

**Health Risk Assessment  
January 2022**

**Pac Rancho, Inc.**

**Prepared For:**

**Pac Rancho, Inc.  
11000 Jersey Boulevard  
Rancho Cucamonga, California**

**EHS-11588**

## Preface

A revised Health Risk Assessment (HRA) submitted on January 10, 2022 by Pac Rancho and prepared by JE Compliance Services/All4 Inc. has been modified by South Coast AQMD staff in accordance with Rule 1402(e)(2)(D). South Coast AQMD initially rejected the original HRA submittal on September 15, 2021 and requested resubmission. The revised HRA has been modified and approved by South Coast AQMD as follows:

- The HRA has been modified to utilize a variable emissions modeling. Pac Rancho previously applied a highly conservative Worker Adjustment Fact (WAF) to various health risk scenarios without the use of non-continuous emissions modeling. OEHHA's Guidance Manual for Preparation of Health Risk Assessments states that a WAF shall only be applied to non-continuous emissions scenarios.
- The WAF has been modified to more closely reflect the minimum operating hours of the facility.

As a result of these modifications, all risk values from the facility submittal have changed. All modified assumptions, risk results, and corresponding tables and figures have been updated in this report and are also summarized in the modified HRA Summary Form found in Appendix C.

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# Executive Summary

## Facility Description

Pac Rancho is located at 11000 Jersey Boulevard in Rancho Cucamonga, California (the “facility”) within the southwestern portion of San Bernardino County. The facility is located in a commercial and industrial area. The facility occupies approximately five acres of land. The geographic coordinates of the facility are 34°05’42” latitude and 117°33’53” longitude, and the Universal Transverse Mercator (UTM) coordinates are 447.899 kilometers east, 3,772.846 kilometers north. **Table 1** (see **Appendix B**) provides facility information, including facility identification number and address. A map of the area is provided as **Figure 1** on page 4.

## Process Description

PAC Rancho, Inc. utilizes molds to manufacture steel and aluminum castings used in the aircraft and aerospace industries. Steel and aluminum castings are produced by first creating wax patterns by injection molding. Heated raw material is injected under pressure into a heated mold where the uncured wax cures and hardens into the shape of the mold. A silica shell is then formed around the wax pattern. The wax pattern is melted out of the silica shell in an autoclave and then the molten aluminum or steel is poured into the silica shell. The silica shell is then removed using high pressure water. The castings go through grinding and deburring operations. To check for defects, PAC Rancho uses x-ray and penetrant for the steel and aluminum castings.

## Overview of Facility Emissions

According to the Air Toxic Inventory Report (ATIR) for the facility, approximately 55 substances listed under the Air Toxics Hot Spots Information and Assessment Act of 1987 were emitted from the facility. **Table 2** (see **Appendix B**) summarizes the maximum one-hour and average annual emissions for each of these eighty listed substances at the facility. **Table 3** (see **Appendix B**) summarizes the maximum one-hour and average annual emissions by device for the substances emitted at the facility.

The Hot Spots Analysis and Reporting Program (HARP2) risk assessment algorithm contained methods for calculating the risk for certain pollutants potentially created by exposures other than inhalations, including soil ingestion, dermal absorption, mother’s milk, water ingestion, fish and beef consumption, and homegrown vegetables. These substances are referred to as multipathway substances. To determine total predicted exposure at each receptor, the applicable pathways of exposure for each pollutant were included in the assessment. The exposure routes for each pollutant for which multipathway exposures were considered are listed in **Table 9** (see **Appendix B**).

## Overview of Dispersion Modeling and Assessment

The purpose of the exposure assessment was to estimate the extent of public exposure to each listed substance for which cancer potency or non-cancer reference exposure levels have been developed. This involved emission quantification, modeling of environmental fate and transport, identification of exposure routes, identification of exposed populations, and estimation of short-term and long-term exposure levels. Air dispersion modeling employing the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 21112 and health risk assessment using the HARP2 software, version 22118.

## Overview of Dose-Response Assessment for Cancer and Non-Cancer Impacts

Cancer potency factors were used to calculate the probability or risk of cancer associated with the estimated exposure to listed substances emitted from the facility. The cancer risk created by the emission of each substance was calculated by multiplying the estimated average daily dose at a particular receptor by the chemical specific cancer potency factor. The total cancer risk at a given receptor location is the sum of the individual risks for each substance.

Hazard indices were used to quantify the acute or chronic exposure of a substance at its toxicological endpoints. To estimate the acute and chronic non-cancer health hazards presented by emissions from the facility, a hazard index was developed. Hazard indices were developed for both short-term (acute) and long-term (chronic) exposures using reference exposure levels (RELs). The hazard index was calculated at each receptor by dividing the concentration, maximum hourly for acute exposures or average annual for chronic exposures, of each substance by its corresponding acute or chronic REL. RELs are concentrations or doses at or below the level at which no adverse health effects are likely to occur. A hazard index of one or less indicates that an adverse health effect is not expected to result from exposure to the given substance.

Individual pollutants may affect the human body differently. For example, scientific research has shown that exposure to acrolein or copper may affect the respiratory system at certain concentrations, but do not adversely affect the skin. Human organs or organ systems that may be affected differently are referred to as “toxicological endpoints”. The total hazard index was calculated by summing the index derived for each substance and each toxicological endpoint.

A summary of cancer unit risks, RELs, and toxicological endpoint organs and organ systems affected by non-cancer impacts of the 55 substances included in this Report is provided in **Table 10a** (see **Appendix B**). A summary of the chemicals included in the ATIR with no risk factors are provided in **Table 10b** (see **Appendix B**).

### Summary of Results

The potential health risks posed from emissions of listed substances from the facility were estimated using the HARP2 software. No subpopulations such as subsistence fishers were identified within the zone of impact. Cancer and non-cancer health risks were determined for the off-site point of maximum impact (PMI), the maximum exposed individual resident (MEIR), the maximum exposed individual worker (MEIW). No sensitive receptors were located within the one in one million zone of impact (ZOI) for cancer risk. UTM coordinates for the PMI, MEIR, and MEIW are provided in the Health Risk Assessment Summary Form located in **Appendix C**.

#### Total Cancer Health Risks

The overall risk of cancer associated with emissions of listed substances from the facility was measured in terms of a cancer risk factor.

The predicted cancer risk represents the theoretical probability of extra cancer cases occurring in the exposed population over a lifetime of thirty years. An off-site worker’s cancer risk is based on a 25-year work schedule. Based upon this Report, the cancer risk at the PMI was determined to be 222.48 per million. The PMI is located UTM coordinates 447,895.8 East and 3,772,804 North on the fence line directly to the south of the facility. The cancer risk at the MEIW located at 447,995.7 East and 3,772,864

North to the east of the facility was determined to be 38.76 per million. The cancer risk at the MEIR located at 447,900 East and 3,772,450 North to the southwest of the facility was determined to be 1.72 per million. Hexavalent chromium appeared to contribute the most potential cancer risk at the PMI, MEIR, and MEIW. A cancer risk summary by listed substance at the PMI, MEIW, and MEIR is provided in **Table 12** (see **Appendix B**).

A 30-year cancer risk isopleth map for the one in one million ZOI is provided in **Figure 3** (see **Appendix A**). Also included in Figure 3 are the isopleths for Rule 1402 thresholds for 10 in one million, 25 in one million, and 100 in one million. The locations of the PMI, MEIW, and MEIR are provided in **Figure 4** (see **Appendix A**).

Cancer burden is the estimated number of people in a defined population that could potentially contract cancer from a lifetime exposure to emitted substances from the facility. The cancer burden was calculated by multiplying the cancer risk by the number of people exposed. The one in one million ZOI for the 70-year cancer risk isopleth had a residential population of 4 people according to the 2010 Census data utilized by the HARP2 software which resulted in an estimated cancer burden of 4.06E-6. **Table 14** (see **Appendix B**) summarizes the cancer burden for the one in one million ZOI.

#### **Total Chronic, Acute and 8-Hour Non-Cancer Health Risks**

The chronic, acute, and 8-hour non-cancer health risks were measured in terms of level of exposure relative to the reference level. The reference exposure level is the level of exposure considered to cause no adverse health effects.

The chronic hazard index was determined to be 0.04 at the MEIR and 4.48 at the MEIW. Nickel appeared to contribute the most potential chronic hazards at the MEIR and MEIW. Primary target organ system impacted by chronic exposure is expected to be the respiratory system. Toxicological endpoints chronically affected by these substances are provided in **Table 10a** (see **Appendix B**). The locations of the MEIW and MEIR for chronic hazards are provided in **Figure 5** (see **Appendix A**). The isopleth map for chronic hazard index level of 1, 3, and 5 is provided in **Figure 6** (see **Appendix A**).

The acute hazard index was determined to be 21.26 at the PMI. Emissions of nickel appeared to contribute the most potential acute hazards at the PMI. Primary target organ system impacted by acute exposure is expected to be immune system. Toxicological endpoints acutely affected by these substances are provided in **Table 10a** (see **Appendix B**). The location of the PMI is provided in **Figure 7** (see **Appendix A**). The isopleth map for the chronic hazard index level of 1, 3, and 5 is provided in **Figure 8** (see **Appendix A**).

The 8-hour hazard index was determined to be 2.87 at the PMI. Emissions of nickel appeared to contribute the most potential 8-hour hazards at the PMI. Primary target organ system impacted by 8-hour exposure is expected to be respiratory and immune systems. Toxicological endpoints acutely affected by these substances are provided in **Table 10a** (see **Appendix B**). The location of the for 8-hour hazards is provided in **Figure 9** (see **Appendix A**). The isopleth map for the 8-hour hazard index level of 1, and 3 is provided in **Figure 10** (see **Appendix A**).



## Introduction

This Health Risk Assessment Report (“Report”) has been modified by South Coast AQMD for Pac Rancho, located at 11000 Jersey Boulevard in Rancho Cucamonga, California (the “facility”). In a letter dated 7 August 2020 from the South Coast Air Quality Management District (SCAQMD) required that a health risk assessment be completed for the facility for reporting year 2018 (see **Appendix D**). Due to the facility receiving an HRA rejection on September 15, 2021, South Coast AQMD has elected to revise this report in accordance to provisions set out in Rule 1402; the preface to this report provides more detail regarding the modification.

This Report has been prepared in accordance with the California Office of Environmental Health Hazard Assessment *Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, February 2015* and *SCAQMD Supplemental Guidelines for Preparing Risk Assessments and Risk Reduction Plan for the Air Toxics “Hot Spots” Information and Assessment Act, October 2020*.

Air dispersion modeling employing the Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 21112 and health risk assessment using the Hot Spots Analysis and Reporting (HARP2) software, version 19121 for cancer, acute and 8-hour hazard indices and version 21081 for updates to chronic indices (HARP2) was conducted in accordance with SCAQMD and California Office of Environmental Health Hazard Assessment recommended practices.

## Facility Information

The facility is located in a commercial and industrial area. An area map is provided as **Figure 1**. A facility map showing the approximate locations of the emission sources, property boundaries, and building dimensions of the facility is provided as **Figure 2** (see **Appendix A**). See **Table 1** (see **Appendix B**) for facility information including facility address, and facility ID.

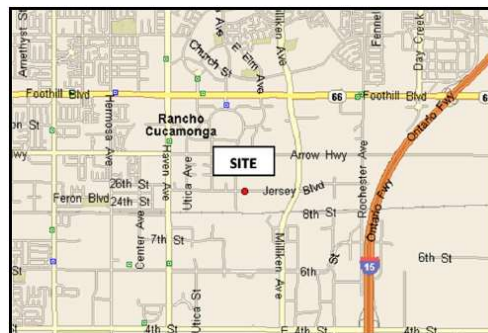


Figure 1 – Area Map

## Process Description

Pac Rancho, Inc. utilizes molds to manufacture steel and aluminum castings used in the aircraft and aerospace industries. Steel and aluminum castings are produced by first creating wax patterns by injection molding. Heated raw material is injected under pressure into a heated mold where the uncured wax cures and hardens into the shape of the mold. A silica shell is then formed around the wax pattern. The wax pattern is melted out of the silica shell in an autoclave and then the molten aluminum or steel is poured into the silica shell. The silica shell is then removed using high pressure water. The castings go through grinding and deburring operations. To check for defects, Pac Rancho uses x-ray and penetrant for the steel and aluminum castings.

## Hazard Identification

Approximately 55 substances listed under the Air Toxics Hot Spots Information and Assessment Act 1987 are emitted from the facility. **Table 2** (see **Appendix B**) summarize the maximum one-hour and average annual emissions for each of these eighty listed substances for emission sources at the facility. Emission sources at the site are identified in the section titled **Emissions Inventory**.

## Multipathway Analysis

The HARP2 risk assessment algorithm includes methods for calculating the risk for certain pollutants potentially created by exposures other than inhalation, including soil ingestion, dermal absorption, water ingestion, and homegrown vegetables. These substances are referred to as multipathway substances.

To determine total predicted exposure at each receptor, the applicable pathways of exposure for each pollutant were included in the assessment.

Pathways enabled in the HARP2 software for the analysis in addition to inhalation included dermal absorption, soil ingestion, mother's milk, and homegrown produce (vegetable).

Pathways that were disabled during the evaluation include drinking water, fish, pasture (dairy), beef, pigs, chickens, and eggs. The exposure routes for each pollutant for which multipathway exposures were considered are listed in **Table 9** (see **Appendix B**).

## Exposure Assessment

Cancer potency factors were used to calculate the probability or risk of cancer associated with the estimated exposure to listed substances emitted from the facility. Cancer potency factors represent the theoretical probability of extra cancer cases occurring in the exposed population assuming 70-year lifetime exposure. The cancer risk created by the emission of each substance was calculated by multiplying the estimated average daily dose at a particular receptor by the chemical specific cancer potency factor. The total cancer risk at a given receptor location was the sum of the individual risks for each substance, including multipathway contributors.

Hazard indices quantify the acute, chronic, or 8-hour exposure of a substance at its toxicological endpoints. To estimate the acute, chronic, or 8-hour non-cancer health hazards presented by emissions from the facility, a hazard index was developed. Hazard indices were developed for both short-term (acute) and long-term (chronic) exposures using reference exposure levels (RELs). The hazard index was calculated at each receptor by dividing the concentration, maximum hourly for acute exposures or average annual for chronic exposures, of each substance by its corresponding acute or chronic REL. RELs are concentrations or doses at or below the level at which no adverse health effects are likely to occur. A hazard index of one or less indicates that an adverse health effect is not expected to result from exposure to the given substance.

Individual pollutants may affect the human body differently. For example, scientific research has shown that long-term exposure to acrolein or copper may affect the respiratory system above certain concentrations, but do not adversely affect the skin. Human organs or organ systems that may be affected differently are referred to as "toxicological endpoints". The total hazard index was calculated by summing the index derived for each substance and each toxicological endpoint.

The determination of risk values for listed substances carries a level of uncertainty. In some cases, the uncertainty may be quite large. Most acceptable risk or exposure levels are based on animal studies or epidemiological studies on workers. Uncertainty is enhanced when the results of these studies are applied to human beings or to a general population.

Predicated doses calculated by pathway for each listed substance are contained in the attached electronic file. Air dispersion modeling inputs for assessment reproduction are also provided in the attached electronic file (see **Appendix E**).

## Emissions Inventory

Average annual emissions were determined from the average daily process rate. Maximum hourly emissions were determined from the maximum hourly process rate. **Table 2** (see **Appendix B**) summarizes the annual emissions by substance for the facility in pounds per year and grams per second, and maximum hourly emissions in pounds per hour and grams per second. **Table 3** (see **Appendix B**) summarizes annual emissions by source in pounds per year and grams per second, and the maximum hourly emissions by source in pounds per hour and grams per second.

Predictable emissions occur from activities such as: natural gas and propane combustion; melting, pouring, and casting; abrasive blasting; welding; aluminum parts bright dip line; metal grinding; shell making; and wax burnout. Additionally, evaporative emissions from the facility occur from the use of binders, cleaners, lubricants, adhesives, solvents, non-destructive testing, mold release, and foam packing. No unpredictable emissions from activities such as spilling or leaking occurred during the 2018 calendar year. A description of methodologies used to calculate emissions are provided in **Table 4** (see **Appendix B**).

Multiple devices at the facility utilize air pollution control equipment. Aluminum pusher furnaces, steel wax burnout ovens, and flash fire oven wax burnout operations are vented to an afterburner with a 99% control efficiency. Metal grinding operations are vented to a dust collector with a 99% control efficiency. A description of emission control equipment used to control emissions are provided in **Table 5** (see **Appendix B**). The Air Toxic Inventory Report (ATIR) that includes detailed emission calculations is provided in **Appendix E**.

**Tables 6A** and **6B** (see **Appendix B**) contain information about the emission sources at the facility. Source parameters including UTM coordinates, elevations, stack height and diameters, flow rates, and temperature. Operational hours are also provided in **Table 7** (see **Appendix B**).

## Air Dispersion Modeling

Air dispersion modeling employing the Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 22112 and health risk assessment using the Hot Spots Analysis and Reporting (HARP2) software, version 22118.

HARP is an integrated health risk assessment program that includes modules for air dispersion modeling and health risk assessment. The risk analysis algorithms used in HARP2 are based on the guidelines provided in *Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, February 2015).

HARP2 was used to enter receptor, source, emissions, and building wake effect data and model the emissions of listed substances from the facility using AERMOD. Execution of the AERMOD model produced a series of dispersion coefficients calculated by setting emissions from emission sources to one gram per second and running the AERMOD program using only one pollutant. Essentially, this process produced a number at each receptor and for each separate emission source representing the concentration of the pollutant that would be produced if one gram per second were emitted from that source. This data file of dispersion coefficients was used as an input to the health risk assessment module.

To cover the site vicinity, 40,000 grid receptors on 50-meter centers were used to cover approximately 9,950-meter by 9,950-meter receptor grid. The Office of Environmental Health Hazard Assessment (OEHHA) and SCAQMD require a minimum of 100-meter centers to ensure sufficient receptor density. The grid was situated to capture the one in a million zone of influence. Sensitive receptors such as schools, hospitals, and day-care facilities within the general area of the facility were captured by the spacing on the grid. There were two sensitive receptors such within the general area of the facility. In addition, 30 boundary receptors at 20 meter spacing and 1,061 Census Block receptors were included in the analysis. Population data from the 2010 Census and aerial terrain maps were used to define residential and worker exposures.

SCAQMD maintains data for twenty-four meteorological surface air monitoring stations throughout the South Coast Air Basin. Pre-processed hourly meteorological data for Ontario Airport for calendar years 2012 through 2016 was identified as the most representative station for the site.

Regulatory default options were turned on. The AERMOD modeling program was run using the urban Pasquill-Gifford dispersion coefficients with six stability classes. Stack-tip downwash calculations and building wake effects were included. To be conservative, gravitational settling calculations were not included. **Table 8** (see **Appendix B**) summarizes the AERMOD modeling options selected for the assessment.

## **Risk Characterization and Results**

The potential health risks posed from emissions of listed substances from the facility were estimated using the HARP2 software. Cancer and non-cancer health risks were determined at the following locations:

1. Point of Maximum Impact (PMI) – offsite receptor location where the highest health risk occurs; receptor 41096 for cancer risks, 41074 for 8-hour health risks, and 41097 for acute health risks.
2. Maximum Exposed Individual Resident (MEIR) – offsite receptor location where the maximum exposure occurs at an existing residential receptor; receptor 18498 for cancer risks and chronic health risks.
3. Maximum Exposed Individual Worker (MEIW) – offsite receptor location where the highest health risk occurs; receptor 41074 for cancer risks and chronic health risks.

The determination of risk values for listed substances carries a level of uncertainty. In some cases, the uncertainty may be quite large. Most acceptable risk or exposure levels are based on animal studies or epidemiological studies on workers. Uncertainty is enhanced when the results of these studies are applied to human beings or to a general population.

## Sensitive Receptors

Sensitive receptors may include hospitals, day-care facilities, and schools (K-12). No sensitive receptors were identified during the modification of the Pac Rancho HRA.

## Cancer Health Risks

Potential multipathway cancer risks contributed by source at the PMI, MEIW, and MEIR are provided in **Tables 15 through 17** (see **Appendix B**). The 30-year potential cancer risks at the PMI, MEIW, and MEIR are provided in **Tables 18** (see **Appendix B**). Potential multipathway cancer risks contributed by substance at the PMI, MEIW, MEIR are provided in **Tables 19 through 21** (see **Appendix B**).

Based upon this Report, the cancer risk at the PMI was determined to be 222.48 per million. The PMI is located at 447,895.8 meters East and 3,772,804 meters North. The cancer risk at the MEIW was determined to be 38.76 per million. The cancer risk at the MEIR was determined to be 1.72 per million. Hexavalent chromium appeared to contribute the most potential cancer risk at the PMI, MEIR, and MEIW.

Total cancer risk values for the PMI, MEIW, and MEIR by each substance are provided in **Table 12** (see **Appendix B**). A 30-year cancer risk isopleth map for the one in one million ZOI is provided in **Figure 3** (see **Appendix A**). The locations of the PMI, MEIW, MEIR, and sensitive receptors are provided in **Figure 4** (see **Appendix A**).

## Chronic and Acute Non-Cancer Health Risks

Total acute and chronic hazard indices at the PMI, MEIW, and MEIR receptor locations are summarized in **Table 12b** (see **Appendix B**).

Chronic hazard indices contributed by each source and toxicological endpoint at the MEIW and MEIR are provided in **Tables 22 and 23** (see **Appendix B**). Chronic hazard indices contribution by each substance and to each toxicological endpoint at the MEIW and MEIR are provided in **Tables 24 and 25** (see **Appendix B**).

The chronic hazard index was determined to be 0.04 at the MEIR and 4.48 at the MEIW. Nickel appeared to contribute the most potential chronic hazards at the MEIR. The locations of the MEIW, MEIR for chronic hazards are provided in **Figure 5** (see **Appendix A**). The isopleth map for chronic hazard index level of 1.0, 3.0, and 5.0 is provided in **Figure 6** (see **Appendix A**).

Acute hazard indices contributed by each source and toxicological endpoint at the PMI are provided in **Table 26** (see **Appendix B**). Acute hazard indices contributed by each substance and at each toxicological endpoint at the PMI are provided in **Table 27** (see **Appendix B**).

The acute hazard index was determined to be 21.26 at the PMI. Emissions of nickel appeared to contribute the most potential acute hazards at the PMI. The location of the PMI for acute hazard is provided in **Figure 7** (see **Appendix A**). The isopleth map for acute hazard index level of 1.0, 3.0, and 5.0 is provided in **Figure 8** (see **Appendix A**).

The 8-hour hazard indices contributed by each source and toxicological endpoint at the PMI are provided in **Table 28** (see **Appendix B**). The 8-hour hazard indices contributed by each substance and toxicological endpoint at the PMI are provided in **Table 29** (see **Appendix B**).

The 8-hour hazard index was determined to be 2.87 at the PMI. Emissions of nickel appeared to contribute the most potential 8-hour hazards at the PMI. The location of the PMI for 8-hour hazard is provided in **Figure 9** (see **Appendix A**). The isopleth map for the 8-hour hazard index level of 1.0, 3.0, and 5.0 is provided in **Figure 10** (see **Appendix A**).

### **Cancer Burden**

Cancer burden is the estimated number of people in a defined population that could potentially contract cancer from a lifetime exposure to emitted substances from the facility. The cancer burden was calculated by summing the product of the cancer risk in each receptor in a one in one million ZOI and the number of people exposed in each receptor. The ZOI for the 70-year cancer risk isopleth has a residential population of 4 according to the 2010 Census data utilized by the HARP2 software. The resulting cancer burden was estimated to be 4.06E-6.

**Table 14** (see **Appendix B**) summarizes the cancer burden for the residential receptors included for one in one million ZOI for cancer risks.

## **Summary of Findings**

Based upon this Report, the cancer risk at the PMI was determined to be 222.48 per million. The cancer risk at the MEIW was determined to be 38.76 per million. The cancer risk at the MEIR was determined to be 1.72 per million. Hexavalent chromium appeared to contribute the most potential cancer risk at the PMI, MEIR, and MEIW.

The chronic hazard index was determined to be 0.04 at the MEIR and 4.48 at the MEIW. Nickel appeared to contribute the most potential chronic hazards at the MEIR, and MEIW.

The acute hazard index was determined to be 21.26 at the PMI. Emissions of nickel appeared to contribute the most potential acute hazards at the PMI.

The 8-hour hazard index was determined to be 2.87 at the PMI. Emissions of nickel appeared to contribute the most potential 8-hour hazards at the PMI.

## References

California Air Resources Board, *Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool User's Manual*, 2015.

OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments*, February 2015.

SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)*, October 2020.

USEPA, AERMOD Implementation Guide, 19 March 2009.

USEPA, *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources*, 1995.

USEPA, User's Guide for AMS/EPA Regulatory Model – AERMOD, (EPA)454/B-03-001.

## Definitions and Abbreviations

**8- hour health impacts** - health effect that occurs from short term exposure to substances with 8 hour chronic RELs.

**Acute health impacts** - health effect that occurs from short term exposure to substances with acute RELs.

**Cancer burden** - the estimated number of theoretical cancer cases in a defined population resulting from lifetime exposure to pollutants emitted from a facility.

**Cancer health impacts** - health effect that occurs from exposure to carcinogenic substances.

**Census tract** - a physical area used by the U.S. Census Bureau to compile population and other statistical data.

**Chronic health impacts** - health effect that occurs from long term exposure to substances with chronic RELs.

**HARP2**- Hot Spots Analysis and Reporting Program.

**Hazard index, acute** - health risk index created by dividing the concentration of a substance by its corresponding acute REL.

**Hazard index, chronic** - health risk index created by dividing the concentration of a substance by its corresponding chronic REL.

**MEIW** - maximum exposed individual worker.

**MEIR** - maximum exposed individual resident.

**Multipathway substances** - substances that can be taken into a human receptor by inhalation and by other exposure routes.

**OEHHA** - Office of Environmental Health Hazard Assessment.

**PMI** - point of maximum impact; offsite receptor location where the highest health risk occurs.

**REL** - reference exposure level - An exposure level at or below which no noncancer adverse health effect is anticipated to occur in a human population exposed for a specific duration.

**SCAQMD** - South Coast Air Quality Management District.

**Sensitive receptors** - a location such as a school, hospital, or daycare center, where the human occupants are considered to be more sensitive to pollutants than average.

**Toxicological endpoint** - an organ or organ system that could potentially be adversely affected by a substance if above a certain concentration.



**ZOI** - zone of impact - the area in the vicinity of the facility in which an individual is exposed to a cancer risk greater than one in a million, or a non-cancer health risk (acute or chronic) greater than one.

