SFPP, L.P.	ORANGE	5.9	ND	0.0	0.2	1999
8578	OB	ASSOCIATED CONCRETE PROD. INC	SANTA ANA	5.8	ND	0.1	0.6	1999
136148	A	E/M COATING SERVICES	NORTH HOLLYWOOD	5.8	ND	0.3	0.6	1998
65382	A	SFPP, L.P.	BLOOMINGTON	5.8	ND	0.0	0.0	1996
164864	A	ARROWHEAD BRASS & PLUMBING	LOS ANGELES	5.7	ND	0.3	0.0	1995
800288	A	UNIV CAL IRVINE (NSR USE ONLY)	IRVINE	5.6	ND	0.0	0.1	1996
22410	A	PALACE PLATING	LOS ANGELES	5.6	ND	0.7	0.4	2004
38971	A	RICOH ELECTRONICS INC	IRVINE	5.6	ND	0.0	0.4	1995
14146	A	MAC GREGOR YACHT CORP	COSTA MESA	5.5	ND	0.0	0.1	1998
43201	A	SNOW SUMMIT INC	BIG BEAR LAKE	5.5	ND	0.2	0.0	2007
54424	A	L & L CUSTOM SHUTTERS	PLACENTIA	5.5	ND	0.2	0.2	2001
800409	A	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	REDONDO BEACH	5.5	ND	0.5	0.2	1998
800196	A	AMERICAN AIRLINES INC (EIS USE)	LOS ANGELES	5.4	ND	0.9	0.1	2002
800171	A	EXXONMOBIL OIL CORPORATION	VERNON	5.3	ND	0.1	0.0	1997

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
134018	A	INDUSTRIAL CONTAINER SERVICES-CA LLC	MONTEBELLO	5.2	ND	0.6	0.2	2000
109198	A	TORCH OPERATING COMPANY	BREA	5.0	ND	0.0	0.0	2001
103888	A	SARGENT FLETCHER INC	EL MONTE	4.9	ND	0.2	0.0	1999
800037	A	DEMENNO/KERDOON	COMPTON	4.9	0.01	0.0	0.0	2009
11192	A	HI-SHEAR CORPORATION	TORRANCE	4.8	ND	0.0	0.0	2008
800038	A	THE BOEING COMPANY - C17 PROGRAM	LONG BEACH	4.8	ND	0.2	0.1	1999
800264	A	EDGINGTON OIL COMPANY	LONG BEACH	4.8	0.001	0.0	0.0	2002
101977	A	SIGNAL HILL PETROLEUM INC	LONG BEACH	4.7	ND	0.6	1.0	1998
3950	A	CROWN CORK & SEAL CO INC	LA MIRADA	4.6	ND	0.0	0.1	1997
83102	A	LIGHT METALS INC	INDUSTRY	4.5	0.01	0.0	2.7	2002
157451	A	VERNON MACHINE CORP, BENDER US DBA	VERNON	4.4	0.001	1.0	0.0	2002
800041	A	DOW CHEM U.S.A. (NSR USE)	TORRANCE	4.4	ND	0.1	0.0	2000
93346	A	WAYMIRE DRUM CO,INC.,S EL MONTE FACILITY	SOUTH EL MONTE	4.3	ND	0.1	0.2	1997
174591	A	TESORO REFINING & MARKETING CO LLC, CAL (c)	WILMINGTON	4.3	ND	0.1	0.2	1995
177042	A	SOLVAY USA, INC	LONG BEACH	4.3	ND	0.3	0.0	2001
124506	A	BOEING ELECTRON DYNAMIC DEVICES INC	TORRANCE	4.2	ND	0.5	0.1	1995
6459	OB	HONEYWELL INTERNATIONAL INC	VERNON	4.1	ND	0.0	0.0	1999
7533	A	HUGO NEU-PROLER CO	TERMINAL ISLAND	4.1		1.3	0.1	
18439	OB	ACE PLATING CO INC	LOS ANGELES	4.1	ND	0.6	0.2	1998
45489	A	ABBOTT CARDIOVASCULAR SYSTEMS, INC.	TEMECULA	3.8	0.01	1.3	0.0	2002
126060	A	STERIGENICS US, LLC	ONTARIO	3.8	0	0.0	0.0	2007
8820	A	REULAND ELECTRIC CO, H.BRITTON LEES	INDUSTRY	3.7	ND	0.0	0.0	1996
9114	I	SOMITEX PRINTS OF CAL INC	INDUSTRY	3.7	ND	0.1	0.0	1996
17325	A	ACE CLEARWATER ENTER.	PARAMOUNT	3.7	ND	0.0	0.0	2002
106838	A	VALLEY-TODECO, INC	SYLMAR	3.7	ND	0.2	0.2	2000
105598	A	SENIOR FLEXONICS INC/STAINLESS STEEL DVN	BURBANK	3.6	ND	1.0	0.5	2001
7427	A	OWENS-BROCKWAY GLASS CONTAINER INC	VERNON	3.6	0.02	0.0	0.1	1999
800007	OB	ALLIED SIGNAL INC (NSR USE ONLY)	EL SEGUNDO	3.6	ND	0.0	0.5	2000
126197	A	STERIGENICS US, INC.	LOS ANGELES	3.6	ND	0.0	0.0	1996
127568	A	ENGINEERED POLYMER SOLUTION, VALSPAR	MONTEBELLO	3.5	ND	0.1	0.5	2000
151899	A	VINTAGE PRODUCTION CALIFORNIA LLC	NEWHALL	3.5	ND	0.0	0.2	2000
140811	A	DUCOMMUN AEROSTRUCTURES INC	MONROVIA	3.5	0.01	0.0	0.0	2002
8015	A	ANADITE INC	SOUTH GATE	3.5	ND	0.6	0.8	1998
9163	A	INLAND EMPIRE UTL AGEN, A MUN WATER DIS	ONTARIO	3.4	ND	0.3	0.0	2007
57329	OB	KWIKSET CORP	ANAHEIM	3.4	ND	0.0	0.1	2000
151415	A	LINN WESTERN OPERATING, INC	BREA	3.4	ND	0.0	0.0	1999

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
800204	OB	SIMPSON PAPER CO	POMONA	3.4	ND	0.0	0.0	1996
153546	A	HUCK INTL INC. DBA ALCOA FASTENING SYS.	CARSON	3.3	ND	0.0	0.0	1999
126191	A	STERIGENICS US, INC.	LOS ANGELES	3.3	ND	0.0	0.0	1996
800063	A	GROVER PROD. CO (EIS USE)	LOS ANGELES	3.3	ND	0.9	0.1	2001
800189	A	DISNEYLAND RESORT	ANAHEIM	3.3	0.03	0.1	0.1	2009
18396	A	SPRAYLAT CORP	LOS ANGELES	3.2	0	0.7	0.0	2012
6384	A	LA CO., RANCHO LOS AMIGOS MEDICAL CENTER	DOWNEY	3.1	ND	0.0	0.1	1999
113676	A	VICKERS	LOS ANGELES	3.0	ND	0.0	0.0	1995
11435	A	THE PQ CORP	SOUTH GATE	3.0	ND	0.0	0.0	1998
174703	A	TESORO REFINING & MARKETING CO LLC CARSO	CARSON	3.0	ND	0.0	0.0	1994
10005	A	ELECTRONIC CHROME GRINDING CO INC	SANTA FE SPRINGS	3.0	0.01	0.2	0.1	2001
52517	A	REXAM PLC, REXAM BEVERAGE CAN COMPANY	CHATSWORTH	2.9	0.01	0.7	0.1	2009
18452	A	UCLA (REGENTS OF UC) (c)	LOS ANGELES	2.9	ND	0.0	0.1	1999
2613	A	US GOVT, NAVY DEPT, NAVAL WEAPONS STN	SEAL BEACH	2.9	ND	0.1	0.0	2002
116868	A	EQUILON ENT LLC/RIALTO TERMINAL	BLOOMINGTON	2.9	ND	0.0	0.0	1999
800035	A	CONTINENTAL AIRLINES INC (NSR USE ONLY)	LOS ANGELES	2.8	ND	0.0	0.1	1995
48274	A	FENDER MUSICAL INST	CORONA	2.8	ND	0.0	0.4	1997
151798	A	TESORO REFINING AND MARKETING CO	CARSON	2.8	ND	0.1	0.0	1999
167981	A	TESORO LOGISTICS OPERATIONS LLC	WILMINGTON	2.8	ND	0.0	0.0	2000
800030	A	CHEVRON PRODUCTS CO.	EL SEGUNDO	2.7	0.28	0.3	0.1	2001
5887	A	NEXGEN PHARMA INC	IRVINE	2.7	ND	0.0	0.0	1997
16642	A	ANHEUSER-BUSCH INC., (LA BREWERY)	VAN NUYS	2.7	ND	0.0	0.1	1999
25440	A	ROBERTSHAW CONTROLS CO, GRAYSON CONTROLS	LONG BEACH	2.7	ND	0.0	1.0	1998
27701	A	CADDOCK ELECTRONIC	RIVERSIDE	2.7	ND	0.0	0.1	2002
46268	A	CALIFORNIA STEEL INDUSTRIES INC	FONTANA	2.7	0.02	0.2	0.0	1995
137517	A	PACIFIC TERMINALS LLC	ETIWANDA	2.7	ND	0.0	0.2	2000
175191	A	FREEMPORT-MCMORAN OIL & GAS	LOS ANGELES	2.7	ND	0.0	0.1	1997
35483	A	WARNER BROTHERS STUDIO FACILITIES	BURBANK	2.6	ND	0.1	0.3	1997
134943	A	ALCOA GLOBAL FASTENERS, INC. SOUTH BAY	TORRANCE	2.6	ND	0.6	0.0	2008
37507	A	TROJAN BATTERY COMPANY	SANTA FE SPRINGS	2.6	0.001	1.1	1.3	2012
7949	A	CUSTOM FIBERGLASS MFG CO/CUSTOM HARDTOP	LONG BEACH	2.5	ND	0.0	0.0	1995
65381	A	SFPP, L.P. (NSR USE)	CARSON	2.4	ND	0.0	0.1	1999
79682	A	RAMCAR BATTERIES INC	COMMERCE	2.4	1	0.0	0.2	1998
18508	A	AIR PROD & CHEM INC	LOS ANGELES	2.4	ND	0.1	0.8	1999
800202	A	UNIVERSAL STUDIOS INC (EIS USE)	UNIVERSAL CITY	2.4	ND	0.0	0.0	1996
800387	A	CAL INST OF TECH	PASADENA	2.4	ND	0.1	0.0	2007

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
172878	A	TESORO LOGISTICS OPERATIONS LLC LONG BEA	LONG BEACH	2.4	ND	0.0	0.0	1999
133405	A	BODYCOTE INC/BODYCOTE THERMAL PROCESSING	LOS ANGELES	2.4	ND	0.0	0.2	1999
800039	I	DOUGLAS PRODUCTS DIVISION	TORRANCE	2.4	ND	0.0	0.0	1996
1208	OB	MICROSEMI CORP	SANTA ANA	2.3	ND	0.0	0.0	2001
90546	OB	SORIN BIOMEDICAL INC	IRVINE	2.3	ND	0.0	0.0	1996
160437	A	SOUTHERN CALIFORNIA EDISON	SAN BERNARDINO	2.3	<0.01	<0.01	<0.01	2013
800056	A	KINDER MORGAN LIQUIDS TERMINALS, LLC	WILMINGTON	2.3	0.01	0.0	0.0	1997
800111	OB	THE BOEING COMPANY	DOWNEY	2.3	ND	0.0	0.1	1996
103659	OB	4MC-BURBANK, INC.	BURBANK	2.2	ND	0.6	0.0	2004
99773	A	CYTEC FIBERITE INC	ANAHEIM	2.2	0.0004	0.0	0.2	2000
9668	A	DELUXE LABORATORIES INC,DELUXE LABORATOR	HOLLYWOOD	2.1	ND	0.0	0.0	2000
40829	A	HAWKER PACIFIC INC	SUN VALLEY	2.1	0.0003	0.0	0.1	2009
142267	A	FS PRECISION TECH LLC	RANCHO DOMINGUEZ	2.0	ND	0.1	0.2	2001
800181	A	CALIFORNIA PORTLAND CEMENT CO (c)	COLTON	2.0	ND	0.0	0.4	1996
2605	A	3M PHARMACEUTICALS	NORTHRIDGE	2.0	ND	0.4	0.4	1996
14502	A	VERNON CITY, LIGHT & POWER DEPT	VERNON	2.0	0.0004	0.0	0.0	2007
54627	A	HICKORY SPRINGS OF CAL INC	COMMERCE	2.0	ND	0.0	0.5	1998
800325	A	TIDELANDS OIL PRODUCTION CO	LONG BEACH	1.9	ND	0.1	0.6	1999
10245	A	LA CITY,SANITATION BUREAU,TERMINAL ISLAN	SAN PEDRO	1.8	ND	0.0	0.0	2000
23559	OB	JOHNSON CONTROLS BATTERY GROUP INC	FULLERTON	1.8	ND	0.0	0.1	2001
800003	A	HONEYWELL INTERNATIONAL INC	TORRANCE	1.8	ND	0.0	0.0	1999
8309	A	CAMBRO MANUFACTURING CO	HUNTINGTON BEACH	1.7	ND	0.0	0.1	2000
22467	A	LEFIELL MFG CO	SANTA FE SPRINGS	1.7	ND	0.7	0.2	2000
82512	A	BREA CANON OIL CO	WILMINGTON	1.7	ND	0.0	0.0	1996
119907	A	BERRY PETROLEUM COMPANY	SANTA CLARITA	1.6	ND	0.2	0.7	1999
119920	A	PECHINEY CAST PLATE INC	VERNON	1.6	ND	0.3	0.3	1996
133660	A	HAYDEN INDUSTRIAL PRODUCTS	CORONA	1.6	ND	0.8	0.4	1998
107350	A	NATIONAL O-RINGS	DOWNEY	1.5	ND	0.0	0.0	2001
2638	A	OCCIDENTAL COLLEGE	LOS ANGELES	1.5	ND	0.1	0.0	2007
126536	A	CONSOLIDATED FOUNDRIES - POMONA	POMONA	1.5	ND	0.0	0.0	1999
25070	A	LA CO., SANITATION DISTRICT (c)	WHITTIER	1.5	0.003	0.3	0.1	2009
82513	A	BREA CANON OIL COMPANY INC	HARBOR CITY	1.4	ND	0.0	0.0	1996
800408	A	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	MANHATTAN BEACH	1.4	ND	0.9	0.1	1998
3968	A	TABC, INC	LONG BEACH	1.4	ND	0.1	0.2	1999
62679	A	KOP-COAT INC	VERNON	1.3	ND	0.0	0.5	1997
126544	A	PAC FOUNDRIES-INDUSTRY	INDUSTRY	1.3	ND	0.6	0.1	1996

