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October 15, 2024

Ms. Vanessa Tanik  
AQ Specialist  
South Coast Air Quality Management District  
21865 East Copley Drive  
Diamond Bar, CA 91765

Subject: **AB 2588 Risk Reduction Plan**

Facility: Carpenter Co.  
7809 Lincoln Avenue  
Riverside, CA 92504  
Facility ID No. 7730

Dear Ms. Tanik:

Per your letter dated February 22, 2024 and following correspondence, please find enclosed the Rule 1402 Risk Reduction Plan (RRP) for the above referenced facility. As required, this RRP has been prepared in accordance with applicable SCAQMD and OEHHA risk reduction guidelines. The modeling input and output files for AERMOD and HARP2, which were utilized in the preparation of the RRP, have been submitted via the OnBase system.

If there are any questions, please contact our office to discuss the matter further.

Sincerely,

TRINITY CONSULTANTS

A handwritten signature in black ink that reads "Steven R. Walters". The signature is written in a cursive, flowing style.

Steven R. Walters, P.E.  
Director

Encl.

cc: [REDACTED]

**HEADQUARTERS**

12700 Park Central Dr, Ste 2100, Dallas, TX 75251 / P 800.229.6655 / P 972.661.8100 / F 972.385.9203

# RULE 1402 RISK REDUCTION PLAN

Carpenter Co / Riverside, CA



## AB 2588 California Air Toxics "Hot Spots" Information and Assessment Act of 1987

**Prepared for:**

Carpenter Co  
7809 Lincoln Avenue  
Riverside, CA  
SCAQMD Facility ID No. 7730

**Prepared By:**

Trinity Consultants  
20 Corporate Park, Suite 285  
Irvine, CA 92606

October 2024

Project No. 220501.0148



|                   |                                                                                                                    |                                |
|-------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>FORM<br/>A</b> | <b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b><br>AB 2588 Program, 21865 COPLEY DR., DIAMOND BAR CA 91765-0949 | INVENTORY YEAR<br>20 <u>19</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 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 checked="" 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  NO

*Please provide the following information:*

|                                                                                                                                                                         |                                                                                                       |                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Facility name<br><input style="width:90%;" type="text" value="Carpenter Co."/>                                                                                          | South Coast AQMD ID<br><input style="width:60%;" type="text" value="7730"/>                           | Facility SIC/NAICS CODE<br><input style="width:60%;" type="text" value="3086"/> |
| Facility Location Address<br><input style="width:90%;" type="text" value="7809 Lincoln Avenue"/><br><input style="width:90%;" type="text" value="Riverside, CA 92504"/> | Mailing Address<br><input style="width:90%;" type="text"/><br><input style="width:90%;" type="text"/> |                                                                                 |

Contact Person (Company Official)

|                                                                     |                                                                 |
|---------------------------------------------------------------------|-----------------------------------------------------------------|
| Name: <input style="width:80%;" type="text" value="REDACTED"/>      | Title: <input style="width:80%;" type="text" value="REDACTED"/> |
| Telephone: <input style="width:80%;" type="text" value="REDACTED"/> | eMail: <input style="width:80%;" type="text" value="REDACTED"/> |

Preparer (if different from above)

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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.

|                                                                                                                                  |                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Signature Of Responsible Company Official<br><input style="width:90%; height: 40px;" type="text" value="Handwritten Signature"/> | Date<br><input style="width:90%; height: 40px;" type="text" value="10/15/24"/>  |
| Name Of Responsible Company Official<br><input style="width:90%; height: 40px;" type="text" value="REDACTED"/>                   | Title<br><input style="width:90%; height: 40px;" type="text" value="REDACTED"/> |

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## ABBREVIATIONS AND DEFINITIONS

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### Abbreviations

|                  |                                                       |
|------------------|-------------------------------------------------------|
| AB 2588          | Air Toxics "Hot Spots" Information and Assessment Act |
| ADMRT            | Air Dispersion Modeling Risk Tool                     |
| AERMOD           | American Meteorological Society Regulatory Model      |
| AER              | Annual Emissions Report                               |
| AMS              | American Meteorological Society                       |
| BPIP-PRIME       | Building Profile Input Program PRIME                  |
| CARB             | California Air Resources Board                        |
| CAS              | Chemical Abstract System                              |
| HARP2            | Hot Spots Analysis and Reporting Program              |
| HI               | Hazard Index                                          |
| HRA              | Health Risk Assessment                                |
| MEIR             | Maximum Exposed Individual Resident                   |
| MEIW             | Maximum Exposed Individual Worker                     |
| MICR             | Maximum Individual Cancer Risk                        |
| OEHHA            | Office of Environmental Health Hazard Assessment      |
| PMI              | Point of Maximum Impact                               |
| REL              | Reference Exposure Level                              |
| RRP              | Risk Reduction Plan                                   |
| South Coast AQMD | South Coast Air Quality Management District           |
| USEPA            | United States Environmental Protection Agency         |
| USGS             | United States Geological Survey                       |
| UTM              | Universal Transverse Mercator                         |
| ZOI              | Zone of Impact                                        |

### Key Definitions

- ▶ **Action Risk Level** - An MICR of twenty-five in one million ( $25 \times 10^{-6}$ ), a total acute hazard index (HIA) of 3.0, or chronic hazard index (HIC) of 3.0 for any target organ system at any receptor location.
- ▶ **Acute Health Impacts** - An effect caused by initial exposure of a hazardous chemical on the body. The effects are generally severe but are often reversible after exposure stops.
- ▶ **Cancer Health Impacts** - An increase in the likelihood for cancer in the exposed individual, caused by exposure to a carcinogenic substance.
- ▶ **Cancer Burden** - Cancer burden is the estimated number of theoretical c
- ▶ **Chronic Health Impacts** - An effect caused by prolonged or repeated exposures over time. Symptoms may not be apparent immediately but develop over time and are often irreversible.
- ▶ **Chronic 8-hour Health Impacts** - An effect caused by exposures that occur on a recurrent basis, but only during a portion of the day.
- ▶ **Dose-Response Assessment** - The process of characterizing the relationship between the exposure to an agent and the incidence of an adverse health effect in exposed populations.
- ▶ **MEI** - Maximum exposed individual (theoretical)
- ▶ **MEIR** - Maximum exposed individual resident (actual)