## **Appendices**

## **Appendix A – Figures**

Figure 2 – Site Map

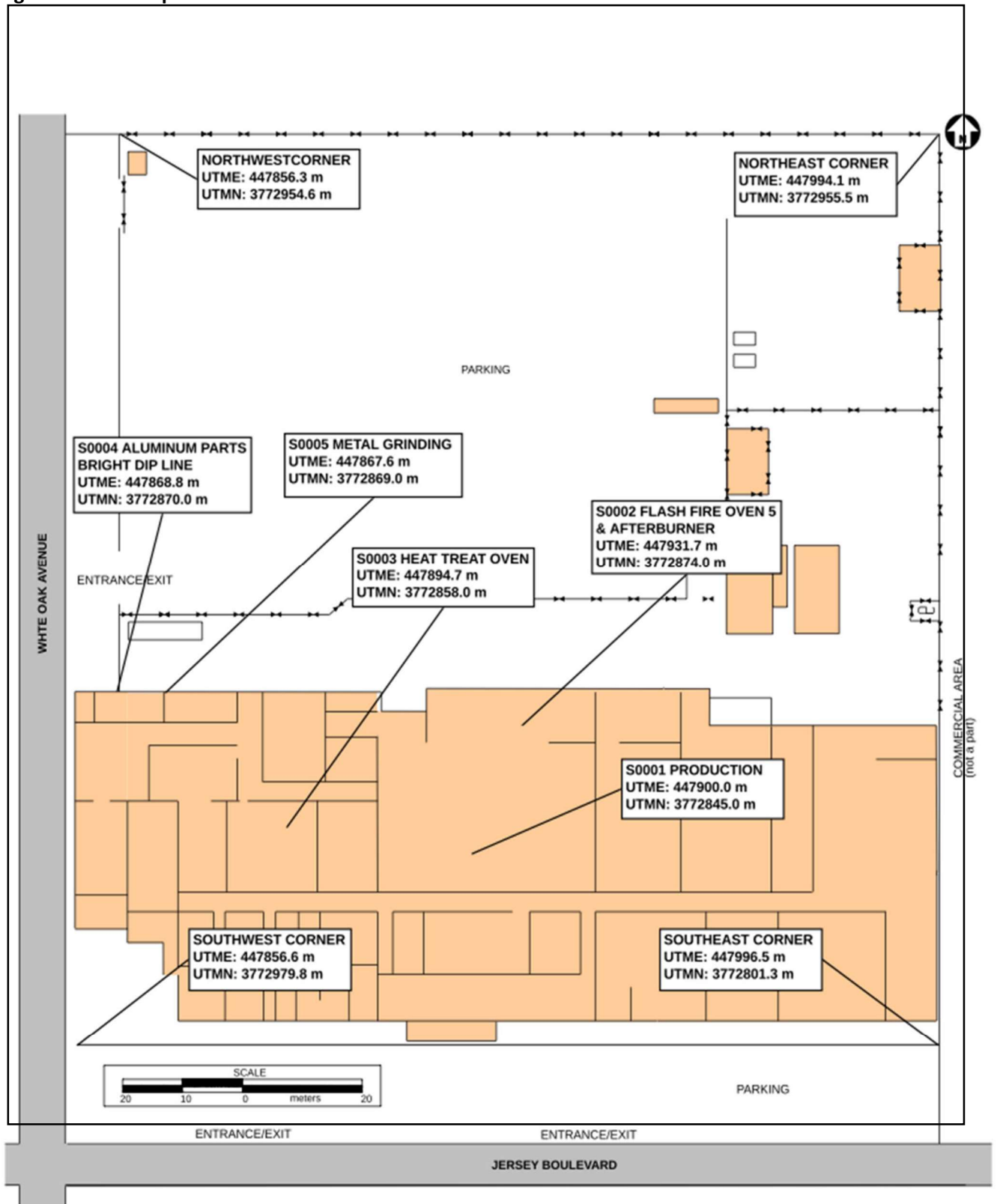


Figure 3 - 30 Year Cancer Isoleth and Zone of Impact

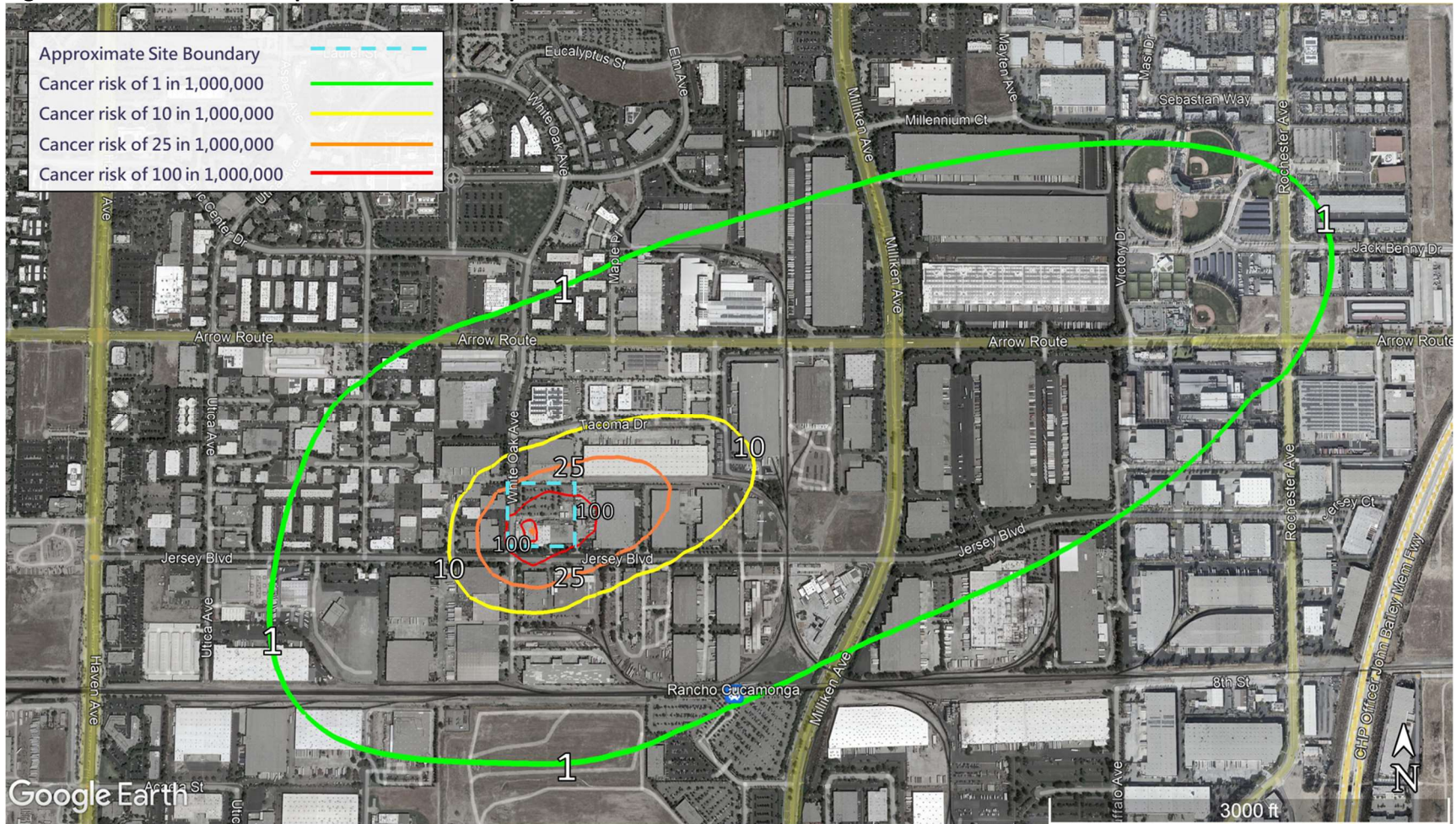


Figure 4 - Cancer Risk for PMI, MEIW, and MEIR

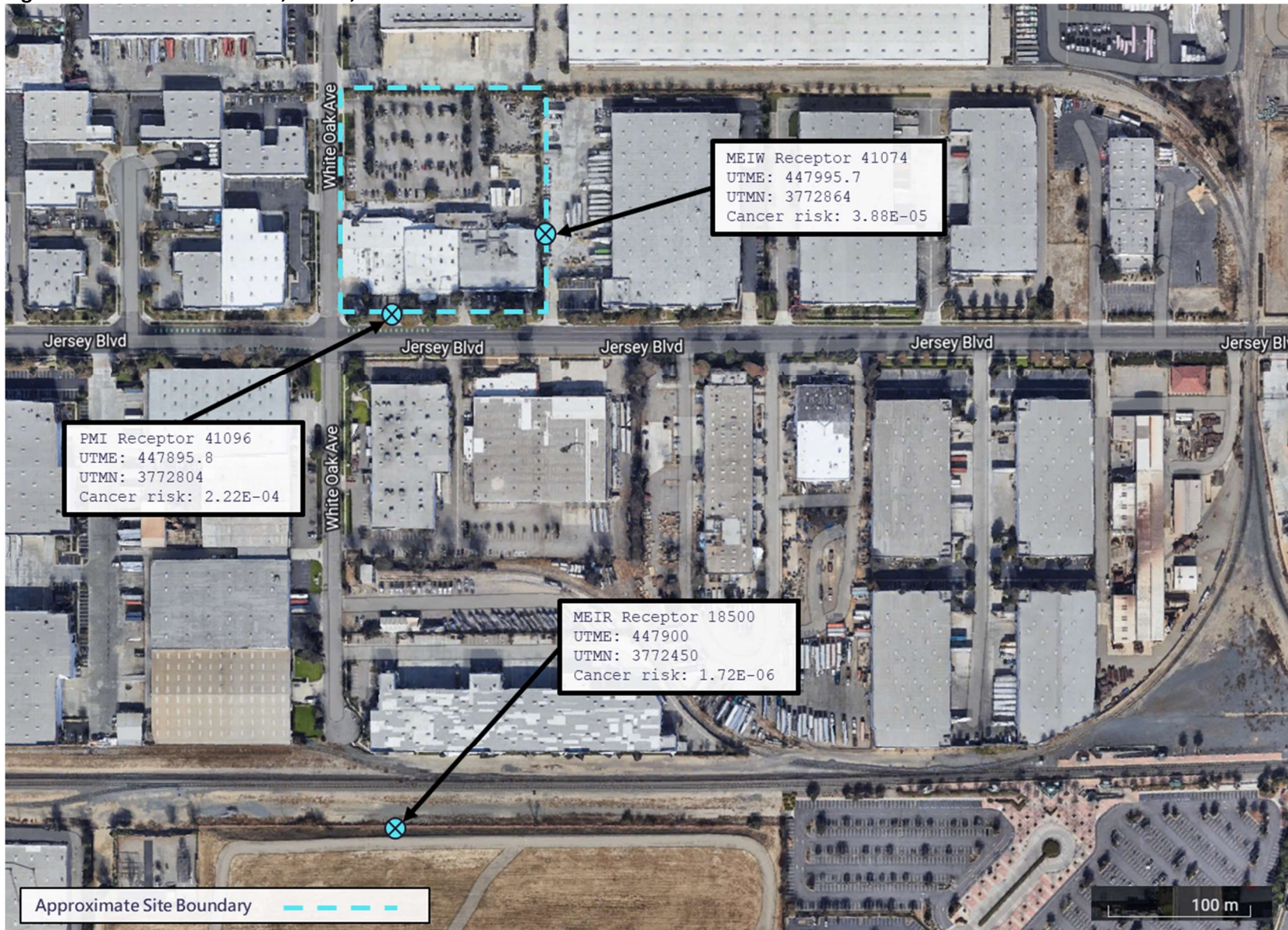


Figure 5 - Chronic Hazard Index for MEIW and MEIR

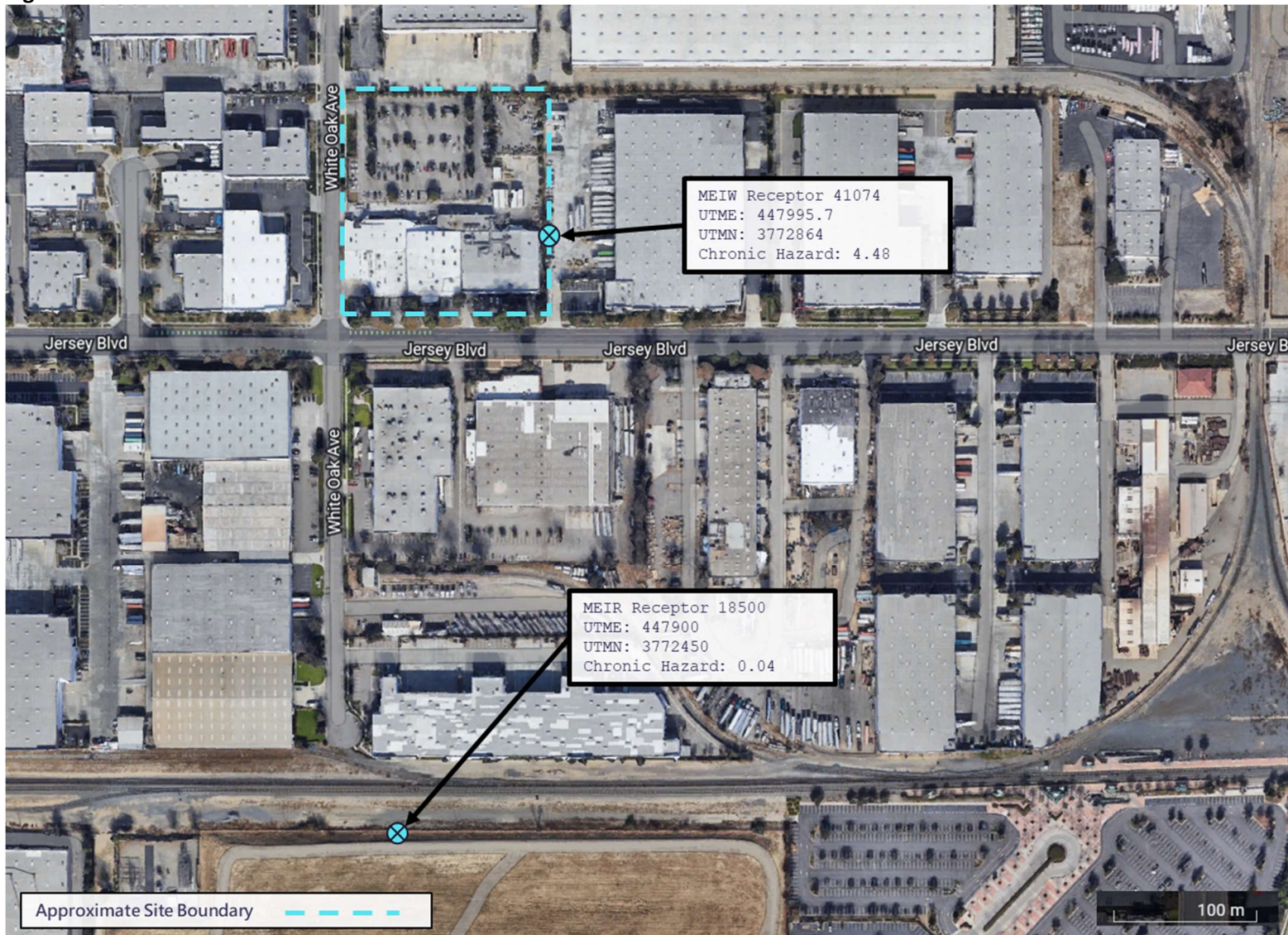


Figure 6 - Chronic Hazard Index Isopleths

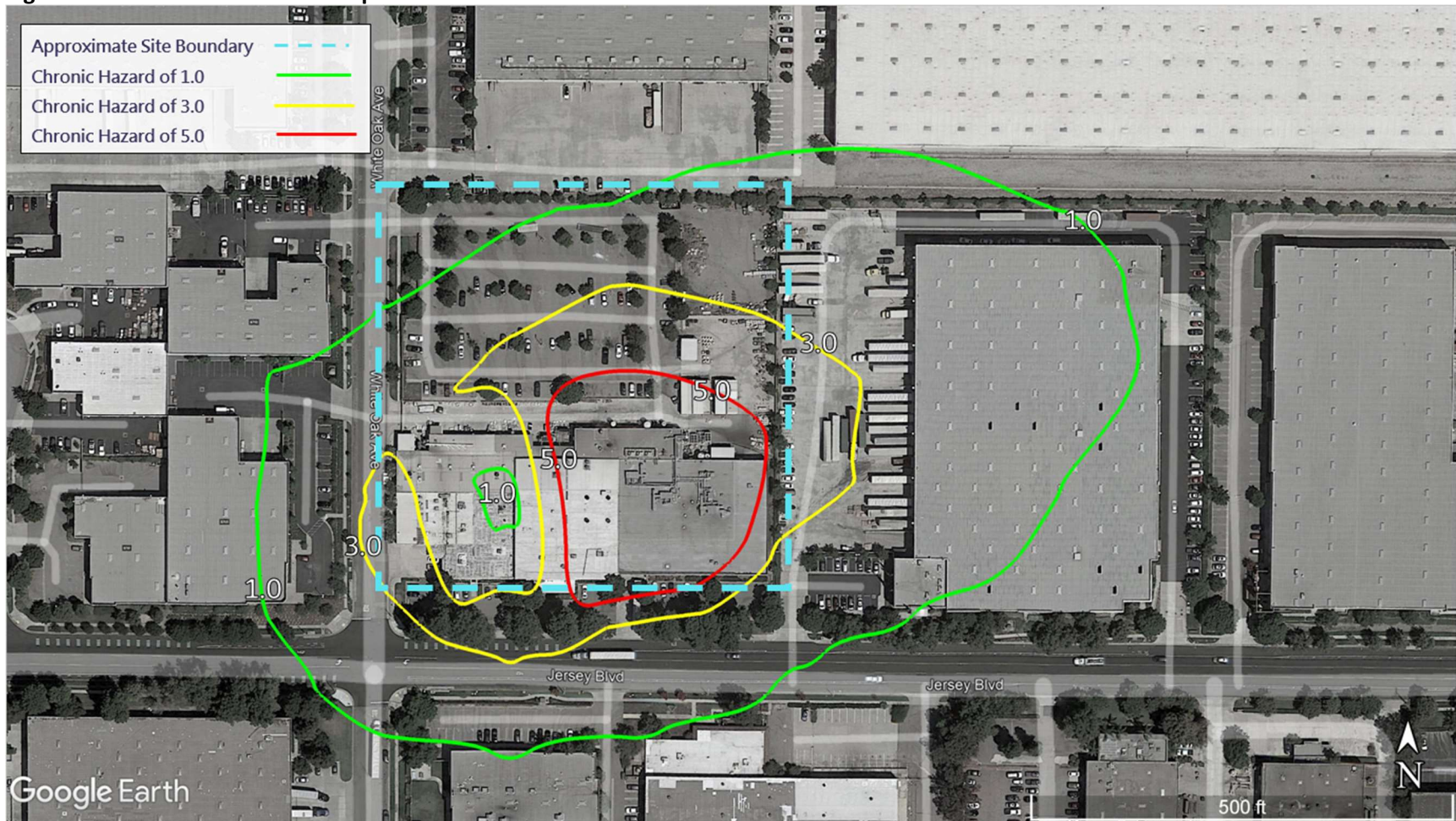






Figure 8 - Acute Hazard Index Isoleths

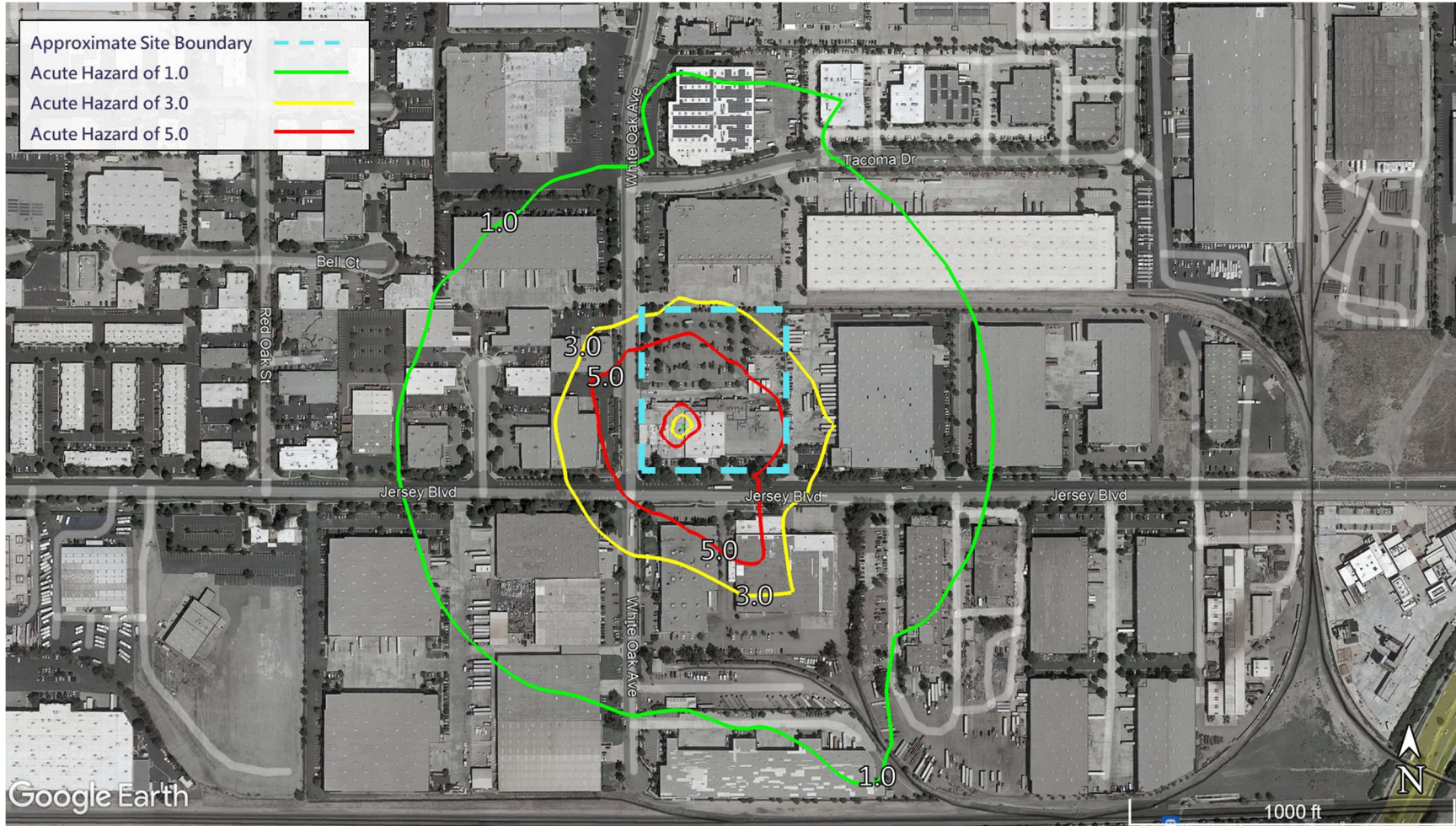


Figure 9 - Chronic 8-Hour Hazard Index for PMI

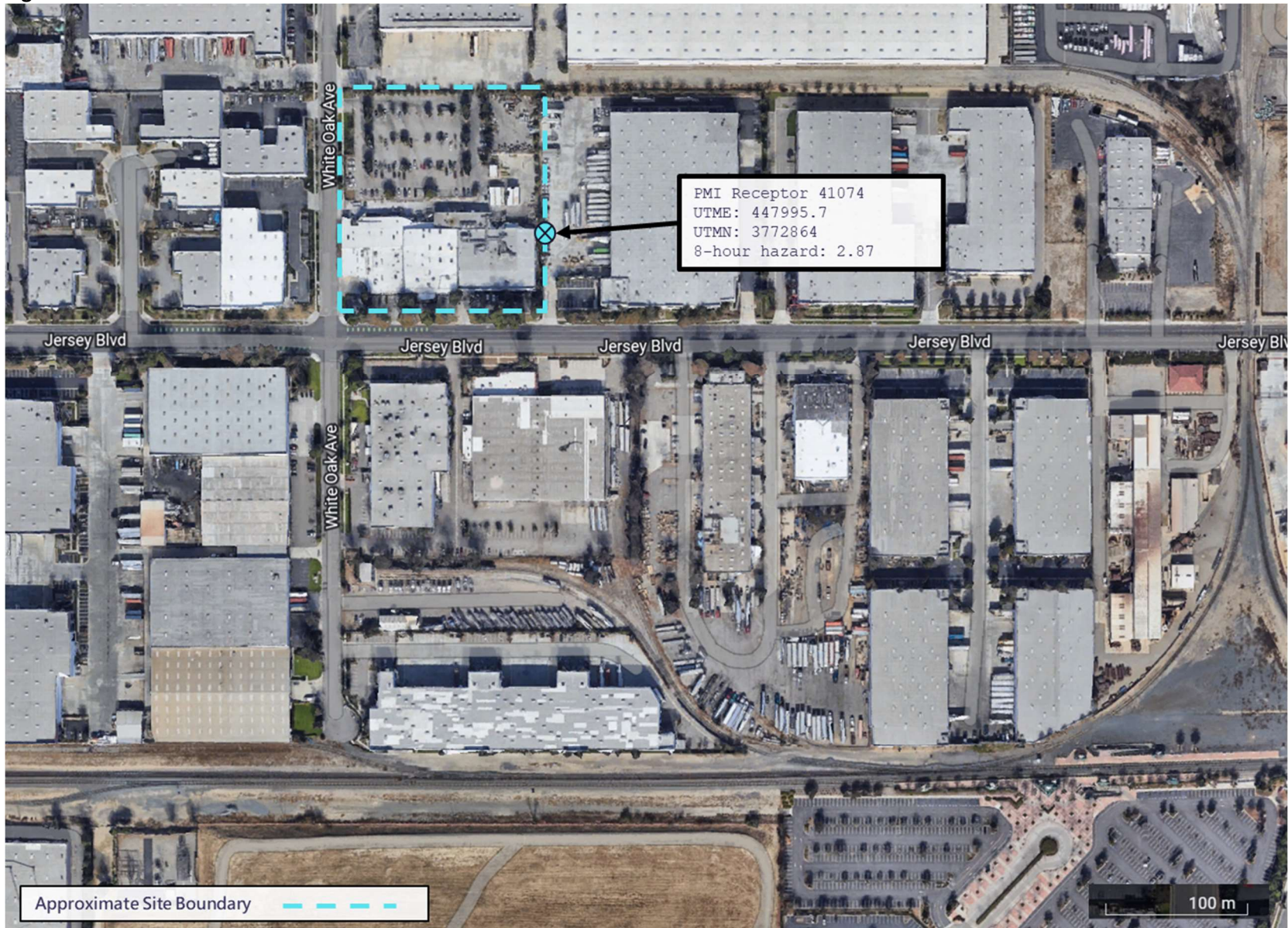
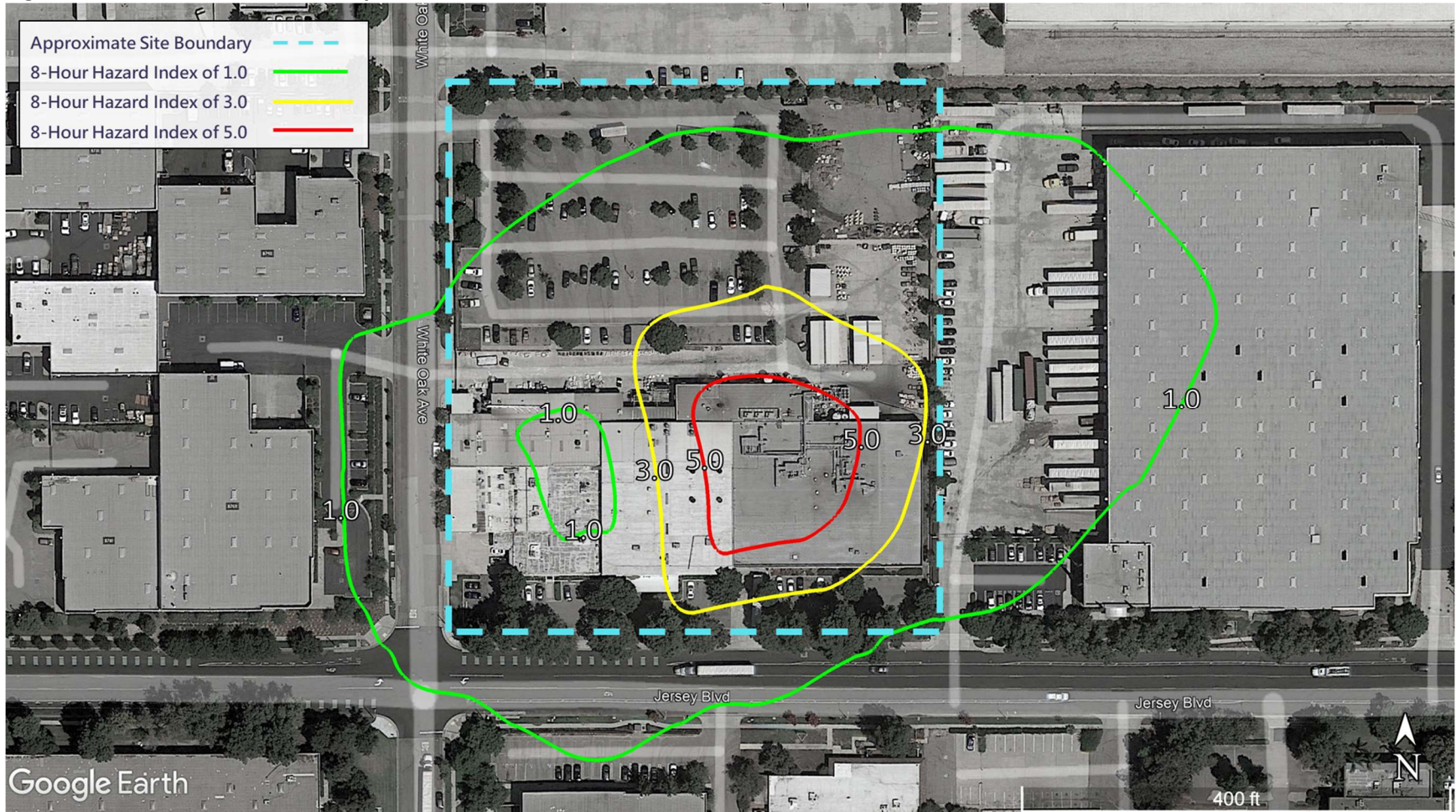


Figure 10 - 8-Hour Hazard Index Isopleths



## **Appendix B – Tables**

**Table 1 - Business Identification Information**

Business Name	Pac Rancho, Inc.
Facility Address	11000 Jersey Boulevard in Rancho Cucamonga, California
Mailing Address	11000 Jersey Boulevard in Rancho Cucamonga, California
County	San Bernardino
Phone	909.595.2252
Facility ID	140871
Principle Business Activity	Aluminum foundry
Contact Person	Jim Inhoff
SIC	3365
NAICS	331524

Table 2 - Maximum One-Hour and Annual Emissions for All Sources at Facility

Listed substance	CAS/CARB Number	Maximum 1-Hour Emissions		Average Annual Emissions	
		lbs/hr	grams/sec	lbs/yr	grams/sec
Acenaphthene	83329	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Acenaphthylene	208968	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Acetaldehyde	75070	9.57E-05	1.21E-05	7.04E-02	1.01E-06
Acrolein	107028	5.97E-05	7.52E-06	4.29E-02	6.17E-07
Aluminum	7429905	9.52E-02	1.20E-02	2.97E+02	4.27E-03
Aluminum oxide	1344281	3.64E-03	4.59E-04	1.02E+01	1.47E-04
Ammonia	7664417	1.43E-01	1.80E-02	2.86E+02	4.12E-03
Anthracene	120127	5.30E-08	6.68E-09	3.81E-05	5.49E-10
Benzene	71432	1.77E-04	2.23E-05	1.27E-01	1.83E-06
Beryllium	7440417	8.22E-04	1.04E-04	2.56E+00	3.69E-05
Benzo (a) anthracene	56553	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Benzo (a) pyrene	50328	2.65E-08	3.34E-09	1.91E-05	2.74E-10
Benzo (b) fluoranthene	205992	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Benzo (g,h,i) perylene	191242	2.65E-08	3.34E-09	1.91E-05	2.74E-10
Benzo (k) fluoranthene	207089	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Carbon monoxide	630080	7.74E-01	9.75E-02	5.56E+02	8.00E-03
Chromium	7440473	3.81E-02	4.80E-03	1.19E+02	1.71E-03
Chrysene	218019	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Cobalt	7440484	1.30E-05	1.64E-06	4.05E-02	5.83E-07
Copper	7440508	1.00E-02	1.26E-03	3.13E+01	4.50E-04
Crystalline silica	1175	1.04E-03	1.31E-04	3.24E+00	4.66E-05
Cyclohexane	110827	2.20E-02	2.77E-03	6.87E+01	9.88E-04
Dibenz (a,h) anthracene	53703	2.65E-08	3.34E-09	1.91E-05	2.74E-10
Dichlorobenzene	106467	2.65E-05	3.34E-06	1.91E-02	2.74E-07
Diethylene glycol	111466	7.55E-02	9.51E-03	2.36E+02	3.39E-03
Dimethylbenz(a)anthracene, 7,12-	57976	3.54E-07	4.46E-08	2.54E-04	3.66E-09
Dioxane, 1,4-	123911	1.83E-05	2.30E-06	5.70E-02	8.20E-07
Ethyl acrylate	140885	2.43E-06	3.06E-07	7.59E-03	1.09E-07
Ethylbenzene	100414	2.10E-04	2.65E-05	1.51E-01	2.17E-06
Ethylene oxide	75218	1.83E-05	2.30E-06	5.70E-02	8.20E-07
Fluoranthene	206440	6.63E-08	8.35E-09	4.77E-05	6.86E-10
Fluorene	86737	6.19E-08	7.80E-09	4.45E-05	6.40E-10
Formaldehyde	50000	6.26E-04	7.89E-05	1.05E+00	1.51E-05
Hexane, n-	110543	1.39E-04	1.75E-05	1.00E-01	1.44E-06
Hexavalent chromium	18540299	6.13E-05	7.72E-06	1.89E-01	2.72E-06
Indeno(1,2,3-cd)pyrene	193395	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Isopropyl alcohol	67630	3.11E-01	3.92E-02	9.70E+02	1.40E-02
Lead	7439921	1.09E-04	1.37E-05	3.39E-01	4.88E-06
Manganese	7439965	3.59E-03	4.52E-04	1.12E+01	1.61E-04
Methylcholanthrene, 3-	56495	3.98E-08	5.01E-09	2.86E-05	4.12E-10
Methylene diphenyl diisocyanate	101688	4.21E-09	5.31E-10	1.31E-05	1.89E-10
Methylnaphthalene,2-	91576	5.30E-07	6.68E-08	3.81E-04	5.49E-09
Naphthalene	91203	6.63E-06	8.35E-07	4.77E-03	6.86E-08
Nickel	7440020	1.31E-02	1.65E-03	4.07E+01	5.86E-04
Nitric acid	7697372	3.51E-03	4.42E-04	3.07E+01	4.42E-04
PAH	1151	2.61E-07	3.29E-08	1.88E-04	2.70E-09
Phenanthrene	85018	3.76E-07	4.73E-08	2.70E-04	3.89E-09
Phosphoric acid	7664382	2.98E-04	3.75E-05	2.61E+00	3.75E-05
Phosphorous	7723140	8.91E-05	1.12E-05	2.78E-01	4.00E-06
Pyrene	129000	1.11E-07	1.39E-08	7.95E-05	1.14E-09
Sulfuric acid	7664939	3.27E-20	4.11E-21	2.86E-16	4.11E-21
Toluene	108883	8.09E-04	1.02E-04	5.82E-01	8.37E-06
Vanadium	7440622	1.14E-06	1.43E-07	3.55E-03	5.10E-08
Xylenes	1330207	6.01E-04	7.58E-05	4.32E-01	6.22E-06
Zinc compounds	7440666	2.20E-03	2.77E-04	6.86E+00	9.87E-05

Table 3 - Annual Average and Maximum Hourly Emissions Summary by Source

Source ID	Source Name	Substance Name	CAS Number	Average Annual Emissions, lbs/yr	Average Annual Emissions, grams/sec	Maximum One Hour Emissions, lbs/hr	Maximum One Hour Emissions, grams/sec
S0001	Production Building	Acenaphthene	83329	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Acenaphthylene	208968	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Acetaldehyde	75070	5.92E-02	8.52E-07	8.02E-05	1.01E-05
S0001	Production Building	Acrolein	107028	3.59E-02	5.16E-07	4.99E-05	6.29E-06
S0001	Production Building	Aluminum	7429905	2.23E+02	3.21E-03	7.15E-02	9.01E-03
S0001	Production Building	Aluminum oxide	1344281	1.02E+01	1.47E-04	3.64E-03	4.59E-04
S0001	Production Building	Ammonia	7664417	2.60E+02	3.74E-03	1.29E-01	1.62E-02
S0001	Production Building	Anthracene	120127	3.19E-05	4.59E-10	4.44E-08	5.59E-09
S0001	Production Building	Benzene	56553	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Beryllium	71432	1.06E-01	1.53E-06	1.48E-04	1.86E-05
S0001	Production Building	Benzo (a) anthracene	50328	1.60E-05	2.29E-10	2.22E-08	2.80E-09
S0001	Production Building	Benzo (a) pyrene	205992	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Benzo (b) fluoranthene	191242	1.60E-05	2.29E-10	2.22E-08	2.80E-09
S0001	Production Building	Benzo (g,h,i) perylene	207089	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Benzo (k) fluoranthene	7440417	2.56E+00	3.68E-05	8.20E-04	1.03E-04
S0001	Production Building	Carbon monoxide	630080	4.65E+02	6.69E-03	6.47E-01	8.15E-02
S0001	Production Building	Chromium	7440473	1.01E+02	1.45E-03	3.24E-02	4.08E-03
S0001	Production Building	Chrysene	218019	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Cobalt	7440484	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0001	Production Building	Copper	7440508	2.76E+01	3.97E-04	8.84E-03	1.11E-03
S0001	Production Building	Crystalline silica	1175	3.24E+00	4.66E-05	1.04E-03	1.31E-04
S0001	Production Building	Cyclohexane	110827	6.87E+01	9.88E-04	2.20E-02	2.77E-03
S0001	Production Building	Dibenz (a,h) anthracene	53703	1.60E-05	2.29E-10	2.22E-08	2.80E-09
S0001	Production Building	Dichlorobenzene	106467	1.60E-02	2.29E-07	2.22E-05	2.80E-06
S0001	Production Building	Diethylene glycol	111466	2.36E+02	3.39E-03	7.55E-02	9.51E-03
S0001	Production Building	Dimethylbenz(a)anthracene, 7,12-	57976	2.13E-04	3.06E-09	2.96E-07	3.73E-08
S0001	Production Building	Dioxane, 1,4-	123911	5.70E-02	8.20E-07	1.83E-05	2.30E-06
S0001	Production Building	Ethyl acrylate	140885	7.59E-03	1.09E-07	2.43E-06	3.06E-07
S0001	Production Building	Ethylbenzene	100414	1.26E-01	1.82E-06	1.76E-04	2.21E-05
S0001	Production Building	Ethylene oxide	75218	5.70E-02	8.20E-07	1.83E-05	2.30E-06
S0001	Production Building	Fluoranthene	206440	3.99E-05	5.74E-10	5.55E-08	6.99E-09
S0001	Production Building	Fluorene	86737	3.72E-05	5.35E-10	5.18E-08	6.52E-09
S0001	Production Building	Formaldehyde	50000	1.01E+00	1.45E-05	5.65E-04	7.12E-05
S0001	Production Building	Hexane, n-	110543	8.38E-02	1.20E-06	1.16E-04	1.47E-05
S0001	Production Building	Hexavalent chromium	18540299	1.89E-01	2.72E-06	6.13E-05	7.72E-06
S0001	Production Building	Indeno(1,2,3-cd)pyrene	193395	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Isopropyl alcohol	67630	9.70E+02	1.40E-02	3.11E-01	3.92E-02
S0001	Production Building	Lead	7439921	3.34E-01	4.80E-06	1.07E-04	1.35E-05
S0001	Production Building	Manganese	7439965	1.00E+01	1.44E-04	3.21E-03	4.05E-04
S0001	Production Building	Methylcholanthrene, 3-	56495	2.39E-05	3.44E-10	3.33E-08	4.19E-09
S0001	Production Building	Methylene diphenyl diisocyanate	101688	1.31E-05	1.89E-10	4.21E-09	5.31E-10
S0001	Production Building	Methylnaphthalene,2-	91576	3.19E-04	4.59E-09	4.44E-07	5.59E-08
S0001	Production Building	Naphthalene	91203	3.99E-03	5.74E-08	5.55E-06	6.99E-07
S0001	Production Building	Nickel	7440020	3.54E+01	5.09E-04	1.13E-02	1.43E-03
S0001	Production Building	Nitric acid	7697372	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0001	Production Building	PAH	1151	1.57E-04	2.26E-09	2.18E-07	2.75E-08
S0001	Production Building	Phenanthrene	85018	2.26E-04	3.25E-09	3.14E-07	3.96E-08
S0001	Production Building	Phosphoric acid	7664382	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0001	Production Building	Phosphorous	7723140	2.27E-01	3.27E-06	7.29E-05	9.18E-06
S0001	Production Building	Pyrene	129000	6.65E-05	9.56E-10	9.24E-08	1.16E-08
S0001	Production Building	Sulfuric acid	7664939	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0001	Production Building	Toluene	108883	4.87E-01	7.00E-06	6.77E-04	8.53E-05
S0001	Production Building	Vanadium	7440622	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0001	Production Building	Xylenes	1330207	3.62E-01	5.20E-06	5.03E-04	6.34E-05
S0001	Production Building	Zinc compounds	7440666	6.81E+00	9.80E-05	2.18E-03	2.75E-04
S0002	Flash Fire Oven	Acenaphthene	83329	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Acenaphthylene	208968	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Acetaldehyde	75070	6.66E-03	9.58E-08	9.27E-06	1.17E-06
S0002	Flash Fire Oven	Acrolein	107028	4.18E-03	6.02E-08	5.82E-06	7.33E-07
S0002	Flash Fire Oven	Aluminum	7429905	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Aluminum oxide	1344281	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Ammonia	7664417	4.96E+00	7.13E-05	6.89E-03	8.69E-04
S0002	Flash Fire Oven	Anthracene	120127	3.72E-06	5.35E-11	5.17E-09	6.52E-10
S0002	Flash Fire Oven	Benzene	56553	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Beryllium	71432	1.24E-02	1.78E-07	1.72E-05	2.17E-06
S0002	Flash Fire Oven	Benzo (a) anthracene	50328	1.86E-06	2.67E-11	2.59E-09	3.26E-10
S0002	Flash Fire Oven	Benzo (a) pyrene	205992	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Benzo (b) fluoranthene	191242	1.86E-06	2.67E-11	2.59E-09	3.26E-10