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
161300	A	SAPA EXTRUDER, INC	INDUSTRY	1.3	ND	0.0	0.0	1999
2526	A	CHEVRON PRODUCTS CO	VAN NUYS	1.3	ND	0.0	0.0	1996
22551	A	THUMS LONG BEACH CO	SAN PEDRO	1.2	ND	0.0	0.0	2000
42633	A	LA CO., SANITATION DIST	POMONA	1.2	ND	0.0	0.0	1996
106009	A	VENOCO INC.	BEVERLY HILLS	1.2	ND	0.0	0.0	2005
152054	A	LINN WESTERN OPERATING INC	BREA	1.1	ND	0.0	0.1	1996
42514	A	LA CO.,SANITATION DIST,CALABASAS LNDFFILL	AGOURA	1.1	0	0.1	0.0	2010
124806	OB	EXIDE TECHNOLOGIES	INDUSTRY	1.0	ND	0.0	0.0	1999
800127	A	SO CAL GAS CO (EIS USE)	MONTEBELLO	1.0	0	0.0	0.0	2009
7730	A	CARPENTER CO	RIVERSIDE	1.0	ND	0.0	1.3	2003
20375	A	PRUDENTIAL OVERALL SUPPLY	RIVERSIDE	1.0	ND	0.0	0.1	1997
6670	A	TRU CUT INC	LOS ANGELES	< 1	ND	0.0	0.0	2002
22808	I	PRICE PFISTER INC	PACOIMA	0.9	ND	0.2	0.1	1996
47056	OB	MYERS CONTAINER CORP, IMACC CORP DIV	HUNTINGTON PARK	0.9	ND	0.2	2.0	2002
5177	A	ITT GILFILLAN UNIT NO.02	VAN NUYS	0.9	ND	0.1	0.2	1998
3134	A	THUMS LONG BEACH CO, UNIT NO.05	SAN PEDRO	0.8	ND	0.0	0.0	1996
18378	A	GRUBER SYS INC	VALENCIA	0.8	ND	0.1	0.1	2004
22556	A	THUMS LONG BEACH CO, UNIT NO.02	SAN PEDRO	0.8	ND	0.0	0.0	1996
111415	A	VAN CAN COMPANY	FONTANA	0.8	ND	0.0	0.1	1996
14544	OB	SANTA FE ENAMELING & METAL FINISHING CO	SANTA FE SPRINGS	0.8	ND	0.0	0.4	1999
120088	A	BREITBURN ENERGY COMPANY, LLC	SANTA FE SPRINGS	0.8	ND	0.0	0.0	1998
118406	A	CARSON COGENERATION COMPANY	CARSON	0.8	ND	0.2	0.0	2007
126964	A	EDWARDS LIFESCIENCES LLC	IRVINE	0.8	ND	0.0	0.0	1995
22373	A	JEFFERSON SMURFIT CORPORATION (U.S.)	LOS ANGELES	0.7	ND	0.0	0.0	1996
24060	A	TOMKINS INDUSTRIES INC-LASCO PRODS GROUP	ANAHEIM	0.7	ND	0.0	0.0	1996
800091	A	MOBIL OIL CORP (NSR USE ONLY)	ANAHEIM	0.7	ND	0.0	0.0	1999
772	A	DEFT INC	IRVINE	0.7	ND	0.0	0.0	1995
24756	A	CRANE CO, HYDRO-AIRE DIV	BURBANK	0.6	ND	0.0	0.1	1997
115394	A	AES ALAMITOS, LLC	LONG BEACH	0.6	ND	0.0	0.0	1999
134931	A	ALCOA GLOBAL FASTENERS, INC.	FULLERTON	0.6	ND	1.9	0.0	1997
800327	A	GLENDALE CITY, GLENDALE WATER & POWER	GLENDALE	0.6	ND	0.0	0.0	1999
15647	A	CUSTOM ENAMELERS INC	FOUNTAIN VALLEY	0.6	ND	0.1	0.0	2000
3093	A	LA CO., OLIVE VIEW/UCLA MEDICAL CENTER	SYLMAR	0.5	ND	0.0	0.0	1999
21895	A	AC PRODUCTS INC	PLACENTIA	0.5	ND	0.0	0.0	2003
6281	A	US GOVT,MARINE CORPS AIR STATION,EL TORO	SANTA ANA	0.5	ND	0.0	0.0	1996
1634	OB	STEELCASE INC, WESTERN DIV	TUSTIN	0.5	ND	0.0	0.0	1995

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
39388	A	THUMS LONG BEACH CO, UNIT NO.03	SAN PEDRO	0.5	ND	0.0	0.0	1996
61160	A	GE ENGINE SERVICES	ONTARIO	0.5	ND	0.7	0.0	2003
800267	A	TRIUMPH PROCESSING, INC.	LYNWOOD	0.5	0	0.1	0.4	2012
152501	A	PRECISION SPECIALTY METALS INC	LOS ANGELES	0.5	ND	0.4	0.2	2001
43436	A	TST, INC.	FONTANA	0.4	0.11	0.0	0.4	1997
18990	A	LIFE PAINT CO	SANTA FE SPRINGS	0.4	ND	0.0	0.0	2001
12660	I	GOLDSHIELD FIBERGLASS, INC, PLANT #58	FONTANA	0.4	ND	0.0	0.0	1994
44577	A	LONG BEACH CITY, SERRF PROJECT	LONG BEACH	0.4	0	0.0	0.1	2011
115536	A	AES REDONDO BEACH, LLC	REDONDO BEACH	0.4	ND	0.0	0.0	1998
122295	A	FALCON FOAM, A DIV OF ATLAS ROOFING CORP	LOS ANGELES	0.4	ND	0.0	0.0	1999
115663	A	EL SEGUNDO POWER, LLC	EL SEGUNDO	0.3	ND	0.0	0.0	2000
25638	A	BURBANK CITY, PUB SERV DEPT	BURBANK	0.3	ND	0.3	0.0	1996
124805	A	EXIDE TECHNOLOGIES	COMMERCE	0.3	ND	0.0	0.0	2000
112192	OB	CONSOLIDATED DRUM RECONDITIONING CO INC	SOUTH GATE	0.3	ND	0.0	0.0	1997
550	A	LA CO., INTERNAL SERVICE DEPT	LOS ANGELES	0.3	ND	0.0	0.0	2008
800343	A	BOEING SATELLITE SYSTEMS, INC	EL SEGUNDO	0.3	ND	0.0	0.2	1996
24520	A	LA CO, SANITATION DISTRICTS	ROLLING HILLS ESTATE	0.3	ND	0.0	0.0	1998
99119	A	INTERPLASTIC CORP	HAWTHORNE	0.3	ND	0.1	0.3	1999
122300	A	BASF CORPORATION	COLTON	0.3	ND	0.6	0.0	2002
19989	OB	PARKER HANNIFIN AEROSPACE CORP	IRVINE	0.3	ND	0.0	0.0	1999
107149	A	MARKLAND MANUFACTURING INC	SANTA ANA	0.3	ND	0.1	0.1	2007
161142	A	FOAMEX INNOVATIONS, INC.	COMPTON	0.3	0	0.0	0.0	2010
16264	A	INTL COATINGS CO INC	CERRITOS	0.2	ND	0.0	0.0	1999
800074	A	LA CITY, DWP HAYNES GENERATING STATION	LONG BEACH	0.2	ND	0.0	0.0	2000
48300	A	PRECISION TUBE BENDING	SANTA FE SPRINGS	0.2	ND	0.0	0.0	2002
800168	A	PASADENA CITY, DWP (EIS USE)	PASADENA	0.2	ND	0.7	0.0	1996
800193	A	LA CITY, DWP VALLEY GENERATING STATION	SUN VALLEY	0.2	ND	0.3	0.0	1999
37336	A	COMMERCE REFUSE TO ENERGY FACILITY	COMMERCE	0.1	0	0.0	0.0	2010
42676	A	AES PLACERITA INC	NEWHALL	0.1	ND	0.1	0.0	2003
114801	A	RHODIA INC.	LONG BEACH	0.1	ND	0.0	0.1	2006
115389	A	AES HUNTINGTON BEACH, LLC	HUNTINGTON BEACH	0.1	ND	0.0	0.0	1999
7416	A	PRAXAIR INC	WILMINGTON	0.1	ND	0.0	0.0	2001
1992	A	PRUDENTIAL OVERALL SUPPLY	VAN NUYS	0.1	ND	0.0	0.0	1997
16044	I	SPECIALTY ORGANICS, INC.	IRWINDALE	0.1	ND	0.0	0.2	1997
24812	A	FARMER BROS CO	TORRANCE	0.1	ND	0.0	0.0	1999
25012	A	AMADA MFG AMERICA, INC	LA MIRADA	0.1	ND	0.0	0.0	2002

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
94872	A	METAL CONTAINER CORP	MIRA LOMA	0.1	ND	0.4	0.4	2002
111110	A	BRISTOL FIBERLITE INDUSTRIES, INC	SANTA ANA	0.1	ND	0.0	0.0	1995
24118	A	DEVOE COATINGS CO	RIVERSIDE	0.1	ND	0.3	0.1	1999
156741	A	HARBOR COGENERATION CO	WILMINGTON	0.1	ND	0.0	0.0	2002
20144	OB	CANON BUSINESS MACHINES INC	COSTA MESA	0.0	ND	0.0	0.1	1999
800320	A	AMVAC CHEMICAL CORP	LOS ANGELES	0.0	ND	0.1	0.3	2004
14217	OB	MODERN FAUCET MFG COMPANY	LOS ANGELES	0.0	ND	0.0	0.5	1996
45938	A	E.M.E. INC/ELECTRO MACHINE & ENGINEERING	COMPTON	0.0	ND	0.0	0.0	1999
117785	A	BALL METAL BEVERAGE CONTAINER CORP.	TORRANCE	0.0	ND	0.2	0.9	2001
22229	A	PROCESSES BY MARTIN INC	LYNWOOD	0.0	ND	0.0	0.0	2002
800075	A	LA CITY, DWP SCATTERGOOD GENERATING STA	PLAYA DEL REY	0.0	ND	0.0	0.0	2000
160150	A	ERGON ASPHALT & EMULSIONS, INC.	FONTANA	0.0	ND	0.3	0.0	1999
115586	A	SUNDANCE SPAS, INC	CHINO	0.0	ND	0.0	0.4	1996
51620	A	WHEELABRATOR NORWALK ENERGY CO INC	NORWALK	0.0	ND	0.0	0.0	1996
61743	A	AMERON STEEL FABRICATION DIVISION	FONTANA	0.0	ND	0.2	0.2	2000
55711	A	SUNLAW COGENERATION PARTNERS I	VERNON	0.0	ND	0.0	0.0	1996
124016	A	OAKLITE PRODUCTS (BRENT AMERICA, INC./ LEEDER ARDOX)	LA MIRADA	0.0	ND	0.1	0.1	2000
55714	A	SUNLAW COGENERATION PARTNERS I	VERNON	0.0	ND	0.0	0.0	1996
119127	A	PRC-DE SOTO INTERNATIONAL	GLENDALE	0.0	ND	0.0	0.0	2000
809	A	GARNER GLASS CO	CLAREMONT	0.0	ND	0.0	0.0	1996
1732	OB	INTL ELECTRONIC RESEARCH CORP	BURBANK	0.0	ND	0.0	0.0	1996
1746	A	UNITED ALLOYS INC	LOS ANGELES	0.0	ND	0.0	0.0	1998
3084	A	CARDINAL INDUSTRIAL FINISHES INC	SOUTH EL MONTE	0.0	ND	0.0	0.0	1996
3100	A	BAXTER HEALTHCARE CORP, I V SYSTEMS	IRVINE	0.0	ND	0.0	0.4	1994
3578	A	PRUDENTIAL OVERALL SUPPLY	CARSON	0.0	ND	0.0	0.0	1995
4616	OB	SUPERIOR IND INTL INC	VAN NUYS	0.0	ND	0.0	0.4	1997
5125	OB	UTILITY TRAILER MFG CO	INDUSTRY	0.0	ND	0.0	0.3	1996
5645	OB	STANDARD NICKEL CHROMIUM PLATING CO INC	LOS ANGELES	0.0	ND	0.0	0.0	1999
6163	A	OHLINE	GARDENA	0.0	ND	0.3	0.7	1996
6315	A	FLO-KEM, INC.	RANCHO DOMINGUEZ	0.0	ND	0.0	0.6	1999
6362	OB	JACUZZI WHIRLPOOL BATH INC	SANTA ANA	0.0	ND	0.0	0.0	1995
7010	A	PRUDENTIAL OVERALL SUPPLY	IRVINE	0.0	ND	0.0	0.0	1995
8560	A	PRUDENTIAL OVERALL SUPPLY CO	COMMERCE	0.0	ND	0.2	0.4	1995
8935	A	TRAIL RITE INC	SANTA ANA	0.0	ND	0.0	0.3	1996
10656	A	NEWPORT LAMINATES	SANTA ANA	0.0	ND	0.0	0.0	1996
12493	A	REMO INC	NORTH HOLLYWOOD	0.0	ND	0.0	0.0	1997

Appendix A-1. Continued.