- ▶ **MEIW** - Maximum exposed individual worker (actual)
- ▶ **Multi-pathway Substances** - A substance or chemical that once airborne from an emission source can, under environmental conditions, be taken into a human receptor by multiple exposure routes, such as inhalation, skin contact with contaminated surfaces, ingestion of soil contaminated by the emission, etc.
- ▶ **PMI** - Off-site point of maximum impact. A location, with or without people currently present, at which the total cancer risk, or the total noncancer risk, has the highest numerical value.
- ▶ **Reference Exposure Level** - The REL is an exposure level at or below which no noncancer adverse health effect is anticipated to occur in a human population, including sensitive subpopulations, exposed for a specific duration. One-hour acute RELs are designed to be protective for infrequent one-hour maximum exposures. Eight-hour RELs are designed to be protective for repeated 8-hour exposures. Chronic RELs are designed to be protective for continuous long-term exposures. RELs are used to evaluate toxicity endpoints other than cancer. RELs are expressed in units of  $\mu\text{g}/\text{m}^3$  for inhalation exposures and of  $\text{mg}/\text{kg}\text{-day}$  for non-inhalation exposures.
- ▶ **Risk** - The estimated probability of adverse effects to human health, in this instance from the exposure to environmental hazards.
- ▶ **Sensitive Receptor** - A location where the human occupants are considered to be more sensitive to air toxic pollutants than the "average" population, such as, K-12 schools, hospitals, nursing/convalescent homes, daycares, and senior centers.
- ▶ **Significant Risk Level** - An MICR of one hundred in one million ( $1.0 \times 10^{-4}$ ), a total acute hazard index (HIA) of 5.0, or chronic hazard index (HIC) of 5.0 for any target organ system at any receptor location.
- ▶ **ZOI** - The area in the vicinity of the facility in which an individual is exposed to greater than or equal to one in a million cancer risk ( $1.0 \times 10^{-6}$ ) or greater than or equal to one half (0.5) non-cancer hazard.

# 1. EXECUTIVE SUMMARY

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On behalf of Carpenter Co. (Carpenter), Trinity Consultants, Inc. (Trinity) has prepared this Rule 1402 Risk Reduction Plan (RRP) for Carpenter's facility (Facility ID #7730) located at 7809 Lincoln Ave in the city of Riverside, California. In accordance with AB 2588 and SCAQMD Rule 1402, Carpenter has prepared this RRP in response to SCAQMD's notice dated February 22, 2024.

## 1.1 Project Overview

On November 14, 2022, Carpenter prepared and submitted a Health Risk Assessment (HRA) based on its reported emissions for Calendar Year 2019 (2019 HRA). As per SCAQMD requirements, Carpenter was required to prepare the 2019 HRA utilizing the applicable state and local regulatory guidance for health risk assessments in effect at that time, which were the *2015 OEHHA Guidelines*. Per H&S Code 44362 (a), the SCAQMD is required to approve (or return for revision and resubmission) an HRA prepared pursuant to AB 2588 within one (1) year of receipt. Pursuant to communications and requirements of the SCAQMD staff, Carpenter submitted a revised 2019 HRA on May 3, 2023.

The SCAQMD issued a conditional approval letter for the 2019 HRA dated February 22, 2024 (refer to Appendix A). Pursuant to 1402(q)(1), the SCAQMD required the distribution of an AB 2588 public notice for affected receptors near the facility, which Carpenter completed and verified on April 3, 2024 (refer to Appendix A). As per the distributed public notice, a community meeting was subsequently held by the SCAQMD on April 25, 2024. In its conditional approval letter, the SCAQMD also required Carpenter to prepare this RRP per the requirements of Rule 1402 to address the chronic health risk impacts for the 2019 HRA.

## 1.2 Facility Risk Characterization

Per applicable Rule 1402 requirements, this RRP contains a complete facility risk characterization utilizing proposed or installed risk reduction measures for the facility, and an updated HRA based on the revised emissions data for Calendar Year 2019 (RRP HRA). The RRP HRA utilized the Hot Spots Analysis and Reporting Program Version 2 (HARP2) and air dispersion modeling output from the most recent version of U.S. EPA's AERMOD software. The results obtained from HARP2 provide the necessary information to generate the zones of impact and identify the potentially exposed populations. In addition, potential health effects were evaluated for the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW) for both noncancer and carcinogenic health impacts.

Carpenter operates various process lines, storage tanks, and combustion sources (permits provided in Appendix C). Based on the 2019 HRA submitted by Carpenter and approved by the SCAQMD, emissions of Toluene Diisocyanate (TDI) from the Rebond Line constitutes over 99% of the 8-hour chronic health risk impacts for the MEIW. For purposes of the RRP HRA, emissions data was based on the 2019 Annual Emissions Report (2019 AER) submitted by Carpenter. Risk reduction measures were evaluated and specified for the Rebond Line, which are the main driver of chronic health risks. To achieve stated risk reduction goals, Carpenter has made a material substitution of TDI with Methylene Diphenyl Diisocyanate (MDI) in the Rebond Line, which has much lower non-cancer chronic health hazards. Carpenter intends to make this a permanent material substitution, and a permit application to modify the SCAQMD operating permit for the Rebond Line was submitted on June 19, 2024. The facility risk characterization and post-implementation health risk assessment contained in this RRP applied this primary risk reduction measure.

## 1.3 Summary of Results

Based on the facility risk characterization and proposed risk reduction measure, Carpenter is anticipated to reduce its chronic health risk impacts to less than Action Risk Levels. Table 1b provides a summary of all health risk impacts from this RRP HRA. Note that Rule 1402 risk reduction measures were not required for acute health and cancer risk impacts; however, the RRP HRA indicates that these acute health and cancer risk impacts will remain well below applicable Action Risk Levels and will also decrease due to the proposed risk reduction measure. Summary discussions of the key health risk impacts are provided below, including, Point of Maximum Impact (PMI), Maximum Exposed Individual Residence (MEIR) and Maximum Exposed Individual Worker (MEIW).

### 1.3.1 Comparison of Health Risk Results

Table 1a compares the estimated health risk from the proposed risk reduction measure relative to the 2019 HRA, which was used as the Baseline for comparison purposes. As stated above, the submitted 2019 HRA indicated the 8-hr chronic MEIW was approximately 3.19, based on the *2015 OEHHA Guidelines*.

As shown by Table 1b, this RRP HRA indicates the 8-hr chronic health risk for the MEIW has significantly declined as a result of the proposed risk reduction measure of reducing TDI emissions from the Rebond Line. The 8-hr chronic health risk for the MEIW due to the proposed risk reduction measure is 0.543. These updated health risk estimates are based on the *2015 OEHHA Guidelines*, which indicate the post-implementation chronic health risks for Carpenter are substantially lower than the 2019 HRA and well below Rule 1402 Action Risk Levels. As shown by Table 1a, the MEIR and MEIW for acute health and cancer hazards (HIA and HIC) also remain well below Rule 1402 Action Risk Levels. Further details on the results of the RRP HRA are summarized below.