Table 3 - Annual Average and Maximum Hourly Emissions Summary by Source

Source ID	Source Name	Substance Name	CAS Number	Average Annual Emissions, lbs/yr	Average Annual Emissions, grams/sec	Maximum One Hour Emissions, lbs/hr	Maximum One Hour Emissions, grams/sec
S0002	Flash Fire Oven	Benzo (g,h,i) perylene	207089	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Benzo (k) fluoranthene	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Carbon monoxide	630080	5.42E+01	7.80E-04	7.54E-02	9.50E-03
S0002	Flash Fire Oven	Chromium	7440473	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Chrysene	218019	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Cobalt	7440484	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Copper	7440508	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Crystalline silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Cyclohexane	110827	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Dibenz (a,h) anthracene	53703	1.86E-06	2.67E-11	2.59E-09	3.26E-10
S0002	Flash Fire Oven	Dichlorobenzene	106467	1.86E-03	2.67E-08	2.59E-06	3.26E-07
S0002	Flash Fire Oven	Diethylene glycol	111466	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Dimethylbenz(a)anthracene, 7,12-	57976	2.48E-05	3.57E-10	3.45E-08	4.34E-09
S0002	Flash Fire Oven	Dioxane, 1,4-	123911	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Ethyl acrylate	140885	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Ethylbenzene	100414	1.47E-02	2.12E-07	2.05E-05	2.58E-06
S0002	Flash Fire Oven	Ethylene oxide	75218	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Fluoranthene	206440	4.65E-06	6.69E-11	6.46E-09	8.14E-10
S0002	Flash Fire Oven	Fluorene	86737	4.34E-06	6.24E-11	6.03E-09	7.60E-10
S0002	Flash Fire Oven	Formaldehyde	50000	2.63E-02	3.79E-07	3.66E-05	4.62E-06
S0002	Flash Fire Oven	Hexane, n-	110543	9.76E-03	1.40E-07	1.36E-05	1.71E-06
S0002	Flash Fire Oven	Hexavalent chromium	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Indeno(1,2,3-cd)pyrene	193395	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Isopropyl alcohol	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Lead	7439921	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Manganese	7439965	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Methylcholanthrene, 3-	56495	2.79E-06	4.01E-11	3.88E-09	4.89E-10
S0002	Flash Fire Oven	Methylene diphenyl diisocyanate	101688	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Methylnaphthalene,2-	91576	3.72E-05	5.35E-10	5.17E-08	6.52E-09
S0002	Flash Fire Oven	Naphthalene	91203	4.65E-04	6.69E-09	6.46E-07	8.14E-08
S0002	Flash Fire Oven	Nickel	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Nitric acid	7697372	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	PAH	1151	1.83E-05	2.63E-10	2.54E-08	3.20E-09
S0002	Flash Fire Oven	Phenanthrene	85018	2.63E-05	3.79E-10	3.66E-08	4.62E-09
S0002	Flash Fire Oven	Phosphoric acid	7664382	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Phosphorous	7723140	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Pyrene	129000	7.75E-06	1.11E-10	1.08E-08	1.36E-09
S0002	Flash Fire Oven	Sulfuric acid	7664939	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Toluene	108883	5.67E-02	8.16E-07	7.89E-05	9.94E-06
S0002	Flash Fire Oven	Vanadium	7440622	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0002	Flash Fire Oven	Xylenes	1330207	4.21E-02	6.06E-07	5.86E-05	7.38E-06
S0002	Flash Fire Oven	Zinc compounds	7440666	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Acenaphthene	83329	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Acenaphthylene	208968	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Acetaldehyde	75070	4.51E-03	6.49E-08	6.27E-06	7.91E-07
S0003	Heat Treat Oven	Acrolein	107028	2.83E-03	4.07E-08	3.94E-06	4.96E-07
S0003	Heat Treat Oven	Aluminum	7429905	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Aluminum oxide	1344281	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Ammonia	7664417	3.36E+00	4.83E-05	4.67E-03	5.88E-04
S0003	Heat Treat Oven	Anthracene	120127	2.52E-06	3.62E-11	3.50E-09	4.41E-10
S0003	Heat Treat Oven	Benzene	56553	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Beryllium	71432	8.39E-03	1.21E-07	1.17E-05	1.47E-06
S0003	Heat Treat Oven	Benzo (a) anthracene	50328	1.26E-06	1.81E-11	1.75E-09	2.21E-10
S0003	Heat Treat Oven	Benzo (a) pyrene	205992	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Benzo (b) fluoranthene	191242	1.26E-06	1.81E-11	1.75E-09	2.21E-10
S0003	Heat Treat Oven	Benzo (g,h,i) perylene	207089	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Benzo (k) fluoranthene	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Carbon monoxide	630080	3.67E+01	5.28E-04	5.11E-02	6.43E-03
S0003	Heat Treat Oven	Chromium	7440473	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Chrysene	218019	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Cobalt	7440484	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Copper	7440508	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Crystalline silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Cyclohexane	110827	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Dibenz (a,h) anthracene	53703	1.26E-06	1.81E-11	1.75E-09	2.21E-10
S0003	Heat Treat Oven	Dichlorobenzene	106467	1.26E-03	1.81E-08	1.75E-06	2.21E-07
S0003	Heat Treat Oven	Diethylene glycol	111466	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Dimethylbenz(a)anthracene, 7,12-	57976	1.68E-05	2.41E-10	2.33E-08	2.94E-09

Table 3 - Annual Average and Maximum Hourly Emissions Summary by Source

Source ID	Source Name	Substance Name	CAS Number	Average Annual Emissions, lbs/yr	Average Annual Emissions, grams/sec	Maximum One Hour Emissions, lbs/hr	Maximum One Hour Emissions, grams/sec
S0003	Heat Treat Oven	Dioxane, 1,4-	123911	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Ethyl acrylate	140885	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Ethylbenzene	100414	9.97E-03	1.43E-07	1.39E-05	1.75E-06
S0003	Heat Treat Oven	Ethylene oxide	75218	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Fluoranthene	206440	3.15E-06	4.53E-11	4.38E-09	5.52E-10
S0003	Heat Treat Oven	Fluorene	86737	2.94E-06	4.23E-11	4.09E-09	5.15E-10
S0003	Heat Treat Oven	Formaldehyde	50000	1.78E-02	2.57E-07	2.48E-05	3.13E-06
S0003	Heat Treat Oven	Hexane, n-	110543	6.61E-03	9.51E-08	9.19E-06	1.16E-06
S0003	Heat Treat Oven	Hexavalent chromium	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Indeno(1,2,3-cd)pyrene	193395	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Isopropyl alcohol	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Lead	7439921	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Manganese	7439965	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Methylcholanthrene, 3-	56495	1.89E-06	2.72E-11	2.63E-09	3.31E-10
S0003	Heat Treat Oven	Methylene diphenyl diisocyanate	101688	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Methylnaphthalene,2-	91576	2.52E-05	3.62E-10	3.50E-08	4.41E-09
S0003	Heat Treat Oven	Naphthalene	91203	3.15E-04	4.53E-09	4.38E-07	5.52E-08
S0003	Heat Treat Oven	Nickel	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Nitric acid	7697372	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	PAH	1151	1.24E-05	1.78E-10	1.72E-08	2.17E-09
S0003	Heat Treat Oven	Phenanthrene	85018	1.78E-05	2.57E-10	2.48E-08	3.13E-09
S0003	Heat Treat Oven	Phosphoric acid	7664382	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Phosphorous	7723140	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Pyrene	129000	5.25E-06	7.55E-11	7.30E-09	9.19E-10
S0003	Heat Treat Oven	Sulfuric acid	7664939	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Toluene	108883	3.84E-02	5.52E-07	5.34E-05	6.73E-06
S0003	Heat Treat Oven	Vanadium	7440622	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0003	Heat Treat Oven	Xylenes	1330207	2.85E-02	4.11E-07	3.97E-05	5.00E-06
S0003	Heat Treat Oven	Zinc compounds	7440666	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Acenaphthene	83329	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Acenaphthylene	208968	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Aluminum	7429905	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Aluminum oxide	1344281	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Ammonia	7664417	1.79E+01	2.58E-04	2.04E-03	2.58E-04
S0004	Aluminum Parts Bright Dip Line	Anthracene	120127	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzene	56553	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Beryllium	71432	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzo (a) anthracene	50328	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzo (a) pyrene	205992	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzo (b) fluoranthene	191242	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzo (g,h,i) perylene	207089	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Benzo (k) fluoranthene	7440417	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Carbon monoxide	630080	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Chromium	7440473	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Chrysene	218019	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Cobalt	7440484	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Copper	7440508	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Crystalline silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Cyclohexane	110827	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Dibenz (a,h) anthracene	53703	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Dichlorobenzene	106467	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Diethylene glycol	111466	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Dimethylbenz(a)anthracene, 7,12-	57976	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Dioxane, 1,4-	123911	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Ethyl acrylate	140885	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Ethylbenzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Ethylene oxide	75218	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Fluoranthene	206440	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Fluorene	86737	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Hexane, n-	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Hexavalent chromium	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Indeno(1,2,3-cd)pyrene	193395	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Isopropyl alcohol	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Lead	7439921	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Manganese	7439965	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 3 - Annual Average and Maximum Hourly Emissions Summary by Source

Source ID	Source Name	Substance Name	CAS Number	Average Annual Emissions, lbs/yr	Average Annual Emissions, grams/sec	Maximum One Hour Emissions, lbs/hr	Maximum One Hour Emissions, grams/sec
S0004	Aluminum Parts Bright Dip Line	Methylcholanthrene, 3-	56495	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Methylene diphenyl diisocyanate	101688	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Methylnaphthalene,2-	91576	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Nickel	7440020	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Nitric acid	7697372	3.07E+01	4.42E-04	3.51E-03	4.42E-04
S0004	Aluminum Parts Bright Dip Line	PAH	1151	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Phenanthrene	85018	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Phosphoric acid	7664382	2.61E+00	3.75E-05	2.98E-04	3.75E-05
S0004	Aluminum Parts Bright Dip Line	Phosphorous	7723140	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Pyrene	129000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Sulfuric acid	7664939	2.86E-16	4.11E-21	3.27E-20	4.11E-21
S0004	Aluminum Parts Bright Dip Line	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Vanadium	7440622	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0004	Aluminum Parts Bright Dip Line	Zinc compounds	7440666	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Acenaphthene	83329	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Acenaphthylene	208968	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Acetaldehyde	75070	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Acrolein	107028	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Aluminum	7429905	7.41E+01	1.07E-03	2.37E-02	2.99E-03
S0005	Metal Grinding	Aluminum oxide	1344281	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Ammonia	7664417	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Anthracene	120127	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benz(a)anthracene	56553	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benzene	71432	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benzo(a)pyrene	50328	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benzo(b)fluoranthene	205992	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benzo(g,h,i)perylene	191242	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Benzo(k)fluoranthene	207089	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Beryllium	7440417	6.80E-03	9.78E-08	2.18E-06	2.75E-07
S0005	Metal Grinding	Carbon monoxide	630080	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Chromium	7440473	1.79E+01	2.58E-04	5.74E-03	7.23E-04
S0005	Metal Grinding	Chrysene	218019	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Cobalt	7440484	4.05E-02	5.83E-07	1.30E-05	1.64E-06
S0005	Metal Grinding	Copper	7440508	3.71E+00	5.33E-05	1.19E-03	1.50E-04
S0005	Metal Grinding	Crystalline silica	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Cyclohexane	110827	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Dibenz(a,h)anthracene	53703	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Dichlorobenzene	106467	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Diethylene glycol	111466	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Dimethylbenz(a)anthracene, 7,12-	57976	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Dioxane, 1,4-	123911	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Ethyl acrylate	140885	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Ethylbenzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Ethylene oxide	75218	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Fluoranthene	206440	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Fluorene	86737	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Hexane, n-	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Hexavalent chromium	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Indeno(1,2,3-cd)pyrene	193395	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Isopropyl alcohol	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Lead	7439921	5.85E-03	8.41E-08	1.87E-06	2.36E-07
S0005	Metal Grinding	Manganese	7439965	1.17E+00	1.69E-05	3.76E-04	4.73E-05
S0005	Metal Grinding	Methylcholanthrene, 3-	56495	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Methylene diphenyl diisocyanate	101688	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Methylnaphthalene, 2-	91576	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Naphthalene	91203	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Nickel	7440020	5.35E+00	7.69E-05	1.71E-03	2.16E-04
S0005	Metal Grinding	Nitric acid	7697372	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	PAH (unspeciated)	1151	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Phenanthrene	85018	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Phosphoric acid	7664382	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Phosphorus	7723140	5.05E-02	7.27E-07	1.62E-05	2.04E-06
S0005	Metal Grinding	Pyrene	129000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Sulfuric acid	7664939	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 3 - Annual Average and Maximum Hourly Emissions Summary by Source

Source ID	Source Name	Substance Name	CAS Number	Average Annual Emissions, lbs/yr	Average Annual Emissions, grams/sec	Maximum One Hour Emissions, lbs/hr	Maximum One Hour Emissions, grams/sec
S0005	Metal Grinding	Vanadium	7440622	3.55E-03	5.10E-08	1.14E-06	1.43E-07
S0005	Metal Grinding	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	Zinc	7440666	4.95E-02	7.12E-07	1.59E-05	2.00E-06

**Table 4 - Emission Inventory Methods**

Source ID	Source Description	Method
S0001	Steel Wax Burnout Oven 1	Not operating
S0001	Aluminum Pusher Furnace 4 and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Aluminum Pusher Furnace 2 and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Aluminum Box Oven and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Steel Wax Burnout Oven 4 and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Steel Wax Burnout Oven 3 and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Aluminum Pusher Furnace 3	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Steel Wax Burnout Oven 2	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Thermtronix Aluminum Melting 1	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Thermtronix Aluminum Melting 2	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Hot Straight Oven	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0001	Propane Handheld Torch	Estimated using SCAQMD Emission Factors <sup>1</sup>
S0001	Baghouse	Controls 70018
S0001	Abrasive Blasting Cabinet	Estimated using SCAQMD Emission Factors for Abrasive Blasting Operations
S0001	Steel Melting, Pouring, Casting 75 lb Crucible	Estimated using AP-42 Table 12.13-2 and California Air Toxics Emission Factors <sup>3</sup>
S0001	Steel Melting, Pouring, Casting 65 lb Crucible	Estimated using AP-42 Table 12.13-2 and California Air Toxics Emission Factors <sup>3</sup>
S0001	Steel Melting, Pouring, Casting 300/650 lb Crucible	Estimated using AP-42 Table 12.13-2 and California Air Toxics Emission Factors <sup>3</sup>
S0001	Aluminum Melting, Pouring, Casting Thermtronix 1	Estimated using AP-42 Table 12.8-2 and 12.11-2 and California Air Toxics Emission Factors <sup>4</sup>
S0001	Aluminum Melting, Pouring, Casting Thermtronix 2	Estimated using AP-42 Table 12.8-2 and 12.11-2 and California Air Toxics Emission Factors <sup>4</sup>
S0001	Production - Binders	Mass balance
S0001	Production - Cleaners	Mass balance
S0001	Production - Lubricants	Mass balance
S0001	Production - Adhesives and Solvents	Mass balance
S0001	Production - Non Destructive Testing and Mold Release	Mass balance
S0001	Production - Foam Packing	MDI Emissions Reporting Guidelines for the Polyurethane Industry American Chemistry Council May 2012
S0001	Welding	Estimated using San Diego Air Pollution Control District Welding Emission Factors
S0001	Shell Making	Estimated using AP-42 Table 12.13-2
S0001	Abrasive Blasting Cabinet	Estimated using SCAQMD Emission Factors for Abrasive Blasting Operations
S0001	Steel and Aluminum Testing	Reported under Production - Non Destructive Testing and Mold Release and Aluminum Parts Brite Dip Line
S0001	Wax Burnout	Estimated using SCAQMD Flash Fire Oven A/N 312486 Evaluation
S0002	Flash Fire Oven 5 and Afterburner	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0003	Heat Treat Oven	Estimated using SCAQMD Emission Factors <sup>1</sup> and USEPA AP-42 <sup>2</sup>
S0004	Aluminum Parts Bright Dip Line and Scrubber	Estimated using SCAQMD Emission Factors <sup>1</sup>
S0005	Metal Grinding	Estimated using engineering evaluation with SCAQMD Emission Factors <sup>1</sup> and metal dust analysis <sup>5</sup>

1. SCAQMD, Reporting Procedures for AB2588 Facilities Reporting their Quadrennial Air Toxics Emission Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3.

3. Hexavalent chromium emissions based on California Air Toxics Emission Factor for alloy stock, electric induction, primary metal production steel.

4. Hexavalent chromium emissions based on California Air Toxics Emission Factor for aluminum, reverberatory, secondary metal production.

5. Envirochem analysis, 4 June 2020.

**Table 5 - Emission Control Equipment**

Source ID	Device	Efficiency, %	Substances
S0001	Afterburner	99	Volatile TAC
S0005	Metal Grinding	99	Non volatile TAC

Table 6a - Point Source Parameters

Source ID	Source Name	Source Type	WGS 84		Elevation, m	Release Height, m	Stack Temp, k	Stack diameter, m	Exit Velocity, m/s
			UTM East, m	UTM North, m					
S0002	Flash Fire Oven 5 and Afterburner	Point	447,931.70	3,772,874.00	346.81	7.315	1,033.15	0.457	12.959
S0003	Heat Treat Oven	Point	447,894.70	3,772,858.00	346.49	7.315	620.65	0.457	12.959
S0004	Aluminum Parts Bright Dip Line	Point	447,868.80	3,772,870.00	346.73	1.875	298.15	0.814	21.770
S0005	Metal Grinding	Point	447,867.60	3,772,869.00	346.71	1.875	298.15	0.762	10.619

Table 6b - Volume Source Parameters

Source ID	Source Name	Source Type	WGS 84		Elevation, m	Release Height, m	Init. Late. Dime., m	Init. Vert. Dime., m
			UTM East, m	UTM North, m				
S0001	Production	Volume	447,900.00	3,772,845.00	346.24	3.075	11.628	2.859

Table 7 - Source Operating Parameters

Source ID	Source Description	Hours/day	Days/week	Weeks/year	Hours/yr
S0001	Steel Wax Burnout Oven 1	10	6	52	3,120
S0001	Aluminum Pusher Furnace 4 and Afterburner	10	6	52	3,120
S0001	Aluminum Pusher Furnace 2 and Afterburner	10	6	52	3,120
S0001	Aluminum Box Oven and Afterburner	10	6	52	3,120
S0001	Steel Wax Burnout Oven 4 and Afterburner	10	6	52	3,120
S0001	Steel Wax Burnout Oven 3 and Afterburner	10	6	52	3,120
S0001	Aluminum Pusher Furnace 3	10	6	52	3,120
S0001	Steel Wax Burnout Oven 2	10	6	52	3,120
S0001	Thermtronix Aluminum Melting 1	10	6	52	3,120
S0001	Thermtronix Aluminum Melting 2	10	6	52	3,120
S0001	Hot Straight Oven	10	6	52	3,120
S0001	Propane Handheld Torch	10	6	52	3,120
S0001	Baghouse	9	6	52	2,808
S0001	Abrasive Blasting Cabinet	9	6	52	2,808
S0001	Steel Melting, Pouring, Casting 75 lb Crucible	10	6	52	3,120
S0001	Steel Melting, Pouring, Casting 65 lb Crucible	10	6	52	3,120
S0001	Steel Melting, Pouring, Casting 300/650 lb Crucible	10	6	52	3,120
S0001	Aluminum Melting, Pouring, Casting Thermtronix 1	10	6	52	3,120
S0001	Aluminum Melting, Pouring, Casting Thermtronix 2	10	6	52	3,120
S0001	Production - Binders	10	6	52	3,120
S0001	Production - Cleaners	10	6	52	3,120
S0001	Production - Lubricants	10	6	52	3,120
S0001	Production - Adhesives and Solvents	10	6	52	3,120
S0001	Production - Non Destructive Testing and Mold Release	10	6	52	3,120
S0001	Production - Foam Packing	10	6	52	3,120
S0001	Welding	9	6	52	2,808
S0001	Shell Making	10	6	52	3,120
S0001	Abrasive Blasting Cabinet	9	6	52	2,808
S0001	Steel and Aluminum Testing*	NA	NA	NA	NA
S0001	Wax Burnout	10	6	52	3,120
S0002	Flash Fire Oven 5 and Afterburner	10	6	52	3,120
S0003	Heat Treat Oven	10	6	52	3,120
S0004	Aluminum Parts Bright Dip Line	24	7	52	8,760
S0005	Metal Grinding	10	6	52	3,120

\* Reported under Production (Non Destructive Testing and Mold Release) and Aluminum Parts Brite Dip Line



**Table 8 - AERMOD Modeling Options**

<b>Model Control Options</b>
Regulatory Default
Urban
Population - 2,035,210
Roughness Length - 1
<b>Source Options</b>
Variable Emissions
<b>Receptor Grid</b>
50 Meter Spacing Centered on Facility
20 Meter Property Boundary Receptors
No Pathway Receptors
Flag Pole Height - 0 meters
<b>Meteorology Options</b>
Ontario
Period - 1 January 2012 to 31 December 2016
<b>Terrain</b>
CARB DEM
<b>Building Downwash</b>
BPIP Prime Run

Table 9 - Multipathway Substances Summary

Listed substance	Potential Health Risk	CAS/CARB Number	Route of Exposure	Route of Exposure (Pending actual exposure)
Acenaphthene		83329	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Acenaphthylene		208968	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Acetaldehyde	Cancer, chronic, acute	75070		
Acrolein	Chronic, acute	107028		
Aluminum		7429905		
Aluminum oxide		1344281		
Ammonia	Chronic, acute	7664417		
Anthracene		120127	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Benzene	Cancer, chronic, acute	71432		
Benzo (a) anthracene	Cancer	56553	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Benzo (a) pyrene	Cancer	50328	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Benzo (b) fluoranthene	Cancer	205992	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Benzo (g,h,i) perylene		191242	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Benzo (k) fluoranthene	Cancer	207089	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Beryllium	Cancer, chronic	7440417	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Carbon monoxide		630080		
Chromium		7440473		
Chrysene	Cancer	218019	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Cobalt	Cancer	7440484	Inhalation, Soil ingestion, Dermal	
Copper	Acute	7440508		
Crystalline silica	Chronic	1175		
Cyclohexane		110827		
Dibenz (a,h) anthracene	Cancer	53703	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Dichlorobenzene	Cancer, chronic	106467		
Diethylene glycol		111466		
Dimethylbenz(a)anthracene, 7,12-	Cancer	57976	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Dioxane, 1,4-	Cancer, chronic, acute	123911		
Ethyl acrylate		140885		
Ethylbenzene	Cancer, chronic	100414		
Ethylene oxide	Cancer, chronic	75218		
Fluoranthene		206440	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Fluorene		86737	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Formaldehyde	Cancer, chronic, acute	50000		
Hexane, n-	Chronic	110543		
Hexavalent chromium	Cancer, chronic	18540299	Inhalation, Soil ingestion, Dermal	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Protected vegetable ingestion, Root vegetable ingestion, Water ingestion
Indeno(1,2,3-cd)pyrene	Cancer	193395	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Isopropyl alcohol	Acute	67630		
Lead	Cancer	7439921	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Protected vegetable ingestion, Root vegetable ingestion, Water ingestion
Manganese	Chronic	7439965		
Methylcholanthrene, 3-	Cancer	56495	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Methylene diphenyl diisocyanate	Chronic	101688		
Methylnaphthalene,2-		91576	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Naphthalene	Cancer, chronic	91203	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Nickel	Cancer, chronic, acute	7440020	Inhalation, Soil ingestion, Dermal	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Protected vegetable ingestion, Root vegetable ingestion, Water ingestion
Nitric acid	Acute	7697372		
PAH	Cancer	1151	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Phenanthrene		85018	Inhalation, Soil ingestion, Dermal, Mother's milk	Meat, milk, & egg ingestion, Fish ingestion, Exposed vegetable ingestion, Leafy vegetable ingestion, Water ingestion
Phosphoric acid	Chronic	7664382		
Phosphorous		7723140		
Pyrene		129000		
Sulfuric acid	Acute, chronic	7664939		
Toluene	Acute, chronic	108883		
Vanadium	Acute	7440622		
Xylenes	Acute, chronic	1330207		
Zinc compounds		7440666		

Table 10a - Risk Factors and Affected Body Systems and Organs

Listed substance	CAS/CARB Number	Unit Risk (ug/m <sup>3</sup> ) <sup>-1</sup>	Acute REL <sup>1</sup> (ug/m <sup>3</sup> )	Chronic REL <sup>1</sup> (ug/m <sup>3</sup> )	Toxicological Endpoint: System or Organ Affected <sup>2</sup>											
					CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN	EYE	BONE	ENDO	BLOOD
Acetaldehyde	75070	2.70E-06	4.70E+02	1.40E+02								a,c	a			
Acrolein	107028		2.50E+00	3.50E-01								a,c	a			
Ammonia	7664417		3.20E+03	2.00E+02								a,c	a			
Benzene	71432	2.90E-05	2.70E+01	3.00E+00			a				a					a,c
Benzo (a) anthracene	56553	1.10E-04														
Benzo (a) pyrene	50328	1.10E-03														
Benzo (b) fluoranthene	205992	1.10E-04														
Benzo (k) fluoranthene	207089	1.10E-04														
Beryllium	7440417	2.40E-03		7.00E-03			c		c				c			
Chrysene	218019	1.10E-05														
Cobalt	7440484	7.70E-03														
Copper	7440508		1.00E+02										a			
Crystalline silica	1175			3.00E+00									c			
Dibenz (a,h) anthracene	53703	1.20E-03														
Dichlorobenzene	106467	1.10E-05		8.00E+02		c		c	c				c			
Dimethylbenz(a)anthracene, 7,12-	57976	7.10E-02														
Dioxane, 1,4-	123911	7.70E-06	3.00E+03	3.00E+03	c			c	c				a	a		
Ethylbenzene	100414	2.50E-06		2.00E+03				c	c							c
Ethylene oxide	75218	8.80E-05		3.00E+01									c			
Formaldehyde	50000	6.00E-06	5.50E+01	9.00E+00									c			
Hexane, n-	110543			7.00E+03			c							a		
Hexavalent chromium	18540299	1.50E-01		2.00E-01												c
Indeno(1,2,3-cd)pyrene	193395	1.10E-04														
Isopropyl alcohol	67630		3.20E+03	7.00E+03									a	a		
Lead	7439921	1.20E-05														
Manganese	7439965			9.00E-02			c									
Methylcholanthrene, 3-	56495	6.30E-03														
Methylene diphenyl diisocyanate	101688		1.20E+01	8.00E-02									c			
Naphthalene	91203	3.40E-05		9.00E+00									c			
Nickel	7440020	2.60E-04	2.00E-01	1.40E-02				a					c			c
Nitric acid	7697372		8.60E+01										a			
PAH	1151	1.10E-03														
Phosphoric acid	7664382			7.00E+00									c			
Sulfuric acid	7664939		1.20E+02	1.00E+00									a,c			
Toluene	108883		5.00E+03	4.20E+02				a					a,c	a		
Vanadium	7440622		3.00E+01										a	a		
Xylenes	1330207		2.20E+04	7.00E+02			a,c						a,c	a,c		

- REL = Reference Exposure Level
- a = acute response  
c. chronic response
- No data for cancer or non-cancer health effects

Table 10b- Chemicals without Hazard Indices

Listed substance	CAS/CARB Number
Acenaphthene	83329
Acenaphthylene	208968
Aluminum	7429905
Aluminum oxide	1344281
Anthracene	120127
Benzo (g,h,i) perylene	191242
Carbon monoxide	42101
Chromium	7440473
Cyclohexane	110827
Diethylene glycol	111466
Ethyl acrylate	140885
Fluoranthene	205440
Fluorene	86737
Methylnaphthalene,2-	91576
Phenanthrene	85018
Phosphorous	7723140
Pyrene	129000
Zinc compounds	7440666

**Table 11 - Risk Assessment Assumptions**

<b>Parameter</b>	<b>Assumption</b>
<b>Pathway</b>	
Inhalation	Included
Dermal	Included
Soil ingestion	Included
Mother's milk	Included
Home grown produce	Included
Fraction of homegrown produce	0.137
Drinking water	Not included
Fish	Not included
Beef and dairy	Not included
Pig, chicken, and egg	Not included
Deposition velocity	0.02 meters per second
Climate	Warm
<b>Residential Cancer Risk Assumptions</b>	
Exposure duration	30 years
Analysis method	RMP with OEHHA derived
<b>Worker Cancer Risk Assumptions</b>	
Exposure duration	25 years
Analysis method	OEHHA derived
WAF adjustment	3.11
<b>Residential Chronic Risk Assumptions</b>	
Analysis method	OEHHA derived
<b>Worker Chronic Risk Assumptions</b>	
Analysis method	OEHHA derived
<b>Residential Acute Risk Assumptions</b>	
Analysis method	OEHHA derived
<b>Worker Acute Risk Assumptions</b>	
Analysis method	OEHHA derived
<b>Residential 8 hour</b>	
Analysis method	OEHHA derived
WAF adjustment	3.11
<b>Worker 8 hour</b>	
Analysis method	OEHHA derived
WAF adjustment	3.11
<b>Population Wide Cancer Risk Assumptions</b>	
Exposure duration	70 years
Analysis method	OEHHA derived
<b>Sensitive Cancer Risk Assumptions</b>	
Exposure duration	30 years
Analysis method	RMP with OEHHA derived

**Table 12 - Cancer Risk for PMI, MEIR, and MEIW**

Type	Receptor	WGS 84		Risk	Risk in a million
		UTM East (m)	UTM North (m)		
PMI	41096	447,895.8	3,772,804	2.22E-04	222.48
MEIR	18500	447,900	3,772,450	1.72E-06	1.72
MEIW	41074	447,995.7	3,772,864	3.88E-05	38.76

**Table 12b - Hazard Index for PMI, MEIR, MEIW**

Type	Receptor	WGS 84		Hazard Index
		UTM East (m)	UTM North (m)	
<b>Chronic Hazard Indices</b>				
MEIR	18498	447,900	3,772,450	0.04
MEIW	41074	447,995.7	3,772,864	4.48
<b>Acute Hazard Indices</b>				
PMI	41097	447,915.8	3,772,804	21.26
<b>8 hour Hazard Indices</b>				
PMI	41074	447,996	3,772,864	2.87

**Table 13 - Listed Substances Cancer Risk Summary at PMI, MEIR, and MEIW**

Listed Substance	PMI (Rec. 41096)	MEIR (18500)	MEIW (41074)
1,4-Dioxane	1.52E-09	1.15E-11	3.86E-10
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	5.07E-09	4.11E-11	2.21E-10
7,12-DB[a]anthr	5.12E-07	4.15E-09	2.23E-08
Acenaphthene	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	5.94E-10	4.81E-12	1.67E-10
Acrolein	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	2.63E-10	2.13E-12	6.53E-12
B[a]P	1.75E-09	1.42E-11	4.36E-11
B[b]fluoranthen	2.63E-10	2.13E-12	6.53E-12
B[g,h,i]perylene	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthen	2.63E-10	2.13E-12	6.53E-12
Benzene	1.07E-08	8.67E-11	3.02E-09
Beryllium	2.12E-05	1.61E-07	5.39E-06
Chromium	0.00E+00	0.00E+00	0.00E+00
Chrysene	2.63E-11	2.13E-13	6.53E-13
CO	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	1.68E-04	1.28E-06	2.43E-05
Cyclohexane	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	6.30E-10	5.11E-12	2.74E-11
DEGlycol	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	1.10E-09	8.96E-12	3.12E-10
EtO	1.74E-08	1.32E-10	4.43E-09
Fluoranthene	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	2.09E-08	1.62E-10	5.46E-09
Hexane	0.00E+00	0.00E+00	0.00E+00
In[1,2,3-cd]pyr	2.63E-10	2.13E-12	6.53E-12
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00
Lead	1.67E-07	1.28E-09	9.05E-09
Manganese	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00
Naphthalene	4.81E-10	3.90E-12	1.36E-10
NH3	0.00E+00	0.00E+00	0.00E+00
Nickel	3.22E-05	2.67E-07	8.81E-06
PAHs-w/o	1.72E-08	1.40E-10	4.29E-10
p-DiClBenzene	6.41E-10	5.20E-12	1.81E-10
Phenanthrene	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00
Cobalt	9.25E-08	5.75E-09	1.67E-07
Vanadium	0.00E+00	0.00E+00	0.00E+00