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
12879	OB	CYTEC ENGINEERED MATERIALS, INC	SAUGUS	0.0	ND	0.0	0.0	1994
14191	I	NIKLOR CHEMICAL COMPANY INC	CARSON	0.0	ND	0.0	0.0	2002
19953	OB	RISTON KELLER INC	IRVINE	0.0	ND	0.0	0.0	1996
21544	A	US GOVT, MARINE CORPS AIR STA @BLD	Tustin	0.0	ND	0.0	0.0	2000
22092	A	WESTERN TUBE & CONDUIT CORP	LONG BEACH	0.0	ND	0.0	0.6	1997
24647	A	J. B. I. INC	COMPTON	0.0	ND	0.0	0.2	1999
40806	A	NEW BASIS	RIVERSIDE	0.0	ND	0.7	0.2	1997
47459	OB	JACUZZI WHIRLPOOL BATH	IRVINE	0.0	ND	0.0	0.0	1995
51849	A	ELIMINATOR CUSTOM BOATS	MIRA LOMA	0.0	ND	0.0	0.0	1995
61209	OB	AKZO NOBEL CHEM INC, FILTROL CORP SUB OF	LOS ANGELES	0.0	ND	0.0	0.0	1996
70021	A	XERXES CORP (A DELAWARE CORP)	ANAHEIM	0.0	ND	0.0	0.0	1996
132343	A	SPECTRUM PAINT & POWDER, INC.	ANAHEIM	0.0	ND	0.2	0.7	1997
144677	A	PRATT & WHITNEY ROCKETDYNE/RUBY ACQ ENT	CANOGA PARK	0.0	ND	0.0	0.0	1996
149241	A	REGAL CULTURED MARBLE	POMONA	0.0	ND	0.0	0.2	1995
160916	A	FOAMEX INNOVATIONS, INC.	ORANGE	0.0	ND	0.4	0.4	1994
800087	A	MENASCO MFG CO (EIS USE)	BURBANK	0.0	ND	0.0	0.0	1997
800273	OB	CHEMOIL REF CORP (NSR USE ONLY)	SIGNAL HILL	0.0	ND	0.0	0.0	2000
800337	OB	CHEVRON U.S.A., INC (NSR USE)	LA HABRA	0.0	ND	0.0	0.0	1996

Notes:

- (a) A = Active (note that facilities with “Active” status within SCAQMD’s database might not be in operation currently); I = Inactive; OB = Out of Business
- (b) The specific risk driver listed in this HRA is no longer in use & the resulting risk has been eliminated or minimized.
- (c) SCAQMD staff has requested these facilities to update their HRAs.
- (d) This includes risk attributable to the emergency DICE. The total facility risks excluding the emergency DICE are less than 10 in a million.
- (e) All HRAs with HRA Approval Year dated 2015 and later have used the 2015 OEHHA HRA Guidelines for preparation of their HRA.

ATTACHMENT A
APPENDIX A-2
Health Risks from Facilities with an Approved HRA
(listed by Facility ID)

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
550	A	LA CO., INTERNAL SERVICE DEPT	LOS ANGELES	0.3	ND	0.0	0.0	2008
772	A	DEFT INC	IRVINE	0.7	ND	0.0	0.0	1995
809	A	GARNER GLASS CO	CLAREMONT	0.0	ND	0.0	0.0	1996
1208	OB	MICROSEMI CORP	SANTA ANA	2.3	ND	0.0	0.0	2001
1226	A	HYATT DIE CAST & ENGINEERING CORP	CYPRESS	6.2	ND	0.0	0.1	1996
1634	OB	STEELCASE INC, WESTERN DIV	TUSTIN	0.5	ND	0.0	0.0	1995
1732	OB	INTL ELECTRONIC RESEARCH CORP	BURBANK	0.0	ND	0.0	0.0	1996
1744	A	KIRKHILL RUBBER CO	BREA	8.7	0.001	0.2	0.1	2007
1746	A	UNITED ALLOYS INC	LOS ANGELES	0.0	ND	0.0	0.0	1998
1992	A	PRUDENTIAL OVERALL SUPPLY	VAN NUYS	0.1	ND	0.0	0.0	1997
2526	A	CHEVRON PRODUCTS CO	VAN NUYS	1.3	ND	0.0	0.0	1996
2605	A	3M PHARMACEUTICALS	NORTHRIDGE	2.0	ND	0.4	0.4	1996
2613	A	US GOVT, NAVY DEPT,NAVAL WEAPONS STN	SEAL BEACH	2.9	ND	0.1	0.0	2002
2638	A	OCCIDENTAL COLLEGE	LOS ANGELES	1.5	ND	0.1	0.0	2007
2680	A	LA CO., SANITATION DISTRICT	WHITTIER	8.6	ND	0.0	0.0	1999
2852	A	THE WALT DISNEY COMPANY	BURBANK	6.4	0.03	0.0	0.0	1997
3084	A	CARDINAL INDUSTRIAL FINISHES INC	SOUTH EL MONTE	0.0	ND	0.0	0.0	1996
3093	A	LA CO., OLIVE VIEW/UCLA MEDICAL CENTER	SYLMAR	0.5	ND	0.0	0.0	1999
3100	A	BAXTER HEALTHCARE CORP, I V SYSTEMS	IRVINE	0.0	ND	0.0	0.4	1994
3134	A	THUMS LONG BEACH CO, UNIT NO.05	SAN PEDRO	0.8	ND	0.0	0.0	1996
3578	A	PRUDENTIAL OVERALL SUPPLY	CARSON	0.0	ND	0.0	0.0	1995
3609	I	AL'S PLATING CO INC	LOS ANGELES	7.8	ND	0.3	0.2	1999
3950	A	CROWN CORK & SEAL CO INC	LA MIRADA	4.6	ND	0.0	0.1	1997
3968	A	TABC, INC	LONG BEACH	1.4	ND	0.1	0.2	1999
4477	A	SO CAL EDISON CO	AVALON	6.3	0.02	0.0	0.0	2012
4616	OB	SUPERIOR IND INTL INC	VAN NUYS	0.0	ND	0.0	0.4	1997
5125	OB	UTILITY TRAILER MFG CO	INDUSTRY	0.0	ND	0.0	0.3	1996
5177	A	ITT GILFILLAN UNIT NO.02	VAN NUYS	0.9	ND	0.1	0.2	1998
5645	OB	STANDARD NICKEL CHROMIUM PLATING CO INC	LOS ANGELES	0.0	ND	0.0	0.0	1999
5723	A	DUCOMMUN AEROSTRUCTURES INC	ORANGE	6.7	ND	0.0	0.1	1999
5887	A	NEXGEN PHARMA INC	IRVINE	2.7	ND	0.0	0.0	1997
6163	A	OHLINE	GARDENA	0.0	ND	0.3	0.7	1996

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
6281	A	US GOVT,MARINE CORPS AIR STATION,EL TORO	SANTA ANA	0.5	ND	0.0	0.0	1996
6315	A	FLO-KEM, INC.	RANCHO DOMINGUEZ	0.0	ND	0.0	0.6	1999
6362	OB	JACUZZI WHIRLPOOL BATH INC	SANTA ANA	0.0	ND	0.0	0.0	1995
6384	A	LA CO., RANCHO LOS AMIGOS MEDICAL CENTER	DOWNEY	3.1	ND	0.0	0.1	1999
6459	OB	HONEYWELL INTERNATIONAL INC	VERNON	4.1	ND	0.0	0.0	1999
6643	A	TECHNICOLOR INC	NORTH HOLLYWOOD	6.5	ND	0.0	0.1	2007
6670	A	TRU CUT INC	LOS ANGELES	< 1	ND	0.0	0.0	2002
7010	A	PRUDENTIAL OVERALL SUPPLY	IRVINE	0.0	ND	0.0	0.0	1995
7416	A	PRAXAIR INC	WILMINGTON	0.1	ND	0.0	0.0	2001
7427	A	OWENS-BROCKWAY GLASS CONTAINER INC	VERNON	3.6	0.02	0.0	0.1	1999
7533	A	HUGO NEU-PROLER CO	TERMINAL ISLAND	4.1		1.3	0.1	
7730	A	CARPENTER CO	RIVERSIDE	1.0	ND	0.0	1.3	2003
7949	A	CUSTOM FIBERGLASS MFG CO/CUSTOM HARDTOP	LONG BEACH	2.5	ND	0.0	0.0	1995
8015	A	ANADITE INC	SOUTH GATE	3.5	ND	0.6	0.8	1998
8309	A	CAMBRO MANUFACTURING CO	HUNTINGTON BEACH	1.7	ND	0.0	0.1	2000
8547	A	QUEMETCO INC (c)	INDUSTRY	16	2	0.22	1.28	2016
8560	A	PRUDENTIAL OVERALL SUPPLY CO	COMMERCE	0.0	ND	0.2	0.4	1995
8578	OB	ASSOCIATED CONCRETE PROD. INC	SANTA ANA	5.8	ND	0.1	0.6	1999
8820	A	REULAND ELECTRIC CO, H.BRITTON LEES	INDUSTRY	3.7	ND	0.0	0.0	1996
8935	A	TRAIL RITE INC	SANTA ANA	0.0	ND	0.0	0.3	1996
9114	I	SOMITEX PRINTS OF CAL INC	INDUSTRY	3.7	ND	0.1	0.0	1996
9163	A	INLAND EMPIRE UTL AGEN, A MUN WATER DIS	ONTARIO	3.4	ND	0.3	0.0	2007
9668	A	DELUXE LABORATORIES INC,DELUXE LABORATOR	HOLLYWOOD	2.1	ND	0.0	0.0	2000
10005	A	ELECTRONIC CHROME GRINDING CO INC	SANTA FE SPRINGS	3.0	0.01	0.2	0.1	2001
10245	A	LA CITY,SANITATION BUREAU,TERMINAL ISLAN	SAN PEDRO	1.8	ND	0.0	0.0	2000
10510	A	GREGG INDUSTRIES INC	EL MONTE	9.4	ND	0.6	0.6	2008
10656	A	NEWPORT LAMINATES	SANTA ANA	0.0	ND	0.0	0.0	1996
11142	OB	KEYSOR-CENTURY CORP	SAUGUS	17.0	ND	0.5	0.1	2000
11192	A	HI-SHEAR CORPORATION	TORRANCE	4.8	ND	0.0	0.0	2008
11435	A	THE PQ CORP	SOUTH GATE	3.0	ND	0.0	0.0	1998
11726	A	GE ENGINE SERVICES	ONTARIO	6.5	ND	0.1	0.6	1999
11818	A	HIXSON METAL FINISHING	NEWPORT BEACH	1502.0	1.09	0.2	0.1	2015
12493	A	REMO INC	NORTH HOLLYWOOD	0.0	ND	0.0	0.0	1997
12660	I	GOLDSHIELD FIBERGLASS, INC, PLANT #58	FONTANA	0.4	ND	0.0	0.0	1994
12879	OB	CYTEC ENGINEERED MATERIALS, INC	SAUGUS	0.0	ND	0.0	0.0	1994

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
13920	A	ST. JOSPEH HOSPITAL	ORANGE	7.7	0.004	0.8	0.3	2008
14146	A	MAC GREGOR YACHT CORP	COSTA MESA	5.5	ND	0.0	0.1	1998
14191	I	NIKLOR CHEMICAL COMPANY INC	CARSON	0.0	ND	0.0	0.0	2002
14217	OB	MODERN FAUCET MFG COMPANY	LOS ANGELES	0.0	ND	0.0	0.5	1996
14495	A	VISTA METALS CORP	FONTANA	19.8	0.06	0.0	0.3	2008
14502	A	VERNON CITY, LIGHT & POWER DEPT	VERNON	2.0	0.0004	0.0	0.0	2007
14544	OB	SANTA FE ENAMELING & METAL FINISHING CO	SANTA FE SPRINGS	0.8	ND	0.0	0.4	1999
15504	A	SCHLOSSER FORGE CO	RANCHO CUCAMONGA	9.5	ND	1.6	1.1	2002
15647	A	CUSTOM ENAMELERS INC	FOUNTAIN VALLEY	0.6	ND	0.1	0.0	2000
15736	A	HENRY CO	HUNTINGTON PARK	8.5	ND	0.0	0.0	2000
16044	I	SPECIALTY ORGANICS, INC.	IRWINDALE	0.1	ND	0.0	0.2	1997
16264	A	INTL COATINGS CO INC	CERRITOS	0.2	ND	0.0	0.0	1999
16642	A	ANHEUSER-BUSCH INC., (LA BREWERY)	VAN NUYS	2.7	ND	0.0	0.1	1999
16660	A	THE BOEING COMPANY	HUNTINGTON BEACH	6.39	0.02	0.01	0.08	2015
17301	A	ORANGE, COUNTY OF - SANITATION DISTRICT	FOUNTAIN VALLEY	6.6	0.001	0.4	0.3	2007
17325	A	ACE CLEARWATER ENTER.	PARAMOUNT	3.7	ND	0.0	0.0	2002
18294	A	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	EL SEGUNDO	7.6	ND	0.1	0.1	1999
18378	A	GRUBER SYS INC	VALENCIA	0.8	ND	0.1	0.1	2004
18396	A	SPRAYLAT CORP	LOS ANGELES	3.2	0	0.7	0.0	2012
18439	OB	ACE PLATING CO INC	LOS ANGELES	4.1	ND	0.6	0.2	1998
18452	A	UCLA (REGENTS OF UC) (c)	LOS ANGELES	2.9	ND	0.0	0.1	1999
18508	A	AIR PROD & CHEM INC	LOS ANGELES	2.4	ND	0.1	0.8	1999
18648	OB	CROWN CITY PLATING CO.	EL MONTE	12.0	ND	0.4	0.1	2000
18931	A	GERDAU	RANCHO CUCAMONGA	52.7	3.08	3.0	3.2	2015
18989	A	BOWMAN PLATING CO INC	COMPTON	97.72	0.10	0.07	0.10	2015
18990	A	LIFE PAINT CO	SANTA FE SPRINGS	0.4	ND	0.0	0.0	2001
19953	OB	RISTON KELLER INC	IRVINE	0.0	ND	0.0	0.0	1996
19989	OB	PARKER HANNIFIN AEROSPACE CORP	IRVINE	0.3	ND	0.0	0.0	1999
20144	OB	CANON BUSINESS MACHINES INC	COSTA MESA	0.0	ND	0.0	0.1	1999
20197	A	LAC/USC MEDICAL CENTER	LOS ANGELES	7.5	ND	0.7	0.4	2007
20280	A	METAL SURFACES INC	BELL GARDENS	6.8	0	0.9	0.3	2011
20375	A	PRUDENTIAL OVERALL SUPPLY	RIVERSIDE	1.0	ND	0.0	0.1	1997
21544	A	US GOVT, MARINE CORPS AIR STA @BLD	Tustin	0.0	ND	0.0	0.0	2000
21615	OB	PERKINELMER OPTOELECTRONICS SC, INC	AZUSA	8.1	ND	0.2	0.1	1998
21895	A	AC PRODUCTS INC	PLACENTIA	0.5	ND	0.0	0.0	2003