### 1.3.2 Maximum Carcinogenic Risks

Table 1b summarizes the key results of this RRP HRA for cancer risk. Figures 5 and 8 identify the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of diesel particulate matter (DPM) from the fire pump engines are the driving contributors to the cancer risks, constituting over 84% and 79%, respectively. After the material substitution, TDI emissions constitute less than 5% and 13% of the excess cancer risk for the MEIR and the MEIW, respectively; furthermore, the overall facility cancer risk has been significantly reduced since the 2019 HRA. Key results for PMI, MEIR, and MEIW are as follows:

- ▶ PMI
  - Receptor ID – #3403
  - UTM Coordinates – 462690.4 E, 3754197.4 N
  - Location – along east side of the facility boundary, near the intersection of Freda Avenue and Grace Street
  - Cancer Risk –  $9.67 \times 10^{-07}$
- ▶ MEIR
  - Receptor ID – #1165
  - UTM Coordinates – 462693.1 E, 3754233.9 N
  - Location – east of the facility, along Grace Street between Fern Avenue and Freda Avenue
  - Cancer Risk –  $7.66 \times 10^{-07}$
- ▶ MEIW
  - Receptor ID – #1162
  - UTM Coordinates – 462693.1 E, 3754058.9 N
  - Location – south of the facility, along Lincoln Avenue

- Cancer Risk –  $1.22 \times 10^{-07}$

Estimated cancer risks for MEIR and MEIW are both below 25 in a million, which is the Action Risk Level as defined by SCAQMD Rule 1402. Moreover, the values for the MEIR and MEIW do not exceed  $1 \times 10^{-5}$  (or 10 in 1 million), which the SCAQMD requires the distribution of public notices pursuant Rule 1402. No sensitive receptors exist in the zone of impact for cancer risks. Census tracts were included in the zone of impact (ZOI), e.g., boundary in which the lifetime cancer risk is greater than  $1 \times 10^{-6}$ .

### 1.3.3 Chronic Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for chronic noncancer health hazards. Figures 6 and 8 identify the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of TDI remain the driving contributor to chronic health risks, constituting over 92% and 96% respectively. However, the main contributing sources in the RRP HRA are the Prime Pour Line (Source 1) and Prime Pour TDI Tanks (Source 8), whereas the contributing source in the 2019 HRA was the Rebond Pour Line. The overall chronic health risks have decreased significantly from the 2019 HRA.

- ▶ PMI
  - Receptor ID – #3392
  - UTM Coordinates – 462639.6 E, 3754063 N
  - Location – south side of the facility boundary, along Lincoln Avenue
  - Chronic Hazard – 0.450
- ▶ MEIR
  - Receptor ID – #1207
  - UTM Coordinates – 462718.1 E, 3754183.9 N
  - Location – east of the facility, along Grace Street between Lincoln Avenue and Freda Avenue
  - Chronic Hazard – 0.243
- ▶ MEIW
  - Receptor ID – #1162
  - UTM Coordinates – 462693.1 E, 3754058.9 N
  - Location – south of the facility, along Lincoln Avenue
  - Chronic Hazard – 0.355

Estimated chronic hazards for the MEIR and MEIW do not exceed the chronic hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the values for the MEIR and MEIW do not exceed the chronic hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

### 1.3.4 Chronic 8-hour Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for chronic 8-hour noncancer health hazards. Figure 9 identifies the location of the MEIW. For the MEIW, emissions of TDI remain the driving contributor to chronic health risks, constituting over 97%. However, the main contributing sources in the RRP HRA are the Prime Pour Line and Prime Pour TDI Tanks, whereas the contributing source in the 2019 HRA was the Rebond Pour Line. The overall chronic health risks have decreased significantly from the 2019 HRA.

- ▶ MEIW
  - Receptor ID – #1122
  - UTM Coordinates – 462668.1 E, 3754033.9 N
  - Location – south of the facility, along Lincoln Avenue

- Chronic Hazard – 0.543

The estimated chronic 8-hr hazards for the MEIW does not exceed the chronic hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the value for the MEIW does not exceed the chronic hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

### 1.3.5 Acute Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for acute noncancer health hazards. Figure 10 identifies the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of TDI remain the driving contributor to chronic health risks, constituting over 79% and 89% respectively. However, the main contributing sources in the RRP HRA are the Prime Pour Line and Prime Pour TDI Tanks, whereas the contributing source in the 2019 HRA was the Rebond Pour Line. The overall chronic health risks have decreased significantly from the 2019 HRA.

- ▶ PMI
  - Receptor ID – #3388
  - UTM Coordinates – 462573.8 E, 3754017.4 N
  - Location – south side of the facility boundary, along Lincoln Avenue
  - Acute Hazard – 0.041
- ▶ MEIR
  - Receptor ID – #1125
  - UTM Coordinates – 462668.1 E, 3754258.9 N
  - Location – east of the facility, along Grace Street between Fern Avenue and Freda Avenue
  - Acute Hazard – 0.021
- ▶ MEIW
  - Receptor ID – #1017
  - UTM Coordinates – 462593.1 E, 3754008.9 N
  - Location – south of the facility, along Lincoln Avenue
  - Acute Hazard – 0.037

The MEIW and MEIR do not exceed the acute hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the values for the MEIR and MEIW do not exceed the acute hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

## 2. INTRODUCTION

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In response to an SCAQMD notice, this Risk Reduction Plan (RRP) was prepared pursuant to California Air Resources Board Air Toxics Hot Spots Program (Hot Spots Program), which is implemented per the requirements of California Assembly Bill 2588 (AB 2588). SCAQMD Rule 1402 implements the key requirements of AB 2588, which is intended to reduce the health risk associated with emissions of toxic air contaminants from existing sources by specifying limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI). Further, Rule 1402 requires applicable facilities to implement risk reduction plans to achieve specified risk limits, as required by the Hot Spots Program. This RRP contains the required plan elements to satisfy the requirements of SCAQMD Rule 1402, as described herein.