Table 14 - Summary of Cancer Burden at Receptors for one in a million Zone of Impact

Receptor	UTM East (m)	UTM North (m)	Population	Cancer Risk	Burden
40878	448113.2098	3772930.601	0	5.79E-05	0.00E+00
40873	448538.4809	3773050.021	0	7.65E-06	0.00E+00
40877	447677.6804	3772643.597	0	5.36E-06	0.00E+00
40872	447820.6775	3773094.995	0	5.27E-06	0.00E+00
40884	447630.2813	3772480.748	0	2.08E-06	0.00E+00
40876	448580.0603	3772690.416	0	1.99E-06	0.00E+00
40874	449178.4864	3773066.287	0	1.88E-06	0.00E+00
40838	448569.5513	3773554.157	0	1.46E-06	0.00E+00
40871	448258.9592	3773484.669	0	1.37E-06	0.00E+00
40837	449136.6285	3773668.729	0	1.35E-06	0.00E+00
40883	448519.1645	3772553.362	0	1.26E-06	0.00E+00
40962	449869.83	3773682.099	4	1.02E-06	4.06E-06
40868	448003.0543	3773463.789	0	1.00E-06	0.00E+00
				<b>Total Cancer Burden</b>	<b>4.06E-06</b>

Table 15 - Cancer Risk by Emission Source at PMI

Source ID	Source Description	Exposure Pathway												
		Inhal	Soil	Derm	Mother	Water	Fish	Veg	Beef	Dairy	Pig	Chick	Egg	Sum
S0001	Production	1.48E-04	1.85E-06	7.90E-08	1.14E-07	0.00E+00	0.00E+00	7.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-04
S0002	Flash Fire Oven 5 and Afterburner	6.09E-10	5.13E-10	1.28E-10	1.22E-09	0.00E+00	0.00E+00	3.47E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.94E-09
S0003	Heat Treat Oven	4.80E-10	4.05E-10	1.01E-10	9.63E-10	0.00E+00	0.00E+00	2.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.69E-09
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	5.08E-07	1.79E-10	4.35E-12	3.25E-12	0.00E+00	0.00E+00	4.94E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.09E-07



Table 16 - Cancer Risk by Emission Source at MEIW

Source ID	Source Description	Exposure Pathway												
		Inhal	Soil	Derm	Mother	Water	Fish	Veg	Beef	Dairy	Pig	Chick	Egg	Sum
S0001	Production	3.77E-05	1.74E-07	1.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.78E-05
S0002	Flash Fire Oven 5 and Afterburner	1.23E-09	3.13E-10	1.41E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-09
S0003	Heat Treat Oven	1.16E-09	2.94E-10	1.33E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-09
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	9.17E-07	5.26E-11	5.47E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.17E-07

Table 17 - Cancer Risk by Emission Source at MEIR

Source ID	Source Description	Exposure Pathway												Sum
		Inhal	Soil	Derm	Mother	Water	Fish	Veg	Beef	Dairy	Pig	Chick	Egg	
S0001	Production	1.13E-06	1.40E-08	6.01E-10	8.68E-10	0.00E+00	0.00E+00	5.46E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69E-06
S0002	Flash Fire Oven 5 and Afterburner	2.10E-11	1.77E-11	4.41E-12	4.21E-11	0.00E+00	0.00E+00	1.20E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-10
S0003	Heat Treat Oven	1.64E-11	1.39E-11	3.46E-12	3.30E-11	0.00E+00	0.00E+00	9.39E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-10
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	3.16E-08	1.11E-11	2.71E-13	2.02E-13	0.00E+00	0.00E+00	3.07E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-08

Table 18 - 30 Year Cancer Risks by Pathway at PMI, MEIR, and MEIW

Receptor	UTM East (m)	UTM North (m)	Exposure Pathway												TOTAL
			INHAL	SOIL	DERM	MOTHER	WATER	FISH	VEG	BEEF	DAIRY	PIG	CHICK	EGG	
PMI	447,895.8	3,772,804	1.49E-04	1.85E-06	7.93E-08	1.16E-07	0.00E+00	0.00E+00	7.18E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-04
MEIW	447,995.7	3,772,864	3.86E-05	1.75E-07	1.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.88E-05
MEIR	447,900	3,772,450	1.16E-06	1.41E-08	6.09E-10	9.43E-10	0.00E+00	0.00E+00	5.46E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-06

Table 19 - Cancer Risk By Substance at PMI

Substance	Exposure Pathway													
	Inhal	Soil	Derm	Mother	Water	Fish	Veg	Beef	Dairy	Pig	Chick	Egg	Total	
1,4-Dioxane	1.52E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-09	
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3-MeCholanthren	3.73E-10	4.52E-10	1.13E-10	1.07E-09	0.00E+00	0.00E+00	3.06E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.07E-09	
7,12-DB[a]janthr	3.77E-08	4.56E-08	1.14E-08	1.09E-07	0.00E+00	0.00E+00	3.09E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.12E-07	
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Acetaldehyde	5.94E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.94E-10	
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
B[a]anthracene	6.62E-12	2.46E-11	6.14E-12	5.86E-11	0.00E+00	0.00E+00	1.67E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-10	
B[a]P	4.41E-11	1.64E-10	4.09E-11	3.91E-10	0.00E+00	0.00E+00	1.11E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-09	
B[b]fluoranthen	6.62E-12	2.46E-11	6.14E-12	5.86E-11	0.00E+00	0.00E+00	1.67E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-10	
B[g,h,i]perylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
B[k]fluoranthen	6.62E-12	2.46E-11	6.14E-12	5.86E-11	0.00E+00	0.00E+00	1.67E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-10	
Benzene	1.07E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-08	
Beryllium	2.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-05	
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Chrysene	6.62E-13	2.46E-12	6.14E-13	5.86E-12	0.00E+00	0.00E+00	1.67E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-11	
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Cr(VI)	9.51E-05	1.68E-06	6.44E-08	0.00E+00	0.00E+00	0.00E+00	7.15E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-04	
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
D[a,h]anthracen	4.64E-11	5.61E-11	1.40E-11	1.34E-10	0.00E+00	0.00E+00	3.80E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.30E-10	
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Ethyl Benzene	1.10E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-09	
EtO	1.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-08	
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Formaldehyde	2.09E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-08	
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
In[1,2,3-cd]pyr	6.62E-12	2.46E-11	6.14E-12	5.86E-11	0.00E+00	0.00E+00	1.67E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E-10	
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Lead	9.76E-09	1.19E-07	2.90E-09	2.16E-09	0.00E+00	0.00E+00	3.29E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-07	
Manganese	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Naphthalene	4.81E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-10	
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Nickel	3.22E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-05	
PAHs-w/o	4.34E-10	1.62E-09	4.03E-10	3.85E-09	0.00E+00	0.00E+00	1.09E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-08	
p-DiClBenzene	6.41E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.41E-10	
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Silica, CrysTn	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Xylenes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Cobalt	9.25E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.25E-08	
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	



Table 21 - Cancer Risk By Substance at MEIR

Substance	Exposure Pathway														Total
	Inhal	Soil	Derm	Mother	Water	Fish	Veg	Beef	Dairy	Pig	Chick	Egg			
1,4-Dioxane	1.15E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.15E-11
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	3.03E-12	3.67E-12	9.13E-13	8.72E-12	0.00E+00	0.00E+00	2.48E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.11E-11
7,12-DB[a]anthr	3.06E-10	3.70E-10	9.23E-11	8.81E-10	0.00E+00	0.00E+00	2.51E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.15E-09
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	4.81E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.81E-12
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	5.37E-14	2.00E-13	4.98E-14	4.76E-13	0.00E+00	0.00E+00	1.35E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-12
B[a]P	3.58E-13	1.33E-12	3.32E-13	3.17E-12	0.00E+00	0.00E+00	9.02E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-11
B[b]fluoranthren	5.37E-14	2.00E-13	4.98E-14	4.76E-13	0.00E+00	0.00E+00	1.35E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-12
B[g,h,i]perlyen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthren	5.37E-14	2.00E-13	4.98E-14	4.76E-13	0.00E+00	0.00E+00	1.35E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-12
Benzene	8.67E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.67E-11
Beryllium	1.61E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-07
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	5.37E-15	2.00E-14	4.98E-15	4.76E-14	0.00E+00	0.00E+00	1.35E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-13
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	7.23E-07	1.28E-08	4.89E-10	0.00E+00	0.00E+00	0.00E+00	5.43E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-06
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	3.76E-13	4.55E-13	1.13E-13	1.08E-12	0.00E+00	0.00E+00	3.08E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-12
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	8.96E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.96E-12
EtO	1.32E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-10
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	1.62E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-10
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
In[1,2,3-cd]pyr	5.37E-14	2.00E-13	4.98E-14	4.76E-13	0.00E+00	0.00E+00	1.35E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.13E-12
Isopropyl Alcohl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7.50E-11	9.15E-10	2.23E-11	1.66E-11	0.00E+00	0.00E+00	2.53E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-09
Manganese	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	3.90E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-12
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	2.67E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.67E-07
PAHs-w/o	3.52E-12	1.31E-11	3.27E-12	3.12E-11	0.00E+00	0.00E+00	8.88E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-10
p-DiClBenzene	5.20E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-12
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	5.75E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-09
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 22 - Chronic Hazard Indices by Emission Source at MEIW

Source ID	Source Description	Exposure Pathway											
		CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
S0001	Production	2.72E-08	1.59E-01	5.23E-01	1.99E-04	1.04E-02	2.53E-02	4.15E+00	0.00E+00	2.40E-06	0.00E+00	9.05E-08	3.62E+00
S0002	Flash Fire Oven 5 and Afterburner	6.58E-12	5.39E-08	0.00E+00	8.07E-09	8.07E-09	6.13E-09	3.32E-05	0.00E+00	1.63E-07	0.00E+00	6.13E-09	3.44E-06
S0003	Heat Treat Oven	0.00E+00	5.01E-08	0.00E+00	7.59E-09	7.59E-09	5.76E-09	3.12E-05	0.00E+00	1.53E-07	0.00E+00	5.76E-09	3.24E-06
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	0.00E+00	2.65E-07	8.46E-04	0.00E+00	1.68E-05	2.30E-03	3.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.32E-01
<b>Total HI</b>		<b>2.72E-08</b>	<b>1.59E-01</b>	<b>5.24E-01</b>	<b>1.99E-04</b>	<b>1.04E-02</b>	<b>2.76E-02</b>	<b>4.48E+00</b>	<b>0.00E+00</b>	<b>2.71E-06</b>	<b>0.00E+00</b>	<b>1.02E-07</b>	<b>3.95E+00</b>

**Table 23 - Chronic Hazard Indices by Emission Source at MEIR**

Source ID	Source Description	Exposure Pathway											
		CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
S0001	Production	2.10E-10	1.23E-03	4.05E-03	1.54E-06	1.81E-04	5.62E-04	3.21E-02	0.00E+00	1.85E-08	0.00E+00	6.99E-10	2.80E-02
S0002	Flash Fire Oven 5 and Afterburner	3.72E-14	3.04E-10	0.00E+00	4.55E-11	4.55E-11	3.46E-11	1.87E-07	0.00E+00	9.17E-10	0.00E+00	3.46E-11	1.94E-08
S0003	Heat Treat Oven	0.00E+00	2.35E-10	0.00E+00	3.56E-11	3.56E-11	2.71E-11	1.47E-07	0.00E+00	7.18E-10	0.00E+00	2.71E-11	1.52E-08
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	0.00E+00	2.37E-09	7.55E-06	0.00E+00	3.38E-07	5.94E-05	2.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.97E-03
<b>Total HI</b>		<b>2.10E-10</b>	<b>1.23E-03</b>	<b>4.05E-03</b>	<b>1.54E-06</b>	<b>1.82E-04</b>	<b>6.21E-04</b>	<b>3.51E-02</b>	<b>0.00E+00</b>	<b>2.02E-08</b>	<b>0.00E+00</b>	<b>7.61E-10</b>	<b>3.10E-02</b>



Table 24 - Chronic Hazard Indices by Substance at MEIW

Substance	Exposure Pathway											
	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
1,4-Dioxane	2.72E-08	0.00E+00	0.00E+00	2.72E-08	2.72E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7,12-DB[a]anthr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.82E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[b]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[g,h,i]perylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-05
Beryllium	0.00E+00	0.00E+00	5.24E-01	0.00E+00	1.04E-02	0.00E+00	5.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.37E-05
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	1.02E-07	1.02E-07	1.02E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-07	0.00E+00
EtO	0.00E+00	2.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	0.00E+00	1.94E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ln[1,2,3-cd]pyr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	1.99E-04	0.00E+00	1.99E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	0.00E+00	1.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-02	3.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E+00
PAHs-w/o	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
p-DiClBenzene	0.00E+00	3.23E-08	0.00E+00	3.23E-08	3.23E-08	0.00E+00	3.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-06	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	8.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.37E-07	0.00E+00	8.37E-07	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 25 - Chronic Hazard Indices by Substance at MEIW

Substance	Exposure Pathway											
	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
1,4-Dioxane	2.72E-08	0.00E+00	0.00E+00	2.72E-08	2.72E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7,12-DB[a]anthr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.82E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[b]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[g,h,i]perylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-05
Beryllium	0.00E+00	0.00E+00	5.24E-01	0.00E+00	1.04E-02	0.00E+00	5.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.35E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.37E-05
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	1.02E-07	1.02E-07	1.02E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-07	0.00E+00
EtO	0.00E+00	2.72E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	0.00E+00	1.94E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
In[1,2,3-cd]pyr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	1.99E-04	0.00E+00	1.99E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	0.00E+00	1.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-02	3.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E+00
PAHs-w/o	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
p-DiClBenzene	0.00E+00	3.23E-08	0.00E+00	3.23E-08	3.23E-08	0.00E+00	3.23E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-06	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	8.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.37E-07	0.00E+00	8.37E-07	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.39E-19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 26 - Acute Hazard Indices by Emission Source at PMI

Source ID	Source Description	Exposure Pathway											
		CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
S0001	Production	0.00E+00	5.83E-05	2.09E+01	0.00E+00	0.00E+00	2.02E-03	9.08E-02	0.00E+00	6.20E-02	0.00E+00	0.00E+00	2.02E-03
S0002	Flash Fire Oven 5 and Afterburner	0.00E+00	1.33E-06	4.62E-05	0.00E+00	0.00E+00	4.62E-05	3.27E-04	0.00E+00	3.76E-04	0.00E+00	0.00E+00	4.62E-05
S0003	Heat Treat Oven	0.00E+00	7.26E-07	2.52E-05	0.00E+00	0.00E+00	2.52E-05	1.78E-04	0.00E+00	2.04E-04	0.00E+00	0.00E+00	2.52E-05
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-03	0.00E+00	2.69E-05	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	0.00E+00	0.00E+00	3.43E-01	0.00E+00	0.00E+00	0.00E+00	4.77E-04	0.00E+00	1.52E-06	0.00E+00	0.00E+00	0.00E+00
<b>Total HI</b>		<b>0.00E+00</b>	<b>6.04E-05</b>	<b>2.13E+01</b>	<b>0.00E+00</b>	<b>0.00E+00</b>	<b>2.09E-03</b>	<b>9.35E-02</b>	<b>0.00E+00</b>	<b>6.26E-02</b>	<b>0.00E+00</b>	<b>0.00E+00</b>	<b>2.09E-03</b>

Table 27 - Acute Hazard Indices by Substance at PMI

Substance	Exposure Pathway											
	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
1,4-Dioxane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E-06	0.00E+00	2.24E-06	0.00E+00	0.00E+00	0.00E+00
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7,12-DB[a]anthr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.51E-05	0.00E+00	6.51E-05	0.00E+00	0.00E+00	0.00E+00
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.62E-03	0.00E+00	7.62E-03	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[b]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[g,h,i]perlyen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.00E+00	0.00E+00	2.09E-03	0.00E+00	0.00E+00	2.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.09E-03
Beryllium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EtO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-03	0.00E+00	0.00E+00	0.00E+00
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
In[1,2,3-cd]pyr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.58E-02	0.00E+00	3.58E-02	0.00E+00	0.00E+00	0.00E+00
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-02	0.00E+00	1.51E-02	0.00E+00	0.00E+00	0.00E+00
Nickel	0.00E+00	0.00E+00	2.13E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
p-DiClBenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	5.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.17E-05	0.00E+00	5.17E-05	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	8.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.73E-06	0.00E+00	8.73E-06	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-06	0.00E+00	1.52E-06	0.00E+00	0.00E+00	0.00E+00

Table 28 - 8 Hour Hazard Indices by Emission Source at PMI

Source ID	Source Description	Exposure Pathway											
		CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
S0001	Production	0.00E+00	2.62E-01	2.63E+00	0.00E+00	0.00E+00	0.00E+00	2.63E+00	0.00E+00	2.61E-06	0.00E+00	0.00E+00	1.58E-04
S0002	Flash Fire Oven 5 and Afterburner	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.31E-05	0.00E+00	1.77E-07	0.00E+00	0.00E+00	1.07E-05
S0003	Heat Treat Oven	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-05	0.00E+00	1.66E-07	0.00E+00	0.00E+00	1.01E-05
S0004	Aluminum Parts Bright Dip Line	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
S0005	Metal Grinding	0.00E+00	4.37E-07	2.41E-01	0.00E+00	0.00E+00	0.00E+00	2.41E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>Total HI</b>		<b>0.00E+00</b>	<b>2.62E-01</b>	<b>2.87E+00</b>	<b>0.00E+00</b>	<b>0.00E+00</b>	<b>0.00E+00</b>	<b>2.87E+00</b>	<b>0.00E+00</b>	<b>2.95E-06</b>	<b>0.00E+00</b>	<b>0.00E+00</b>	<b>1.79E-04</b>

Table 29 - 8 Hour Hazard Indices by Substance at PMI

Substance	Exposure Pathway											
	CV	CNS	IMMUN	KIDNEY	GILV	REPRO	RESP	SKIN	EYE	BONE	ENDO	BLOOD
1,4-Dioxane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2MeNaphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3-MeCholanthren	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7,12-DB[a]anthr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Alumin Oxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aluminum	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]anthracene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[a]P	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[b]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[ghi]perlylen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B[k]fluoranthen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-05
Beryllium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chrysene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D[a,h]anthracen	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGlycol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Acrylate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EtO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
In[1,2,3-cd]pyr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcohol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Manganese	0.00E+00	8.44E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MeDiphenDiisocy	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	0.00E+00	0.00E+00	9.22E-01	0.00E+00	0.00E+00	0.00E+00	9.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
p-DiClBenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Silica, Crystln	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.50E-07	0.00E+00	0.00E+00	0.00E+00
Xylenes	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zinc	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cobalt	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vanadium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

**Appendix C – Health Risk Assessment Summary Form**



**South Coast Air Quality Management District**

21865 Copley Drive, Diamond Bar, CA 91765-4182

(909) 396-2000 • www.aqmd.gov

**HEALTH RISK ASSESSMENT SUMMARY FORM**

(Required in Executive Summary of HRA)

Facility Name : \_\_\_\_\_

Facility Address: \_\_\_\_\_

Type of Business: \_\_\_\_\_

SCAQMD ID No.: \_\_\_\_\_

**A. Cancer Risk**

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

1. Inventory Reporting Year : \_\_\_\_\_

2. Maximum Cancer Risk to Receptors : *(Offsite and residence = 30-year exposure, worker = 25-year exposure)*

a. Offsite \_\_\_\_\_ in a million Location: \_\_\_\_\_

b. Residence \_\_\_\_\_ in a million Location: \_\_\_\_\_

c. Worker \_\_\_\_\_ in a million Location: \_\_\_\_\_

3. Substances Accounting for 90% of Cancer Risk: \_\_\_\_\_

Processes Accounting for 90% of Cancer Risk: \_\_\_\_\_

4. Cancer Burden for a 70-yr exposure: *(Cancer Burden = [cancer risk] x [# of people exposed to specific cancer risk])*

a. Cancer Burden \_\_\_\_\_

b. Number of people exposed to >1 per million cancer risk for a 70-yr exposure \_\_\_\_\_

c. Maximum distance to edge of 70-year, 1 x 10<sup>-6</sup> cancer risk isopleth (meters) \_\_\_\_\_

**B. Hazard Indices**

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

*(non-carcinogenic impacts are estimated by comparing calculated concentration to identified Reference Exposure Levels, and expressing this comparison in terms of a "Hazard Index")*

1. Maximum Chronic Hazard Indices:

a. Residence HI: \_\_\_\_\_ Location: \_\_\_\_\_ toxicological endpoint: \_\_\_\_\_

b. Worker HI : \_\_\_\_\_ Location: \_\_\_\_\_ toxicological endpoint: \_\_\_\_\_

2. Substances Accounting for 90% of Chronic Hazard Index: \_\_\_\_\_

3. Maximum 8-hour Chronic Hazard Index:

8-Hour Chronic HI: \_\_\_\_\_ Location: \_\_\_\_\_ toxicological endpoint: \_\_\_\_\_

4. Substances Accounting for 90% of 8-hour Chronic Hazard Index: \_\_\_\_\_

5. Maximum Acute Hazard Index:

PMI: \_\_\_\_\_ Location: \_\_\_\_\_ toxicological endpoint: \_\_\_\_\_

6. Substances Accounting for 90% of Acute Hazard Index: \_\_\_\_\_

**C. Public Notification and Risk Reduction**

1. Public Notification Required? \_\_\_\_\_ Yes \_\_\_\_\_ No

a. If 'Yes', estimated population exposed to risks > 10 in a million for a 30-year exposure, or an HI >1

\_\_\_\_\_

2. Risk Reduction Required? \_\_\_\_\_ Yes \_\_\_\_\_ No



**Appendix D – SCAQMD Letter to Prepare Health Risk Assessment**



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

*Via Email and Certified Mail, return receipt requested*

August 7, 2020

Jesus Diaz  
Pac Rancho, Inc.  
11000 Jersey Blvd.  
Rancho Cucamonga, CA 91730-5103

Subject: Approval of Air Toxics Inventory Report and Notice to Prepare a Health Risk Assessment for **Pac Rancho, Inc.** (South Coast AQMD ID# 140871)

Dear Mr. Diaz:

In accordance with the State of California's Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) and South Coast Air Quality Management District's (South Coast AQMD) Rule 1402, South Coast AQMD staff notified you by letter dated September 4, 2019 to prepare an Air Toxics Inventory Report (ATIR) for your facility which was submitted on February 21, 2020. South Coast AQMD staff provided several comments, starting on April 14, 2020. You provided a final revised ATIR for your facility on June 23, 2020 in response to the comments. Your ATIR submittal of June 23, 2020 for calendar year 2018 has been reviewed and approved.

Subsequently, pursuant to Rule 1402(e)(1), you are required to prepare and submit a Health Risk Assessment (HRA), based on the approved ATIR, for your facility within **90 days** from the date of this letter which is November 5, 2020.

The remainder of this letter informs you of the following:

- Guidelines and procedures for preparing the HRA;
- Process used to review and approve the HRA; and
- Availability of further assistance.

## **Guidelines and Procedures for Preparing the HRA**

The State of California Air Resources Board (CARB) has developed a "Hot Spots" Analysis and Reporting Program (HARP) which streamlines the emissions inventory and risk assessment requirements of the "Hot Spots" Program into a single integrated analysis tool. You are required to submit your HRA using the HARP software. A copy of the HARP software can be obtained from the following website: <http://www.arb.ca.gov/toxics/harp/harp.htm>. The latest version of the software must be used.

The U.S. EPA air quality dispersion model called AERMOD is used by HARP to estimate the concentration of pollutants. AERMOD documentation is available from U.S. EPA at:

<https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models>. In addition, South Coast AQMD guidance on using AERMOD can be found at: <https://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance>. Meteorological data for use in HARP and AERMOD can be downloaded from <http://www.aqmd.gov/home/air-quality/meteorological-data/data-for-aermod>.

The HRA must be prepared in accordance with *The Air Toxics Hot Spots Program Risk Assessments Guidelines (February 2015)* developed by the State of California Office of Environmental Health Hazard Assessment (OEHHA). This document can be obtained at the following link: <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>. South Coast AQMD staff has prepared supplemental guidelines for preparing an HRA which must also be followed. This document can be obtained at: <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab-2588-supplemental-guidelines-201809.pdf>

Diesel particulate matter emissions were identified as a TAC by CARB in 1998 and were added to South Coast AQMD Rule 1401 list of compounds on March 7, 2008. Under the current AB 2588 Air Toxics “Hot Spots” Emission Inventory Criteria and Guidelines Regulation, amended on August 27, 2007, you are required to include health risk impacts of any diesel exhaust particulate emissions from stationary emergency and prime compression ignition internal combustion engines, as well as portable diesel engines. **Please clearly identify emergency diesel internal combustion engines (DICEs) and their corresponding emissions.** This is essential because, on January 5, 2007, the South Coast AQMD Board adopted separate public notification procedures for emergency DICEs.

Air emissions of any substances listed in Appendix A-I of the OEHHA guidelines must be quantified and evaluated in the HRA. Please follow the detailed outline for the HRA report, which is contained in Appendix C of the South Coast AQMD supplemental risk assessment guidelines mentioned above. Lastly, please also include a signed copy of the AB 2588 Air Toxics Document Certification & Submittal Form (Attachment) along with your HRA submittal.

### **Process for Reviewing and Approving the HRA**

The HRA will be reviewed by staff from both South Coast AQMD and OEHHA. You will be notified of the status of your HRA within a few weeks after it is returned to South Coast AQMD from OEHHA. An HRA that is not consistent with state and South Coast AQMD guidelines will be returned to the facility with a list of necessary corrections, prior to approval.

If the HRA shows that your facility, **excluding risks from emergency DICEs**, poses a maximum individual lifetime cancer risk of ten in one million or greater, or the non-cancer health effects hazard index exceeds one, you will be required to provide public notice to all individuals exposed above notification levels. If the cancer risks from emergency DICEs exceed the above-mentioned public notice threshold, your facility is subject to a newspaper notification and information will be made available on the South Coast AQMD website. The determination of whether your facility is subject to notification will be made upon approval of the HRA. You will receive further information regarding the public notification process at that time.

In addition, if your facility, **excluding risks from emergency DICEs**, poses a maximum individual lifetime cancer risk of 25 in a million or greater, cancer burden of 0.5 or greater, or non-

**Appendix E – Air Toxics Inventory Report 2018**



# JE Compliance Services

**Air Toxic Inventory Report for 2018**  
**Reporting Period**  
**June 2020**

**Pac Rancho Inc.**

**Prepared For:**

**Pac Rancho Inc.**  
**11000 Jersey Boulevard**  
**Rancho Cucamonga, California**

**EHS-9942**



P: +1.909.483.3300

F: +1.909.646.9854

<http://www.jecsi.net>



## List of Acronyms

AER - Annual Emission Report.  
CAS - Chemical Abstract Number.  
DN - Device Number.  
EPN - Emission Point Number.  
HARP - “Hot Spots” Analysis and Reporting Program.  
PAH – Polycyclic Aromatic Hydrocarbons.  
SCAQMD - South Coast Air Quality Management District.  
USEPA – United States Environmental Protection Agency.

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## Introduction

This air toxics emission inventory report (ATIR) for the 2018 reporting period has been prepared at the request of South Coast Air Quality Management District (SCAQMD). This inventory was prepared with the objective of meeting the requirements, standards, and guidelines established by the State of California Toxic Hot Spots Emissions Inventory criteria and guidelines to quantify emissions of listed substances from devices present on site.

Pac Rancho, Inc. utilizes molds to manufacture precision steel and aluminum castings used in the aircraft and aerospace industries.

The emissions calculated in this report have been entered into the “Hot Spots” Analysis and Reporting Program (HARP) software. The HARP reporting forms are provided in **Appendix B**. A signed copy of the AB2588 Air Toxic Document Certification and Application Form is included in **Appendix C**.

The numbering conventions presented in **Table 1** for emission points and devices are used to distinguish emissions from different types of sources and devices. The site detail including the buildings and emission sources are contained in **Figure 1** (see **Appendix A – Source Location Map**).

**Table 1 - Device Numbering Convention**

Number Convention	Source/Device Type	Description
5000X	Area Source	A diffuse source of emissions that is not enclosed or controlled and is assumed to be emitted at an equal rate for each point in a defined area. Examples include storage yards, fields, etc.
6000X	Volume Source	An enclosed source of emissions, which may be controlled but typically is uncontrolled, such as a building, from which emissions may escape with no weighting in particular direction or velocity. An example is a manufacturing building with process equipment that vents directly into the building.
9000X	Point Source	A source of emissions with definable emission rates and emission parameters that is located in a fixed area. Examples include a spray booth stack and an oven exhaust stack.
7000X	Device Number	Specific emission producing devices or a collection of equipment.

This Inventory has limitations based in part on the reliance of information supplied by others or due to using various proxies to calculate emissions. JE Compliance Services relies in part on the accuracy and completeness of safety data sheets to provide a basis for calculating the content of listed substances in raw materials. Some manufacturers choose not to disclose certain ingredients if below certain regulatory *de minimis* thresholds. In addition, certain calculations may use generic emission factors from governmental or other sources which may not be completely representative of actual operating conditions or site equipment configurations.



### **Steel Wax Burnout Oven 1 (A/N 430512), DN 70001, EPN 60001**

The steel wax burnout oven was not in operation during the 2018 calendar year; therefore, emissions are reported as zero.

## Aluminum Pusher Furnace 4 and Afterburner (A/N 430514), DN 70002, EPN 60002

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the aluminum pusher furnace 4 and afterburner, 1.96 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the aluminum pusher furnace 4 and afterburner, 2.80 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Acenaphthylene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Acetaldehyde	4.30E-03	1.96	8.42E-03	1.17E-05	See note 1
Acrolein	2.70E-03	1.96	5.29E-03	7.35E-06	See note 1
Ammonia	3.20	1.96	6.27	8.72E-03	See note 1
Anthracene	2.40E-06	1.96	4.70E-06	6.54E-09	See note 2
Benz(a)anthracene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Benzene	8.00E-03	1.96	1.57E-02	2.18E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Carbon monoxide	35.00	1.96	68.55	9.53E-02	See note 1
Chrysene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Dichlorobenzene	1.20E-03	1.96	2.35E-03	3.27E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.96	3.13E-05	4.36E-08	See note 2
Ethylbenzene	9.50E-03	1.96	1.86E-02	2.59E-05	See note 1
Fluoranthene	3.00E-06	1.96	5.88E-06	8.17E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Fluorene	2.80E-06	1.96	5.48E-06	7.63E-09	See note 2
Formaldehyde	1.70E-02	1.96	3.33E-02	4.63E-05	See note 1
Hexane, n-	6.30E-03	1.96	1.23E-02	1.72E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.96	4.70E-05	6.54E-08	See note 2
Naphthalene	3.00E-04	1.96	5.88E-04	8.17E-07	See note 1
PAH (unspeciated)	1.18E-05	1.96	2.31E-05	3.21E-08	See note 3
Phenanthrene	1.70E-05	1.96	3.33E-05	4.63E-08	See note 2
Pyrene	5.00E-06	1.96	9.79E-06	1.36E-08	See note 2
Toluene	3.66E-02	1.96	7.17E-02	9.97E-05	See note 1
Xylenes	2.72E-02	1.96	5.33E-02	7.41E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.
2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.
3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Aluminum Pusher Furnace 2 and Afterburner (A/N 430515), DN 70003, EPN 60003

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

### Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the aluminum pusher furnace 2 and afterburner, 1.96 mmcf/yr.

### Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the aluminum pusher furnace 2 and afterburner, 2.80 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Acenaphthylene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Acetaldehyde	4.30E-03	1.96	8.42E-03	1.17E-05	See note 1
Acrolein	2.70E-03	1.96	5.29E-03	7.35E-06	See note 1
Ammonia	3.20	1.96	6.27	8.72E-03	See note 1
Anthracene	2.40E-06	1.96	4.70E-06	6.54E-09	See note 2
Benz(a)anthracene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Benzene	8.00E-03	1.96	1.57E-02	2.18E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Carbon monoxide	35.00	1.96	68.55	9.53E-02	See note 1
Chrysene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.96	2.35E-06	3.27E-09	See note 2
Dichlorobenzene	1.20E-03	1.96	2.35E-03	3.27E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.96	3.13E-05	4.36E-08	See note 2
Ethylbenzene	9.50E-03	1.96	1.86E-02	2.59E-05	See note 1
Fluoranthene	3.00E-06	1.96	5.88E-06	8.17E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Fluorene	2.80E-06	1.96	5.48E-06	7.63E-09	See note 2
Formaldehyde	1.70E-02	1.96	3.33E-02	4.63E-05	See note 1
Hexane, n-	6.30E-03	1.96	1.23E-02	1.72E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.96	3.53E-06	4.90E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.96	4.70E-05	6.54E-08	See note 2
Naphthalene	3.00E-04	1.96	5.88E-04	8.17E-07	See note 1
PAH (unspeciated)	1.18E-05	1.96	2.31E-05	3.21E-08	See note 3
Phenanthrene	1.70E-05	1.96	3.33E-05	4.63E-08	See note 2
Pyrene	5.00E-06	1.96	9.79E-06	1.36E-08	See note 2
Toluene	3.66E-02	1.96	7.17E-02	9.97E-05	See note 1
Xylenes	2.72E-02	1.96	5.33E-02	7.41E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.
2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.
3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Aluminum Box Oven and Afterburner (A/N 430516), DN 70004, EPN 60004

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the aluminum box oven and afterburner, 1.01 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the aluminum box oven and afterburner, 1.441 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Acenaphthylene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Acetaldehyde	4.30E-03	1.01	4.33E-03	6.03E-06	See note 1
Acrolein	2.70E-03	1.01	2.72E-03	3.78E-06	See note 1
Ammonia	3.20	1.01	3.23	4.49E-03	See note 1
Anthracene	2.40E-06	1.01	2.42E-06	3.36E-09	See note 2
Benz(a)anthracene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Benzene	8.00E-03	1.01	8.06E-03	1.12E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.01	1.21E-06	1.68E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.01	1.21E-06	1.68E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Carbon monoxide	35.00	1.01	35.28	4.91E-02	See note 1
Chrysene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.01	1.21E-06	1.68E-09	See note 2
Dichlorobenzene	1.20E-03	1.01	1.21E-03	1.68E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.01	1.61E-05	2.24E-08	See note 2
Ethylbenzene	9.50E-03	1.01	9.58E-03	1.33E-05	See note 1
Fluoranthene	3.00E-06	1.01	3.02E-06	4.21E-09	See note 2
Fluorene	2.80E-06	1.01	2.82E-06	3.92E-09	See note 2



Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.01	1.71E-02	2.38E-05	See note 1
Hexane, n-	6.30E-03	1.01	6.35E-03	8.83E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.01	1.81E-06	2.52E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.01	2.42E-05	3.36E-08	See note 2
Naphthalene	3.00E-04	1.01	3.02E-04	4.21E-07	See note 1
PAH (unspeciated)	1.18E-05	1.01	1.19E-05	1.65E-08	See note 3
Phenanthrene	1.70E-05	1.01	1.71E-05	2.38E-08	See note 2
Pyrene	5.00E-06	1.01	5.04E-06	7.01E-09	See note 2
Toluene	3.66E-02	1.01	3.69E-02	5.13E-05	See note 1
Xylenes	2.72E-02	1.01	2.74E-02	3.81E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Steel Wax Burnout Oven 4 and Afterburner (A/N 430518), DN 70005, EPN 60005

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the steel wax burnout oven 4 and afterburner, 1.19 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the steel wax burnout oven 4 and afterburner, 1.707 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Acenaphthylene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Acetaldehyde	4.30E-03	1.19	5.13E-03	7.14E-06	See note 1
Acrolein	2.70E-03	1.19	3.22E-03	4.48E-06	See note 1
Ammonia	3.20	1.19	3.82	5.31E-03	See note 1
Anthracene	2.40E-06	1.19	2.87E-06	3.99E-09	See note 2
Benz(a)anthracene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Benzene	8.00E-03	1.19	9.55E-03	1.33E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Carbon monoxide	35.00	1.19	41.79	5.81E-02	See note 1
Chrysene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Dichlorobenzene	1.20E-03	1.19	1.43E-03	1.99E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.19	1.91E-05	2.66E-08	See note 2
Ethylbenzene	9.50E-03	1.19	1.13E-02	1.58E-05	See note 1
Fluoranthene	3.00E-06	1.19	3.58E-06	4.98E-09	See note 2
Fluorene	2.80E-06	1.19	3.34E-06	4.65E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.19	2.03E-02	2.82E-05	See note 1
Hexane, n-	6.30E-03	1.19	7.52E-03	1.05E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.19	2.87E-05	3.99E-08	See note 2
Naphthalene	3.00E-04	1.19	3.58E-04	4.98E-07	See note 1
PAH (unspeciated)	1.18E-05	1.19	1.41E-05	1.96E-08	See note 3
Phenanthrene	1.70E-05	1.19	2.03E-05	2.82E-08	See note 2
Pyrene	5.00E-06	1.19	5.97E-06	8.30E-09	See note 2
Toluene	3.66E-02	1.19	4.37E-02	6.08E-05	See note 1
Xylenes	2.72E-02	1.19	3.25E-02	4.52E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Steel Wax Burnout Oven 3 and Afterburner (A/N 430519), DN 70006, EPN 60006

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the steel wax burnout oven 3 and afterburner, 1.19 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the steel wax burnout oven 3 and afterburner, 1.707 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Acenaphthylene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Acetaldehyde	4.30E-03	1.19	5.13E-03	7.14E-06	See note 1
Acrolein	2.70E-03	1.19	3.22E-03	4.48E-06	See note 1
Ammonia	3.20	1.19	3.82	5.31E-03	See note 1
Anthracene	2.40E-06	1.19	2.87E-06	3.99E-09	See note 2
Benz(a)anthracene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Benzene	8.00E-03	1.19	9.55E-03	1.33E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Carbon monoxide	35.00	1.19	41.79	5.81E-02	See note 1
Chrysene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.19	1.43E-06	1.99E-09	See note 2
Dichlorobenzene	1.20E-03	1.19	1.43E-03	1.99E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.19	1.91E-05	2.66E-08	See note 2
Ethylbenzene	9.50E-03	1.19	1.13E-02	1.58E-05	See note 1
Fluoranthene	3.00E-06	1.19	3.58E-06	4.98E-09	See note 2
Fluorene	2.80E-06	1.19	3.34E-06	4.65E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.19	2.03E-02	2.82E-05	See note 1
Hexane, n-	6.30E-03	1.19	7.52E-03	1.05E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.19	2.15E-06	2.99E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.19	2.87E-05	3.99E-08	See note 2
Naphthalene	3.00E-04	1.19	3.58E-04	4.98E-07	See note 1
PAH (unspeciated)	1.18E-05	1.19	1.41E-05	1.96E-08	See note 3
Phenanthrene	1.70E-05	1.19	2.03E-05	2.82E-08	See note 2
Pyrene	5.00E-06	1.19	5.97E-06	8.30E-09	See note 2
Toluene	3.66E-02	1.19	4.37E-02	6.08E-05	See note 1
Xylenes	2.72E-02	1.19	3.25E-02	4.52E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Flash Fire Oven 5 and Afterburner (A/N 430520), DN 70007, EPN 90001

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the flash fire oven 5 and afterburner, 1.55 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the flash fire oven 5 and afterburner, 2.215 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Acenaphthylene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Acetaldehyde	4.30E-03	1.55	6.66E-03	9.27E-06	See note 1
Acrolein	2.70E-03	1.55	4.18E-03	5.82E-06	See note 1
Ammonia	3.20	1.55	4.96	6.89E-03	See note 1
Anthracene	2.40E-06	1.55	3.72E-06	5.17E-09	See note 2
Benz(a)anthracene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Benzene	8.00E-03	1.55	1.24E-02	1.72E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.55	1.86E-06	2.59E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.55	1.86E-06	2.59E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Carbon monoxide	35.00	1.55	54.23	7.54E-02	See note 1
Chrysene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.55	1.86E-06	2.59E-09	See note 2
Dichlorobenzene	1.20E-03	1.55	1.86E-03	2.59E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.55	2.48E-05	3.45E-08	See note 2
Ethylbenzene	9.50E-03	1.55	1.47E-02	2.05E-05	See note 1
Fluoranthene	3.00E-06	1.55	4.65E-06	6.46E-09	See note 2
Fluorene	2.80E-06	1.55	4.34E-06	6.03E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.55	2.63E-02	3.66E-05	See note 1
Hexane, n-	6.30E-03	1.55	9.76E-03	1.36E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.55	2.79E-06	3.88E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.55	3.72E-05	5.17E-08	See note 2
Naphthalene	3.00E-04	1.55	4.65E-04	6.46E-07	See note 1
PAH (unspeciated)	1.18E-05	1.55	1.83E-05	2.54E-08	See note 3
Phenanthrene	1.70E-05	1.55	2.63E-05	3.66E-08	See note 2
Pyrene	5.00E-06	1.55	7.75E-06	1.08E-08	See note 2
Toluene	3.66E-02	1.55	5.67E-02	7.89E-05	See note 1
Xylenes	2.72E-02	1.55	4.21E-02	5.86E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

### Aluminum Pusher Furnace 3 (A/N 430533), DN 70008, EPN 60007

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the aluminum pusher furnace 3, 1.79 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the aluminum pusher furnace 3, 2.552 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Acenaphthylene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Acetaldehyde	4.30E-03	1.79	7.68E-03	1.07E-05	See note 1
Acrolein	2.70E-03	1.79	4.82E-03	6.70E-06	See note 1
Ammonia	3.20	1.79	5.71	7.94E-03	See note 1
Anthracene	2.40E-06	1.79	4.28E-06	5.96E-09	See note 2
Benz(a)anthracene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Benzene	8.00E-03	1.79	1.43E-02	1.99E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.79	2.14E-06	2.98E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.79	2.14E-06	2.98E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Carbon monoxide	35.00	1.79	62.48	8.69E-02	See note 1
Chrysene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.79	2.14E-06	2.98E-09	See note 2
Dichlorobenzene	1.20E-03	1.79	2.14E-03	2.98E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.79	2.86E-05	3.97E-08	See note 2
Ethylbenzene	9.50E-03	1.79	1.70E-02	2.36E-05	See note 1
Fluoranthene	3.00E-06	1.79	5.36E-06	7.45E-09	See note 2
Fluorene	2.80E-06	1.79	5.00E-06	6.95E-09	See note 2



Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.79	3.03E-02	4.22E-05	See note 1
Hexane, n-	6.30E-03	1.79	1.12E-02	1.56E-05	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.79	3.21E-06	4.47E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.79	4.28E-05	5.96E-08	See note 2
Naphthalene	3.00E-04	1.79	5.36E-04	7.45E-07	See note 1
PAH (unspeciated)	1.18E-05	1.79	2.11E-05	2.93E-08	See note 3
Phenanthrene	1.70E-05	1.79	3.03E-05	4.22E-08	See note 2
Pyrene	5.00E-06	1.79	8.93E-06	1.24E-08	See note 2
Toluene	3.66E-02	1.79	6.53E-02	9.09E-05	See note 1
Xylenes	2.72E-02	1.79	4.86E-02	6.75E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Steel Wax Burnout Oven 2 (A/N 553329), DN 70009, EPN 60008

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the steel wax burnout oven 2, 1.05 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the steel wax burnout oven 2, 1.50 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acenaphthylene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acetaldehyde	4.30E-03	1.05	4.51E-03	6.27E-06	See note 1
Acrolein	2.70E-03	1.05	2.83E-03	3.94E-06	See note 1
Ammonia	3.20	1.05	3.36	4.67E-03	See note 1
Anthracene	2.40E-06	1.05	2.52E-06	3.50E-09	See note 2
Benz(a)anthracene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzene	8.00E-03	1.05	8.39E-03	1.17E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Carbon monoxide	35.00	1.05	36.73	5.11E-02	See note 1
Chrysene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Dichlorobenzene	1.20E-03	1.05	1.26E-03	1.75E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.05	1.68E-05	2.33E-08	See note 2
Ethylbenzene	9.50E-03	1.05	9.97E-03	1.39E-05	See note 1
Fluoranthene	3.00E-06	1.05	3.15E-06	4.38E-09	See note 2
Fluorene	2.80E-06	1.05	2.94E-06	4.09E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.05	1.78E-02	2.48E-05	See note 1
Hexane, n-	6.30E-03	1.05	6.61E-03	9.19E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.05	2.52E-05	3.50E-08	See note 2
Naphthalene	3.00E-04	1.05	3.15E-04	4.38E-07	See note 1
PAH (unspeciated)	1.18E-05	1.05	1.24E-05	1.72E-08	See note 3
Phenanthrene	1.70E-05	1.05	1.78E-05	2.48E-08	See note 2
Pyrene	5.00E-06	1.05	5.25E-06	7.30E-09	See note 2
Toluene	3.66E-02	1.05	3.84E-02	5.34E-05	See note 1
Xylenes	2.72E-02	1.05	2.85E-02	3.97E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

### Thermtronix Aluminum Melting 1, DN 70010, EPN 60009

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the thermtronix aluminum melting 1, 1.05 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the thermtronix aluminum melting 1, 1.50 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acenaphthylene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acetaldehyde	4.30E-03	1.05	4.51E-03	6.27E-06	See note 1
Acrolein	2.70E-03	1.05	2.83E-03	3.94E-06	See note 1
Ammonia	3.20	1.05	3.36	4.67E-03	See note 1
Anthracene	2.40E-06	1.05	2.52E-06	3.50E-09	See note 2
Benz(a)anthracene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzene	8.00E-03	1.05	8.39E-03	1.17E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Carbon monoxide	35.00	1.05	36.73	5.11E-02	See note 1
Chrysene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Dichlorobenzene	1.20E-03	1.05	1.26E-03	1.75E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.05	1.68E-05	2.33E-08	See note 2
Ethylbenzene	9.50E-03	1.05	9.97E-03	1.39E-05	See note 1
Fluoranthene	3.00E-06	1.05	3.15E-06	4.38E-09	See note 2
Fluorene	2.80E-06	1.05	2.94E-06	4.09E-09	See note 2

Listed Substance	F, lbs/mmcsf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.05	1.78E-02	2.48E-05	See note 1
Hexane, n-	6.30E-03	1.05	6.61E-03	9.19E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.05	2.52E-05	3.50E-08	See note 2
Naphthalene	3.00E-04	1.05	3.15E-04	4.38E-07	See note 1
PAH (unspeciated)	1.18E-05	1.05	1.24E-05	1.72E-08	See note 3
Phenanthrene	1.70E-05	1.05	1.78E-05	2.48E-08	See note 2
Pyrene	5.00E-06	1.05	5.25E-06	7.30E-09	See note 2
Toluene	3.66E-02	1.05	3.84E-02	5.34E-05	See note 1
Xylenes	2.72E-02	1.05	2.85E-02	3.97E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Thermtronix Aluminum Melting 2, DN 70011, EPN 60010

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the thermtronix aluminum melting 2, 1.05 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = maximum heat rating of the thermtronix aluminum melting 2, 1.50 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acenaphthylene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acetaldehyde	4.30E-03	1.05	4.51E-03	6.27E-06	See note 1
Acrolein	2.70E-03	1.05	2.83E-03	3.94E-06	See note 1
Ammonia	3.20	1.05	3.36	4.67E-03	See note 1
Anthracene	2.40E-06	1.05	2.52E-06	3.50E-09	See note 2
Benz(a)anthracene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzene	8.00E-03	1.05	8.39E-03	1.17E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Carbon monoxide	35.00	1.05	36.73	5.11E-02	See note 1
Chrysene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Dichlorobenzene	1.20E-03	1.05	1.26E-03	1.75E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.05	1.68E-05	2.33E-08	See note 2
Ethylbenzene	9.50E-03	1.05	9.97E-03	1.39E-05	See note 1
Fluoranthene	3.00E-06	1.05	3.15E-06	4.38E-09	See note 2
Fluorene	2.80E-06	1.05	2.94E-06	4.09E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.05	1.78E-02	2.48E-05	See note 1
Hexane, n-	6.30E-03	1.05	6.61E-03	9.19E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.05	2.52E-05	3.50E-08	See note 2
Naphthalene	3.00E-04	1.05	3.15E-04	4.38E-07	See note 1
PAH (unspeciated)	1.18E-05	1.05	1.24E-05	1.72E-08	See note 3
Phenanthrene	1.70E-05	1.05	1.78E-05	2.48E-08	See note 2
Pyrene	5.00E-06	1.05	5.25E-06	7.30E-09	See note 2
Toluene	3.66E-02	1.05	3.84E-02	5.34E-05	See note 1
Xylenes	2.72E-02	1.05	2.85E-02	3.97E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Heat Treat Oven, DN 70012, EPN 90002

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the heat treat oven, 1.05 mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = estimated maximum heat rating of the heat treat oven, 1.50 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmcf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acenaphthylene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acetaldehyde	4.30E-03	1.05	4.51E-03	6.27E-06	See note 1
Acrolein	2.70E-03	1.05	2.83E-03	3.94E-06	See note 1
Ammonia	3.20	1.05	3.36	4.67E-03	See note 1
Anthracene	2.40E-06	1.05	2.52E-06	3.50E-09	See note 2
Benz(a)anthracene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzene	8.00E-03	1.05	8.39E-03	1.17E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Carbon monoxide	35.00	1.05	36.73	5.11E-02	See note 1
Chrysene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Dichlorobenzene	1.20E-03	1.05	1.26E-03	1.75E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.05	1.68E-05	2.33E-08	See note 2
Ethylbenzene	9.50E-03	1.05	9.97E-03	1.39E-05	See note 1
Fluoranthene	3.00E-06	1.05	3.15E-06	4.38E-09	See note 2
Fluorene	2.80E-06	1.05	2.94E-06	4.09E-09	See note 2



Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.05	1.78E-02	2.48E-05	See note 1
Hexane, n-	6.30E-03	1.05	6.61E-03	9.19E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.05	2.52E-05	3.50E-08	See note 2
Naphthalene	3.00E-04	1.05	3.15E-04	4.38E-07	See note 1
PAH (unspeciated)	1.18E-05	1.05	1.24E-05	1.72E-08	See note 3
Phenanthrene	1.70E-05	1.05	1.78E-05	2.48E-08	See note 2
Pyrene	5.00E-06	1.05	5.25E-06	7.30E-09	See note 2
Toluene	3.66E-02	1.05	3.84E-02	5.34E-05	See note 1
Xylenes	2.72E-02	1.05	2.85E-02	3.97E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Hot Straight Oven, DN 70013, EPN 60011

Emissions of listed substances due to combustion of natural gas are calculated using AB 2588 emission factors for natural gas combustion provided by South Coast Air Quality Management District (SCAQMD) and USEPA AP-42 Table 1.4-3. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, 1.05 lbs/mmcf (SCAQMD and USEPA AP-42).

Q = quantity of natural gas combusted in the hot straight oven, mmcf/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

q = estimated maximum heat rating of the hot straight oven, 1.50 mmBTU/hr.

k = conversion factor, 1,028 mmBTU/mmcf.

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Acenaphthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acenaphthylene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Acetaldehyde	4.30E-03	1.05	4.51E-03	6.27E-06	See note 1
Acrolein	2.70E-03	1.05	2.83E-03	3.94E-06	See note 1
Ammonia	3.20	1.05	3.36	4.67E-03	See note 1
Anthracene	2.40E-06	1.05	2.52E-06	3.50E-09	See note 2
Benz(a)anthracene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzene	8.00E-03	1.05	8.39E-03	1.17E-05	See note 1
Benzo(a)pyrene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(b)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Benzo(g,h,i)perylene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Benzo(k)fluoranthene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Carbon monoxide	35.00	1.05	36.73	5.11E-02	See note 1
Chrysene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Dibenz(a,h)anthracene	1.20E-06	1.05	1.26E-06	1.75E-09	See note 2
Dichlorobenzene	1.20E-03	1.05	1.26E-03	1.75E-06	See note 2
Dimethylbenz(a)anthracene, 7,12-	1.60E-05	1.05	1.68E-05	2.33E-08	See note 2
Ethylbenzene	9.50E-03	1.05	9.97E-03	1.39E-05	See note 1
Fluoranthene	3.00E-06	1.05	3.15E-06	4.38E-09	See note 2
Fluorene	2.80E-06	1.05	2.94E-06	4.09E-09	See note 2

Listed Substance	F, lbs/mmscf	Q, mmcf/yr	Y, lbs/yr	H, lbs/hr	Source
Formaldehyde	1.70E-02	1.05	1.78E-02	2.48E-05	See note 1
Hexane, n-	6.30E-03	1.05	6.61E-03	9.19E-06	See note 1
Indeno(1,2,3-cd)pyrene	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylcholanthrene, 3-	1.80E-06	1.05	1.89E-06	2.63E-09	See note 2
Methylnaphthalene, 2-	2.40E-05	1.05	2.52E-05	3.50E-08	See note 2
Naphthalene	3.00E-04	1.05	3.15E-04	4.38E-07	See note 1
PAH (unspeciated)	1.18E-05	1.05	1.24E-05	1.72E-08	See note 3
Phenanthrene	1.70E-05	1.05	1.78E-05	2.48E-08	See note 2
Pyrene	5.00E-06	1.05	5.25E-06	7.30E-09	See note 2
Toluene	3.66E-02	1.05	3.84E-02	5.34E-05	See note 1
Xylenes	2.72E-02	1.05	2.85E-02	3.97E-05	See note 1

1. SCAQMD Web Based Tool and Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory, December 2016.

2. USEPA AP-42, Fifth Edition, Chapter 1.4 Natural Gas Combustion, Table 1.4-3, October 1998.

3. Emission factors for PAH were adjusted by excluding the emission factor of speciated organic compounds (see **Appendix D**).

## Propane Handheld Torch, DN 70014, EPN 60012

Emissions of listed substances due to combustion of propane are calculated using AB 2588 emission factors for propane combustion provided by South Coast Air Quality Management District (SCAQMD) Supplemental Reporting Procedures for AB2588 Facilities Reporting their Quadrennial Air Toxic Emissions Report Program December 2016. The quantity of listed substances from the combustion of natural gas is calculated using the following equation:

Annual Emissions

$$Y = FQ$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/mmcf (SCAQMD Table B-1).

Q = quantity of propane combusted during the 2018 calendar year, 9.19E-03 Mgal/yr.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substances, lbs/hr.

h = operating hours of the propane handheld torch, 2,808 hrs/yr.

Listed Substance	F, lbs/Mgal	Q, Mgal/yr	Y, lbs/yr	H, lbs/hr
Acetaldehyde	3.80E-04	9.19E-03	3.49E-06	1.24E-09
Acrolein	2.40E-04	9.19E-03	2.21E-06	7.85E-10
Ammonia	0.30	9.19E-03	2.76E-03	9.82E-07
Benzene	7.10E-04	9.19E-03	6.52E-06	2.32E-09
Carbon monoxide	3.20	9.19E-03	2.94E-02	1.05E-05
Ethylbenzene	8.40E-04	9.19E-03	7.72E-06	2.75E-09
Formaldehyde	1.51E-03	9.19E-03	1.39E-05	4.94E-09
Hexane, n-	5.60E-04	9.19E-03	5.15E-06	1.83E-09
Naphthalene	3.00E-05	9.19E-03	2.76E-07	9.82E-11
PAH (unspeciated)	1.00E-05	9.19E-03	9.19E-08	3.27E-11
Toluene	3.25E-03	9.19E-03	2.99E-05	1.06E-08
Xylenes	2.41E-03	9.19E-03	2.21E-05	7.89E-09



**Scrubber (A/N 530525), DN 70015, EPN 90003**

The scrubber is associated with the aluminum parts bright drip line; therefore, emissions from the scrubber are reported as zero.

## Aluminum Parts Bright Drip Line (A/N 430526), DN 70016, EPN 90004

### Volatile Listed Substances from Aluminum Parts Bright Drip Line

Emissions of volatile listed substances in the use of raw materials are calculated using the following equation:

Annual Emissions

$$Y = QP$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

Q = quantity of raw materials used during the reporting period, lbs/yr.

P = weight proportion of volatile listed substances in the material, lbs/lbs.

Maximum Hourly Emissions

$$H = Fqk^{-1}$$

where,

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of the aluminum parts bright drip line, 8,760 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/yr
Ammonia	DW 62M	100	0.18	17.91	2.04E-03

### Evaporative Emissions from Open Process Tanks

Evaporative emissions from open process tanks are calculated using the following equation:

$$Y = Rh$$

where,

Y = emissions from the open process tank.

R = emissions rate for particulate matter, lbs/hr (see Emissions from Open Process Tank).

h = operating hours of the tank, 8,760 hrs/yr.

Listed Substance	Material	R, lbs/hr	h, hrs/yr	Y, lbs/yr	H, lbs/yr
Sulfuric acid	DW 61	3.27E-20	8,760	2.86E-16	3.27E-20
Nitric acid	DW 61	3.51E-03	8,760	30.70	3.51E-03
Phosphoric acid	DW 61	2.98E-04	8,760	2.61	2.98E-04

### **Nitric Acid from Open Process Tank**

Emissions of nitric acid are calculated using SCAQMD emission factors; however, emissions of nitric acid are not expected to occur. Based on the vapor pressure of nitric acid at the temperature that the open process tank is operated, the absence of mechanisms to promote atmospheric emissions (e.g. sparging), and because nitric acid is expected to dissociate when in solution and be converted to oxides of nitrogen, it is unlikely that nitric acid would be emitted.

### **Non-Volatile Listed Substances**

Emissions of sodium hydroxide are not expected; therefore, emissions of sodium hydroxide are reported as zero.



**Baghouse (A/N 430534), DN 70017, EPN 60013**

The baghouse is associated with the abrasive blasting cabinet; therefore, emissions from the baghouse are reported as zero.



### Abrasive Blasting Cabinet (A/N 430535), DN 70018, EPN 90005

As a result of the operation of the abrasive blasting cabinet, listed substances in the form of particulate matter may be emitted into the atmosphere. Emissions will be estimated using the emission factor provided by the SCAQMD document "AER Reporting Tool Help and Support Manual: Abrasive Blasting Operations." Emissions will be calculated using the following equation:

Annual Emissions

$$Y = QFPk$$

where,

Y = annual emissions of aluminum oxide, lbs/yr.

Q = quantity of abrasive blasting material used, 16,050 lbs/yr.

F = emission factor for abrasive blasting of unspecified material, controlled with a baghouse, 0.20 lbs/ton (SCAQMD, AER Reporting Tool Help and Support Manual: Abrasive Blasting Operations).

P = weight proportion of aluminum oxide in the material, 0.90 lbs/lbs.

k = conversion factor, 5.00E-04 tons/lb.

$$Y = (16,050 \text{ lbs/yr})(0.20 \text{ lbs/ton})(0.90 \text{ lbs/lbs})(5.00\text{E-}04 \text{ tons/lb}) = 1.44 \text{ lbs/yr}$$

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the aluminum oxide, lbs/hr.

h = operating hours of the abrasive blasting cabinet, 2,808 hrs/yr.

$$H = (1.44 \text{ lbs/yr})(2,808 \text{ hrs/yr})^{-1} = 5.14\text{E-}04 \text{ lbs/yr}$$

## Steel Melting, Pouring and Casting 75 lb Crucible, DN 70019, EPN 60014

### Metal from Melting

Emissions of listed substances from steel melting using electric induction furnaces are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel melting using electric induction furnaces, 0.10 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, tons/lb	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	2,818	0.18	0.10	5.00E-04	0.02	7.90E-06
304 Steel	Chromium	157	0.20	0.10	5.00E-04	1.57E-03	5.02E-07
15-5 Steel	Chromium	27,280	0.16	0.10	5.00E-04	0.21	6.78E-05
<b>Total chromium</b>						<b>0.24</b>	<b>7.62E-05</b>
17-4 Steel	Copper	2,818	5.00E-02	0.10	5.00E-04	7.05E-03	2.26E-06
15-5 Steel	Copper	27,280	3.20E-02	0.10	5.00E-04	0.04	1.40E-05
<b>Total copper</b>						<b>0.05</b>	<b>1.62E-05</b>
17-4 Steel	Manganese	2,818	1.00E-02	0.10	5.00E-04	1.41E-03	4.52E-07
304 Steel	Manganese	157	2.00E-02	0.10	5.00E-04	1.57E-04	5.02E-08
15-5 Steel	Manganese	27,280	7.00E-03	0.10	5.00E-04	0.01	3.06E-06
<b>Total manganese</b>						<b>0.01</b>	<b>3.56E-06</b>
17-4 Steel	Nickel	2,818	5.00E-02	0.10	5.00E-04	7.05E-03	2.26E-06
304 Steel	Nickel	157	1.05E-01	0.10	5.00E-04	8.22E-04	2.63E-07
15-5 Steel	Nickel	27,280	5.50E-02	0.10	5.00E-04	0.08	2.40E-05
<b>Total nickel</b>						<b>0.08</b>	<b>2.66E-05</b>
17-4 Steel	Phosphorus	2,818	4.00E-04	0.10	5.00E-04	5.64E-05	1.81E-08
304 Steel	Phosphorus	157	4.50E-04	0.10	5.00E-04	3.52E-06	1.13E-09
15-5 Steel	Phosphorus	27,280	3.50E-04	0.10	5.00E-04	4.77E-04	1.53E-07
<b>Total phosphorus</b>						<b>5.37E-04</b>	<b>1.72E-07</b>

## Metal from Pouring and Casting

Emissions of listed substances from steel pouring and casting are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel pouring and casting operations, 2.80 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	2,818	0.18	2.80	5.00E-04	0.69	2.21E-04
304 Steel	Chromium	157	0.20	2.80	5.00E-04	0.04	1.40E-05
15-5 Steel	Chromium	27,280	0.16	2.80	5.00E-04	5.92	1.90E-03
<b>Total chromium</b>						<b>6.65</b>	<b>2.13E-03</b>
17-4 Steel	Copper	2,818	5.00E-02	2.80	5.00E-04	0.20	6.32E-05
15-5 Steel	Copper	27,280	3.20E-02	2.80	5.00E-04	1.22	3.92E-04
<b>Total copper</b>						<b>1.42</b>	<b>4.55E-04</b>
17-4 Steel	Manganese	2,818	1.00E-02	2.80	5.00E-04	0.04	1.26E-05
304 Steel	Manganese	157	2.00E-02	2.80	5.00E-04	4.38E-03	1.40E-06
15-5 Steel	Manganese	27,280	7.00E-03	2.80	5.00E-04	0.27	8.57E-05
<b>Total manganese</b>						<b>0.31</b>	<b>9.97E-05</b>
17-4 Steel	Nickel	2,818	5.00E-02	2.80	5.00E-04	0.20	6.32E-05
304 Steel	Nickel	157	1.05E-01	2.80	5.00E-04	0.02	7.38E-06
15-5 Steel	Nickel	27,280	5.50E-02	2.80	5.00E-04	2.10	6.73E-04
<b>Total nickel</b>						<b>2.32</b>	<b>7.44E-04</b>
17-4 Steel	Phosphorus	2,818	4.00E-04	2.80	5.00E-04	1.58E-03	5.06E-07
304 Steel	Phosphorus	157	4.50E-04	2.80	5.00E-04	9.86E-05	3.16E-08
15-5 Steel	Phosphorus	27,280	3.50E-04	2.80	5.00E-04	0.01	4.28E-06
<b>Total phosphorus</b>						<b>0.02</b>	<b>4.82E-06</b>

## Hexavalent Chromium

Emissions of hexavalent chromium from the furnace are calculated using California Air Toxics Emission Factors (CATEF). Emissions are calculated using the following equation.

Annual Emissions

$$Y = QEF$$

where,

Y = annual emissions of hexavalent chromium from steel, lbs/yr.

Q = quantity of steel alloy used during the reporting period, tons/yr.

EF = emission factor for hexavalent chromium, 7.72E-04 lbs/ton (CATEF).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, pouring, and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, tons/yr	EF, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Hexavalent chromium	1.41	7.72E-04	1.09E-03	3.49E-07
304 Steel	Hexavalent chromium	0.08	7.72E-04	6.04E-05	1.94E-08
15-5 Steel	Hexavalent chromium	13.64	7.72E-04	1.05E-02	3.38E-06
<b>Total hexavalent chromium</b>				1.17E-02	3.74E-06

## Steel Melting, Pouring and Casting 65 lb Crucible, DN 70020, EPN 60015

### Metal from Melting

Emissions of listed substances from steel melting using electric induction furnaces are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel melting using electric induction furnaces, 0.10 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, tons/lb	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	2,442	0.18	0.10	5.00E-04	0.02	6.85E-06
304 Steel	Chromium	136	0.20	0.10	5.00E-04	1.36E-03	4.35E-07
15-5 Steel	Chromium	23,643	0.16	0.10	5.00E-04	0.18	5.87E-05
<b>Total chromium</b>						<b>0.21</b>	<b>6.60E-05</b>
17-4 Steel	Copper	2,442	5.00E-02	0.10	5.00E-04	6.11E-03	1.96E-06
15-5 Steel	Copper	23,643	3.20E-02	0.10	5.00E-04	0.04	1.21E-05
<b>Total copper</b>						<b>0.04</b>	<b>1.41E-05</b>
17-4 Steel	Manganese	2,442	1.00E-02	0.10	5.00E-04	1.22E-03	3.91E-07
304 Steel	Manganese	136	2.00E-02	0.10	5.00E-04	1.36E-04	4.35E-08
15-5 Steel	Manganese	23,643	7.00E-03	0.10	5.00E-04	0.01	2.65E-06
<b>Total manganese</b>						<b>0.01</b>	<b>3.09E-06</b>
17-4 Steel	Nickel	2,442	5.00E-02	0.10	5.00E-04	6.11E-03	1.96E-06
304 Steel	Nickel	136	1.05E-01	0.10	5.00E-04	7.12E-04	2.28E-07
15-5 Steel	Nickel	23,643	5.50E-02	0.10	5.00E-04	0.07	2.08E-05
<b>Total nickel</b>						<b>0.07</b>	<b>2.30E-05</b>
17-4 Steel	Phosphorus	2,442	4.00E-04	0.10	5.00E-04	4.88E-05	1.57E-08
304 Steel	Phosphorus	136	4.50E-04	0.10	5.00E-04	3.05E-06	9.78E-10
15-5 Steel	Phosphorus	23,643	3.50E-04	0.10	5.00E-04	4.14E-04	1.33E-07
<b>Total phosphorus</b>						<b>4.66E-04</b>	<b>1.49E-07</b>

## Metal from Pouring and Casting

Emissions of listed substances from steel pouring and casting are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel pouring and casting operations, 2.80 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	2,442	0.18	2.80	5.00E-04	0.60	1.92E-04
304 Steel	Chromium	136	0.20	2.80	5.00E-04	0.04	1.22E-05
15-5 Steel	Chromium	23,643	0.16	2.80	5.00E-04	5.13	1.64E-03
<b>Total chromium</b>						<b>5.77</b>	<b>1.85E-03</b>
17-4 Steel	Copper	2,442	5.00E-02	2.80	5.00E-04	0.17	5.48E-05
15-5 Steel	Copper	23,643	3.20E-02	2.80	5.00E-04	1.06	3.39E-04
<b>Total copper</b>						<b>1.23</b>	<b>3.94E-04</b>
17-4 Steel	Manganese	2,442	1.00E-02	2.80	5.00E-04	0.03	1.10E-05
304 Steel	Manganese	136	2.00E-02	2.80	5.00E-04	3.80E-03	1.22E-06
15-5 Steel	Manganese	23,643	7.00E-03	2.80	5.00E-04	0.23	7.43E-05
<b>Total manganese</b>						<b>0.27</b>	<b>8.64E-05</b>
17-4 Steel	Nickel	2,442	5.00E-02	2.80	5.00E-04	0.17	5.48E-05
304 Steel	Nickel	136	1.05E-01	2.80	5.00E-04	0.02	6.39E-06
15-5 Steel	Nickel	23,643	5.50E-02	2.80	5.00E-04	1.82	5.83E-04
<b>Total nickel</b>						<b>2.01</b>	<b>6.45E-04</b>
17-4 Steel	Phosphorus	2,442	4.00E-04	2.80	5.00E-04	1.37E-03	4.38E-07
304 Steel	Phosphorus	136	4.50E-04	2.80	5.00E-04	8.55E-05	2.74E-08
15-5 Steel	Phosphorus	23,643	3.50E-04	2.80	5.00E-04	0.01	3.71E-06
<b>Total phosphorus</b>						<b>0.01</b>	<b>4.18E-06</b>

## Hexavalent Chromium

Emissions of hexavalent chromium from the furnace are calculated using California Air Toxics Emission Factors (CATEF). Emissions are calculated using the following equation.