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
22092	A	WESTERN TUBE & CONDUIT CORP	LONG BEACH	0.0	ND	0.0	0.6	1997
22229	A	PROCESSES BY MARTIN INC	LYNWOOD	0.0	ND	0.0	0.0	2002
22373	A	JEFFERSON SMURFIT CORPORATION (U.S.)	LOS ANGELES	0.7	ND	0.0	0.0	1996
22410	A	PALACE PLATING	LOS ANGELES	5.6	ND	0.7	0.4	2004
22467	A	LEFIELL MFG CO	SANTA FE SPRINGS	1.7	ND	0.7	0.2	2000
22551	A	THUMS LONG BEACH CO	SAN PEDRO	1.2	ND	0.0	0.0	2000
22556	A	THUMS LONG BEACH CO, UNIT NO.02	SAN PEDRO	0.8	ND	0.0	0.0	1996
22808	I	PRICE PFISTER INC	PACOIMA	0.9	ND	0.2	0.1	1996
22911	A	CARLTON FORGE WORKS	PARAMOUNT	15.4	ND	1.76	1.04	2006
23559	OB	JOHNSON CONTROLS BATTERY GROUP INC	FULLERTON	1.8	ND	0.0	0.1	2001
23907	A	JOHNS MANVILLE CORP	CORONA	13.0	ND	0.4	2.7	1999
24060	A	TOMKINS INDUSTRIES INC-LASCO PRODS GROUP	ANAHEIM	0.7	ND	0.0	0.0	1996
24118	A	DEVOE COATINGS CO	RIVERSIDE	0.1	ND	0.3	0.1	1999
24520	A	LA CO, SANITATION DISTRICTS	ROLLING HILLS ESTATE	0.3	ND	0.0	0.0	1998
24647	A	J. B. I. INC	COMPTON	0.0	ND	0.0	0.2	1999
24756	A	CRANE CO, HYDRO-AIRE DIV	BURBANK	0.6	ND	0.0	0.1	1997
24812	A	FARMER BROS CO	TORRANCE	0.1	ND	0.0	0.0	1999
25012	A	AMADA MFG AMERICA, INC	LA MIRADA	0.1	ND	0.0	0.0	2002
25070	A	LA CO., SANITATION DISTRICT (c)	WHITTIER	1.5	0.003	0.3	0.1	2009
25440	A	ROBERTSHAW CONTROLS CO, GRAYSON CONTROLS	LONG BEACH	2.7	ND	0.0	1.0	1998
25638	A	BURBANK CITY, PUB SERV DEPT	BURBANK	0.3	ND	0.3	0.0	1996
27343	OB	CON AGRA INC, GILROY FOODS DBA	SANTA ANA	7.1	ND	0.2	0.1	1995
27701	A	CADDOCK ELECTRONIC	RIVERSIDE	2.7	ND	0.0	0.1	2002
29110	A	ORANGE, COUNTYOF - SANITATION DISTRICT (d)	HUNTINGTON BEACH	10.7	ND	1.8	0.5	2007
34764	A	CADDOCK ELECTRONICS INC	RIVERSIDE	6.5		0.0	0.1	
35302	A	OWENS CORNING (c)	COMPTON	14.0	0.02	0.1	0.1	2000
35483	A	WARNER BROTHERS STUDIO FACILITIES	BURBANK	2.6	ND	0.1	0.3	1997
37336	A	COMMERCE REFUSE TO ENERGY FACILITY	COMMERCE	0.1	0	0.0	0.0	2010
37507	A	TROJAN BATTERY COMPANY	SANTA FE SPRINGS	2.6	0.001	1.1	1.3	2012
37603	A	SGL TECHNIC INC, POLYCARBON DIVISION	VALENCIA	7.8	ND	0.0	0.4	1998
38971	A	RICOH ELECTRONICS INC	IRVINE	5.6	ND	0.0	0.4	1995
39388	A	THUMS LONG BEACH CO, UNIT NO.03	SAN PEDRO	0.5	ND	0.0	0.0	1996
40806	A	NEW BASIS	RIVERSIDE	0.0	ND	0.7	0.2	1997
40829	A	HAWKER PACIFIC INC	SUN VALLEY	2.1	0.0003	0.0	0.1	2009
41229	A	LUBECO INC	LONG BEACH	14.0	ND	0.0	0.1	2002

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
42514	A	LA CO.,SANITATION DIST,CALABASAS LNDFILL	AGOURA	1.1	0	0.1	0.0	2010
42633	A	LA CO., SANITATION DIST	POMONA	1.2	ND	0.0	0.0	1996
42676	A	AES PLACERITA INC	NEWHALL	0.1	ND	0.1	0.0	2003
42922	OB	CMC PRINTED BAG INC	WHITTIER	9.0	ND	0.0	0.0	1995
43201	A	SNOW SUMMIT INC	BIG BEAR LAKE	5.5	ND	0.2	0.0	2007
43436	A	TST, INC.	FONTANA	0.4	0.11	0.0	0.4	1997
44454	A	STRUCTURAL COMPOSITES IND	POMONA	8.6	0.001	0.0	0.2	2002
44577	A	LONG BEACH CITY, SERRF PROJECT	LONG BEACH	0.4	0	0.0	0.1	2011
45262	A	LA CO, SANITATION DISTRICT UNIT NO.02	GLENDALE	6.2	ND	0.0	0.1	1998
45489	A	ABBOTT CARDIOVASCULAR SYSTEMS, INC.	TEMECULA	3.8	0.01	1.3	0.0	2002
45938	A	E.M.E. INC/ELECTRO MACHINE & ENGINEERING	COMPTON	0.0	ND	0.0	0.0	1999
46268	A	CALIFORNIA STEEL INDUSTRIES INC	FONTANA	2.7	0.02	0.2	0.0	1995
47056	OB	MYERS CONTAINER CORP, IMACC CORP DIV	HUNTINGTON PARK	0.9	ND	0.2	2.0	2002
47459	OB	JACUZZI WHIRLPOOL BATH	IRVINE	0.0	ND	0.0	0.0	1995
48274	A	FENDER MUSICAL INST	CORONA	2.8	ND	0.0	0.4	1997
48300	A	PRECISION TUBE BENDING	SANTA FE SPRINGS	0.2	ND	0.0	0.0	2002
48323	A	SIGMA PLATING CO INC	LA PUENTE	13.8	ND	0.0	0.7	2001
49387	A	UNIV CAL, RIVERSIDE	RIVERSIDE	7.1	ND	0.0	0.0	1999
51620	A	WHEELABRATOR NORWALK ENERGY CO INC	NORWALK	0.0	ND	0.0	0.0	1996
51849	A	ELIMINATOR CUSTOM BOATS	MIRA LOMA	0.0	ND	0.0	0.0	1995
52517	A	REXAM PLC, REXAM BEVERAGE CAN COMPANY	CHATSWORTH	2.9	0.01	0.7	0.1	2009
54424	A	L & L CUSTOM SHUTTERS	PLACENTIA	5.5	ND	0.2	0.2	2001
54627	A	HICKORY SPRINGS OF CAL INC	COMMERCE	2.0	ND	0.0	0.5	1998
55711	A	SUNLAW COGENERATION PARTNERS I	VERNON	0.0	ND	0.0	0.0	1996
55714	A	SUNLAW COGENERATION PARTNERS I	VERNON	0.0	ND	0.0	0.0	1996
57094	A	GS ROOFING PRODUCTS CO, INC/CERTAINTeed (c)	WILMINGTON	7.0	ND	0.0	0.0	2000
57329	OB	KWIKSET CORP	ANAHEIM	3.4	ND	0.0	0.1	2000
61160	A	GE ENGINE SERVICES	ONTARIO	0.5	ND	0.7	0.0	2003
61209	OB	AKZO NOBEL CHEM INC, FILTROL CORP SUB OF	LOS ANGELES	0.0	ND	0.0	0.0	1996
61743	A	AMERON STEEL FABRICATION DIVISION	FONTANA	0.0	ND	0.2	0.2	2000
62679	A	KOP-COAT INC	VERNON	1.3	ND	0.0	0.5	1997
62897	OB	NORTHROP GRUMMAN CORP, MASD	PICO RIVERA	9.4	ND	1.0	0.5	2000
65381	A	SFPP, L.P. (NSR USE)	CARSON	2.4	ND	0.0	0.1	1999
65382	A	SFPP, L.P.	BLOOMINGTON	5.8	ND	0.0	0.0	1996
70021	A	XERXES CORP (A DELAWARE CORP)	ANAHEIM	0.0	ND	0.0	0.0	1996
79682	A	RAMCAR BATTERIES INC	COMMERCE	2.4	1	0.0	0.2	1998

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
82512	A	BREA CANON OIL CO	WILMINGTON	1.7	ND	0.0	0.0	1996
82513	A	BREA CANON OIL COMPANY INC	HARBOR CITY	1.4	ND	0.0	0.0	1996
83102	A	LIGHT METALS INC	INDUSTRY	4.5	0.01	0.0	2.7	2002
90546	OB	SORIN BIOMEDICAL INC	IRVINE	2.3	ND	0.0	0.0	1996
93346	A	WAYMIRE DRUM CO,INC.,S EL MONTE FACILITY	SOUTH EL MONTE	4.3	ND	0.1	0.2	1997
94872	A	METAL CONTAINER CORP	MIRA LOMA	0.1	ND	0.4	0.4	2002
99119	A	INTERPLASTIC CORP	HAWTHORNE	0.3	ND	0.1	0.3	1999
99773	A	CYTEC FIBERITE INC	ANAHEIM	2.2	0.0004	0.0	0.2	2000
101380	OB	GENERAL DYNAMICS OTS (DOWNEY) INC	DOWNEY	9.8	ND	0.0	0.1	2000
101977	A	SIGNAL HILL PETROLEUM INC	LONG BEACH	4.7	ND	0.6	1.0	1998
103659	OB	4MC-BURBANK, INC.	BURBANK	2.2	ND	0.6	0.0	2004
103888	A	SARGENT FLETCHER INC	EL MONTE	4.9	ND	0.2	0.0	1999
105598	A	SENIOR FLEXONICS INC/STAINLESS STEEL DVN	BURBANK	3.6	ND	1.0	0.5	2001
106009	A	VENOCO INC.	BEVERLY HILLS	1.2	ND	0.0	0.0	2005
106797	OB	SAINT-GOBAIN CONTAINERS LLC	LOS ANGELES	9.9	ND	0.0	0.1	2000
106838	A	VALLEY-TODECO, INC	SYLMAR	3.7	ND	0.2	0.2	2000
107149	A	MARKLAND MANUFACTURING INC	SANTA ANA	0.3	ND	0.1	0.1	2007
107168	I	ADVANCED SPA DESIGNS	LA HABRA	8.6	ND	0.0	0.0	1995
107350	A	NATIONAL O-RINGS	DOWNEY	1.5	ND	0.0	0.0	2001
108701	A	SAINT-GOBAIN CONTAINERS LLC	EL MONTE	7.3	ND	0.1	0.1	2000
109198	A	TORCH OPERATING COMPANY	BREA	5.0	ND	0.0	0.0	2001
110924	A	WESTWAY TERMINAL COMPANY	SAN PEDRO	8.0	ND	0.3	0.5	1997
111110	A	BRISTOL FIBERLITE INDUSTRIES, INC	SANTA ANA	0.1	ND	0.0	0.0	1995
111415	A	VAN CAN COMPANY	FONTANA	0.8	ND	0.0	0.1	1996
112192	OB	CONSOLIDATED DRUM RECONDITIONING CO INC	SOUTH GATE	0.3	ND	0.0	0.0	1997
113170	A	SANTA MONICA - UCLA MEDICAL CENTER (b)	SANTA MONICA	7.6	0.14	0.2	0.0	1997
113676	A	VICKERS	LOS ANGELES	3.0	ND	0.0	0.0	1995
114801	A	RHODIA INC.	LONG BEACH	0.1	ND	0.0	0.1	2006
115389	A	AES HUNTINGTON BEACH, LLC	HUNTINGTON BEACH	0.1	ND	0.0	0.0	1999
115394	A	AES ALAMITOS, LLC	LONG BEACH	0.6	ND	0.0	0.0	1999
115536	A	AES REDONDO BEACH, LLC	REDONDO BEACH	0.4	ND	0.0	0.0	1998
115586	A	SUNDANCE SPAS, INC	CHINO	0.0	ND	0.0	0.4	1996
115663	A	EL SEGUNDO POWER, LLC	EL SEGUNDO	0.3	ND	0.0	0.0	2000
116868	A	EQUILON ENT LLC/RIALTO TERMINAL	BLOOMINGTON	2.9	ND	0.0	0.0	1999
117560	A	EQUILON ENTER, LLC-SHELL OIL PROD. US	WILMINGTON	7.3	ND	0.0	0.1	1998
117785	A	BALL METAL BEVERAGE CONTAINER CORP.	TORRANCE	0.0	ND	0.2	0.9	2001