### 2.1 Applicable Requirements

SCAQMD Rule 1402 implements AB 2588 for facilities within its jurisdiction, which requires health risk assessment, public notification and risk reduction measures for facilities which exceed applicable risk levels. Rule 1402 identifies public notification and action risk levels for carcinogenic impacts, as well as non-cancer acute and chronic hazard impacts. SCAQMD Rule 1402 specifies the following key requirements:

- ▶ **Public Notification** – SCAQMD requires public notification to affected populations which equal or exceed the following health risk levels: MICR = 10 in 1 million, HIC = 1.0, or HIA = 1.0
- ▶ **Action Risk Levels** – SCAQMD requires facilities to implement risk reduction measures if affected populations are exposed to health risk levels that equal or exceed the following: MICR = 25 in 1 million, HIC = 3.0, or HIA = 3.0
- ▶ **Significant Risk Levels** – SCAQMD considers the following health risk impacts of affected populations to be significant: MICR = 100 in 1 million, HIC = 5.0, or HIA = 5.0
- ▶ **Risk Reduction Plan (RRP)** – Rule 1402 specifies the following minimum plan elements for submittal of RRP for subject facilities: (1) Facility Identification; (2) Facility Risk Characterization; (3) Identification of sources requiring risk reduction; (4) Evaluation of risk reduction measures for applicable sources; (5) Specification of selected risk reduction measures for applicable sources; (6) Implementation schedule; (7) Time extensions, if required; (8) Estimation of residual health risk; and (9) Proof of certification.

As per Rule 1402 (g)(2), if the RRP contains a facility risk characterization demonstrating to the satisfaction of the Executive Officer that the facility does not exceed the Action Risk Levels, the RRP may be approved without the inclusion of the minimum plan elements described above.

### 2.2 Background

On November 14, 2022, Carpenter prepared and submitted a Health Risk Assessment (HRA) based on reported emissions for Calendar Year 2019 (2019 HRA). As per SCAQMD requirements, Carpenter was required to prepare the 2019 HRA utilizing the applicable state and local regulatory guidance for health risk assessments in effect at that time, which were the *2015 OEHHA Guidelines*. Per H&S Code 44362 (a), the SCAQMD is required to approve (or return for revision and resubmission) an HRA prepared pursuant to

AB 2588 within one (1) year of receipt. Pursuant to communications and requirements of the SCAQMD staff, Carpenter submitted a revised 2019 HRA on May 3, 2023.

The SCAQMD issued a conditional approval letter for the 2019 HRA dated February 22, 2024 (refer to Appendix A). Pursuant to 1402(q)(1), SCAQMD required the distribution of an AB 2588 public notice for affected receptors near the facility, which Carpenter completed and verified on April 3, 2024 (refer to Appendix A). As per the distributed public notice, a community meeting was subsequently held by SCAQMD on April 25, 2024. In its conditional approval letter, SCAQMD also required Carpenter to prepare this RRP per the requirements of Rule 1402 to address the chronic health risk impacts for the 2019 HRA.

### **2.3 Risk Reduction Plan Elements**

As per Rule 1402, the RRP must contain minimum plan elements. The following describes the minimum plan elements, and the relevant section of this RRP where the information can be located.

- Rule 1402 (f)(3)(A) The RRP must include the name, address, SCAQMD identification number and SIC code of the facility. This required facility identification can be found in Section 2.1 of this RRP.
- Rule 1402 (f)(3)(B) The RRP requires a facility risk characterization which includes an updated air toxics emission inventory and health risk assessment, if the risk due to total facility emissions has increased above or decreased below the levels indicated in the previously approved health risk assessment.
- Rule 1402 (f)(3)(C) The RRP must include identification of each source from which risk needs to be reduced in order to achieve a risk below the action risk level.
- Rule 1402 (f)(3)(D) The RRP must include an evaluation of the risk reduction measures available for applicable sources identified in (f)(3)(C), including emission and risk reduction potential, estimated costs, and time necessary for implementation.
- Rule 1402 (f)(3)(E) The RRP must specify the risk reduction measures that shall be implemented by the operator to achieve the action risk level or the lowest achievable level.
- Rule 1402 (f)(3)(F) The RRP must specify a schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the plan, or in accordance with another schedule subject to approval of the Executive Officer, and specify the dates for other increments of progress associated with implementation of the risk reduction measures.
- Rule 1402 (f)(3)(G) If requesting a time extension, the RRP must specify information required to demonstrate that the request meets the required criteria specified under paragraph (e)(2) and the length of time up to two years requested. This requirement does not apply to this RRP, as a time extension is not being requested.
- Rule 1402 (f)(3)(H) The RRP must provide an estimation of the residual health risk after implementation of the specified risk reduction measures.



Rule 1402 (f)(3)(I) The RRP must provide proof of certification of the risk reduction plan as meeting all requirements by an individual who is officially responsible for the processes and operations of the facility.

## 2.4 Report Format

The report format for this RRP HRA is consistent with South Coast AQMD requirements and based on guidance by the OEHHA.

- Section 1.0 **Executive Summary** – This section summarizes facility information, emission sources, modeling parameters, and key findings of this HRA.
- Section 2.0 **Introduction** – This section discusses applicable regulatory requirements, project background, and report format.
- Section 3.0 **Risk Reduction Measures** – This section identifies the source(s) of risk from the facility and potential risk reduction measure(s) evaluated to reduce risk.
- Section 4.0 **Hazard Identification** – This section identifies the reported substances emitted from the facility. The substances evaluated for cancer and noncancer endpoints are identified for Appendix A-I substances.
- Section 5.0 **Exposure Assessment** – This section describes the estimated emissions for the chemicals of interest, the air dispersion modeling for determining airborne concentrations, the exposure pathways evaluated, and off-site receptors evaluated.
- Section 6.0 **Risk Characterization** – This section presents the results of the risk assessment for the exposure scenarios evaluated. An evaluation of the zone of impact (ZOI), sensitive receptors, and population health risks are presented where appropriate.
- Section 7.0 **Certification** – This section includes the proof of certification for this RRP.
- Section 8.0 **References** – This section identifies the various publications, sources, and other references used to prepare this HRA.