Annual Emissions

$$Y = QEF$$

where,

Y = annual emissions of hexavalent chromium from steel, lbs/yr.

Q = quantity of steel alloy used during the reporting period, tons/yr.

EF = emission factor for hexavalent chromium, 7.72E-04 lbs/ton (CATEF).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, pouring, and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, tons/yr	P, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Hexavalent chromium	1.22	7.72E-04	9.43E-04	3.02E-07
304 Steel	Hexavalent chromium	0.07	7.72E-04	5.24E-05	1.68E-08
15-5 Steel	Hexavalent chromium	11.82	7.72E-04	9.13E-03	2.93E-06
<b>Total hexavalent chromium</b>				1.01E-02	3.24E-06

## Steel Melting, Pouring and Casting 300/650 lb Crucible, DN 70021, EPN 60016

### Metal from Melting

Emissions of listed substances from steel melting using electric induction furnaces are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel melting using electric induction furnaces, 0.10 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, tons/lb	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	35,696	0.18	0.10	5.00E-04	0.31	1.00E-04
304 Steel	Chromium	1,983	0.20	0.10	5.00E-04	1.98E-02	6.36E-06
15-5 Steel	Chromium	345,552	0.16	0.10	5.00E-04	2.68	8.58E-04
<b>Total chromium</b>						<b>3.01</b>	<b>9.65E-04</b>
17-4 Steel	Copper	35,696	5.00E-02	0.10	5.00E-04	8.92E-02	2.86E-05
15-5 Steel	Copper	345,552	3.20E-02	0.10	5.00E-04	0.55	1.77E-04
<b>Total copper</b>						<b>0.64</b>	<b>2.06E-04</b>
17-4 Steel	Manganese	35,696	1.00E-02	0.10	5.00E-04	1.78E-02	5.72E-06
304 Steel	Manganese	1,983	2.00E-02	0.10	5.00E-04	1.98E-03	6.36E-07
15-5 Steel	Manganese	345,552	7.00E-03	0.10	5.00E-04	0.12	3.88E-05
<b>Total manganese</b>						<b>0.14</b>	<b>4.51E-05</b>
17-4 Steel	Nickel	35,696	5.00E-02	0.10	5.00E-04	8.92E-02	2.86E-05
304 Steel	Nickel	1,983	1.05E-01	0.10	5.00E-04	1.04E-02	3.34E-06
15-5 Steel	Nickel	345,552	5.50E-02	0.10	5.00E-04	0.95	3.05E-04
<b>Total nickel</b>						<b>1.05</b>	<b>3.37E-04</b>
17-4 Steel	Phosphorus	35,696	4.00E-04	0.10	5.00E-04	7.14E-04	2.29E-07
304 Steel	Phosphorus	1,983	4.50E-04	0.10	5.00E-04	4.46E-05	1.43E-08
15-5 Steel	Phosphorus	345,552	3.50E-04	0.10	5.00E-04	6.05E-03	1.94E-06
<b>Total phosphorus</b>						<b>6.81E-03</b>	<b>2.18E-06</b>



## Metal from Pouring and Casting

Emissions of listed substances from steel pouring and casting are estimated using the emission factor provided by the USEPA AP-42 Section 12.13. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from steel melting, lbs/yr.

Q = quantity of steel alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in steel alloy, lbs/lbs.

F = emission factor for particulate matter resulting from steel pouring and casting operations, 2.80 lbs/ton (USEPA, AP-42 Table 12.13-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Chromium	35,696	0.18	2.80	5.00E-04	8.75	2.80E-03
304 Steel	Chromium	1,983	0.20	2.80	5.00E-04	0.56	1.78E-04
15-5 Steel	Chromium	345,552	0.16	2.80	5.00E-04	74.98	2.40E-02
<b>Total chromium</b>						<b>84.29</b>	<b>2.70E-02</b>
17-4 Steel	Copper	35,696	5.00E-02	2.80	5.00E-04	2.50	8.01E-04
15-5 Steel	Copper	345,552	3.20E-02	2.80	5.00E-04	15.48	4.96E-03
<b>Total copper</b>						<b>17.98</b>	<b>5.76E-03</b>
17-4 Steel	Manganese	35,696	1.00E-02	2.80	5.00E-04	0.50	1.60E-04
304 Steel	Manganese	1,983	2.00E-02	2.80	5.00E-04	5.55E-02	1.78E-05
15-5 Steel	Manganese	345,552	7.00E-03	2.80	5.00E-04	3.39	1.09E-03
<b>Total manganese</b>						<b>3.94</b>	<b>1.26E-03</b>
17-4 Steel	Nickel	35,696	5.00E-02	2.80	5.00E-04	2.50	8.01E-04
304 Steel	Nickel	1,983	1.05E-01	2.80	5.00E-04	0.29	9.34E-05
15-5 Steel	Nickel	345,552	5.50E-02	2.80	5.00E-04	26.61	8.53E-03
<b>Total nickel</b>						<b>29.40</b>	<b>9.42E-03</b>
17-4 Steel	Phosphorus	35,696	4.00E-04	2.80	5.00E-04	2.00E-02	6.41E-06
304 Steel	Phosphorus	1,983	4.50E-04	2.80	5.00E-04	1.25E-03	4.00E-07
15-5 Steel	Phosphorus	345,552	3.50E-04	2.80	5.00E-04	0.17	5.43E-05
<b>Total phosphorus</b>						<b>0.19</b>	<b>6.11E-05</b>

## Hexavalent Chromium

Emissions of hexavalent chromium from the furnace are calculated using California Air Toxics Emission Factors (CATEF). Emissions are calculated using the following equation.

Annual Emissions

$$Y = QEF$$

where,

Y = annual emissions of hexavalent chromium from steel, lbs/yr.

Q = quantity of steel alloy used during the reporting period, tons/yr.

EF = emission factor for hexavalent chromium, 7.72E-04 lbs/ton (CATEF).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of steel melting, pouring, and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, tons/yr	P, lbs/ton	Y, lbs/yr	H, lbs/hr
17-4 Steel	Hexavalent chromium	17.85	7.72E-04	1.38E-02	4.42E-06
304 Steel	Hexavalent chromium	0.99	7.72E-04	7.65E-04	2.45E-07
15-5 Steel	Hexavalent chromium	172.78	7.72E-04	0.13	4.28E-05
<b>Total hexavalent chromium</b>				0.15	4.74E-05

## Aluminum Melting, Pouring and Casting Thermtronix 1, DN 70022, EPN 60017

### Metal from Melting

Emissions of listed substances from aluminum melting using crucible furnaces are estimated using the emission factor provided by the USEPA AP-42 Section 12.8. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from aluminum melting, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in aluminum alloy, lbs/lbs.

F = emission factor for particulate matter resulting from aluminum alloy melting operations, 1.90 lbs/ton (USEPA, AP-42 Table 12.8-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of the aluminum pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A356 Alloy	Aluminum	24,034	0.93	1.90	5.00E-04	21.29	6.82E-03
B356 Alloy	Aluminum	30,538	0.93	1.90	5.00E-04	27.04	8.67E-03
C355 Alloy	Aluminum	1,260	0.94	1.90	5.00E-04	1.13	3.61E-04
A357 Alloy	Aluminum	53,919	0.93	1.90	5.00E-04	47.65	1.53E-02
E357 Alloy	Aluminum	6,911	0.86	1.90	5.00E-04	5.65	1.81E-03
F357 Alloy	Aluminum	1,310	0.86	1.90	5.00E-04	1.07	3.43E-04
356 Alloy	Aluminum	5,501	0.93	1.90	5.00E-04	4.88	1.56E-03
<b>Total aluminum</b>						<b>108.70</b>	<b>3.48E-02</b>
A357 Alloy	Beryllium	53,919	7.00E-04	1.90	5.00E-04	3.59E-02	1.15E-05
E357 Alloy	Beryllium	6,911	2.00E-05	1.90	5.00E-04	1.31E-04	4.21E-08
F357 Alloy	Beryllium	1,310	2.00E-05	1.90	5.00E-04	2.49E-05	7.98E-09
<b>Total beryllium</b>						<b>3.60E-02</b>	<b>1.15E-05</b>
E357 Alloy	Chromium	6,911	3.00E-03	1.90	5.00E-04	1.97E-02	6.31E-06
F357 Alloy	Chromium	1,310	3.00E-03	1.90	5.00E-04	3.73E-03	1.20E-06
<b>Total chromium</b>						<b>2.34E-02</b>	<b>7.51E-06</b>
A356 Alloy	Copper	24,034	2.00E-03	1.90	5.00E-04	4.57E-02	1.46E-05
B356 Alloy	Copper	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Copper	1,260	1.50E-02	1.90	5.00E-04	1.80E-02	5.75E-06
A357 Alloy	Copper	53,919	2.00E-03	1.90	5.00E-04	0.10	3.28E-05

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
E357 Alloy	Copper	6,911	5.00E-02	1.90	5.00E-04	0.33	1.05E-04
F357 Alloy	Copper	1,310	5.00E-02	1.90	5.00E-04	0.06	1.99E-05
356 Alloy	Copper	5,501	2.50E-03	1.90	5.00E-04	1.31E-02	4.19E-06
<b>Total copper</b>						<b>0.58</b>	<b>1.87E-04</b>
E357 Alloy	Lead	6,911	3.00E-04	1.90	5.00E-04	1.97E-03	6.31E-07
F357 Alloy	Lead	1,310	3.00E-04	1.90	5.00E-04	3.73E-04	1.20E-07
<b>Total lead</b>						<b>2.34E-03</b>	<b>7.51E-07</b>
A356 Alloy	Manganese	24,034	1.00E-03	1.90	5.00E-04	2.28E-02	7.32E-06
B356 Alloy	Manganese	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Manganese	1,260	1.00E-03	1.90	5.00E-04	1.20E-03	3.84E-07
A357 Alloy	Manganese	53,919	1.00E-03	1.90	5.00E-04	0.05	1.64E-05
E357 Alloy	Manganese	6,911	1.00E-02	1.90	5.00E-04	0.07	2.10E-05
F357 Alloy	Manganese	1,310	1.00E-02	1.90	5.00E-04	1.24E-02	3.99E-06
356 Alloy	Manganese	5,501	3.50E-03	1.90	5.00E-04	1.83E-02	5.86E-06
<b>Total manganese</b>						<b>0.19</b>	<b>5.97E-05</b>
E357 Alloy	Nickel	6,911	6.00E-04	1.90	5.00E-04	3.94E-03	1.26E-06
F357 Alloy	Nickel	1,310	6.00E-04	1.90	5.00E-04	7.47E-04	2.39E-07
<b>Total nickel</b>						<b>4.69E-03</b>	<b>1.50E-06</b>
A356 Alloy	Zinc	24,034	1.00E-03	1.90	5.00E-04	2.28E-02	7.32E-06
B356 Alloy	Zinc	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Zinc	1,260	1.00E-03	1.90	5.00E-04	1.20E-03	3.84E-07
A357 Alloy	Zinc	53,919	1.00E-03	1.90	5.00E-04	0.05	1.64E-05
E357 Alloy	Zinc	6,911	0.11	1.90	5.00E-04	0.70	2.23E-04
F357 Alloy	Zinc	1,310	0.11	1.90	5.00E-04	0.13	4.23E-05
356 Alloy	Zinc	5,501	3.50E-03	1.90	5.00E-04	1.83E-02	5.86E-06
<b>Total zinc</b>						<b>0.94</b>	<b>3.00E-04</b>

### Metal from Pouring and Casting

Emissions of listed substances from aluminum pouring and casting are estimated using the emission factor provided by the USEPA AP-42 Section 12.11. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from aluminum pouring and casting, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in aluminum alloy, lbs/lbs.

F = emission factor for particulate matter resulting from pouring and casting operations, 0.04 lbs/ton (USEPA, AP-42 Table 12.11-2).

k = conversion factor, 5.00E-04 tons/lb.

## Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of the aluminum pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A356 Alloy	Aluminum	24,034	0.93	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Aluminum	30,538	0.93	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Aluminum	1,260	0.94	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Aluminum	53,919	0.93	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Aluminum	6,911	0.86	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Aluminum	1,310	0.86	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Aluminum	5,501	0.93	0.04	5.00E-04	0.11	3.53E-05
<b>Total aluminum</b>						<b>2.47</b>	<b>7.91E-04</b>
A357 Alloy	Beryllium	53,919	7.00E-04	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Beryllium	6,911	2.00E-05	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Beryllium	1,310	2.00E-05	0.04	5.00E-04	0.03	8.40E-06
<b>Total beryllium</b>						<b>1.24</b>	<b>3.98E-04</b>
E357 Alloy	Chromium	6,911	3.00E-03	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Chromium	1,310	3.00E-03	0.04	5.00E-04	0.03	8.40E-06
<b>Total chromium</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Copper	24,034	2.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Copper	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Copper	1,260	1.50E-02	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Copper	53,919	2.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Copper	6,911	5.00E-02	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Copper	1,310	5.00E-02	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Copper	5,501	2.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total copper</b>						<b>2.47</b>	<b>7.91E-04</b>
E357 Alloy	Lead	6,911	3.00E-04	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Lead	1,310	3.00E-04	0.04	5.00E-04	0.03	8.40E-06
<b>Total lead</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Manganese	24,034	1.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Manganese	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Manganese	1,260	1.00E-03	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Manganese	53,919	1.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Manganese	6,911	1.00E-02	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Manganese	1,310	1.00E-02	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Manganese	5,501	3.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total manganese</b>						<b>2.47</b>	<b>7.91E-04</b>
E357 Alloy	Nickel	6,911	6.00E-04	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Nickel	1,310	6.00E-04	0.04	5.00E-04	0.03	8.40E-06
<b>Total nickel</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Zinc	24,034	1.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Zinc	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Zinc	1,260	1.00E-03	0.04	5.00E-04	0.03	8.08E-06

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A357 Alloy	Zinc	53,919	1.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Zinc	6,911	0.11	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Zinc	1,310	0.11	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Zinc	5,501	3.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total zinc</b>						<b>2.47</b>	<b>7.91E-04</b>

### Hexavalent Chromium

Emissions of hexavalent chromium from the furnace are calculated using California Air Toxics Emission Factors (CATEF). Emissions are calculated using the following equation.

Annual Emissions

$$Y = QEF$$

where,

Y = annual emissions of hexavalent chromium from aluminum, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, tons/yr.

EF = emission factor for hexavalent chromium, 5.28E-05 lbs/ton (CATEF).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of aluminum melting, pouring, and casting, 3,120 hrs/yr

Alloy	Listed Substance	Q, tons/yr	P, lbs/ton	Y, lbs/yr	H, lbs/hr
E357 Alloy	Hexavalent chromium	3.46	5.28E-05	1.82E-04	5.85E-08
F357 Alloy	Hexavalent chromium	0.66	5.28E-05	3.46E-05	1.11E-08
<b>Total hexavalent chromium</b>				<b>2.17E-04</b>	<b>6.96E-08</b>

## Aluminum Melting, Pouring and Casting Thermtronix 2, DN 70023, EPN 60018

### Metal from Melting

Emissions of listed substances from aluminum melting using crucible furnaces are estimated using the emission factor provided by the USEPA AP-42 Section 12.8. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from aluminum melting, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in aluminum alloy, lbs/lbs.

F = emission factor for particulate matter resulting from aluminum alloy melting operations, 1.90 lbs/ton (USEPA, AP-42 Table 12.8-2).

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of the aluminum pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A356 Alloy	Aluminum	24,034	0.93	1.90	5.00E-04	21.29	6.82E-03
B356 Alloy	Aluminum	30,538	0.93	1.90	5.00E-04	27.04	8.67E-03
C355 Alloy	Aluminum	1,260	0.94	1.90	5.00E-04	1.13	3.61E-04
A357 Alloy	Aluminum	53,919	0.93	1.90	5.00E-04	47.65	1.53E-02
E357 Alloy	Aluminum	6,911	0.86	1.90	5.00E-04	5.65	1.81E-03
F357 Alloy	Aluminum	1,310	0.86	1.90	5.00E-04	1.07	3.43E-04
356 Alloy	Aluminum	5,501	0.93	1.90	5.00E-04	4.88	1.56E-03
<b>Total aluminum</b>						<b>108.70</b>	<b>3.48E-02</b>
A357 Alloy	Beryllium	53,919	7.00E-04	1.90	5.00E-04	3.59E-02	1.15E-05
E357 Alloy	Beryllium	6,911	2.00E-05	1.90	5.00E-04	1.31E-04	4.21E-08
F357 Alloy	Beryllium	1,310	2.00E-05	1.90	5.00E-04	2.49E-05	7.98E-09
<b>Total beryllium</b>						<b>3.60E-02</b>	<b>1.15E-05</b>
E357 Alloy	Chromium	6,911	3.00E-03	1.90	5.00E-04	1.97E-02	6.31E-06
F357 Alloy	Chromium	1,310	3.00E-03	1.90	5.00E-04	3.73E-03	1.20E-06
<b>Total chromium</b>						<b>2.34E-02</b>	<b>7.51E-06</b>
A356 Alloy	Copper	24,034	2.00E-03	1.90	5.00E-04	4.57E-02	1.46E-05
B356 Alloy	Copper	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Copper	1,260	1.50E-02	1.90	5.00E-04	1.80E-02	5.75E-06
A357 Alloy	Copper	53,919	2.00E-03	1.90	5.00E-04	0.10	3.28E-05

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
E357 Alloy	Copper	6,911	5.00E-02	1.90	5.00E-04	0.33	1.05E-04
F357 Alloy	Copper	1,310	5.00E-02	1.90	5.00E-04	0.06	1.99E-05
356 Alloy	Copper	5,501	2.50E-03	1.90	5.00E-04	1.31E-02	4.19E-06
<b>Total copper</b>						<b>0.58</b>	<b>1.87E-04</b>
E357 Alloy	Lead	6,911	3.00E-04	1.90	5.00E-04	1.97E-03	6.31E-07
F357 Alloy	Lead	1,310	3.00E-04	1.90	5.00E-04	3.73E-04	1.20E-07
<b>Total lead</b>						<b>2.34E-03</b>	<b>7.51E-07</b>
A356 Alloy	Manganese	24,034	1.00E-03	1.90	5.00E-04	2.28E-02	7.32E-06
B356 Alloy	Manganese	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Manganese	1,260	1.00E-03	1.90	5.00E-04	1.20E-03	3.84E-07
A357 Alloy	Manganese	53,919	1.00E-03	1.90	5.00E-04	0.05	1.64E-05
E357 Alloy	Manganese	6,911	1.00E-02	1.90	5.00E-04	0.07	2.10E-05
F357 Alloy	Manganese	1,310	1.00E-02	1.90	5.00E-04	1.24E-02	3.99E-06
356 Alloy	Manganese	5,501	3.50E-03	1.90	5.00E-04	1.83E-02	5.86E-06
<b>Total manganese</b>						<b>0.19</b>	<b>5.97E-05</b>
E357 Alloy	Nickel	6,911	6.00E-04	1.90	5.00E-04	3.94E-03	1.26E-06
F357 Alloy	Nickel	1,310	6.00E-04	1.90	5.00E-04	7.47E-04	2.39E-07
<b>Total nickel</b>						<b>4.69E-03</b>	<b>1.50E-06</b>
A356 Alloy	Zinc	24,034	1.00E-03	1.90	5.00E-04	2.28E-02	7.32E-06
B356 Alloy	Zinc	30,538	5.00E-04	1.90	5.00E-04	1.45E-02	4.65E-06
C355 Alloy	Zinc	1,260	1.00E-03	1.90	5.00E-04	1.20E-03	3.84E-07
A357 Alloy	Zinc	53,919	1.00E-03	1.90	5.00E-04	0.05	1.64E-05
E357 Alloy	Zinc	6,911	0.11	1.90	5.00E-04	0.70	2.23E-04
F357 Alloy	Zinc	1,310	0.11	1.90	5.00E-04	0.13	4.23E-05
356 Alloy	Zinc	5,501	3.50E-03	1.90	5.00E-04	1.83E-02	5.86E-06
<b>Total zinc</b>						<b>0.94</b>	<b>3.00E-04</b>

### Metal from Pouring and Casting

Emissions of listed substances from aluminum pouring and casting are estimated using the emission factor provided by the USEPA AP-42 Section 12.11. Emissions are calculated using the following equation.

Annual Emissions

$$Y = QPFk$$

where,

Y = annual emissions of listed substances from aluminum pouring and casting, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, lbs/yr.

P = maximum weight proportion of listed substances present in aluminum alloy, lbs/lbs.

F = emission factor for particulate matter resulting from pouring and casting operations, 0.04 lbs/ton (USEPA, AP-42 Table 12.11-2).

k = conversion factor, 5.00E-04 tons/lb.



## Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of the aluminum pouring and casting, 3,120 hrs/yr.

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A356 Alloy	Aluminum	24,034	0.93	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Aluminum	30,538	0.93	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Aluminum	1,260	0.94	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Aluminum	53,919	0.93	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Aluminum	6,911	0.86	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Aluminum	1,310	0.86	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Aluminum	5,501	0.93	0.04	5.00E-04	0.11	3.53E-05
<b>Total aluminum</b>						<b>2.47</b>	<b>7.91E-04</b>
A357 Alloy	Beryllium	53,919	7.00E-04	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Beryllium	6,911	2.00E-05	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Beryllium	1,310	2.00E-05	0.04	5.00E-04	0.03	8.40E-06
<b>Total beryllium</b>						<b>1.24</b>	<b>3.98E-04</b>
E357 Alloy	Chromium	6,911	3.00E-03	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Chromium	1,310	3.00E-03	0.04	5.00E-04	0.03	8.40E-06
<b>Total chromium</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Copper	24,034	2.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Copper	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Copper	1,260	1.50E-02	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Copper	53,919	2.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Copper	6,911	5.00E-02	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Copper	1,310	5.00E-02	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Copper	5,501	2.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total copper</b>						<b>2.47</b>	<b>7.91E-04</b>
E357 Alloy	Lead	6,911	3.00E-04	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Lead	1,310	3.00E-04	0.04	5.00E-04	0.03	8.40E-06
<b>Total lead</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Manganese	24,034	1.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Manganese	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Manganese	1,260	1.00E-03	0.04	5.00E-04	0.03	8.08E-06
A357 Alloy	Manganese	53,919	1.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Manganese	6,911	1.00E-02	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Manganese	1,310	1.00E-02	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Manganese	5,501	3.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total manganese</b>						<b>2.47</b>	<b>7.91E-04</b>
E357 Alloy	Nickel	6,911	6.00E-04	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Nickel	1,310	6.00E-04	0.04	5.00E-04	0.03	8.40E-06
<b>Total nickel</b>						<b>0.16</b>	<b>5.27E-05</b>
A356 Alloy	Zinc	24,034	1.00E-03	0.04	5.00E-04	0.48	1.54E-04
B356 Alloy	Zinc	30,538	5.00E-04	0.04	5.00E-04	0.61	1.96E-04
C355 Alloy	Zinc	1,260	1.00E-03	0.04	5.00E-04	0.03	8.08E-06

Alloy	Listed Substance	Q, lbs/yr	P, lbs/lbs	F, lbs/ton	k, lbs/ton	Y, lbs/yr	H, lbs/hr
A357 Alloy	Zinc	53,919	1.00E-03	0.04	5.00E-04	1.08	3.46E-04
E357 Alloy	Zinc	6,911	0.11	0.04	5.00E-04	0.14	4.43E-05
F357 Alloy	Zinc	1,310	0.11	0.04	5.00E-04	0.03	8.40E-06
356 Alloy	Zinc	5,501	3.50E-03	0.04	5.00E-04	0.11	3.53E-05
<b>Total zinc</b>						<b>2.47</b>	<b>7.91E-04</b>

### Hexavalent Chromium

Emissions of hexavalent chromium from the furnace are calculated using California Air Toxics Emission Factors (CATEF). Emissions are calculated using the following equation.

Annual Emissions

$$Y = QEF$$

where,

Y = annual emissions of hexavalent chromium from aluminum, lbs/yr.

Q = quantity of aluminum alloy used during the reporting period, tons/yr.

EF = emission factor for hexavalent chromium, 5.28E-05 lbs/ton (CATEF).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = operating hours of aluminum melting, pouring, and casting, 3,120 hrs/yr

Alloy	Listed Substance	Q, tons/yr	P, lbs/ton	Y, lbs/yr	H, lbs/hr
E357 Alloy	Hexavalent chromium	3.46	5.28E-05	1.82E-04	5.85E-08
F357 Alloy	Hexavalent chromium	0.66	5.28E-05	3.46E-05	1.11E-08
<b>Total hexavalent chromium</b>				<b>2.17E-04</b>	<b>6.96E-08</b>

## Production, DN 70024, EPN 60019

Emissions of listed substances from activities in the production area are generated from use of binders, cleaners, lubricants, adhesives and solvents, non-destructive testing, and foam packing.

### Volatile Listed Substances from Binders

Emissions from binders are estimated using the following equation:

Annual Emissions

$$Y = QPF$$

where,

Y = annual emissions of listed substances from binders, lbs/yr.

Q = quantity of binders used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in binders, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/hr
Ammonia	Primcote Binding Agent	7,800	4.86E-05	0.38	1.22E-04
<b>Total ammonia</b>				<b>0.38</b>	<b>1.22E-04</b>
Formaldehyde	Primcote Binding Agent	7,800	1.00E-04	0.78	2.50E-04
<b>Total formaldehyde</b>				<b>0.78</b>	<b>2.50E-04</b>

### Volatile Listed Substances from Cleaners

Emissions from cleaners are estimated using the following equation:

Annual Emissions

$$Y = QPF$$

where,

Y = annual emissions of listed substances from cleaners, lbs/yr.

Q = quantity of cleaners used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in cleaners, lbs/lbs.

## Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/hr
Dioxane, 1,4-	PC-205 Cleaner	5,525	1.00E-05	5.53E-02	1.77E-05
<b>Total dioxane, 1,4-</b>				<b>5.53E-02</b>	<b>1.77E-05</b>
Ethylene oxide	PC-205 Cleaner	5,525	1.00E-05	5.53E-02	1.77E-05
<b>Total ethylene oxide</b>				<b>5.53E-02</b>	<b>1.77E-05</b>

## Volatile Listed Substances from Lubricants

Emissions from lubricants are estimated using the following equation:

## Annual Emissions

$$Y = QPF$$

where,

Y = annual emissions of listed substances from lubricants, lbs/yr.

Q = quantity of lubricants used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in lubricants, lbs/lbs.

## Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/hr
Ethyl acrylate	Air Tool Oil	7.59	1.00E-03	7.59E-03	2.43E-06
<b>Total ethyl acrylate</b>				<b>7.59E-03</b>	<b>2.43E-06</b>

### Volatile Listed Substances from Adhesives and Solvents

Emissions from adhesives and solvents are estimated using the following equation:

Annual Emissions

$$Y = QPF$$

where,

Y = annual emissions of listed substances from adhesives and solvents, lbs/yr.

Q = quantity of adhesives and solvents used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in adhesives and solvents, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/hr
Cyclohexane	3M(TM) High Strength Spray Adhesive 90	686.56	0.10	68.66	2.20E-02
<b>Total cyclohexane</b>				<b>68.66</b>	<b>2.20E-02</b>
Isopropyl alcohol	Isopropyl alcohol	831.46	0.99	823.14	2.64E-01
<b>Total isopropyl alcohol</b>				<b>823.14</b>	<b>2.64E-01</b>

### Volatile Listed Substances from Non-Destructive Testing and Mold Release

Emissions from non-destructive testing and mold release products are estimated using the following equation:

Annual Emissions

$$Y = QPF$$

where,

Y = annual emissions of listed substances from non-destructive testing and mold release products, lbs/yr.

Q = quantity of non-destructive testing and mold release products used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in non-destructive testing and mold release products, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	Y, lbs/yr	H, lbs/hr
Ammonia	Aufix T/M	9,456.10	2.30E-02	217.32	6.97E-02
<b>Total ammonia</b>				<b>217.32</b>	<b>6.97E-02</b>
Diethylene glycol	Audel T/M	7,852.94	3.00E-02	235.59	7.55E-02
<b>Total diethylene glycol</b>				<b>235.59</b>	<b>7.55E-02</b>
Isopropyl alcohol	D-70 Penetrant	392.65	0.38	147.24	4.72E-02
<b>Total isopropyl alcohol</b>				<b>147.24</b>	<b>4.72E-02</b>

### Non-Volatile Listed Substances from Non-Destructive Testing and Mold Release

Emissions from non-destructive testing and mold release products are estimated using the following equation:

Annual Emissions

$$Y = QPF(1-A)$$

where,

Y = annual emissions of listed substances from non-destructive testing and mold release products, lbs/yr.

Q = quantity of non-destructive testing and mold release products used during the reporting period, lbs/yr.

P = average weight proportion of listed substances present in non-destructive testing and mold release products, lbs/lbs.

A = transfer efficiency of HVLP spray guns on table leg surfaces, 0.65 lbs/lbs (SCAQMD).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	P, lbs/lbs	(1-A), lbs/lbs	Y, lbs/yr	H, lbs/hr
Crystalline silica	D-70 Penetrant	392.65	1.00E-05	0.35	1.37E-03	4.40E-07
<b>Total crystalline silica</b>					<b>1.37E-03</b>	<b>4.40E-07</b>
Lead	D-70 Penetrant	392.65	7.32E-08	0.35	1.01E-05	3.22E-09
<b>Total lead</b>					<b>1.01E-05</b>	<b>3.22E-09</b>

### Volatile Listed Substances from Foam Packing

Emissions of listed substances from the Instapack A G Flex used in the foam packaging are calculated using the following equation on pages 5-44 in MDI Emissions Reporting Guidelines for the Polyurethane Industry from the American Chemistry Council May 2012.

Annual Emissions

$$Y = (Q/D)(1/359 \text{ ft}^3/\text{lb-mole})(273.15\text{K}/T_{\text{proc}})(V_p/760 \text{ mmHg})(M_w)(K)$$

where,

Y = annual emissions of methylene diphenyl diisocyanate from the raw material, lbs/yr.

Q = quantity of Instapack A G Flex and Instapack B G Flex used, 3,530.00 lbs/yr.

D = estimated foam density, 1.5 lbs/ft<sup>3</sup>.

T<sub>proc</sub> = estimated process temperature, 298.15K.

V<sub>p</sub> = vapor pressure of MDI at process temperature, 1.023E-05 mm Hg.

M<sub>w</sub> = molecular weight of MDI, 250.26 lb/lb-mole.

K = MDI/PMDI adjustment factor, 0.65 (American Chemistry Council, May 2012)

$$Y = [(3,530.00 \text{ lbs/yr})/(1.50 \text{ lbs/ft}^3)](1/359 \text{ ft}^3/\text{lb-mole})[(273.15 \text{ K})/(298.15 \text{ K})][(1.023\text{E}-05 \text{ mmHg})/(760 \text{ mmHg})](250.26 \text{ lb/lb-mole})(0.65) = 1.31\text{E}-05 \text{ lbs/yr}$$

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = production hours of operation, hrs/yr.

$$H = (1.13\text{E}-05 \text{ lbs/yr})(3,120 \text{ hrs/yr})^{-1} = 4.21\text{E}-09 \text{ lbs/yr}$$

### Non-Volatile Listed Substances

Emissions of mineral oils, lead, and sodium hydroxide are not expected; therefore, emissions of mineral oils, lead, and sodium hydroxide are reported as zero.



## Welding, DN 70025, EPN 60020

### Metals from Welding

Emissions of listed substances from welding operations are estimated using the following equation.

Annual Emissions

$$Y = QEFP$$

where,

Y = annual emissions of listed substances from welding operations, lbs/yr.

Q = quantity of weld wire used during the reporting period, lbs/yr.

E = fume emission factor, 0.01 lbs fume/lb rod consumed (ARB - www.SDAPCD.org, 2009).

F = fume correction factor, 0.5464 lbs metal/lb fume consumed (NASSCO - www.SDAPCD.org, 2009).

P = weight proportion of the listed substance in weld rods, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = hours of operation, 2,808 hrs/yr.