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
118406	A	CARSON COGENERATION COMPANY	CARSON	0.8	ND	0.2	0.0	2007
118998	OB	CYTEC FIBERITE INC	CULVER CITY	6.6	ND	0.0	0.2	1997
119127	A	PRC-DE SOTO INTERNATIONAL	GLENDALE	0.0	ND	0.0	0.0	2000
119907	A	BERRY PETROLEUM COMPANY	SANTA CLARITA	1.6	ND	0.2	0.7	1999
119920	A	PECHINEY CAST PLATE INC	VERNON	1.6	ND	0.3	0.3	1996
120088	A	BREITBURN ENERGY COMPANY, LLC	SANTA FE SPRINGS	0.8	ND	0.0	0.0	1998
122295	A	FALCON FOAM, A DIV OF ATLAS ROOFING CORP	LOS ANGELES	0.4	ND	0.0	0.0	1999
122300	A	BASF CORPORATION	COLTON	0.3	ND	0.6	0.0	2002
122822	I	CONSOLIDATED FILM INDUSTRIES	HOLLYWOOD	21.0	ND	0.1	0.4	2000
124016	A	OAKLITE PRODUCTS (BRENT AMERICA, INC./ LEEDER ARDOX)	LA MIRADA	0.0	ND	0.1	0.1	2000
124506	A	BOEING ELECTRON DYNAMIC DEVICES INC	TORRANCE	4.2	ND	0.5	0.1	1995
124805	A	EXIDE TECHNOLOGIES	COMMERCE	0.3	ND	0.0	0.0	2000
124806	OB	EXIDE TECHNOLOGIES	INDUSTRY	1.0	ND	0.0	0.0	1999
124838	OB	EXIDE TECHNOLOGIES	LOS ANGELES	156.0	10	3.8	63.0	2013
125281	OB	MODERN PLATING, ALCO CAD-NICKEL PLATING	LOS ANGELES	8.2	ND	0.1	0.0	1995
126060	A	STERIGENICS US, LLC	ONTARIO	3.8	0	0.0	0.0	2007
126191	A	STERIGENICS US, INC.	LOS ANGELES	3.3	ND	0.0	0.0	1996
126197	A	STERIGENICS US, INC.	LOS ANGELES	3.6	ND	0.0	0.0	1996
126536	A	CONSOLIDATED FOUNDRIES - POMONA	POMONA	1.5	ND	0.0	0.0	1999
126544	A	PAC FOUNDRIES-INDUSTRY	INDUSTRY	1.3	ND	0.6	0.1	1996
126964	A	EDWARDS LIFESCIENCES LLC	IRVINE	0.8	ND	0.0	0.0	1995
127568	A	ENGINEERED POLYMER SOLUTION, VALSPAR	MONTEBELLO	3.5	ND	0.1	0.5	2000
132343	A	SPECTRUM PAINT & POWDER, INC.	ANAHEIM	0.0	ND	0.2	0.7	1997
133405	A	BODYCOTE INC/BODYCOTE THERMAL PROCESSING	LOS ANGELES	2.4	ND	0.0	0.2	1999
133660	A	HAYDEN INDUSTRIAL PRODUCTS	CORONA	1.6	ND	0.8	0.4	1998
134018	A	INDUSTRIAL CONTAINER SERVICES-CA LLC	MONTEBELLO	5.2	ND	0.6	0.2	2000
134931	A	ALCOA GLOBAL FASTENERS, INC.	FULLERTON	0.6	ND	1.9	0.0	1997
134943	A	ALCOA GLOBAL FASTENERS, INC. SOUTH BAY	TORRANCE	2.6	ND	0.6	0.0	2008
136148	A	E/M COATING SERVICES	NORTH HOLLYWOOD	5.8	ND	0.3	0.6	1998
137517	A	PACIFIC TERMINALS LLC	ETIWANDA	2.7	ND	0.0	0.2	2000
140499	A	AMERESCO HUNTINGTON BEACH, L.L.C.	HUNTINGTON BEACH	7.0	ND	0.0	0.0	1995
140811	A	DUCOMMUN AEROSTRUCTURES INC	MONROVIA	3.5	0.01	0.0	0.0	2002
140961	A	GKN AEROSPACE TRANSPARENCY SYS INC	GARDEN GROVE	6.0	ND	0.0	0.5	1996
142267	A	FS PRECISION TECH LLC	RANCHO DOMINGUEZ	2.0	ND	0.1	0.2	2001
144677	A	PRATT & WHITNEY ROCKETDYNE/RUBY ACQ ENT	CANOGA PARK	0.0	ND	0.0	0.0	1996

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
146570	A	ROHM AND HAAS CHEMICALS LLC	LA MIRADA	6.2	ND	0.5	0.8	1999
148925	A	CHERRY AEROSPACE LLC	SANTA ANA	9.7	ND	0.1	0.2	1999
149241	A	REGAL CULTURED MARBLE	POMONA	0.0	ND	0.0	0.2	1995
151415	A	LINN WESTERN OPERATING, INC	BREA	3.4	ND	0.0	0.0	1999
151798	A	TESORO REFINING AND MARKETING CO	CARSON	2.8	ND	0.1	0.0	1999
151899	A	VINTAGE PRODUCTION CALIFORNIA LLC	NEWHALL	3.5	ND	0.0	0.2	2000
152054	A	LINN WESTERN OPERATING INC	BREA	1.1	ND	0.0	0.1	1996
152501	A	PRECISION SPECIALTY METALS INC	LOS ANGELES	0.5	ND	0.4	0.2	2001
153546	A	HUCK INTL INC. DBA ALCOA FASTENING SYS.	CARSON	3.3	ND	0.0	0.0	1999
155828	A	GARRETT AVIATION SVCS. LLC DBA STANDARD	LOS ANGELES	< 10	0.001	0.2	0.3	2002
156741	A	HARBOR COGENERATION CO	WILMINGTON	0.1	ND	0.0	0.0	2002
157451	A	VERNON MACHINE CORP, BENDER US DBA	VERNON	4.4	0.001	1.0	0.0	2002
160150	A	ERGON ASPHALT & EMULSIONS, INC.	FONTANA	0.0	ND	0.3	0.0	1999
160437	A	SOUTHERN CALIFORNIA EDISON	SAN BERNARDINO	2.3	<0.01	<0.01	<0.01	2013
160916	A	FOAMEX INNOVATIONS, INC.	ORANGE	0.0	ND	0.4	0.4	1994
161142	A	FOAMEX INNOVATIONS, INC.	COMPTON	0.3	0	0.0	0.0	2010
161300	A	SAPA EXTRUDER, INC	INDUSTRY	1.3	ND	0.0	0.0	1999
164864	A	ARROWHEAD BRASS & PLUMBING	LOS ANGELES	5.7	ND	0.3	0.0	1995
165192	A	TRIUMPH AEROSTRUCTURES, LLC (b)	HAWTHORNE	19.7	ND	0.6	0.2	1999
167981	A	TESORO LOGISTICS OPERATIONS LLC	WILMINGTON	2.8	ND	0.0	0.0	2000
168088	A	PCCR USA	LYNWOOD	6.5	ND	0.1	1.6	1995
169990	A	SPS TECHNOLOGIES, LLC	GARDENA	8.9	ND	0.1	0.1	1999
171107	A	PHILLIPS 66 CO/LA REFINERY WILMINGTON PL	WILMINGTON	23.2	0.29	0.1	0.7	2013
171109	A	PHILLIPS 66 COMPANY/LOS ANGELES REFINERY	CARSON	6.6	0.11	0.0	0.3	2011
172878	A	TESORO LOGISTICS OPERATIONS LLC LONG BEA	LONG BEACH	2.4	ND	0.0	0.0	1999
173913	A	TRIUMPH PROCESSING, EMBEE DIV, INC.	SANTA ANA	6.6	ND	0.2	0.6	2000
174591	A	TESORO REFINING & MARKETING CO LLC, CAL (c)	WILMINGTON	4.3	ND	0.1	0.2	1995
174655	A	TESORO REFINING & MARKETING CO, LLC	CARSON	7.3	ND	0.3	0.1	2000
174703	A	TESORO REFINING & MARKETING CO LLC CARSO	CARSON	3.0	ND	0.0	0.0	1994
174710	A	TESORO LOGISTICS OP LLC, VINVALE MARKETI	SOUTH GATE	9.0	ND	0.0	0.0	1994
175124	A	AEROJET ROCKETDYNE OF DE, INC.	CANOGA PARK	8.7	ND	0.0	0.0	1995
175191	A	FREEMPORT-MCMORAN OIL & GAS	LOS ANGELES	2.7	ND	0.0	0.1	1997
176967	A	GAS RECOVERY SYSTEMS, INC	IRVINE	20.1	0.18	0.6	0.3	2009
177042	A	SOLVAY USA, INC	LONG BEACH	4.3	ND	0.3	0.0	2001
800003	A	HONEYWELL INTERNATIONAL INC	TORRANCE	1.8	ND	0.0	0.0	1999
800007	OB	ALLIED SIGNAL INC (NSR USE ONLY)	EL SEGUNDO	3.6	ND	0.0	0.5	2000

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
800022	A	CALNEV PIPE LINE CO (NSR USE)	BLOOMINGTON	5.9	ND	0.0	0.1	1999
800026	A	ULTRAMAR INC (NSR USE ONLY)	WILMINGTON	7.2	0.18	0.7	0.2	2012
800030	A	CHEVRON PRODUCTS CO.	EL SEGUNDO	2.7	0.28	0.3	0.1	2001
800032	A	CHEVRON U.S.A. INC (EIS USE)	MONTEBELLO	7.5	0.14	0.0	0.2	1999
800035	A	CONTINENTAL AIRLINES INC (NSR USE ONLY)	LOS ANGELES	2.8	ND	0.0	0.1	1995
800037	A	DEMENNO/KERDOON	COMPTON	4.9	0.01	0.0	0.0	2009
800038	A	THE BOEING COMPANY - C17 PROGRAM	LONG BEACH	4.8	ND	0.2	0.1	1999
800039	I	DOUGLAS PRODUCTS DIVISION	TORRANCE	2.4	ND	0.0	0.0	1996
800041	A	DOW CHEM U.S.A. (NSR USE)	TORRANCE	4.4	ND	0.1	0.0	2000
800047	I	FLETCHER OIL & REF CO	CARSON	5.9	ND	0.0	0.0	1998
800056	A	KINDER MORGAN LIQUIDS TERMINALS, LLC	WILMINGTON	2.3	0.01	0.0	0.0	1997
800057	A	KINDER MORGAN LIQUIDS TERMINALS, LLC	CARSON	8.5	ND	0.0	0.1	1999
800063	A	GROVER PROD. CO (EIS USE)	LOS ANGELES	3.3	ND	0.9	0.1	2001
800066	A	HITCO CARBON COMPOSITES INC	GARDENA	6.4	ND	0.3	0.0	1995
800067	A	BOEING SATELLITE SYSTEMS INC	EL SEGUNDO	6.2	ND	0.0	0.1	2000
800074	A	LA CITY, DWP HAYNES GENERATING STATION	LONG BEACH	0.2	ND	0.0	0.0	2000
800075	A	LA CITY, DWP SCATTERGOOD GENERATING STA	PLAYA DEL REY	0.0	ND	0.0	0.0	2000
800079	A	PETRO DIAMOND TERMINAL CO	LONG BEACH	8.3	ND	0.0	0.2	1998
800087	A	MENASCO MFG CO (EIS USE)	BURBANK	0.0	ND	0.0	0.0	1997
800089	A	EXXONMOBIL OIL CORPORATION	TORRANCE	7.7	0.15	0.2	0.5	2013
800091	A	MOBIL OIL CORP (NSR USE ONLY)	ANAHEIM	0.7	ND	0.0	0.0	1999
800111	OB	THE BOEING COMPANY	DOWNEY	2.3	ND	0.0	0.1	1996
800113	A	ROHR,INC	RIVERSIDE	7.2	0.01	0.9	0.0	2007
800127	A	SO CAL GAS CO (EIS USE)	MONTEBELLO	1.0	0	0.0	0.0	2009
800149	A	US BORAX INC	WILMINGTON	9.5	ND	0.0	0.0	2000
800150	A	US GOVT, AF DEPT, MARCH AFB (NSR USE)	RIVERSIDE	7.4	0.02	0.3	0.0	2008
800168	A	PASADENA CITY, DWP (EIS USE)	PASADENA	0.2	ND	0.7	0.0	1996
800171	A	EXXONMOBIL OIL CORPORATION	VERNON	5.3	ND	0.1	0.0	1997
800181	A	CALIFORNIA PORTLAND CEMENT CO (c)	COLTON	2.0	ND	0.0	0.4	1996
800182	A	RIVERSIDE CEMENT CO (c)	RIVERSIDE	7.8	0.11	0.1	0.1	2001
800183	A	PARAMOUNT PETR CORP (EIS USE)	PARAMOUNT	9.6	ND	0.0	0.0	2002
800184	A	GOLDEN WEST REF CO	SANTA FE SPRINGS	8.8	ND	0.2	0.1	1997
800189	A	DISNEYLAND RESORT	ANAHEIM	3.3	0.03	0.1	0.1	2009
800193	A	LA CITY, DWP VALLEY GENERATING STATION	SUN VALLEY	0.2	ND	0.3	0.0	1999
800196	A	AMERICAN AIRLINES INC (EIS USE)	LOS ANGELES	5.4	ND	0.9	0.1	2002
800198	A	ULTRAMAR INC (NSR USE ONLY)	WILMINGTON	5.9	ND	0.0	0.1	1999