In addition to this HRA report, the required and supplemental electronic files, including modeling input and output files, have been submitted to SCAQMD via the OnBase system. Electronic files included are as follows:

- ▶ AERMOD Input File [Carpenter\_v2.3.ami, Carpenter\_v2.3\_acute.ami]
- ▶ AERMOD File [Carpenter\_v2.3.amz, Carpenter\_v2.3\_acute.amz]
- ▶ AERMAP Input and Output Text Files
- ▶ BPIP Input and Output Text Files
- ▶ AERMOD Plot Files by 1 Hour and Period by Source (.plt)
- ▶ USGS Terrain File (Carpenter.tif)
- ▶ Meteorological Files (KRAL\_v9.PFL, KRAL\_v9.SFC)
- ▶ HARP2 input files (\*HRAInput.hra)
- ▶ Supplemental input file with health values (\*PoIDB.csv)
- ▶ Supplemental input file with GLCs (\*GLCList.csv)

- ▶ Output log file (\*output.txt)
- ▶ Output file with cancer risk details (\*CancerRisk.csv)
- ▶ Output file with chronic non-cancer risk details (\*NCChronicRisk.csv)
- ▶ Output file with acute non-cancer risk details (\*NCAcuteRisk.csv)
- ▶ Pathway Receptor Information (\*PathwayRec.csv)
- ▶ HARP2 Generated Risk Plot Files (.plt)
- ▶ Emission Tables

## 3. RISK REDUCTION MEASURES

As per SCAQMD Rule 1402, the RRP must contain minimum plan elements to reduce health impacts from the approved health risk assessment. This section identifies the minimum plan elements, including a discussion of the baseline health risk impacts from which risk reduction can be measured.

### 3.1 Facility Identification

|                    |                                              |
|--------------------|----------------------------------------------|
| <b>Name</b>        | Carpenter, Co.                               |
| <b>Address</b>     | 7809 Lincoln Avenue<br>Riverside, California |
| <b>Facility ID</b> | 7730                                         |
| <b>SIC</b>         | 3086                                         |

### 3.2 Baseline Health Risks

For purposes of this RRP, the 2019 HRA will serve as initial baseline to evaluate the extent of health risk reductions required to meet Action Risk Levels. The following discusses the health risk impacts that were reported in the 2019 HRA:

On November 14, 2022, Carpenter submitted its 2019 HRA which estimated health risk impacts based upon the 2015 OEHHA Guidelines. Table 1b summarizes the results of the 2019 HRA for cancer risks, chronic hazards, and acute hazards, which includes the PMI, MEIR and MEIW for all health risk impacts. As shown by Table 1b, cancer risk and acute hazard indices are well below Action Risk Levels, and therefore, an RRP was not deemed required to address these health risk impacts. For chronic health risks, the MEIR and MEIW were estimated to be 2.28 and 1.92, respectively. For 8-hour chronic health risks, the MEIW was estimated to be 3.19. The 2019 HRA indicated that over 99% of the chronic health risks were caused by TDI emissions from the Rebond Line.

### 3.3 Source Identification

As per Rule 1402 (f)(3)(C), the RRP must include identification of each source from which risk needs to be reduced in order to achieve a risk below the action risk level. As discussed above, over 99% of the chronic health risks in the 2019 HRA resulted from the TDI emissions from the Rebond Line. As a consequence, the primary source subject to this RRP is identified below:

- ▶ Device ID No. 2 – Rebond Pour Line (Permit No. F62238)

### 3.4 Risk Reduction Evaluation

As per Rule 1402 (f)(3)(D), the RRP must include an evaluation of the risk reduction measures available for applicable sources identified in paragraph (f)(3)(C), including emission and risk reduction potential, estimated costs, and time necessary for implementation.

#### 3.4.1 Material Substitution

At the time the 2019 HRA was submitted, the Rebond Line utilized both TDI and MDI in the process. The 2019 HRA was based on reported TDI and MDI emissions, based on annual usage of each chemical. The proposed risk reduction measure for the Rebond Line completely eliminates the use of TDI within the

process and replaces it with a 100% MDI-based system for the Rebond Line. The MDI binder to TDI binder replacement ratio is approximately one-to-one (1:1). The replacement to MDI significantly decreases chronic health risk impacts over the existing TDI usage. As shown in Table 2a and 2b, the TDI and MDI emissions from the Rebond Line for Reporting Year 2019 have been updated for purposes of this RRP, while all other air toxic emission rates at the facility were unchanged from the approved 2019 HRA. Chronic health risk impacts are expected to be reduced to well below Action Risk Levels, as demonstrated by the updated HRA provided in this RRP.

### **3.5 Measure Specification**

As per Rule 1402 (f)(3)(E), the RRP must specify the risk reduction measures implemented that will achieve the Action Risk Level. In this case, the implementation of the TDI to MDI substitution is anticipated to achieve the Action Risk Levels. MDI has lower chronic and acute risk compared to TDI; in addition, there is no cancer risk associated with MDI, while TDI also contributes to cancer risk. A permit application to prohibit the use of TDI for bonded foam in the Rebond Line was submitted to SCAQMD on June 19, 2024. Even assuming the worst-case baseline chronic health risk based on the SCAQMD estimates, the material substitution is expected to reduce these baseline chronic health risks to well below 3.0, which is the Rule 1402 Action Risk Level. Given that the Rebond Line and TDI are at least 99% of the chronic risk impacts, the material substitution will be sufficient to achieve compliance with Rule 1402. For reference, the RRP HRA and facility risk characterization is provided in subsequent sections of this RRP, which further demonstrates the effectiveness of this risk reduction measure.

### **3.6 Schedule**

As per Rule 1402 (f)(3)(F), the RRP must specify a schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the plan, or in accordance with another schedule subject to approval of the Executive Officer and specify the dates for other increments of progress associated with implementation of the risk reduction measures. As previously noted, a SCAQMD application to modify the operating permit was submitted on June 19, 2024. Carpenter implemented the material substitution in March 2024.

### **3.7 Time Extension**

As per Rule 1402 (f)(3)(G), if requesting a time extension, the RRP must specify information required to demonstrate that the request meets the required criteria specified under paragraph (e)(2) and the length of time up to two years requested. This requirement does not apply, as a time extension is not being requested.

### **3.8 Residual Risk Estimate**

As per Rule 1402 (f)(3)(H), the RRP must provide an estimation of the residual health risk after implementation of the specified risk reduction measures. As discussed, the post-implementation risk estimates are being provided in this facility risk characterization and RRP HRA, which are summarized in the subsequent sections of this RRP. For reference, Table 1b identifies the post-implementation health risks for the facility based on the 2019 AER, which indicates residual risks will decrease to well below Rule 1402 Action Risk Levels. As shown by Table 1b, the air toxic emissions can increase over five times from 2019 levels, and residual risks will still remain below Rule 1402 Action Risk Levels.

## 4. HAZARD IDENTIFICATION

Hazard identification involves identifying if a hazard exists, and if so, what are the pollutant(s) of concern and whether a pollutant has potential human carcinogen and/or other adverse health effects. In general, OEHHA guidelines require health risk assessment for chemicals identified as Appendix A-I Substances per AB 2588 regulations. This section provides descriptions of the facility, applicable plant processes, pollutants of concern, and emission estimates.