Listed Substance	Material	E, lbs fume/lb		F, lbs metal/lb		P, lbs/lbs	Y, lbs/yr	H, lbs/hr
		Q, lbs/yr	rod	fume	fume			
Aluminum	356 Weld wire	55		0.01	0.5464	0.93	0.28	9.99E-05
Aluminum	357 weld wire	80		0.01	0.5464	0.93	0.41	1.45E-04
<b>Total aluminum</b>							<b>0.69</b>	<b>2.45E-04</b>
Chromium	15-5 Weld wire	188		0.01	0.5464	0.16	0.16	5.67E-05
Chromium	17-4 Weld wire	230		0.01	0.5464	0.18	0.22	7.83E-05
<b>Total chromium</b>							<b>0.38</b>	<b>1.35E-04</b>
Copper	15-5 Weld wire	188		0.01	0.5464	3.20E-02	3.29E-02	1.17E-05
Copper	356 Weld wire	55		0.01	0.5464	2.50E-03	7.51E-04	2.68E-07
Copper	357 weld wire	80		0.01	0.5464	5.00E-04	2.19E-04	7.78E-08
Copper	17-4 Weld wire	230		0.01	0.5464	5.00E-02	6.28E-02	2.24E-05
<b>Total copper</b>							<b>9.67E-02</b>	<b>3.44E-05</b>
Manganese	15-5 Weld wire	188		0.01	0.5464	7.00E-03	7.19E-03	2.56E-06
Manganese	356 Weld wire	55		0.01	0.5464	3.50E-03	1.05E-03	3.75E-07
Manganese	357 weld wire	80		0.01	0.5464	3.00E-04	1.31E-04	4.67E-08
Manganese	17-4 Weld wire	230		0.01	0.5464	1.00E-02	1.26E-02	4.48E-06
<b>Total manganese</b>							<b>2.09E-02</b>	<b>7.46E-06</b>
Nickel	15-5 Weld wire	188		0.01	0.5464	5.50E-02	5.65E-02	2.01E-05
Nickel	17-4 Weld wire	230		0.01	0.5464	5.00E-02	6.28E-02	2.24E-05
<b>Total nickel</b>							<b>0.12</b>	<b>4.25E-05</b>
Phosphorus	15-5 Weld wire	188		0.01	0.5464	3.50E-04	3.60E-04	1.28E-07

Listed Substance	Material	Q, lbs/yr	E, lbs fume/lb		F, lbs metal/lb		Y, lbs/yr	H, lbs/hr
			rod	fume	fume	P, lbs/lbs		
Phosphorus	17-4 Weld wire	230	0.01	0.5464	4.00E-04	5.03E-04	1.79E-07	
						<b>Total phosphorus</b>	<b>8.62E-04</b>	<b>3.07E-07</b>
Zinc	356 Weld wire	55	0.01	0.5464	3.50E-03	1.05E-03	3.75E-07	
Zinc	357 weld wire	80	0.01	0.5464	5.00E-04	2.19E-04	7.78E-08	
						<b>Total zinc</b>	<b>1.27E-03</b>	<b>4.52E-07</b>

### Hexavalent Chromium from Welding

Emissions of hexavalent chromium from welding operations are estimated using the following equation:

Annual Emissions

$$Y = QEFP1P2$$

where,

Y = annual emissions of hexavalent chromium from welding operations, lbs/yr.

Q = quantity of weld wire used during the reporting period, lbs/yr.

E = fume emission factor, 0.01 lbs fume/lb rod consumed (ARB - [www.SDAPCD.org](http://www.SDAPCD.org), 2009).

F = fume correction factor, 0.5464 lbs metal/lb fume consumed (NASSCO - [www.SDAPCD.org](http://www.SDAPCD.org), 2009).

P1 = weight proportion of the chromium in weld rods, lbs/lbs.

P2 = chromium to hexavalent chromium conversion factor in weld rod, 0.05 lbs/lbs (ARB – [www.SDAPCD.org](http://www.SDAPCD.org), 2009).

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the hexavalent chromium, lbs/hr.

h = hours of operation, 2,808 hrs/yr.

Listed Substance	Material	Q, lbs/yr	E, lbs fume/lb		F, lbs metal/lb		Y, lbs/yr	H, lbs/hr
			rod	fume	fume	P1, lbs/lbs		
Hexavalent chromium	15-5 Weld wire	188	0.01	0.5464	0.16	5.00E-02	7.96E-03	2.84E-06
Hexavalent chromium	17-4 Weld wire	230	0.01	0.5464	0.18	5.00E-02	1.10E-02	3.92E-06
						<b>Total hexavalent chromium</b>	<b>0.02</b>	<b>6.75E-06</b>

## Metal Grinding, DN 70026, EPN 90006

### Aluminum Metal Grinding

Emissions of listed substances from welding operations are estimated using the following equation.

Annual Emissions

$$Y = Q(1-C)PC^{-1}$$

where,

Y = annual emissions of listed substances from aluminum metal grinding, lbs/yr.

Q = quantity of aluminum metal grinding dust produced during the reporting period, lbs/yr.

C = control efficiency of dust collector, 0.99 lbs/yr (SCAQMD default).

P = weight proportion of listed substances in metal grinding dust, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = hours of operation, 3,120 hrs/yr.

Listed Substance	Q, lbs/yr	P, lbs/lbs	C, lbs/lbs	Y, lbs/yr	H, lbs/hr
Aluminum, see note 1	7,912	3.34E-05	0.99	2.67E-03	8.56E-07
<b>Total aluminum</b>				<b>2.67E-03</b>	<b>8.56E-07</b>
Beryllium, see note 2	7,912	8.51E-05	0.99	6.80E-03	2.18E-06
<b>Total beryllium</b>				<b>6.80E-03</b>	<b>2.18E-06</b>
Chromium, see note 2	7,912	1.76E-02	0.99	1.41	4.51E-04
<b>Total chromium</b>				<b>1.41</b>	<b>4.51E-04</b>
Cobalt, see note 2	7,912	4.07E-05	0.99	3.25E-03	1.04E-06
<b>Total cobalt</b>				<b>3.25E-03</b>	<b>1.04E-06</b>
Copper, see note 2	7,912	5.78E-03	0.99	0.46	1.48E-04
<b>Total copper</b>				<b>0.46</b>	<b>1.48E-04</b>
Manganese, see note 1	7,912	1.25E-07	0.99	9.96E-06	3.19E-09
<b>Total manganese</b>				<b>9.96E-06</b>	<b>3.19E-09</b>
Nickel, see note 2	7,912	5.29E-03	0.99	0.42	1.36E-04
<b>Total nickel</b>				<b>0.42</b>	<b>1.36E-04</b>
Vanadium, see note 2	7,912	4.44E-05	0.99	3.55E-03	1.14E-06
<b>Total vanadium</b>				<b>3.55E-03</b>	<b>1.14E-06</b>
Zinc, see note 2	7,912	8.52E-05	0.99	6.81E-03	2.18E-06
<b>Total zinc</b>				<b>6.81E-03</b>	<b>2.18E-06</b>

1. Calculated weight proportion of listed substance in metal grinding dust.

2. Envirochem analysis, 4 June 2020.

## Steel Metal Grinding

Emissions of listed substances from welding operations are estimated using the following equation.

Annual Emissions

$$Y = Q(1-C)PC^{-1}$$

where,

Y = annual emissions of listed substances from steel metal grinding, lbs/yr.

Q = quantity of steel metal grinding dust produced during the reporting period, lbs/yr.

C = control efficiency of dust collector, 0.99 lbs/yr (SCAQMD default).

P = weight proportion of listed substances in metal grinding dust, lbs/lbs.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = hours of operation, 3,120 hrs/yr.

Listed Substance	Q, lbs/yr	P, lbs/lbs	C, lbs/lbs	Y, lbs/yr	H, lbs/hr
Chromium, see note 2	14,088	0.12	0.99	16.51	5.29E-03
<b>Total chromium</b>				<b>16.51</b>	<b>5.29E-03</b>
Copper, see note 2	14,088	2.28E-02	0.99	3.24	1.04E-03
<b>Total copper</b>				<b>3.24</b>	<b>1.04E-03</b>
Cobalt, see note 2	14,088	2.62E-04	0.99	3.73E-02	1.19E-05
<b>Total cobalt</b>				<b>3.73E-02</b>	<b>1.19E-05</b>
Lead, see note 2	14,088	4.11E-05	0.99	5.85E-03	1.87E-06
<b>Total lead</b>				<b>5.85E-03</b>	<b>1.87E-06</b>
Manganese, see note 1	14,088	1.23E-07	0.99	1.75E-05	5.60E-09
<b>Total manganese</b>				<b>1.75E-05</b>	<b>5.60E-09</b>
Nickel, see note 2	14,088	3.46E-02	0.99	4.92	1.58E-03
<b>Total nickel</b>				<b>4.92</b>	<b>1.58E-03</b>
Phosphorus, see note 1	14,088	4.43E-09	0.99	6.30E-07	2.02E-10
<b>Total phosphorus</b>				<b>6.30E-07</b>	<b>2.02E-10</b>
Zinc, see note 2	14,088	3.00E-04	0.99	0.04	1.37E-05
<b>Total zinc</b>				<b>0.04</b>	<b>1.37E-05</b>

1. Calculated weight proportion of listed substance in metal grinding dust.

2. Envirochem analysis, 4 June 2020.

## Hexavalent Chromium from Metal Grinding

Based on analysis of grinding dust conducted by Envirochem on 4 June 2020 no hexavalent chromium was detected in grinding dust, therefore; emissions of hexavalent chromium from grinding dust are reported as zero.

## Shell Making, DN 70027, EPN 60021

Emissions of listed substances from the use of sand in shell making are estimated using the following equation.

Annual Emissions

$$Y = QFPk$$

where,

Y = annual emissions of listed substances from sand, lbs/yr.

Q = Quantity of sand used during the reporting period, lbs/yr.

F = emission factor for particulate matter resulting from sand handling and core making, 0.54 lbs/ton (USEPA, AP-42 Section 12.13-2)

P = proportion of listed substance in sand, lbs/lbs.

k = conversion factor, 5.00E-04 tons/lb.

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = hours of operation, 3,120 hrs/yr.

Listed Substance	Material	Q, lbs/yr	F, lbs/ton	P, lbs/lbs	k, tons/lb	Y, lbs/yr	H, lbs/hr
Crystalline silica	Mulcoa 47/Mulgrain 47	64,800	0.54	0.19	5.00E-04	3.24	1.04E-03
Crystalline silica	Silica Sand	124,300	0.54	1.00E-04	5.00E-04	3.36E-03	1.08E-06
<b>Total crystalline silica</b>						<b>3.24</b>	<b>1.04E-03</b>

### Abrasive Blasting, DN 70028, EPN 60022

As a result of the operation of the abrasive blasting cabinet, listed substances in the form of particulate matter may be emitted into the atmosphere. Emissions will be estimated using the emission factor provided by the SCAQMD document "AER Reporting Tool Help and Support Manual: Abrasive Blasting Operations." Emissions will be calculated using the following equation.

Annual Emissions

$$Y = QFPk$$

where,

Y = annual emissions of listed substances from abrasive blasting operations, lbs/yr.

Q = quantity of abrasive blasting material used during the reporting period, 6,620 lbs/yr.

F = emission factor for abrasive blasting of unspecified material, controlled with a baghouse, 2.95 lbs/ton (SCAQMD, AER Reporting Tool Help and Support Manual: Abrasive Blasting Operations).

P = proportion of aluminum oxide in abrasive blasting material, 0.90 lbs/lbs.

k = conversion factor, 5.00E-04 tons/lb.

$$Y = (6,620 \text{ lbs/yr})(2.95 \text{ lbs/ton})(0.90 \text{ lbs/lbs})(5.00\text{E-}04 \text{ tons/lb}) = 8.79 \text{ lbs/yr}$$

Maximum Hourly Emissions

$$H = Yh^{-1}$$

H = maximum hourly emissions of the given listed substance, lbs/hr.

h = hours of operation, 2,808 hrs/yr.

$$H = (8.79 \text{ lbs/yr})(2,808 \text{ hrs/yr})^{-1} = 3.13\text{E-}03 \text{ lbs/yr}$$



## Steel and Aluminum Testing, DN 70029, EPN 60023

Use of material used in steel and aluminum testing are reported in Production operations and Aluminum Parts Brite Dip Line.



### Wax Burnout, DN 70030, EPN 60024

Emissions of listed substances due to wax burnout are calculated using SCAQMD Flash Fire Oven A/N 312486 evaluation. The quantity of listed substances from the combustion of wax calculated using the following equation:

Annual Emissions

$$Y = FQ(P/100)(1-C)$$

where,

Y = annual emissions of the given listed substance, lbs/yr.

F = emission factor of the given listed substances, lbs/lbs (SCAQMD Flash Fire Oven A/N 312486 evaluation).

Q = quantity of wax used during the 2018 calendar year, 25,300 lbs/yr.

P = estimated total wax combusted, 20%.

C = afterburner control efficiency, 0.99 lbs/lbs (SCAQMD Flash Fire Oven A/N 312486 evaluation).

Device	Q, lbs/yr	P, %	C, lbs/lbs	F, lbs/lbs					Y, lbs/lbs		
				Acetaldehyde	Dioxane, 1,4-	Ethylene oxide	Formaldehyde	Acetaldehyde	Dioxane, 1,4-	Ethylene oxide	Formaldehyde
Aluminum pusher furnace 4 and afterburner (A/N 430514)	4,999.29	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	3.50E-05	3.00E-05	3.00E-05	2.60E-05
Aluminum pusher furnace 2 and afterburner (A/N 430515)	4,999.29	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	3.50E-05	3.00E-05	3.00E-05	2.60E-05
Aluminum box oven 1 and afterburner (A/N 430516)	2,572.85	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	1.80E-05	1.54E-05	1.54E-05	1.34E-05
Steel wax burnout oven 4 and afterburner (A/N 430518)	3,047.78	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	2.13E-05	1.83E-05	1.83E-05	1.58E-05



Device	Q, lbs/yr	P, %	C, lbs/lbs	F, lbs/lbs			Y, lbs/lbs				
				Acetaldehyde	Dioxane, 1,4-	Ethylene oxide	Formaldehyde	Acetaldehyde	Dioxane, 1,4-	Ethylene oxide	Formaldehyde
Steel wax burnout oven 3 and afterburner (A/N 430519)	3,047.78	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	2.13E-05	1.83E-05	1.83E-05	1.58E-05
Flash fire oven 5 and afterburner (A/N 430520)	3,954.80	20.00	0.99	3.50E-06	3.00E-06	3.00E-06	2.60E-06	2.77E-05	2.37E-05	2.37E-05	2.06E-05
Steel wax burnout oven 2 (A/N 553329)	2,678.19	20.00	0.00	3.50E-06	3.00E-06	3.00E-06	2.60E-06	1.87E-03	1.61E-03	1.61E-03	1.39E-03
<b>Total</b>							<b>2.03E-03</b>	<b>1.74E-03</b>	<b>1.74E-03</b>	<b>1.74E-03</b>	<b>1.51E-03</b>

Maximum Hourly Emissions

$$H = Yh^{-1}$$

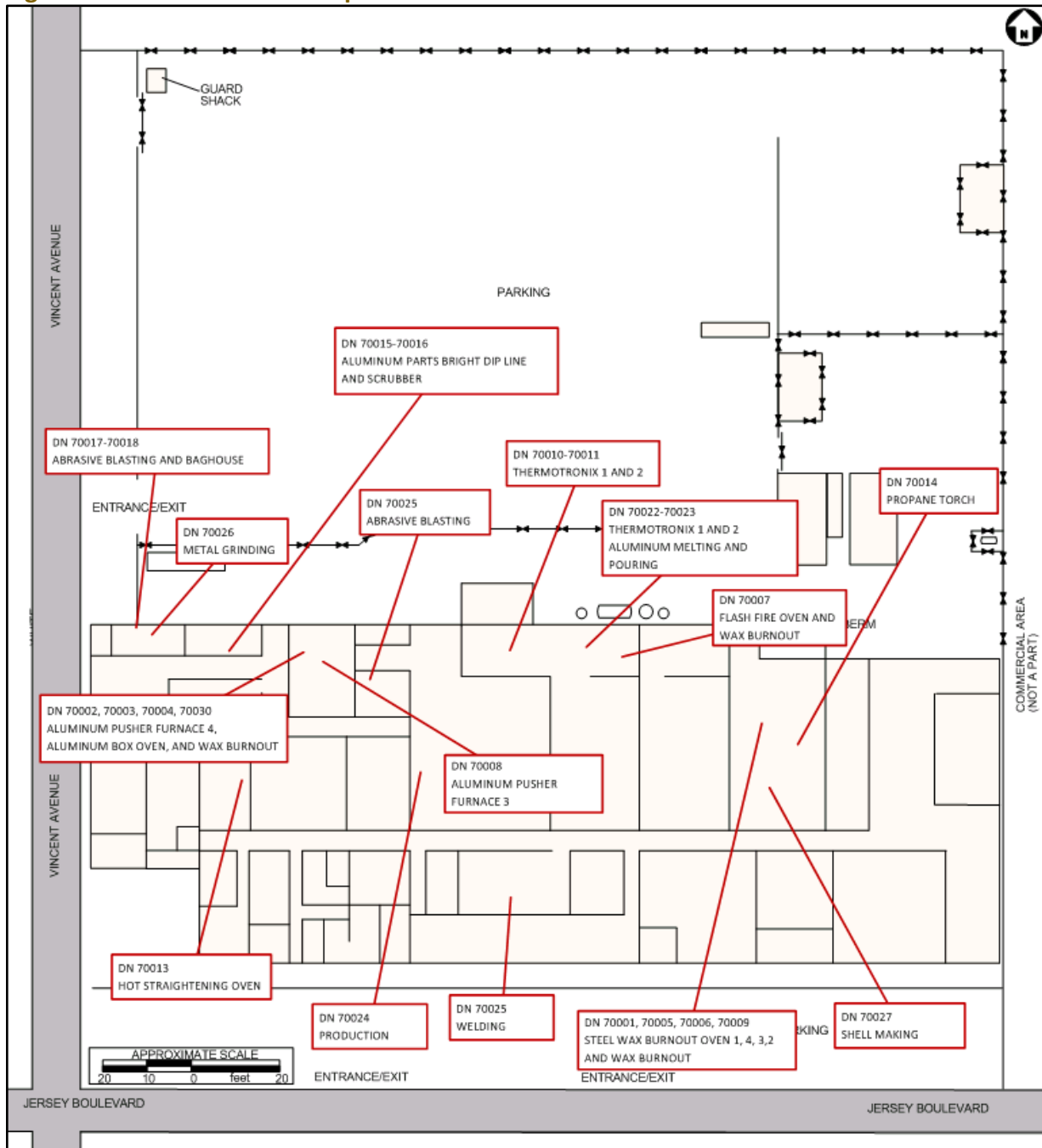
H = maximum hourly emissions of the given listed substance, lbs/hr.  
 h = hours of operation, 3,120 hrs/yr.

Device	H, lbs/hr			
	Acetaldehyde	Dioxane, 1,4-	Ethylene oxide	Formaldehyde
Aluminum pusher furnace 4 and afterburner (A/N 430514)	1.12E-08	9.61E-09	9.61E-09	8.33E-09
Aluminum pusher furnace 2 and afterburner (A/N 430515)	1.12E-08	9.61E-09	9.61E-09	8.33E-09
Aluminum box oven 1 and afterburner (A/N 430516)	5.77E-09	4.95E-09	4.95E-09	4.29E-09
Steel wax burnout oven 4 and afterburner (A/N 430518)	6.84E-09	5.86E-09	5.86E-09	5.08E-09
Steel wax burnout oven 3 and afterburner (A/N 430519)	6.84E-09	5.86E-09	5.86E-09	5.08E-09
Flash fire oven 5 and afterburner (A/N 430520)	8.87E-09	7.61E-09	7.61E-09	6.59E-09
Steel wax burnout oven 2 (A/N 553329)	6.01E-07	5.15E-07	5.15E-07	4.46E-07
<b>Total</b>	<b>6.52E-07</b>	<b>5.59E-07</b>	<b>5.59E-07</b>	<b>4.84E-07</b>

## Appendices

**Appendix A – Facility Map**

Figure 1 – Source Location Map



**Pac Rancho, Inc.**  
**11000 Jersey Boulevard**  
**Rancho Cucamonga, California**

**Base Map Link: [DWG-1372](#)**

## Appendix B – HARP Reporting Forms

File name: \\Mac\Home\Desktop\PACR ATIR\PACREmissionReport2.rtf

## HARP Facility Emission Summary

HARP EIM Version: 2.1.1

Project Path: \\Mac\Home\Desktop\PACR ATIR  
 Project Database: \\Mac\Home\Desktop\PACR ATIR\PACREHS9942ATIR.mdb  
 CEIDARS Utility Database: C:\HARP2\Tables\CEIDARSTables022020.mdb  
 Facility List: N/A  
 Pollutant List: N/A  
 Sorting Order: FACID, CO, AB, DIS, YEAR, TOXAPPEN, POLABBREV  
 Date Created: 6/22/2020 8:28:04 PM  
 Operator: AMB

(Note: Emissions in LBS/YR for toxics, TONS/YR for criteria pollutants, CURRIES/YR for radio nuclides. \* User defined pollutants are marked by an asterisk with the pollutant ID.)

FACILITY	NAME	FSIC										
-----												
ADDRESS												
-----												
CITY	ZIP	CO	AB	DIS	CATEGORY	HAP	POLLUTANT	POLLUTANT ID	EMISSIONS	YEAR		
-----												
140871	PAC RANCHO INC											
	1100 JERSEY BOULEVARD											
	RANCHO CUCAMONGA	91730	36	SC	SC	A-I	Alumin Oxide	1344281	10.233	2018		
						A-I	Aluminum	7429905	223.023	2018		
						A-I	Copper	7440508	31.276	2018		
						A-I	Cyclohexane	110827	68.656	2018		
						A-I	DEGlycol	111466	235.588	2018		
						A-I	Isopropyl Alcoh	67630	970.384	2018		
						A-I	NH3	7664417	286.482	2018		
						A-I	Nitric Acid	7697372	30.704	2018		
						A-I	Phosphoric Acid	7664382	2.609	2018		
						A-I	Silica, Crystln	1175	3.241	2018		
						A-I	Sulfuric Acid	7664939	2.861E-16	2018		
						A-I	Vanadium	7440622	3.548E-03	2018		
						A-I	Zinc	7440666	6.861	2018		
						A-I	Y 1,4-Dioxane	123911	5.699E-02	2018		
						A-I	Y 2MeNaphthalene	91576	3.815E-04	2018		
						A-I	Y 3-MeCholanthren	56495	2.861E-05	2018		
						A-I	Y 7,12-DB[a]anthr	57976	2.543E-04	2018		
						A-I	Y Acenaphthene	83329	2.861E-05	2018		
						A-I	Y Acenaphthylene	208968	2.861E-05	2018		
						A-I	Y Acetaldehyde	75070	7.038E-02	2018		
						A-I	Y Acrolein	107028	4.292E-02	2018		
						A-I	Y Anthracene	120127	3.815E-05	2018		
						A-I	Y B[a]anthracene	56553	2.861E-05	2018		
						A-I	Y B[a]P	50328	1.907E-05	2018		
						A-I	Y B[b]fluoranthen	205992	2.861E-05	2018		
						A-I	Y B[g,h,i]perylene	191242	1.907E-05	2018		
						A-I	Y B[k]fluoranthen	207089	2.861E-05	2018		
						A-I	Y Benzene	71432	0.127	2018		
						A-I	Y Beryllium	7440417	2.564	2018		
						A-I	Y Chromium	7440473	118.829	2018		
						A-I	Y Chrysene	218019	2.861E-05	2018		
						A-I	Y Cobalt	7440484	4.054E-02	2018		
						A-I	Y Cr(VI)	18540299	0.189	2018		
						A-I	Y D[a,h]anthracen	53703	1.907E-05	2018		
						A-I	Y Ethyl Acrylate	140885	7.589E-03	2018		
						A-I	Y Ethyl Benzene	100414	0.151	2018		

A-I	Y	EtO	75218	5.699E-02	2018
A-I	Y	Fluoranthene	206440	4.768E-05	2018
A-I	Y	Fluorene	86737	4.451E-05	2018
A-I	Y	Formaldehyde	50000	1.052	2018
A-I	Y	Hexane	110543	0.100	2018
A-I	Y	In[1,2,3-cd]pyr	193395	2.861E-05	2018
A-I	Y	Lead	7439921	0.339	2018
A-I	Y	Manganese	7439965	10.016	2018
A-I	Y	MeDiphenDiisocy	101688	1.315E-05	2018
A-I	Y	Naphthalene	91203	4.769E-03	2018
A-I	Y	Nickel	7440020	40.739	2018
A-I	Y	PAHs-w/o	1151	1.877E-04	2018
A-I	Y	p-DiClBenzene	106467	1.907E-02	2018
A-I	Y	Phenanthrene	85018	2.702E-04	2018
A-I	Y	Phosphorus	7723140	0.227	2018
A-I	Y	Pyrene	129000	7.947E-05	2018
A-I	Y	Toluene	108883	0.582	2018
A-I	Y	Xylenes	1330207	0.432	2018
CRIT		CO	42101	0.278	2018

**Appendix C – AB2588 Air Toxic Document Certification and Application Form**



<b>FORM A</b>	<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b> AB 2588 Program, 21865 COPLEY DR., DIAMOND BAR CA 91765-0949	INVENTORY YEAR
		20 <u>  18  </u>

**AB 2588 AIR TOXICS DOCUMENT CERTIFICATION & SUBMITTAL FORM**

*Please check the appropriate boxes for purpose of submittal:*

<input type="checkbox"/> INITIAL INFORMATION for ATIR	<input type="checkbox"/> EARLY ACTION REDUCTION PLAN (EARP)	<input checked="" type="checkbox"/> INITIAL
<input checked="" type="checkbox"/> AIR TOXICS INVENTORY REPORT (ATIR)	<input type="checkbox"/> VOLUNTARY RISK REDUCTION PLAN (VRRP)	<input type="checkbox"/> REVISION
<input type="checkbox"/> HEALTH RISK ASSESSMENT (HRA)	<input type="checkbox"/> IMPLEMENTATION PROGRESS REPORT for VRRP/RRP	<input type="checkbox"/> FINAL
<input type="checkbox"/> RISK REDUCTION PLAN (RRP)	<input type="checkbox"/> OTHER: _____	

Does your facility participate or wish to participate in VRRP program pursuant to Rule 1402(h)? YES

*Please provide the following information:*

<b>Facility name</b>	<b>South Coast AQMD ID</b>	<b>Facility SIC/NAICS CODE</b>
<input type="text" value="Pac Rancho, Inc"/>	<input type="text" value="140871"/>	<input type="text" value="3365/331524"/>
<b>Facility Location Address</b>	<b>Mailing Address</b>	
<input type="text" value="11000 Jersey Boulevard"/>	<input type="text" value="11000 Jersey Boulevard"/>	
<input type="text" value="Rancho Cucamonga, CA 91730-5103"/>	<input type="text" value="Rancho Cucamonga, CA 91730-5103"/>	

**Contact Person (Company Official)**

<b>Name:</b> Richard Valdovinos	<b>Title:</b> Regional EHS Manager
<b>Telephone:</b> 323.319.0718	<b>eMail:</b> Richard.Valdovinos@cppcorp.com

**Preparer (if different from above)**

<b>Name:</b> Peter Stein	<b>Title:</b> Vice President
<b>Company:</b> JE Compliance Services	
<b>Telephone:</b> 909.483.3300	<b>eMail:</b> pstein@jecsi.com

**FAILURE TO SUBMIT REQUIRED INFORMATION OR KNOWINGLY SUPPLYING FALSE INFORMATION IS PUNISHABLE TO THE EXTENT DEFINED IN HEALTH AND SAFETY CODE SECTIONS 44381(a) AND 44381(b), WHICH INCLUDES MINIMUM FINES OF NOT LESS THAN FIVE HUNDRED DOLLARS.**

<b>Signature Of Responsible Company Official</b>	<b>Date</b>
<input type="text" value="R Valdovinos"/>	<input type="text" value="2/20/20"/>
<b>Name Of Responsible Company Official</b>	<b>Title</b>
<input type="text" value="Richard Valdovinos"/>	<input type="text" value="Regional EHS Manager"/>

## Appendix D – Unspeciated PAH Calculation

### Derivation of Unspeciated PAH Factor

Listed Substance	F, lbs/mmcf
Acenaphthene	1.80E-06
Acenaphthylene	1.80E-06
Anthracene	2.40E-06
Benzo (a) anthracene	1.80E-06
Benzo (a) pyrene	1.20E-06
Benzo (b) fluoranthene	1.80E-06
Benzo (g,h,i) perylene	1.20E-06
Benzo (k) fluoranthene	1.80E-06
Chrysene	1.80E-06
Dibenz (a,h) anthracene	1.20E-06
Dimethylbenz(a)anthracene, 7,12-	1.60E-05
Fluoranthene	3.00E-06
Fluorene	2.80E-06
Indeno(1,2,3-cd)pyrene	1.80E-06
Methylcholanthrene, 3-	1.80E-06
Methylnaphthalene,2-	2.40E-05
Phenanthrene	1.70E-05
Pyrene	5.00E-06
<b>Total</b>	<b>8.82E-05</b>
<b>SCAQMD aggregate PAH</b>	<b>1.00E-04</b>
<b>Unspeciated PAH</b>	<b>1.18E-05</b>

Note: Unspeciated PAH is the difference between the SCAQMD PAH factor and the sum of the individual AP-42 factors.

## Appendix E – Emission Summary



**Table 2 – Summary of Total Device Emissions**

Listed substance	CAS/CARB Number	70001 Steel Wax Burnout Oven 1		70002 Aluminum Pusher Furnace 4 and Afterburner		70003 Aluminum Pusher Furnace 2 and Afterburner		70004 Aluminum Box Oven and Afterburner		70005 Steel Wax Burnout Oven 4	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Acenaphthylene	208968	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Acetaldehyde	75070	0	0	8.42E-03	1.17E-05	8.42E-03	1.17E-05	4.33E-03	6.03E-06	5.13E-03	7.14E-06
Acrolein	107028	0	0	5.29E-03	7.35E-06	5.29E-03	7.35E-06	2.72E-03	3.78E-06	3.22E-03	4.48E-06
Aluminum	7429905	0	0	0	0	0	0	0	0	0	0
Aluminum oxide	1344281	0	0	0	0	0	0	0	0	0	0
Ammonia	7664417	0	0	6.27	8.72E-03	6.27	8.72E-03	3.23	4.49E-03	3.82	5.31E-03
Anthracene	120127	0	0	4.70E-06	6.54E-09	4.70E-06	6.54E-09	2.42E-06	3.36E-09	2.87E-06	3.99E-09
Benz(a)anthracene	56553	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Benzene	71432	0	0	1.57E-02	2.18E-05	1.57E-02	2.18E-05	8.06E-03	1.12E-05	9.55E-03	1.33E-05
Benzo(a)pyrene	50328	0	0	2.35E-06	3.27E-09	2.35E-06	3.27E-09	1.21E-06	1.68E-09	1.43E-06	1.99E-09
Benzo(b)fluoranthene	205992	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Benzo(g,h,i)perylene	191242	0	0	2.35E-06	3.27E-09	2.35E-06	3.27E-09	1.21E-06	1.68E-09	1.43E-06	1.99E-09
Benzo(k)fluoranthene	207089	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Beryllium	7440417	0	0	0	0	0	0	0	0	0	0
Carbon monoxide	630080	0	0	68.55	9.53E-02	68.55	9.53E-02	35.28	4.91E-02	41.79	5.81E-02
Chromium	7440473	0	0	0	0	0	0	0	0	0	0
Chrysene	218019	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Copper	7440508	0	0	0	0	0	0	0	0	0	0
Crystalline silica	1175	0	0	0	0	0	0	0	0	0	0
Cyclohexane	110827	0	0	0	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	53703	0	0	2.35E-06	3.27E-09	2.35E-06	3.27E-09	1.21E-06	1.68E-09	1.43E-06	1.99E-09
Dichlorobenzene	106467	0	0	2.35E-03	3.27E-06	2.35E-03	3.27E-06	1.21E-03	1.68E-06	1.43E-03	1.99E-06
Diethylene glycol	111466	0	0	0	0	0	0	0	0	0	0
Dimethylbenz(a)anthracene, 7,12-	57976	0	0	3.13E-05	4.36E-08	3.13E-05	4.36E-08	1.61E-05	2.24E-08	1.91E-05	2.66E-08



Air Toxic Inventory Report for 2018 Reporting Period (EHS-9942)

Listed substance	CAS/CARB Number	70001 Steel Wax Burnout Oven 1		70002 Aluminum Pusher Furnace 4 and Afterburner		70003 Aluminum Pusher Furnace 2 and Afterburner		70004 Aluminum Box Oven and Afterburner		70005 Steel Wax Burnout Oven 4	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dioxane, 1,4-	123911	0	0	0	0	0	0	0	0	0	0
Ethyl acrylate	140885	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	100414	0	0	1.86E-02	2.59E-05	1.86E-02	2.59E-05	9.58E-03	1.33E-05	1.13E-02	1.58E-05
Ethylene oxide	75218	0	0	0	0	0	0	0	0	0	0
Fluoranthene	206440	0	0	5.88E-06	8.17E-09	5.88E-06	8.17E-09	3.02E-06	4.21E-09	3.58E-06	4.98E-09
Fluorene	86737	0	0	5.48E-06	7.63E-09	5.48E-06	7.63E-09	2.82E-06	3.92E-09	3.34E-06	4.65E-09
Formaldehyde	50000	0	0	3.33E-02	4.63E-05	3.33E-02	4.63E-05	1.71E-02	2.38E-05	2.03E-02	2.82E-05
Hexane, n-	110543	0	0	1.23E-02	1.72E-05	1.23E-02	1.72E-05	6.35E-03	8.83E-06	7.52E-03	1.05E-05
Indeno(1,2,3-cd)pyrene	193395	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Isopropyl alcohol	67630	0	0	0	0	0	0	0	0	0	0
Lead	7439921	0	0	0	0	0	0	0	0	0	0
Manganese	7439965	0	0	0	0	0	0	0	0	0	0
Methylcholanthrene, 3-	56495	0	0	3.53E-06	4.90E-09	3.53E-06	4.90E-09	1.81E-06	2.52E-09	2.15E-06	2.99E-09
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	0	0	0	0
Methylnaphthalene, 2-	91576	0	0	4.70E-05	6.54E-08	4.70E-05	6.54E-08	2.42E-05	3.36E-08	2.87E-05	3.99E-08
Naphthalene	91203	0	0	5.88E-04	8.17E-07	5.88E-04	8.17E-07	3.02E-04	4.21E-07	3.58E-04	4.98E-07
Nickel	7440020	0	0	0	0	0	0	0	0	0	0
PAH (unspeciated)	1150	0	0	2.31E-05	3.21E-08	2.31E-05	3.21E-08	1.19E-05	1.65E-08	1.41E-05	1.96E-08
Phenanthrene	85018	0	0	3.33E-05	4.63E-08	3.33E-05	4.63E-08	1.71E-05	2.38E-08	2.03E-05	2.82E-08
Phosphorus	7723140	0	0	0	0	0	0	0	0	0	0
Pyrene	129000	0	0	9.79E-06	1.36E-08	9.79E-06	1.36E-08	5.04E-06	7.01E-09	5.97E-06	8.30E-09
Sulfuric acid	7664939	0	0	0	0	0	0	0	0	0	0
Toluene	108883	0	0	7.17E-02	9.97E-05	7.17E-02	9.97E-05	3.69E-02	5.13E-05	4.37E-02	6.08E-05
Xylenes	1330207	0	0	5.33E-02	7.41E-05	5.33E-02	7.41E-05	2.74E-02	3.81E-05	3.25E-02	4.52E-05
Zinc	7440666	0	0	0	0	0	0	0	0	0	0