Appendix A-2. Continued

Facility ID	Facility Status (a)	Facility Name	City	Cancer Risk (per million)	Cancer Burden	Non-Cancer Acute Hazard Index	Non-Cancer Chronic Hazard Index	HRA Approval Year (e)
800202	A	UNIVERSAL STUDIOS INC (EIS USE)	UNIVERSAL CITY	2.4	ND	0.0	0.0	1996
800204	OB	SIMPSON PAPER CO	POMONA	3.4	ND	0.0	0.0	1996
800209	A	BKK CORPORATION, LANDFILL DIVISION GNRL	WEST COVINA	6.9	ND	0.0	0.1	2000
800214	A	LA CITY, SANITATION BUREAU (c)	PLAYA DEL REY	7.6	ND	0.1	0.0	1999
800236	A	LA CO. SANITATION DIST	CARSON	7.2	ND	0.2	0.1	2007
800264	A	EDGINGTON OIL COMPANY	LONG BEACH	4.8	0.001	0.0	0.0	2002
800267	A	TRIUMPH PROCESSING, INC.	LYNWOOD	0.5	0	0.1	0.4	2012
800273	OB	CHEMOIL REF CORP (NSR USE ONLY)	SIGNAL HILL	0.0	ND	0.0	0.0	2000
800279	A	SFPP, L.P.	ORANGE	5.9	ND	0.0	0.2	1999
800288	A	UNIV CAL IRVINE (NSR USE ONLY)	IRVINE	5.6	ND	0.0	0.1	1996
800318	A	GRISWOLD INDUSTRIES	COSTA MESA	9.5	0.01	0.1	0.0	2001
800320	A	AMVAC CHEMICAL CORP	LOS ANGELES	0.0	ND	0.1	0.3	2004
800325	A	TIDELANDS OIL PRODUCTION CO	LONG BEACH	1.9	ND	0.1	0.6	1999
800327	A	GLENDALE CITY, GLENDALE WATER & POWER	GLENDALE	0.6	ND	0.0	0.0	1999
800337	OB	CHEVRON U.S.A., INC (NSR USE)	LA HABRA	0.0	ND	0.0	0.0	1996
800343	A	BOEING SATELLITE SYSTEMS, INC	EL SEGUNDO	0.3	ND	0.0	0.2	1996
800372	A	EQUILON ENTER. LLC, SHELL OIL PROD. US	CARSON	6.9	ND	0.4	0.1	2001
800373	I	CENCO REFINING COMPANY	SANTA FE SPRINGS	9.7	ND	0.3	0.1	2000
800387	A	CAL INST OF TECH	PASADENA	2.4	ND	0.1	0.0	2007
800408	A	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	MANHATTAN BEACH	1.4	ND	0.9	0.1	1998
800409	A	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	REDONDO BEACH	5.5	ND	0.5	0.2	1998
800436	A	TESORO REFINING AND MARKETING CO	WILMINGTON	10.7	0.37	0.3	0.4	2013

Notes:

- a) A = Active
- b) (note that facilities with “Active” status within SCAQMD’s database might not be in operation currently); I = Inactive; OB = Out of Business
- c) The specific risk driver listed in this HRA is no longer in use & the resulting risk has been eliminated or minimized.
- d) SCAQMD staff has requested these facilities to update their HRAs.
- e) This includes risk attributable to the emergency DICE. The total facility risks excluding the emergency DICE are less than 10 in a million.
- f) All HRAs with HRA Approval Year dated 2015 and later have used the 2015 OEHHA HRA Guidelines for preparation of their HRA.

Appendix A-3. Status of Risk Reduction Plans

Fac. ID	Facility Name	Submitted	Approved	Implemented	Residual Risk
7427	Owens-Brockway Glass	Yes	Yes	Yes	Cancer: 3.60
					Acute HI: 0.01
					Chronic HI: 0.06
					Can. Burden: 0.000
7730	E.R. Carpenter	Yes	Yes	Yes	Cancer: 0.96
					Acute HI: 0.03
					Chronic HI: 1.34
					Can. Burden: 0.000
8015	Anadite Inc.	Yes	Yes	Yes	Cancer: 3.5
					Acute HI: 0.63
					Chronic HI: 0.78
					Can. Burden: n/a
8547	Quemetco A previous RRP was approved and implemented in 2008, but a new RRP is required based on a 2016 HRA.	Yes	Under Review		Cancer:
					Acute HI:
					Chronic HI:
					Can. Burden:
8570	Embee Inc.	Yes	Yes	Yes	Cancer: 6.6
					Acute HI: 0.21
					Chronic HI: 0.58
					Can. Burden: n/a
11818	Hixson Metal Finishing	Yes	Yes	In Progress	Cancer:
					Acute HI:
					Chronic HI:
					Can. Burden:
14191	Nicklor Chemical Co.	Yes	Yes	Yes	Cancer: 0.00
					Acute HI: 0 (a)
					Chronic HI: 0 (a)
					Can. Burden: 0.000
15504	Schlosser Forge Co.	Yes	Yes	Yes	Cancer: 9.5
					Acute HI: 1.59
					Chronic HI: 1.11
					Can. Burden: 0.067
18294	Northrop-Grumman	Yes	Yes	Yes	Cancer: 7.6
					Acute HI: 0.13
					Chronic HI: 0.05
					Can. Burden: n/a
18931	Gerdau	Yes	Yes	In Progress	Cancer:
					Acute HI:
					Chronic HI:
					Can. Burden:
18989	Bowman Plating Co. Inc.	Yes	Under Review		Cancer:
					Acute HI:
					Chronic HI:
					Can. Burden:

Appendix A-3. Continued

Fac. ID	Facility Name	Submitted	Approved	Implemented	Residual Risk
22410	Palace Plating	Yes	Yes	Yes	Cancer: 5.6 (b)
					Acute HI: 0.73
					Chronic HI: 0.38
					Acute HI: 0.73
25012	Amanda Manufacturing America, Inc.	Yes	Yes	Yes	Cancer: <0.1
					Acute HI: 0.00
					Chronic HI: 0.00
					Can. Burden: 0.000
41229	Lubeco, Inc.	Yes	Yes	Yes	Cancer: 14.0
					Acute HI: 0.00
					Chronic HI: 0.12
					Can. Burden: n/a
45938	E.M.E. Inc.	Yes	Yes	Yes	Cancer: <0.1
					Acute HI: 0.00
					Chronic HI: < 0.01
					Can. Burden: 0.000
48323	Sigma Plating Co.	Yes	Yes	Yes	Cancer: 13.8
					Acute HI: 0.01
					Chronic HI: 0.74
					Can. Burden: 0.017
61160	GE Engine Services	Yes	Yes	Yes	Cancer: 0.50
					Acute HI: 0.7
					Chronic HI: 0.01
					Can. Burden: 0.000
116459	GE Engine Services	Yes	Yes	Yes	Cancer: 9.3
					Acute HI: 0.19
					Chronic HI: 0.25
					Can. Burden: n/a
119127	PRC DeSoto International	Yes	Yes	Yes	Cancer: 0 (a)
					Acute HI: < 0.01
					Chronic HI: < 0.01
					Can. Burden: 0.000
124838	Exide Technologies	Yes	Yes	<i>(See Note)</i>	Cancer: 0 (d)
					Acute HI:
					Chronic HI:
					Can. Burden:
126501	Vought Aircraft Industries, Inc.	Yes	Yes	Yes	Cancer: 19.7 (c)
					Acute HI: 0.64
					Chronic HI: 0.24
					Can. Burden: n/a
134931	Alcoa Global Fasteners, Inc.	Yes	Yes	Yes	Cancer: 0.6
					Acute HI: 1.90
					Chronic HI: 0.02
					Can. Burden: 0.000
800037	DeMenno/Kerdoon	Yes	Yes	Yes	Cancer: 4.9
					Acute HI: < 0.01
					Chronic HI: 0.02
					Can. Burden: 0.01

Appendix A-3. Concluded

Fac. ID	Facility Name	Submitted	Approved	Implemented	Residual Risk
800063	Grover Products Co.	Yes	Yes	Yes	Cancer: 3.3
					Acute HI: 0.88
					Chronic HI: 0.07
					Can. Burden: 0.039
800196	American Airlines, Inc.	Yes	Yes	Yes	Cancer: 5.4
					Acute HI: 0.86
					Acute HI: 0.86
					Chronic HI: 0.08
					Can. Burden: 0.190

- (a) Facility left the Basin so their risks are zero.
- (b) Facility is shutdown so their risks are zero.
- (c) The specific risk driver listed in this HRA is no longer in use & the resulting risk has been eliminated.
- (d) Facility undergoing closure.

Appendix B

Trends in Ambient Air Toxics in the South Coast Air Basin

In addition to SCAQMD's periodic MATES studies, CARB has maintained a long-term continuous toxics monitoring network since the late 1980's.¹⁹ In this appendix, trends in cancer risks are illustrated for sites in the Basin. Health risk levels for the most recent three-year period (i.e., 2013 to 2015) are also shown for the air toxics which are monitored. CARB's monitoring network does not include diesel particulate matter, which contributes significantly to cancer risks in the Basin. Since this is ambient air quality data, both mobile and stationary emission sources are included in the health risk levels provided here. Looking at this historical data set illustrates the benefits of past regulatory control efforts.

Three of the approximately 16 current active sites in CARB's statewide toxics monitoring network are in or near the Basin as shown in Figure B-1. CARB's long-term sites are located in Azusa and Riverside-Rubidoux. Simi Valley is included in this analysis since it is just outside the western edge of the Basin and represents conditions at the western end of San Fernando Valley. The measurements consist of 24-hour integrated samples collected once every 12 days. Table B-1 lists the toxic air contaminants that are monitored and the carcinogenic compounds in the table are identified with an asterisk.

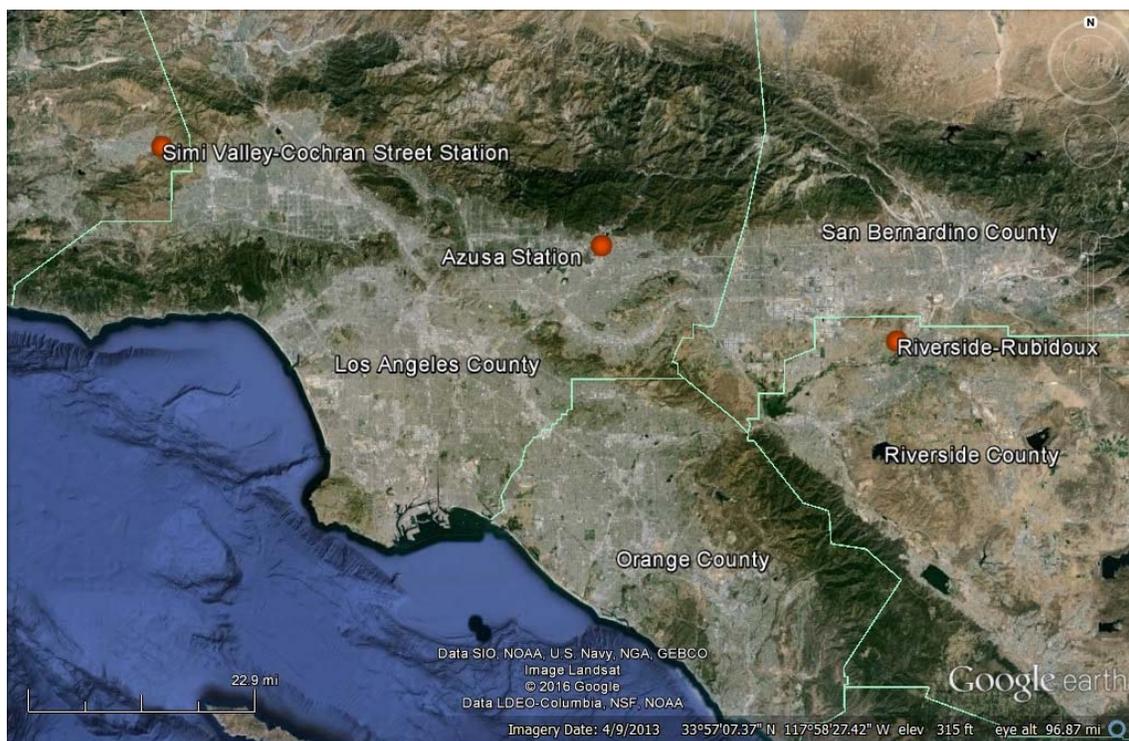


Figure B-1. CARB toxic monitoring sites in the Basin

¹⁹ Information about and data from CARB's toxic monitoring data are available at:
<http://www.arb.ca.gov/adam/toxics/toxics.html>

Table B-1 - Toxic Air Contaminants Considered

Toxic Volatile Organic Compounds		Toxic PM
Acetaldehyde*	Methyl Bromide	Hexavalent Chromium*
Acrolein	Methyl Chloroform	Lead*
Benzene*	Methyl Ethyl Ketone	Manganese
1,3-Butadiene*	Methylene Chloride*	Nickel*
Carbon Tetrachloride*	Perchloroethylene*	Selenium
Chloroform*	Styrene	
Ethyl Benzene*	Toluene	
Formaldehyde*	Trichloroethylene*	

* carcinogen

OEHHA adopted new health risk guidance in March 2015.²⁰ The 2015 OEHHA HRA Guidelines incorporates age sensitivity and exposure factors which increase cancer health risk estimates to residential and sensitive receptors by approximately three times, and more than three times in some cases depending on whether the toxic air contaminant has multiple pathways of exposure in addition to inhalation pathway. Under the 2015 OEHHA HRA Guidelines, even though the toxic pollutant concentrations may not have increased, the estimated cancer risk to a residential receptor will increase.