### 4.1 Facility Description

Carpenter manufactures flexible polyurethane foam products for use in furniture, carpet cushion underlayment, bedding, and other applications. Carpenter operates [REDACTED] located in Riverside, CA. In general, the local topography around the plant is flat terrain within an urban environmental setting (refer to Figure 2). To support its manufacturing operations, Carpenter operates nine (9) emission sources, which are identified on Figure 3, and described further below.

### 4.2 Process Description

Carpenter manufactures flexible foam slabs and related products, which are used in consumer applications such as carpet underlay, bedding, seat cushions and others. For purposes of this HRA, the primary air toxic emission sources for Carpenter's operations are a Prime Pour Line, Rebond Line, Storage Tanks, Slab Gluing Loop, and various combustion sources (diesel and natural gas). Emissions of regulated air toxics from Carpenter's operations are principally volatiles from the foam pouring lines, gluing process, and products of fuel combustion.

#### 4.2.1 Prime Pour Line

The Prime Pour Line produces flexible polyurethane foam in batches. Chemicals are mixed prior to introduction to the prime pour line. [REDACTED]

[REDACTED] After the foam is poured, it is transported to storage areas for curing before shipment. Emission calculations for TDI emissions from the Prime Pour Line are based on permitted emission rates provided in Permit No. G66773. Emission calculations for MDI emissions from the Prime Pour Line are based on approved emission factor per communications with South Coast AQMD staff per email from Vanessa Tanik dated July 6, 2022. The Prime Pour Line emissions are controlled through a [REDACTED].

#### 4.2.2 Rebond Line

[REDACTED] The bonded foam produced from this process is eventually processed into rolls of carpet cushion underlayment. Emission calculations for MDI emissions from the Rebond Line are based on approved emission factor per communications with South Coast AQMD staff per email from Vanessa Tanik dated July 6, 2022. The Rebond Line emissions are controlled through [REDACTED].

### 4.2.3 Storage Tanks

The facility utilizes aboveground storage tanks for TDI and MDI, which are utilized in the Prime Pour Line and Rebond Line, as discussed above. Emission calculations for TDI emissions from storage tanks are based on permitted emission rates provided in Permit No. G48365. Emission calculations for MDI emissions from the storage tanks are based on approved emission factor per communications with agency staff per email from Vanessa Tanik dated July 6, 2022.

### 4.2.4 Slab Gluing Loop

In this process, foam slab blocks are placed on a loop track and glued together to form larger blocks [REDACTED]

[REDACTED] Per communications with South Coast AQMD staff, the agency recommended an emission calculation methodology in the MDI/Polymeric MDI Emissions Reporting Guidelines for the Polyurethane Industry as published by the Alliance for Polyurethane Industries (page 111), which estimate emissions from open processes such as boardstock production. Emission estimates utilizing this methodology were approved by the South Coast AQMD staff per email from Vanessa Tanik dated June 4, 2022. Based on process information from Carpenter, the following assumptions are applied for the slab glue loop process, which are reflected in the approved emission calculations:

[REDACTED]

[REDACTED] Consequently, MDI emissions from the gluing process are determined to be negligible (< 0.0001 lbs/year).

### 4.2.5 Combustion Sources

The facility operates several combustion sources which were part of the 2019 ATIR, which include: (1) a natural gas steam generator (Permit No. G20595); (2) a natural gas fiber line oven (Permit No. F49010); and (3) two emergency diesel fire pumps (Permit Nos. D22228 and D43309). Air toxic combustion emissions from the steam generator were calculated using approved South Coast AQMD default factors for natural gas boilers (< 10 MMBtu/hr). Air toxic combustion emissions from the fiber line oven were calculated using approved South Coast AQMD default factors for natural gas ovens (< 10 MMBtu/hr). Combustion emissions from the fire pumps were calculated using approved South Coast AQMD default factors for diesel fired stationary internal combustion engines.

## 4.3 Updated Emissions Inventory

For purposes of this RRP HRA, Trinity utilized the material usages provided by Carpenter for 2019, assuming the complete substitution of TDI with MDI in the Rebond Line. For the Rebond Line, Trinity identified SCAQMD Rule 1401 toxics from the associated Safety Data Sheets. Based on this AER, emission calculations applied emission factors assigned in SCAQMD permits and default AB 2588 air toxic emission factors for combustion. These processes were modeled as point and area sources, the operating schedules for the various sources are further discussed in Section 5.2.

## 4.4 Pollutants of Interest

Per OEHHA Guidelines, the modeled chemicals in this HRA from the facility emission sources were identified from AB 2588 Appendix A-I list of substances. The chemicals that were identified from the listed Appendix A-I substances are displayed in Table 2a and 2b. Chemical profiles of these air toxics are well established by OEHHA and regulatory authorities, such as physical characteristics, general uses, and toxicity information. As shown by Table 3, of the 25 identified AB 2588 emitted substances, 14 substances have carcinogenic impacts, 22 substances have chronic noncancer hazard impacts, and 21 substances have acute noncancer hazard impacts. Some substances have multiple health impacts. As shown by Table 4, potential target organs for the acute and chronic noncancer health effects are as follows: cardiovascular system (CV), central nervous system (CNS), immune system (IMMUN), kidney (KIDN), alimentary liver system (GILV), reproductive system (REPRO), respiratory system (RESP), skin (SKIN), eye (EYE), bone and teeth (BONE), endocrine system (ENDO), hematopoietic system (HEM), and odor (ODOR).

## 5. EXPOSURE ASSESSMENT

Exposure assessment involves estimating the extent of public exposure to each regulated substance for which there exists potential cancer risk and/or noncancer health hazard effects. This involves modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term and long-term exposure levels.

This section describes air dispersion modeling and associated parameters used to estimate the potential for human exposure to the AB2588 emissions from this facility, including: (1) summarize and describe the source information and emission estimates used in the environmental transport models; (2) describe potentially exposed populations; (3) describe the assumptions used in the air dispersion and assessment of chemical exposure model; and (4) identify primary methodologies for calculating health risk impacts.

### 5.1 Air Dispersion Modeling

Air dispersion modeling is used to estimate off-site air concentrations of chemicals associated with facility emissions. For this HRA, Trinity used the most recent version of the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD) version 23132. Developed to replace the Industrial Source Complex Short-Term Version 3 (ISCST3) model, AERMOD is a steady-state Gaussian plume model that can be used to assess ground level pollutant concentrations from a wide variety of sources (point, line, area or volume) for distances up to approximately 50 km, including urban and rural terrains. AERMOD can calculate ground level concentrations for various averaging periods, such as acute short-term exposures (1-hour averaging), chronic long-term exposures (annual averages) or other required meteorological data periods (i.e., 3-hour, 8-hour, 24-hour). The assumptions used for this model are discussed in more detail below.