**Table 2 – Summary of Total Device Emissions (continued)**

Listed substance	CAS/CARB Number	70006 Steel Wax Burnout Oven 3		70007 Flash Fire Oven		70008 Aluminum Pusher Furnace 3		70009 Steel Wax Burnout Oven 2		70010 Thermronix Aluminum Melting 1	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Acenaphthylene	208968	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Acetaldehyde	75070	5.13E-03	7.14E-06	6.66E-03	9.27E-06	7.68E-03	1.07E-05	4.51E-03	6.27E-06	4.51E-03	6.27E-06
Acrolein	107028	3.22E-03	4.48E-06	4.18E-03	5.82E-06	4.82E-03	6.70E-06	2.83E-03	3.94E-06	2.83E-03	3.94E-06
Aluminum	7429905	0	0	0	0	0	0	0	0	0	0
Aluminum oxide	1344281	0	0	0	0	0	0	0	0	0	0
Ammonia	7664417	3.82	5.31E-03	4.96	6.89E-03	5.71	7.94E-03	3.36	4.67E-03	3.36	4.67E-03
Anthracene	120127	2.87E-06	3.99E-09	3.72E-06	5.17E-09	4.28E-06	5.96E-09	2.52E-06	3.50E-09	2.52E-06	3.50E-09
Benz(a)anthracene	56553	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Benzene	71432	9.55E-03	1.33E-05	1.24E-02	1.72E-05	1.43E-02	1.99E-05	8.39E-03	1.17E-05	8.39E-03	1.17E-05
Benzo(a)pyrene	50328	1.43E-06	1.99E-09	1.86E-06	2.59E-09	2.14E-06	2.98E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09
Benzo(b)fluoranthene	205992	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Benzo(g,h,i)perylene	191242	1.43E-06	1.99E-09	1.86E-06	2.59E-09	2.14E-06	2.98E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09
Benzo(k)fluoranthene	207089	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Beryllium	7440417	0	0	0	0	0	0	0	0	0	0
Carbon monoxide	630080	41.79	5.81E-02	54.23	7.54E-02	62.48	8.69E-02	36.73	5.11E-02	36.73	5.11E-02
Chromium	7440473	0	0	0	0	0	0	0	0	0	0
Chrysene	218019	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Copper	7440508	0	0	0	0	0	0	0	0	0	0
Crystalline silica	1175	0	0	0	0	0	0	0	0	0	0
Cyclohexane	110827	0	0	0	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	53703	1.43E-06	1.99E-09	1.86E-06	2.59E-09	2.14E-06	2.98E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09
Dichlorobenzene	106467	1.43E-03	1.99E-06	1.86E-03	2.59E-06	2.14E-03	2.98E-06	1.26E-03	1.75E-06	1.26E-03	1.75E-06
Diethylene glycol	111466	0	0	0	0	0	0	0	0	0	0
Dimethylbenz(a)anthracene, 7,12-	57976	1.91E-05	2.66E-08	2.48E-05	3.45E-08	2.86E-05	3.97E-08	1.68E-05	2.33E-08	1.68E-05	2.33E-08



**Air Toxic Inventory Report for 2018 Reporting Period (EHS-9942)**

Listed substance	CAS/CARB Number	70006 Steel Wax Burnout Oven 3		70007 Flash Fire Oven		70008 Aluminum Pusher Furnace 3		70009 Steel Wax Burnout Oven 2		70010 Thermronix Aluminum Melting 1	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dioxane, 1,4-	123911	0	0	0	0	0	0	0	0	0	0
Ethyl acrylate	140885	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	100414	1.13E-02	1.58E-05	1.47E-02	2.05E-05	1.70E-02	2.36E-05	9.97E-03	1.39E-05	9.97E-03	1.39E-05
Ethylene oxide	75218	0	0	0	0	0	0	0	0	0	0
Fluoranthene	206440	3.58E-06	4.98E-09	4.65E-06	6.46E-09	5.36E-06	7.45E-09	3.15E-06	4.38E-09	3.15E-06	4.38E-09
Fluorene	86737	3.34E-06	4.65E-09	4.34E-06	6.03E-09	5.00E-06	6.95E-09	2.94E-06	4.09E-09	2.94E-06	4.09E-09
Formaldehyde	50000	2.03E-02	2.82E-05	2.63E-02	3.66E-05	3.03E-02	4.22E-05	1.78E-02	2.48E-05	1.78E-02	2.48E-05
Hexane, n-	110543	7.52E-03	1.05E-05	9.76E-03	1.36E-05	1.12E-02	1.56E-05	6.61E-03	9.19E-06	6.61E-03	9.19E-06
Indeno(1,2,3-cd)pyrene	193395	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Isopropyl alcohol	67630	0	0	0	0	0	0	0	0	0	0
Lead	7439921	0	0	0	0	0	0	0	0	0	0
Manganese	7439965	0	0	0	0	0	0	0	0	0	0
Methylcholanthrene, 3-	56495	2.15E-06	2.99E-09	2.79E-06	3.88E-09	3.21E-06	4.47E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	0	0	0	0
Methylnaphthalene, 2-	91576	2.87E-05	3.99E-08	3.72E-05	5.17E-08	4.28E-05	5.96E-08	2.52E-05	3.50E-08	2.52E-05	3.50E-08
Naphthalene	91203	3.58E-04	4.98E-07	4.65E-04	6.46E-07	5.36E-04	7.45E-07	3.15E-04	4.38E-07	3.15E-04	4.38E-07
Nickel	7440020	0	0	0	0	0	0	0	0	0	0
PAH (unspeciated)	1150	1.41E-05	1.96E-08	1.83E-05	2.54E-08	2.11E-05	2.93E-08	1.24E-05	1.72E-08	1.24E-05	1.72E-08
Phenanthrene	85018	2.03E-05	2.82E-08	2.63E-05	3.66E-08	3.03E-05	4.22E-08	1.78E-05	2.48E-08	1.78E-05	2.48E-08
Phosphorus	7723140	0	0	0	0	0	0	0	0	0	0
Pyrene	129000	5.97E-06	8.30E-09	7.75E-06	1.08E-08	8.93E-06	1.24E-08	5.25E-06	7.30E-09	5.25E-06	7.30E-09
Sulfuric acid	7664939	0	0	0	0	0	0	0	0	0	0
Toluene	108883	4.37E-02	6.08E-05	5.67E-02	7.89E-05	6.53E-02	9.09E-05	3.84E-02	5.34E-05	3.84E-02	5.34E-05
Xylenes	1330207	3.25E-02	4.52E-05	4.21E-02	5.86E-05	4.86E-02	6.75E-05	2.85E-02	3.97E-05	2.85E-02	3.97E-05
Zinc	7440666	0	0	0	0	0	0	0	0	0	0



**Table 2 – Summary of Total Device Emissions (continued)**

Listed substance	CAS/CARB Number	70011 Thermtronix Aluminum Melting 2		70012 Heat Treat Oven		70013 Hot Straight Oven		70014 Propane Handheld Torch		70015 Scrubber	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Acenaphthylene	208968	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Acetaldehyde	75070	4.51E-03	6.27E-06	4.51E-03	6.27E-06	4.51E-03	6.27E-06	3.49E-06	1.24E-09	0	0
Acrolein	107028	2.83E-03	3.94E-06	2.83E-03	3.94E-06	2.83E-03	3.94E-06	2.21E-06	7.85E-10	0	0
Aluminum	7429905	0	0	0	0	0	0	0	0	0	0
Aluminum oxide	1344281	0	0	0	0	0	0	0	0	0	0
Ammonia	7664417	3.36	4.67E-03	3.36	4.67E-03	3.36	4.67E-03	2.76E-03	9.82E-07	0	0
Anthracene	120127	2.52E-06	3.50E-09	2.52E-06	3.50E-09	2.52E-06	3.50E-09	0	0	0	0
Benz(a)anthracene	56553	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Benzene	71432	8.39E-03	1.17E-05	8.39E-03	1.17E-05	8.39E-03	1.17E-05	6.52E-06	2.32E-09	0	0
Benzo(a)pyrene	50328	1.26E-06	1.75E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09	0	0	0	0
Benzo(b)fluoranthene	205992	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Benzo(g,h,i)perylene	191242	1.26E-06	1.75E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09	0	0	0	0
Benzo(k)fluoranthene	207089	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Beryllium	7440417	0	0	0	0	0	0	0	0	0	0
Carbon monoxide	630080	36.73	5.11E-02	36.73	0.05	36.73	0.05	2.94E-02	1.05E-05	0	0
Chromium	7440473	0	0	0	0	0	0	0	0	0	0
Chrysene	218019	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Copper	7440508	0	0	0	0	0	0	0	0	0	0
Crystalline silica	1175	0	0	0	0	0	0	0	0	0	0
Cyclohexane	110827	0	0	0	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	53703	1.26E-06	1.75E-09	1.26E-06	1.75E-09	1.26E-06	1.75E-09	0	0	0	0
Dichlorobenzene	106467	1.26E-03	1.75E-06	1.26E-03	1.75E-06	1.26E-03	1.75E-06	0	0	0	0
Diethylene glycol	111466	0	0	0	0	0	0	0	0	0	0
Dimethylbenz(a)anthracene, 7,12-	57976	1.68E-05	2.33E-08	1.68E-05	2.33E-08	1.68E-05	2.33E-08	0	0	0	0



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Listed substance	CAS/CARB Number	70011 Thermtronix Aluminum Melting 2		70012 Heat Treat Oven		70013 Hot Straight Oven		70014 Propane Handheld Torch		70015 Scrubber	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dioxane, 1,4-	123911	0	0	0	0	0	0	0	0	0	0
Ethyl acrylate	140885	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	100414	9.97E-03	1.39E-05	9.97E-03	1.39E-05	9.97E-03	1.39E-05	7.72E-06	2.75E-09	0	0
Ethylene oxide	75218	0	0	0	0	0	0	0	0	0	0
Fluoranthene	206440	3.15E-06	4.38E-09	3.15E-06	4.38E-09	3.15E-06	4.38E-09	0	0	0	0
Fluorene	86737	2.94E-06	4.09E-09	2.94E-06	4.09E-09	2.94E-06	4.09E-09	0	0	0	0
Formaldehyde	50000	1.78E-02	2.48E-05	1.78E-02	2.48E-05	1.78E-02	2.48E-05	1.39E-05	4.94E-09	0	0
Hexane, n-	110543	6.61E-03	9.19E-06	6.61E-03	9.19E-06	6.61E-03	9.19E-06	5.15E-06	1.83E-09	0	0
Indeno(1,2,3-cd)pyrene	193395	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Isopropyl alcohol	67630	0	0	0	0	0	0	0	0	0	0
Lead	7439921	0	0	0	0	0	0	0	0	0	0
Manganese	7439965	0	0	0	0	0	0	0	0	0	0
Methylcholanthrene, 3-	56495	1.89E-06	2.63E-09	1.89E-06	2.63E-09	1.89E-06	2.63E-09	0	0	0	0
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	0	0	0	0
Methylnaphthalene, 2-	91576	2.52E-05	3.50E-08	2.52E-05	3.50E-08	2.52E-05	3.50E-08	0	0	0	0
Naphthalene	91203	3.15E-04	4.38E-07	3.15E-04	4.38E-07	3.15E-04	4.38E-07	2.76E-07	9.82E-11	0	0
Nickel	7440020	0	0	0	0	0	0	0	0	0	0
PAH (unspeciated)	1150	1.24E-05	1.72E-08	1.24E-05	1.72E-08	1.24E-05	1.72E-08	9.188E-08	3.272E-11	0	0
Phenanthrene	85018	1.78E-05	2.48E-08	1.78E-05	2.48E-08	1.78E-05	2.48E-08	0	0	0	0
Phosphorus	7723140	0	0	0	0	0	0	0	0	0	0
Pyrene	129000	5.25E-06	7.30E-09	5.25E-06	7.30E-09	5.25E-06	7.30E-09	0	0	0	0
Sulfuric acid	7664939	0	0	0	0	0	0	0	0	0	0
Toluene	108883	3.84E-02	5.34E-05	3.84E-02	5.34E-05	3.84E-02	5.34E-05	2.99E-05	1.06E-08	0	0
Xylenes	1330207	2.85E-02	3.97E-05	2.85E-02	3.97E-05	2.85E-02	3.97E-05	2.21E-05	7.89E-09	0	0
Zinc	7440666	0	0	0	0	0	0	0	0	0	0

**Table 2 – Summary of Total Device Emissions (continued)**

Listed substance	CAS/CARB Number	70016 Aluminum Parts Bright Drip Line		70017 Baghouse		70018 Abrasive Blasting Cabinet		70019 Steel Melting 75 lb Crucible		70020 Steel Melting 65 lb Crucible	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	0	0	0	0	0	0	0	0	0	0
Acenaphthylene	208968	0	0	0	0	0	0	0	0	0	0
Acetaldehyde	75070	0	0	0	0	0	0	0	0	0	0
Acrolein	107028	0	0	0	0	0	0	0	0	0	0
Aluminum	7429905	0	0	0	0	0	0	0	0	0	0
Aluminum oxide	1344281	0	0	0	0	1.44	5.14E-04	0	0	0	0
Ammonia	7664417	17.91	2.04E-03	0	0	0	0	0	0	0	0
Anthracene	120127	0	0	0	0	0	0	0	0	0	0
Benz(a)anthracene	56553	0	0	0	0	0	0	0	0	0	0
Benzene	71432	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	50328	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	205992	0	0	0	0	0	0	0	0	0	0
Benzo(g,h,i)perylene	191242	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	207089	0	0	0	0	0	0	0	0	0	0
Beryllium	7440417	0	0	0	0	0	0	0	0	0	0
Carbon monoxide	630080	0	0	0	0	0	0	0	0	0	0
Chromium	7440473	0	0	0	0	0	0	6.89	2.21E-03	5.97	1.91E-03
Chrysene	218019	0	0	0	0	0	0	0	0	0	0
Cobalt	7440484	0	0	0	0	0	0	0	0	0	0
Copper	7440508	0	0	0	0	0	0	1.47	4.71E-04	1.27	4.08E-04
Crystalline silica	1175	0	0	0	0	0	0	0	0	0	0
Cyclohexane	110827	0	0	0	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	53703	0	0	0	0	0	0	0	0	0	0
Dichlorobenzene	106467	0	0	0	0	0	0	0	0	0	0
Diethylene glycol	111466	0	0	0	0	0	0	0	0	0	0

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Listed substance	CAS/CARB Number	70016 Aluminum Parts Bright Drip Line		70017 Baghouse		70018 Abrasive Blasting Cabinet		70019 Steel Melting 75 lb Crucible		70020 Steel Melting 65 lb Crucible	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dimethylbenz(a)anthracene, 7,12-	57976	0	0	0	0	0	0	0	0	0	0
Dioxane, 1,4-	123911	0	0	0	0	0	0	0	0	0	0
Ethyl acrylate	140885	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	100414	0	0	0	0	0	0	0	0	0	0
Ethylene oxide	75218	0	0	0	0	0	0	0	0	0	0
Fluoranthene	206440	0	0	0	0	0	0	0	0	0	0
Fluorene	86737	0	0	0	0	0	0	0	0	0	0
Formaldehyde	50000	0	0	0	0	0	0	0	0	0	0
Hexane, n-	110543	0	0	0	0	0	0	0	0	0	0
Hexavalent chromium	18540299	0	0	0	0	0	0	1.17E-02	3.74E-06	1.01E-02	3.24E-06
Indeno(1,2,3-cd)pyrene	193395	0	0	0	0	0	0	0	0	0	0
Isopropyl alcohol	67630	0	0	0	0	0	0	0	0	0	0
Lead	7439921	0	0	0	0	0	0	0	0	0	0
Manganese	7439965	0	0	0	0	0	0	0.32	1.03E-04	0.28	8.95E-05
Methylcholanthrene, 3-	56495	0	0	0	0	0	0	0	0	0	0
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	0	0	0	0
Methylnaphthalene, 2-	91576	0	0	0	0	0	0	0	0	0	0
Naphthalene	91203	0	0	0	0	0	0	0	0	0	0
Nickel	7440020	0	0	0	0	0	0	2.40	7.70E-04	2.08	6.68E-04
Nitric acid	7697372	30.70	3.51E-03	0	0	0	0	0	0	0	0
PAH (unspeciated)	1151	0	0	0	0	0	0	0	0	0	0
Phenanthrene	85018	0	0	0	0	0	0	0	0	0	0
Phosphoric acid	7664382	2.61	2.98E-04	0	0	0	0	0	0	0	0
Phosphorus	7723140	0	0	0	0	0	0	0.02	4.99E-06	1.35E-02	4.33E-06
Pyrene	129000	0	0	0	0	0	0	0	0	0	0
Sulfuric acid	7664939	2.86E-16	3.27E-20	0	0	0	0	0	0	0	0



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Listed substance	CAS/CARB Number	70016 Aluminum Parts Bright Drip Line		70017 Baghouse		70018 Abrasive Blasting Cabinet		70019 Steel Melting 75 lb Crucible		70020 Steel Melting 65 lb Crucible	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Toluene	108883	0	0	0	0	0	0	0	0	0	0
Vanadium	7440622	0	0	0	0	0	0	0	0	0	0
Xylenes	1330207	0	0	0	0	0	0	0	0	0	0
Zinc	7440666	0	0	0	0	0	0	0	0	0	0

**Table 2 – Summary of Total Device Emissions (continued)**

Listed substance	CAS/CARB Number	70021 Steel Melting 300/650 lb Crucible		70022 Aluminum Melting Thermtronix 1		70023 Aluminum Melting Thermtronix 2		70024 Production		70025 Welding	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	0	0	0	0	0	0	0	0	0	0
Acenaphthylene	208968	0	0	0	0	0	0	0	0	0	0
Acetaldehyde	75070	0	0	0	0	0	0	0	0	0	0
Acrolein	107028	0	0	0	0	0	0	0	0	0	0
Aluminum	7429905	0	0	111.17	3.56E-02	111.17	3.56E-02	0	0	0.69	2.45E-04
Aluminum oxide	1344281	0	0	0	0	0	0	0	0	0	0
Ammonia	7664417	0	0	0	0	0	0	217.70	6.98E-02	0	0
Anthracene	120127	0	0	0	0	0	0	0	0	0	0
Benz(a)anthracene	56553	0	0	0	0	0	0	0	0	0	0
Benzene	71432	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	50328	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	205992	0	0	0	0	0	0	0	0	0	0
Benzo(g,h,i)perylene	191242	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	207089	0	0	0	0	0	0	0	0	0	0
Beryllium	7440417	0	0	1.28	4.10E-04	1.28	4.10E-04	0	0	0	0
Carbon monoxide	630080	0	0	0	0	0	0	0	0	0	0
Chromium	7440473	87.30	2.80E-02	0.19	6.02E-05	0.19	6.02E-05	0	0	0.38	1.35E-04
Chrysene	218019	0	0	0	0	0	0	0	0	0	0
Cobalt	7440484	0	0	0	0	0	0	0	0	0	0
Copper	7440508	18.62	5.97E-03	3.05	9.79E-04	3.05	9.79E-04	0	0	9.67E-02	3.44E-05
Crystalline silica	1175	0	0	0	0	0	0	1.37E-03	4.40E-07	0	0
Cyclohexane	110827	0	0	0	0	0	0	68.66	2.20E-02	0	0
Dibenz(a,h)anthracene	53703	0	0	0	0	0	0	0	0	0	0
Dichlorobenzene	106467	0	0	0	0	0	0	0	0	0	0
Diethylene glycol	111466	0	0	0	0	0	0	235.59	7.55E-02	0	0



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Listed substance	CAS/CARB Number	70021 Steel Melting 300/650 lb Crucible		70022 Aluminum Melting Thermtronix 1		70023 Aluminum Melting Thermtronix 2		70024 Production		70025 Welding	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dimethylbenz(a)anthracene, 7,12-	57976	0	0	0	0	0	0	0	0	0	0
Dioxane, 1,4-	123911	0	0	0	0	0	0	5.53E-02	1.77E-05	0	0
Ethyl acrylate	140885	0	0	0	0	0	0	7.59E-03	2.43E-06	0	0
Ethylbenzene	100414	0	0	0	0	0	0	0	0	0	0
Ethylene oxide	75218	0	0	0	0	0	0	5.53E-02	1.77E-05	0	0
Fluoranthene	206440	0	0	0	0	0	0	0	0	0	0
Fluorene	86737	0	0	0	0	0	0	0	0	0	0
Formaldehyde	50000	0	0	0	0	0	0	0.78	2.50E-04	0	0
Hexane, n-	110543	0	0	0	0	0	0	0	0	0	0
Hexavalent chromium	18540299	1.48E-01	4.74E-05	2.17E-04	6.96E-08	2.17E-04	6.96E-08	0	0	1.90E-02	6.75E-06
Indeno(1,2,3-cd)pyrene	193395	0	0	0	0	0	0	0	0	0	0
Isopropyl alcohol	67630	0	0	0	0	0	0	970.38	3.11E-01	0	0
Lead	7439921	0	0	0.17	5.34E-05	0.17	5.34E-05	0.00	3.22E-09	0	0
Manganese	7439965	4.08	1.31E-03	2.66	8.51E-04	2.66	8.51E-04	0	0	2.09E-02	7.46E-06
Methylcholanthrene, 3-	56495	0	0	0	0	0	0	0	0	0	0
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	1.31E-05	4.21E-09	0	0
Methylnaphthalene, 2-	91576	0	0	0	0	0	0	0	0	0	0
Naphthalene	91203	0	0	0	0	0	0	0	0	0	0
Nickel	7440020	30.45	9.76E-03	0.17	5.42E-05	0.17	5.42E-05	0	0	0.12	4.25E-05
Nitric acid	7697372	0	0	0	0	0	0	0	0	0	0
PAH (unspeciated)	1151	0	0	0	0	0	0	0	0	0	0
Phenanthrene	85018	0	0	0	0	0	0	0	0	0	0
Phosphoric acid	7664382	0	0	0	0	0	0	0	0	0	0
Phosphorus	7723140	0.20	6.33E-05	0	0	0	0	0	0	8.62E-04	3.07E-07
Pyrene	129000	0	0	0	0	0	0	0	0	0	0
Sulfuric acid	7664939	0	0	0	0	0	0	0	0	0	0



**Air Toxic Inventory Report for 2018 Reporting Period (EHS-9942)**

Listed substance	CAS/CARB Number	70021 Steel Melting 300/650 lb Crucible		70022 Aluminum Melting Thermtronix 1		70023 Aluminum Melting Thermtronix 2		70024 Production		70025 Welding	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Toluene	108883	0	0	0	0	0	0	0	0	0	0
Vanadium	7440622	0	0	0	0	0	0	0	0	0	0
Xylenes	1330207	0	0	0	0	0	0	0	0	0	0
Zinc	7440666	0	0	3.41	1.09E-03	3.41	1.09E-03	0	0	1.27E-03	4.52E-07



**Table 2 – Summary of Total Device Emissions (continued)**

Listed substance	CAS/CARB Number	70026 Metal Grinding		70027 Shell Making		70028 Abrasive Blasting		70029 Steel and Aluminum Testing		70030 Wax Burnout	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Acenaphthene	83329	0	0	0	0	0	0	0	0	0	0
Acenaphthylene	208968	0	0	0	0	0	0	0	0	0	0
Acetaldehyde	75070	0	0	0	0	0	0	0	0	2.03E-03	6.52E-07
Acrolein	107028	0	0	0	0	0	0	0	0	0	0
Aluminum	7429905	2.67E-03	8.56E-07	0	0	0	0	0	0	0	0
Aluminum oxide	1344281	0	0	0	0	8.79	3.13E-03	0	0	0	0
Ammonia	7664417	0	0	0	0	0	0	0	0	0	0
Anthracene	120127	0	0	0	0	0	0	0	0	0	0
Benz(a)anthracene	56553	0	0	0	0	0	0	0	0	0	0
Benzene	71432	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	50328	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	205992	0	0	0	0	0	0	0	0	0	0
Benzo(g,h,i)perylene	191242	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	207089	0	0	0	0	0	0	0	0	0	0
Beryllium	7440417	6.80E-03	2.18E-06	0	0	0	0	0	0	0	0
Carbon monoxide	630080	0	0	0	0	0	0	0	0	0	0
Chromium	7440473	17.91	5.74E-03	0	0	0	0	0	0	0	0
Chrysene	218019	0	0	0	0	0	0	0	0	0	0
Cobalt	7440484	0.04	1.30E-05	0	0	0	0	0	0	0	0
Copper	7440508	3.71	1.19E-03	0	0	0	0	0	0	0	0
Crystalline silica	1175	0	0	3.24	1.04E-03	0	0	0	0	0	0
Cyclohexane	110827	0	0	0	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	53703	0	0	0	0	0	0	0	0	0	0
Dichlorobenzene	106467	0	0	0	0	0	0	0	0	0	0
Diethylene glycol	111466	0	0	0	0	0	0	0	0	0	0



**Air Toxic Inventory Report for 2018 Reporting Period (EHS-9942)**

Listed substance	CAS/CARB Number	70026 Metal Grinding		70027 Shell Making		70028 Abrasive Blasting		70029 Steel and Aluminum Testing		70030 Wax Burnout	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Dimethylbenz(a)anthracene, 7,12-	57976	0	0	0	0	0	0	0	0	0	0
Dioxane, 1,4-	123911	0	0	0	0	0	0	0	0	1.74E-03	5.59E-07
Ethyl acrylate	140885	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	100414	0	0	0	0	0	0	0	0	0	0
Ethylene oxide	75218	0	0	0	0	0	0	0	0	1.74E-03	5.59E-07
Fluoranthene	206440	0	0	0	0	0	0	0	0	0	0
Fluorene	86737	0	0	0	0	0	0	0	0	0	0
Formaldehyde	50000	0	0	0	0	0	0	0	0	1.51E-03	4.84E-07
Hexane, n-	110543	0	0	0	0	0	0	0	0	0	0
Hexavalent chromium	18540299	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	193395	0	0	0	0	0	0	0	0	0	0
Isopropyl alcohol	67630	0	0	0	0	0	0	0	0	0	0
Lead	7439921	5.85E-03	1.87E-06	0	0	0	0	0	0	0	0
Manganese	7439965	2.74E-05	8.79E-09	0	0	0	0	0	0	0	0
Methylcholanthrene, 3-	56495	0	0	0	0	0	0	0	0	0	0
Methylene diphenyl diisocyanate	101688	0	0	0	0	0	0	0	0	0	0
Methylnaphthalene, 2-	91576	0	0	0	0	0	0	0	0	0	0
Naphthalene	91203	0	0	0	0	0	0	0	0	0	0
Nickel	7440020	5.35	1.71E-03	0	0	0	0	0	0	0	0
Nitric acid	7697372	0	0	0	0	0	0	0	0	0	0
PAH (unspeciated)	1151	0	0	0	0	0	0	0	0	0	0
Phenanthrene	85018	0	0	0	0	0	0	0	0	0	0
Phosphoric acid	7664382	0	0	0	0	0	0	0	0	0	0
Phosphorus	7723140	6.30E-07	2.02E-10	0	0	0	0	0	0	0	0
Pyrene	129000	0	0	0	0	0	0	0	0	0	0
Sulfuric acid	7664939	0	0	0	0	0	0	0	0	0	0



**Air Toxic Inventory Report for 2018 Reporting Period (EHS-9942)**

Listed substance	CAS/CARB Number	70026 Metal Grinding		70027 Shell Making		70028 Abrasive Blasting		70029 Steel and Aluminum Testing		70030 Wax Burnout	
		Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly	Average Annual	Maximum Hourly
Toluene	108883	0	0	0	0	0	0	0	0	0	0
Vanadium	7440622	3.55E-03	1.14E-06	0	0	0	0	0	0	0	0
Xylenes	1330207	0	0	0	0	0	0	0	0	0	0
Zinc	7440666	0.05	1.59E-05	0	0	0	0	0	0	0	0

Table 3 – Site Emissions Summary Table

Company: Pac Rancho, Inc.		AQMD ID#: 140871			
Listed substance	CAS/CARB Number	Average Annual, lbs/yr	Maximum Hourly, lbs/hr	Average Annual, g/sec	Maximum Hourly, g/sec
Acenaphthene	83329	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Acenaphthylene	208968	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Acetaldehyde	75070	0.07	9.57E-05	1.01E-06	1.21E-05
Acrolein	107028	0.04	5.97E-05	6.17E-07	7.52E-06
Aluminum	7429905	223.02	7.15E-02	3.21E-03	9.01E-03
Aluminum oxide	1344281	10.23	3.64E-03	1.47E-04	4.59E-04
Ammonia	7664417	286.48	0.14	4.12E-03	1.80E-02
Anthracene	120127	3.81E-05	5.30E-08	5.49E-10	6.68E-09
Benz(a)anthracene	56553	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Benzene	71432	0.13	1.77E-04	1.83E-06	2.23E-05
Benzo(a)pyrene	50328	1.91E-05	2.65E-08	2.74E-10	3.34E-09
Benzo(b)fluoranthene	205992	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Benzo(g,h,i)perylene	191242	1.91E-05	2.65E-08	2.74E-10	3.34E-09
Benzo(k)fluoranthene	207089	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Beryllium	7440417	2.56	8.22E-04	3.69E-05	1.04E-04
Carbon monoxide	630080	556.35	0.77	8.00E-03	9.75E-02
Chromium	7440473	118.83	0.04	1.71E-03	4.80E-03
Chrysene	218019	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Cobalt	7440484	0.04	1.30E-05	5.83E-07	1.64E-06
Copper	7440508	31.28	0.01	4.50E-04	1.26E-03
Crystalline silica	1175	3.24	1.04E-03	4.66E-05	1.31E-04
Cyclohexane	110827	68.66	0.02	9.88E-04	2.77E-03
Dibenz(a,h)anthracene	53703	1.91E-05	2.65E-08	2.74E-10	3.34E-09
Dichlorobenzene	106467	0.02	2.65E-05	2.74E-07	3.34E-06
Diethylene glycol	111466	235.59	0.08	3.39E-03	9.51E-03

Company: Pac Rancho, Inc.		AQMD ID#: 140871			
Listed substance	CAS/CARB Number	Average Annual, lbs/yr	Maximum Hourly, lbs/hr	Average Annual, g/sec	Maximum Hourly, g/sec
Dimethylbenz(a)anthracene, 7,12-	57976	2.54E-04	3.54E-07	3.66E-09	4.46E-08
Dioxane, 1,4-	123911	0.06	1.83E-05	8.20E-07	2.30E-06
Ethyl acrylate	140885	7.59E-03	2.43E-06	1.09E-07	3.06E-07
Ethylbenzene	100414	0.15	2.10E-04	2.17E-06	2.65E-05
Ethylene oxide	75218	0.06	1.83E-05	8.20E-07	2.30E-06
Fluoranthene	206440	4.77E-05	6.63E-08	6.86E-10	8.35E-09
Fluorene	86737	4.45E-05	6.19E-08	6.40E-10	7.80E-09
Formaldehyde	50000	1.05	6.26E-04	1.51E-05	7.89E-05
Hexane, n-	110543	0.10	1.39E-04	1.44E-06	1.75E-05
Hexavalent chromium	18540299	0.19	6.13E-05	2.72E-06	7.72E-06
Indeno(1,2,3-cd)pyrene	193395	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Isopropyl alcohol	67630	970.38	0.31	1.40E-02	3.92E-02
Lead	7439921	0.34	1.09E-04	4.88E-06	1.37E-05
Manganese	7439965	10.02	3.21E-03	1.44E-04	4.05E-04
Methylcholanthrene, 3-	56495	2.86E-05	3.98E-08	4.12E-10	5.01E-09
Methylene diphenyl diisocyanate	101688	1.31E-05	4.21E-09	1.89E-10	5.31E-10
Methylnaphthalene, 2-	91576	3.81E-04	5.30E-07	5.49E-09	6.68E-08
Naphthalene	91203	4.77E-03	6.63E-06	6.86E-08	8.35E-07
Nickel	7440020	40.74	0.01	5.86E-04	1.65E-03
Nitric acid	7697372	30.70	3.51E-03	4.42E-04	4.42E-04
PAH (unspeciated)	1151	1.88E-04	2.61E-07	2.70E-09	3.29E-08
Phenanthrene	85018	2.70E-04	3.76E-07	3.89E-09	4.73E-08
Phosphoric acid	7664382	2.61	2.98E-04	0.00E+00	0.00E+00
Phosphorus	7723140	0.23	7.29E-05	3.27E-06	9.18E-06
Pyrene	129000	7.95E-05	1.11E-07	1.14E-09	1.39E-08

Company: Pac Rancho, Inc.		AQMD ID#: 140871			
Listed substance	CAS/CARB Number	Average Annual, lbs/yr	Maximum Hourly, lbs/hr	Average Annual, g/sec	Maximum Hourly, g/sec
Sulfuric acid	7664939	2.86E-16	3.27E-20	4.11E-21	4.11E-21
Toluene	108883	0.58	8.09E-04	8.37E-06	1.02E-04
Vanadium	7440622	3.55E-03	1.14E-06	5.10E-08	1.43E-07
Xylenes	1330207	0.43	6.01E-04	6.22E-06	7.58E-05
Zinc	7440666	6.86	2.20E-03	9.87E-05	2.77E-04

**Appendix F – HARP2 Electronic Files (electronic submission only)**