Figure B-2 presents health risk trends using the 2015 OEHHA HRA Guidelines. Inhalation cancer health risks have decreased significantly at all stations since 1990. Cancer risks have decreased by 74 and 77 percent at Riverside, and Simi Valley, respectively; Azusa station show a decrease in cancer risk by 41 percent since 2000.

²⁰ OEHHA, Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, February 2015, adopted March 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

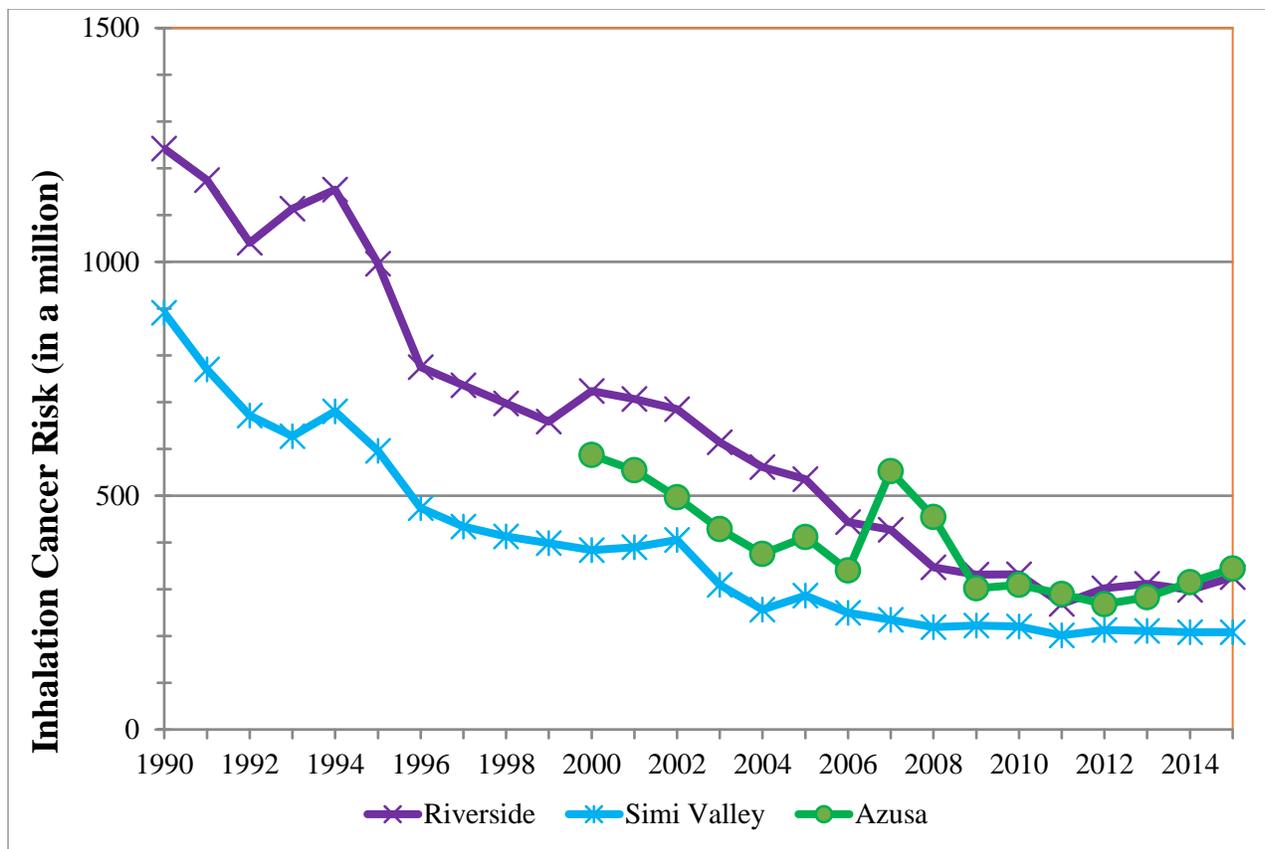


Figure B-2 - Trends in Inhalation Cancer Health Risks (2015 OEHHA HRA Guidelines) in the Basin (excluding cancer risks from diesel particulate matter)

The Azusa station started in 1995 as one of the Photochemical Assessment Monitoring Stations (PAMS) network to determine speciated hydrocarbon ozone (O₃) precursor compounds in ambient air. On October 17, 2006, U.S. EPA issued final amendments to PAMS monitoring requirements in 40 CFR Code 58. On July 1, 2009, to address these amendments, and site-specific observations from the PAMS network assessment project, Azusa station was reclassified from Type 3 (maximum O₃ concentration site) to Type 2 (maximum O₃ precursor emissions impact site or above 8 hour ozone). The proposed change addressed the National PAMS Network Assessment that Azusa has high Volatile Organic Compounds and Oxides of Nitrogen concentrations, with lower O₃ concentrations. The site now more closely resembles a Type 2 O₃ precursor site.

The reduction in risk at the Azusa station is primarily from reductions in ambient concentrations of benzene (74 percent) and perchloroethylene (99 percent) and secondarily from decreases in 1,3-butadiene (78 percent) and lead (61 percent).

The risk reductions shown in Figure B-2 occurred in spite of significant increases in population and vehicle activity. As shown in Table B-2, population increased by 37

percent since 1990 and daily vehicle miles traveled , vehicle population, and daily fuel consumption increased by 42, 52, and 26 percent, respectively.

Table B-2 - Change in Population and Vehicle Activity in the Basin Since 1990

Activity Variable	1990	2016	% Increase
Population	13,083,594	17,918,772	37.0
Daily Vehicle Miles Traveled (thousands of miles per day)	282,561	400,018	41.6
Vehicle Population	7,547,354	11,459,830	51.8
Daily Fuel Consumption (thousands of gallons per day)	18,338	23,885	25.8

Source: http://www.arb.ca.gov/app/emsinv/trends/ems_trends.php.

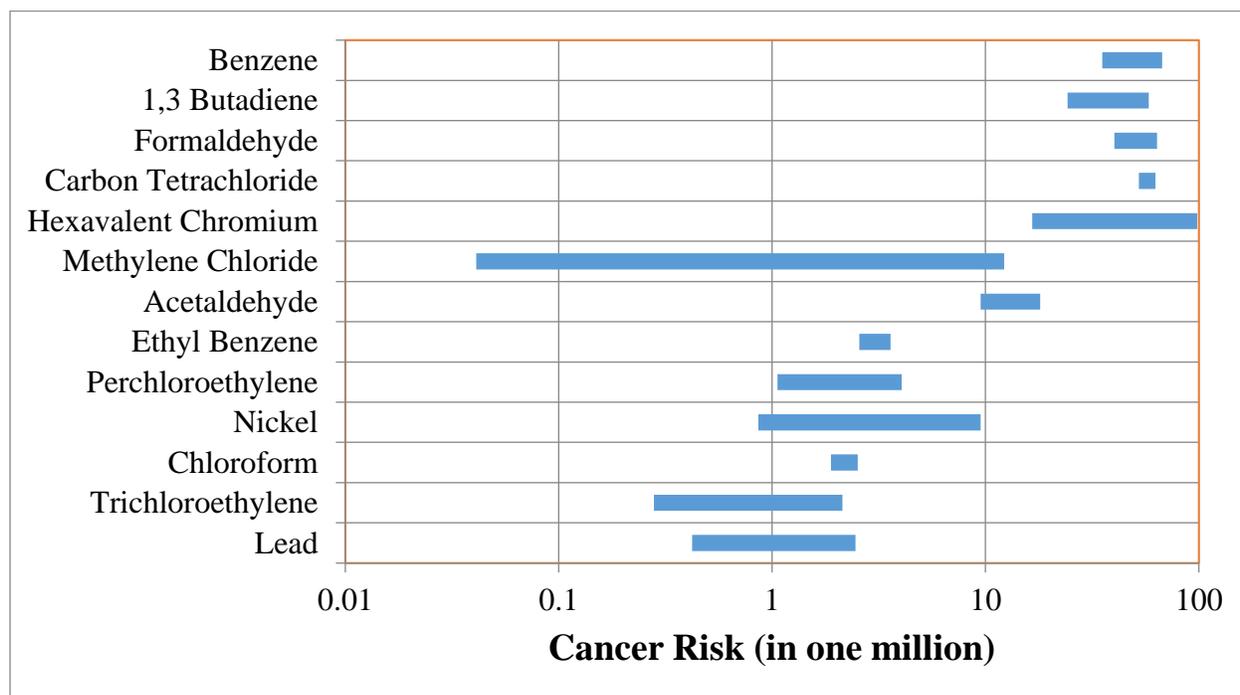


Figure B-3 - Inhalation Cancer Risks in the Basin 2013 to 2015 (excluding diesel particulate matter)

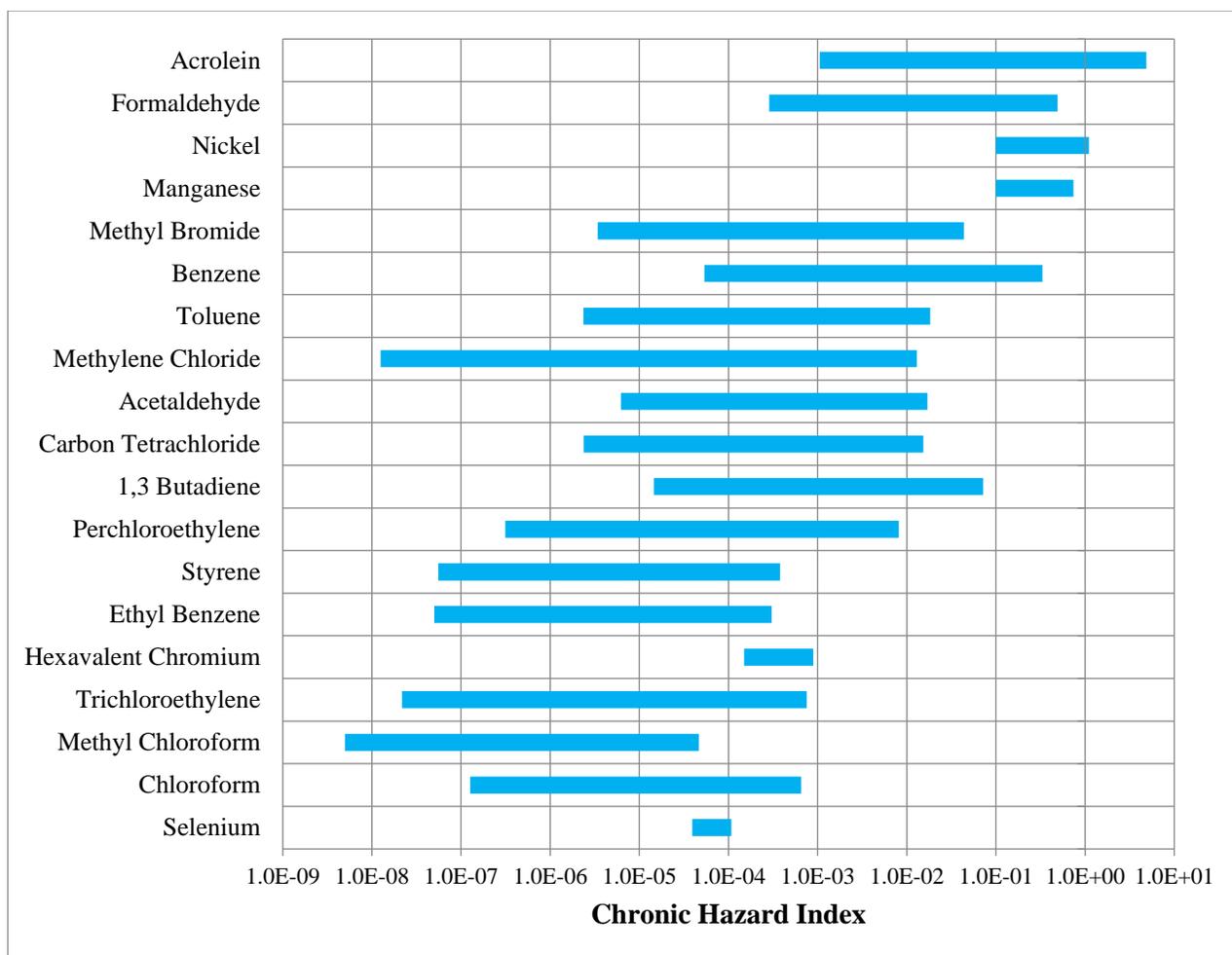
The relative importance of each of the toxics at the three monitored stations is illustrated in Figure B-3 above. These ranges do not represent all potential exposures, and some areas near facilities with toxic air contaminant emissions may have higher risks. The range of cancer risks for the three sites analyzed here are shown for the most recently available three-year period (2013 to 2015). Benzene, 1,3-butadiene, formaldehyde, carbon tetrachloride, hexavalent chromium, methylene chloride, and acetaldehyde are the largest contributors to the inhalation cancer risks, contributing individually from 0.04 to around

98 in a million. The ambient carbon tetrachloride concentrations observed in the Basin are not from a local source of emissions but represent background conditions. Note that there is little variability in cancer risks attributable to carbon tetrachloride as indicated by its short bar in Figure B-3. In fact, there is little variability statewide in carbon tetrachloride concentrations, with concentrations varying by less than ten percent. Perchloroethylene, chloroform, ethyl benzene and nickel each contribute between 0.9 and 9.5 in a million and trichloroethylene and lead contribute on average about two in a million to the inhalation cancer risks.

As demonstrated in the series of MATES conducted by SCAQMD staff, DPM is by far the largest contributor to inhalation cancer risks observed in the Basin. MATES IV attributed about 68 percent of the inhalation cancer risks to DPM based on emissions from 2012,²¹ compared to 84 percent in MATES III based on emissions in 2005.²² The total cancer risks shown in Figures B-2 and B-3 therefore represent only about 35 percent of the population weighted inhalation cancer risks found in the MATES IV study.