#### 5.1.1 Model Options

For this RRP HRA, SCAQMD recommends single and multi-source dispersion modeling in urban or rural areas with "simple terrain" (flat or gently rolling, with ground elevations below the pollutant release heights), which is typical of the area immediately surrounding the facility. The following AERMOD model options were used in the modeling analysis:

|                      |                                     |
|----------------------|-------------------------------------|
| ▶ AERMOD Version     | 23132                               |
| ▶ HARP2 ADMRT        | 22118                               |
| ▶ Projection         | Universal Transverse Mercator (UTM) |
| ▶ Datum              | World Geodetic System 1984          |
| ▶ UTM Zone           | 11                                  |
| ▶ Hemisphere         | Northern                            |
| ▶ Selection          | Hourly and Period                   |
| ▶ AERMOD File        | AMI and .AMZ                        |
| ▶ AERMOD Output File | Plot File by Source                 |

The following default model options were used in accordance with SCAQMD guidelines:

|                              |       |
|------------------------------|-------|
| ▶ Use regulatory default?    | Yes   |
| ▶ Urban or Rural?            | Urban |
| ▶ Include building downwash? | Yes   |



All the point sources at the facility are identified on various manufacturing buildings (refer to Figure 3). To determine noncarcinogenic acute health hazards, AERMOD model calculated ground level concentrations for the maximum 1-hour averaging period. To determine noncarcinogenic chronic health hazards and carcinogenic health impacts, AERMOD model calculated ground level concentrations for the annual average period.

### 5.1.2 Source Parameters

The AERMOD model supports a variety of source types, including point, area, volume, and line. Based on current facility operations and reported emissions, modeling sources were identified for purposes of this HRA. Modeling sources are generally identified as point, line, volume, or area sources. There are nine (9) sources of AB 2588-listed substance emissions, six (6) of which are characterized as point sources. The following inputs are defined for the point source:

- ▶ Source ID
- ▶ X Coordinate
- ▶ Y Coordinate
- ▶ Base Elevation
- ▶ Release Height above Ground
- ▶ Emission Rate
- ▶ Stack Gas Exit Temperature
- ▶ Stack Gas Exit Velocity
- ▶ Stack Diameter

The point source stacks are vertical, and there is no source grouping.

Three (3) sources are characterized as area sources. The following inputs are defined for the area source:

- ▶ Source ID
- ▶ X Coordinate
- ▶ Y Coordinate
- ▶ Base Elevation
- ▶ Release Height above Ground
- ▶ Emission Rate
- ▶ X Length
- ▶ Y Length

Zero sources are characterized as volume sources.

All relevant emissions source parameters that were applied for this model are provided in Table 5. Maximum 1-hour and annual average emission rates for each source and regulated chemical are provided in Table 2. For inputted sources, AERMOD calculates ground level concentrations based on inputted source-specific parameters, including the emission rate, stack height, stack inside diameter, stack exit velocity, and stack gas temperature.

#### 5.1.2.1 Variable Emission Rates

Variable emission rates were applied to each source in AERMOD based on the respective operating schedule. The operating schedule for each source is provided in the table below.

| Source ID | Source Description   |  |  |  | Variable Rate |
|-----------|----------------------|--|--|--|---------------|
| 1         | Prime Pour Line      |  |  |  | 4.2           |
| 2         | Rebond Pour Line     |  |  |  | 3.36          |
| 3         | Fire Pump Engine 1   |  |  |  | 3.73          |
| 4         | Fire Pump Engine 2   |  |  |  | 3.73          |
| 5         | Fiber Line 1 Oven    |  |  |  | 4.2           |
| 6         | Steam Generator      |  |  |  | 1.98          |
| 7         | MDI Storage Tank     |  |  |  | 1             |
| 8         | Prime Pour TDI Tanks |  |  |  | 1             |
| 9         | Slab Gluing Loop 1   |  |  |  | 3.36          |

### 5.1.3 Receptors

According to OEHHA Guidelines, HRAs must provide a detailed analysis of the potentially exposed population. This analysis includes identification of the maximum exposed individuals (MEIs) for nearby residences (MEIR) and workers (MEIW), identification of sensitive receptors within the ZOI, identification of fence line receptors, and evaluation of potential population impacts within the ZOI. As required, various receptor locations were inputted into AERMOD which covered the property fenceline, nearby residences and workers, sensitive receptors, and census blocks. Additional detail for each receptor type is provided as follows:

- ▶ **Facility Boundary** – Facility boundary receptors were defined at 20-meter increments along the property border. Figure 3 shows the fenceline for this HRA. The facility boundary receptors are identified as receptors 3383-3461.
- ▶ **Receptor Grid** – A tiered receptor grid was used to identify locations of potential MEIs. The first tier has spacing of 25 meters out to 500 meters from the facility boundary. Tier 2 has spacing of 50 meters from 500 meters to 1 kilometer. Tier 3 has spacing of 100 meters from 1 kilometer to 2 kilometers. Tier 4 has spacing of 250 meters from 2 kilometers to 4 kilometers. The receptor grid receptors are identified as receptors 1-3377.
- ▶ **Discrete Receptors** – Discrete receptors were added to identify the potential MEIs. Discrete receptors were also added for residences, workplaces, and census blocks preliminarily identified to have a 30-year cancer risk higher than 1 in a million. The discrete receptors are identified as receptors 3378-3382.
- ▶ **Sensitive Receptors** - In accordance with OEHHA Guidelines, sensitive receptors must be identified within the ZOI, such as K-12 schools, hospitals, nursing/convalescent homes, daycares, and senior centers. As applicable, to determine the location of nearby sensitive receptors within the ZOI, Trinity reviewed applicable public sources of information and databases, including, Google and online search. Sensitive receptors are identified as receptors 1444, 1445, 1488-1491, 1534-1536, 1580-1582, and 1625-1627. A breakdown of the sensitive receptors is identified in Table 7a, and ground level concentrations for the sensitive receptors is provided in Table 7b.