²¹ See page ES-2 of the Executive Summary which is available at:
<http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15>.

²² See page ES-3 of the Executive Summary which is available at:
<http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iii/mates-iii-final-report>.



**Figure B-4 - Non-cancer Chronic Risks in the Basin
2013 to 2015**

The range of non-cancer chronic risks for the three sites analyzed here are shown above in Figure B-4 for the most recently available three-year period (2013 to 2015). For each toxic air contaminant, the ratio of the observed concentration to the pollutant’s chronic REL is shown. Ratios greater than one indicate the potential for adverse health effects. Note that acrolein, a respiratory irritant, is the only toxic air contaminant in which ambient concentrations are above its REL throughout the state and thus may partially reflect general background conditions. However, it should be noted that acrolein is well known to be difficult to measure with current techniques, and therefore, there is considerable uncertainty and data quality issues associated with these measurements.²³ At best, acrolein

²³ R. Schulte-Ladbeck, et al. “Characterization of chemical interferences in the determination of unsaturated aldehydes using aromatic hydrazine reagents and liquid chromatography.” *J. Environ. Monit.*, 2001, 3, 306–310.
 Ho, S.S.H., et al. “Unsuitability of using the DNPH-coated solid sorbent cartridge for determination of airborne unsaturated carbonyls.” *Atmospheric Environment*. 2011 45, 261-265.
 Herrington, J.S., et al. “Concerns regarding 24-h sampling for formaldehyde, acetaldehyde, and acrolein using 2,4-dinitrophenylhydrazine (DNPH)-coated solid sorbents.” *Atmospheric Environment* 2012, 55, 179-184.

monitoring data should be considered as a rough indicator, not accurate enough to be compared to health benchmarks. Acrolein emissions can better be estimated using computer modeling methods.

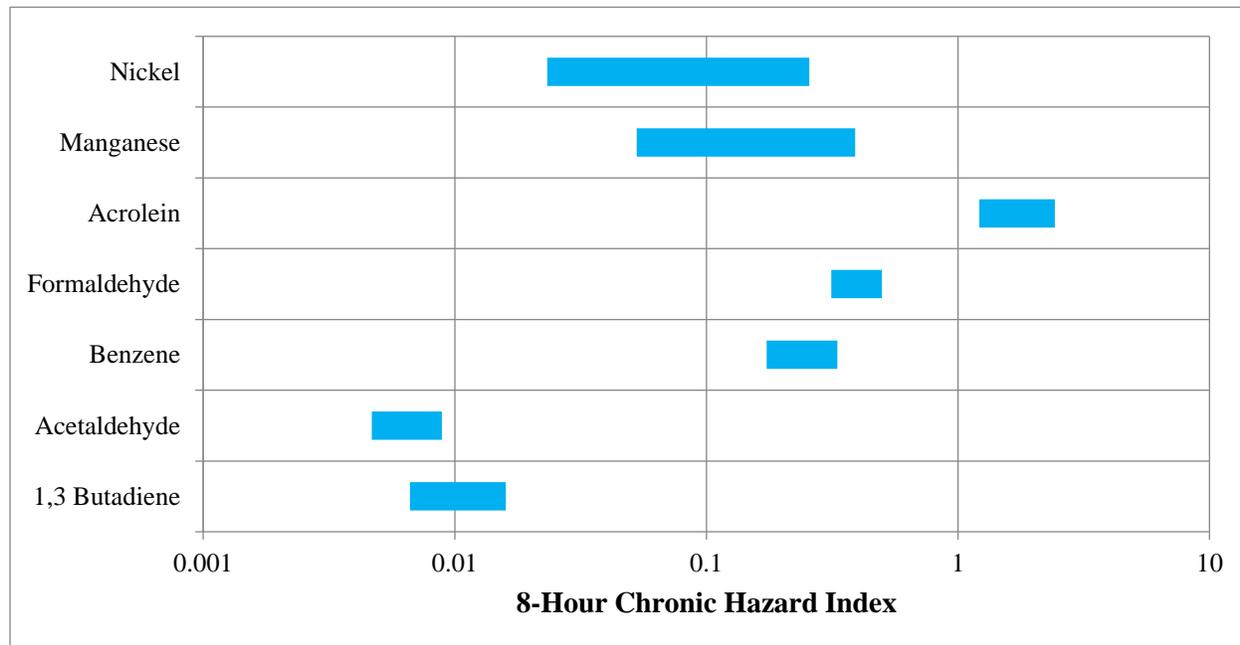


Figure B-5 - Non-cancer 8-Hour Chronic Risks in the Basin 2013 to 2015

The 2015 OEHHA HRA Guidelines includes methodology for estimating an 8-hour chronic HI using 8-hour REL developed for this purpose. The 8-hour RELs were developed only for repeated, chronic daily 8-hour exposures (e.g. a typical worker or resident exposed to a facility that operates equal to or more than 8 hours per day and 5 days per week). The 8-hour HI is based upon the daily average 8-hour exposure only for those chemicals with 8-hour RELs. The range of non-cancer 8-hour chronic health risks for the three sites analyzed here are shown above in Figure B-5 for the most recently available three-year period (2013 to 2015). For each toxic air contaminant, the ratio of the observed concentration to the pollutant’s chronic REL is shown. Ratios greater than one indicate the potential for adverse health effects. Note that acrolein, a respiratory irritant, is the only toxic air contaminant in which ambient concentrations are above its REL. It should be noted that the ambient concentrations of acrolein are above its REL throughout the state and thus may partially reflect general background conditions.

Grosjean, D., “Ambient Levels of Formaldehyde, Acetaldehyde, and Formic Acid in Southern California: Results of a One-Year Base-Line Study,” *Environmental Science & Technology*, Vol 25, 1991, pp. 710–715.

Appendix C

List of Acronyms and Abbreviations

Acronym	Description
AB 2588	Air Toxics Hot Spots Information and Assessment Act
AER	Annual Emissions Reporting
ATIR	Air Toxics Inventory Report
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCP	Clean Communities Plan
CEMS	Continuous Emissions Monitoring System
CEQA	California Environmental Quality Act
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
H&S	Health and Safety
HARP 2	Hotspots Analysis and Reporting Program Version 2
HI	Hazard Index
HRA	Health Risk Assessment
MATES	Multiple Air Toxics Exposure
MICR	Maximum Individual Cancer Risk
NAAQS	National Ambient Air Quality Standard
NATA	National Air Toxics Assessment
OEHHA	Office of Environmental Health Hazard Assessment
PAMS	Photochemical Assessment Monitoring Stations
REL	Reference Exposure Levels
RRP	Risk Reduction Plan
SCAQMD	South Coast Air Quality Management District
U.S. EPA	United States Environmental Protection Agency
VRRP	Voluntary Risk Reduction Plan

AB2588 Toxic Hot Spots 2016 Annual Report

**Governing Board Meeting
July 7, 2017**

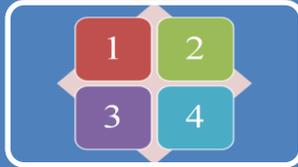




Background

- Air Toxics 'Hot Spots' Act (AB2588) enacted in 1987 and modified in 1992
 - Implemented through SCAQMD Rule 1402
 - Emissions viewable in SCAQMD's FIND web tool
- H&S Code §44363 requires public hearing every year to present results of Annual Report
- 1,640 facilities have been in Core program since program inception
- 340 facilities currently submit quadrennial emission inventories
 - Facilities with a Prioritization Score >10 may either prepare an Air Toxics Inventory Report or Voluntary Risk Reduction Plan, if eligible

AB2588 Traditional Process for 'Core' Facilities



Quadrennial Emissions Inventory



Prioritization



Air Toxics Inventory Report (ATIR)



Health Risk Assessment (HRA)



If HRA exceeds thresholds:

- Public Notification or Risk Reduction Plan (RRP)



Activities in 2016

- Rule 1402 amended in October 2016; which provided three pathways

Traditional Approach

Facilities with health risks expected to be < 100 in a million

Submit:

- Air Toxics Inventory Report
- Health Risk Assessment
- Risk Reduction Plan (if cancer risk >25 in a million)

Voluntary Risk Reduction Program

Facilities with health risks expected to be < 100 in a million and a previously approved Health Risk Assessment

Submit:

- Air Toxics Inventory Report
- Voluntary Risk Reduction Plan committing to reduce below 10 in a million

Potentially High Risk Facilities

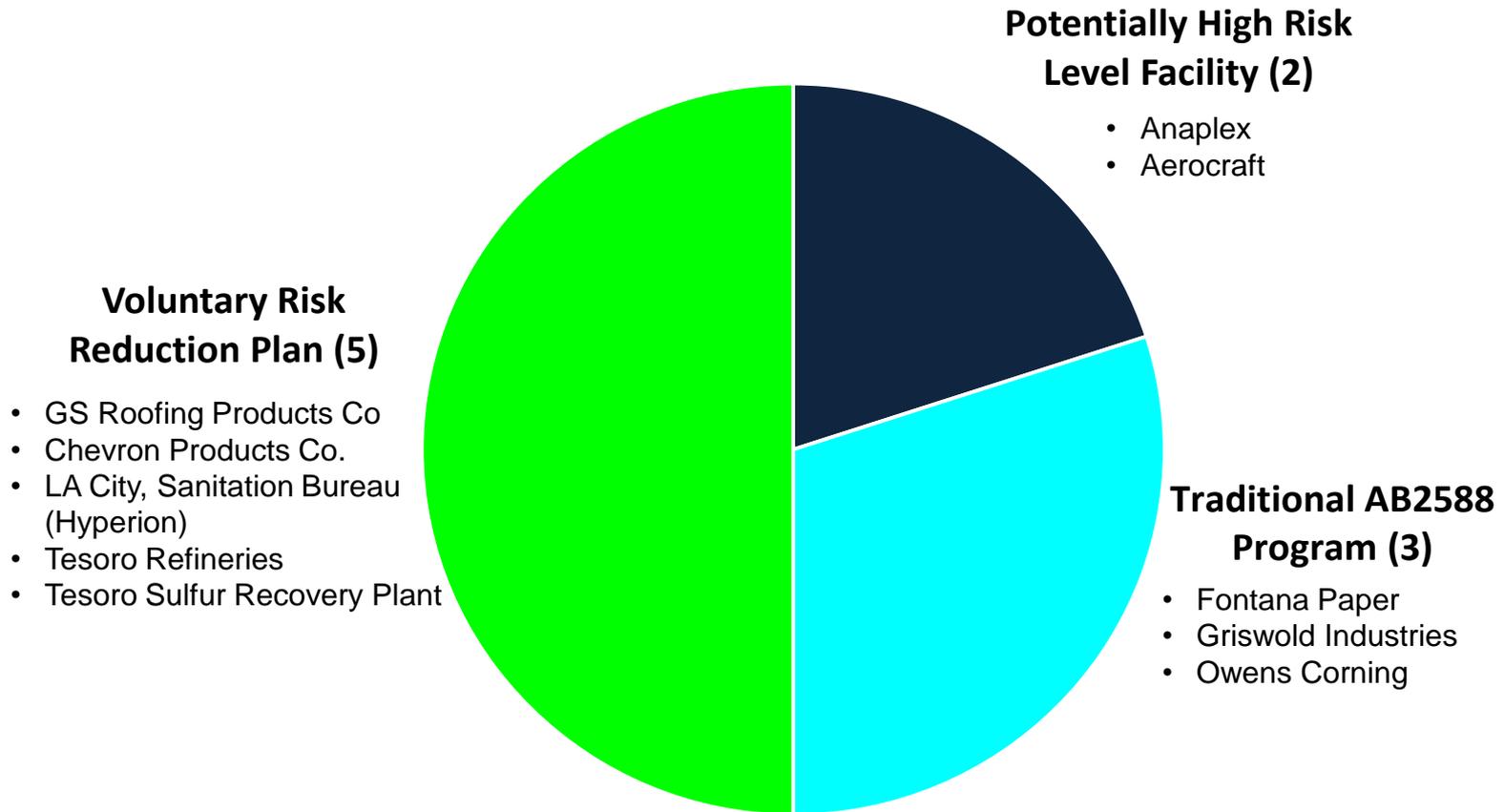
Facilities with health risk potentially ≥ 100 in a million

Submit:

- Early Action Risk Reduction Plan
- Air Toxics Inventory Report
- Health Risk Assessment
- Risk Reduction Plan



Summary of Pathways for Facilities Notified in 2016



10 Facilities Notified to Prepare Toxics Inventories or Plans



Key AB2588 Activities in 2016

- Approved 2 Health Risk Assessments (both facilities required to conduct public notification)
 - Carlton Forge Works, Paramount
 - Quemetco, City of Industry
- Staff reviewing approximately 3 ATIRs, 3 HRAs, 3 RRP, 2 source tests
- Updated SCAQMD's AB2588 Facility Prioritization Procedures & Supplemental Guidance
- Air monitoring work in Paramount (Anaplex and Aerocraft HRAs)
- Initiated process to put contract services in place for 2017 increased workload



2017 AB2588 Workload

- Substantial number of Air Toxics Inventory Reports and Voluntary Risk Reduction Plans
 - Notified 24 facilities in late 2016 and so far in 2017 to prepare Air Toxics Inventory Report or Voluntary Risk Reduction Plans, if eligible
 - Additional 33 facilities need to be notified
 - Staff has increased resources to address anticipated workload
 - Additional positions
 - Contract for consultant assistance
 - Some of the 33 facilities will be addressed in 2018
- Continue review of the 2014 National Air Toxics Assessment emissions data



Ongoing Toxics Activities 2017

- Continue development of guidance for fugitive emissions / monitoring / modeling
- Conduct toxic and criteria pollutant air dispersion modeling to support SCAQMD permit application approval process
- Series of toxics rules under development addressing metal operations