### 5.1.4 Building Downwash

The purpose of this evaluation is to determine if stack discharge might become caught in the turbulent wakes of structures within close proximity. Wind blowing around a building creates zones of turbulence that are greater than if the building was absent. The USEPA-approved Building Profile Input Program PRIME (BPIP-PRIME) was used to simulate the building downwash, which is the effect of nearby structures on the flow of the plumes from their respective emission sources. U.S. EPA has promulgated stack height regulations that restrict the use of stack heights in excess of "Good Engineering Practice" (GEP) in air

dispersion modeling analyses.<sup>1</sup> Under these regulations, that portion of a stack in excess of the GEP height is generally not creditable when modeling to determine source impacts. This essentially prevents the use of excessively tall stacks to reduce the ground-level pollutant concentrations. The stack height not subject to the effects of downwash, called the GEP stack height, is defined by the following formula:

$$H_{GEP} = H + 1.5L$$

Where:

$H_{GEP}$  = GEP stack height,

H = structure height, and

L = lesser dimension of the structure (height or projected width)

This equation is limited to stacks located within 5L of a structure. Stacks located at a distance greater than 5L are not subject to the wake effects of the structure. If there is more than one stack at a given facility, the above equation must be successively applied to each stack. If more than one structure is involved, the equations must also be successively applied to each structure. To calculate downwash effects, if any, building coordinates and height of nearby structures were inputted into BPIP-PRIME and can be seen on Table 6. A total of eight (8) facility buildings and a total of seven (7) external buildings were modeled for building downwash. Figure 3 shows the facility boundary, buildings, and sources.

### 5.1.5 Meteorological and Elevation Data

CARB provides AERMOD-ready meteorological data. The appropriate regional meteorological data set was chosen based on station proximity to the facility. The Riverside Airport meteorological data set was identified as most applicable.

OEHHA Guidelines recommend five years of meteorological data be used in the model if available. The following five-year AERMET processed meteorological data files for years 2012 through 2016 were downloaded from the South Coast AQMD Met Data site:

- ▶ KRAL\_v9.SFC
- ▶ KRAL\_v9.PFL

The surface file and profile file were inputted into AERMAP and processed with all receptors and sources. Topography classification (Simple, Intermediate, Complex) is not required with the AERMOD dispersion model. Terrain options employed within AERMOD, using AERMAP to obtain source, building, and receptor elevations from the following file downloaded and resized from the USGS National Map (USGS 2022):

- ▶ Carpenter.tif

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<sup>1</sup> U.S. Environmental Protection Agency, Good Engineering Practice Stack Height Regulations, October 1988

## 5.2 Assessment of Chemical Exposure

For this RRP HRA, SCAQMD requires the use of the Hotspots Analysis and Reporting Program, Version 2 (HARP2). The health risk module of HARP2 incorporates the current OEHHA guidelines, exposure factors and most recent toxicity values for modeled substances.

### 5.2.1 HARP2 Analysis

AERMOD estimates off-site ambient air concentrations for each averaging period (i.e., 1-hour, annual average, etc.) based on source parameters and a normalized emission rate (1 gram/sec) from each emission source. The AERMOD output provides a theoretical concentration based on this normalized emission rate for each chemical at each receptor location from each source. This normalized emission rate for each source was used to generate a file that contained the partial contribution of each source to the total air concentration in units of micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) at each receptor. This AERMOD model output file was used as an input file to the HARP2 model, which combined the partial contributions with actual source emission rates to estimate the chemical-specific air concentrations at each receptor location. HARP2 sums up the contribution from each source at a given receptor in order to estimate the total pollutant concentration for each emitted chemical. HARP2 also contains updated toxicity information (cancer potency, RELs, etc.) for listed regulated substances, which are applied to estimate cancer and noncancer health hazard impacts for relevant exposure pathways and applicable target organs.

As required, the HARP2 model input and output files were submitted with this HRA report in electronic format, as listed in Section 2.3.

### 5.2.2 Exposure Pathways

Exposure pathways are generally classified as primary pathways and secondary pathways. Inhalation is the primary exposure pathway for all modeled sources and substances. For multi-pathway substances, there are non-inhalation exposure pathways that should also be evaluated. As applicable, the non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), soil ingestion, ingestion of mother's milk, fish, and dairy products, or other.

In general, most air toxics assessed under the Hot Spots program are volatile organic compounds that remain as gases when emitted into the air. These volatile chemicals are not subject to appreciable deposition to soil, surface waters, or plants. Therefore, human exposure does not normally occur to any appreciable extent via ingestion or dermal exposure. Rather, the primary exposure pathway to these volatiles occurs through the inhalation pathway. A small subset of regulated substances, i.e. semi-volatile organic and metals, is emitted partially or totally as particles subject to deposition. In these cases, ingestion and dermal pathways as well as the inhalation pathway must be evaluated.

Based on OEHHA Guidelines the multi-pathway analyses that will be included in this HRA will consider exposure via the mandatory minimum pathways of:

- ▶ Inhalation
- ▶ Soil Ingestion
- ▶ Dermal Absorption
- ▶ Mother's Milk
- ▶ Homegrown Produce

The area surrounding the facility is primarily industrial, commercial, and residential. There is no local potable surface water supply in the vicinity of the facility. Therefore, it is assumed that there is no risk involved in the exposure through ingestion of local fish nor through ingestion of surface water or groundwater. There is no adjustment to exposure time, worker adjustment, and time away from home applied to this HRA.

If applicable, particle deposition will be predicted using the procedures and the values presented in the OEHHA Air Toxics "Hot Spots" Program Risk Assessment Guidelines, February 2015. The deposition rate of 2 cm/s will be used in this HRA, as applicable.

### 5.2.3 Carcinogenic Health Impacts

In accordance with the OEHHA Guidelines, cancer risk estimates based on the theoretical upper-bound cancer risk were evaluated for the MEIR, MEIW, and PMI. The guidelines also require cancer risk to be evaluated for affected sensitive receptors and populations within the ZOI.

The HARP2 model computes the total cancer risk from both inhalation and non-inhalation pathways at each receptor location. For example, the inhalation risk for each pollutant at a receptor location is calculated by multiplying the inhalation dosage by its cancer potency factor (example below). The estimated risks for individual substances emitted by the facility are added to provide the total cancer risk for individual receptor locations. For inhalation exposures, cancer risk must be separately calculated for specified age groups because of age differences in sensitivity to carcinogens and age differences in intake rates. Some substances are subject to deposition onto soil, plants, and water bodies and therefore need to be evaluated by the appropriate non-inhalation pathway. Cancer risk for both inhalation and non-inhalation pathways is calculated using Equation 8.2.4 A and 8.2.5 from the OEHHA Guidelines, generalized in the following equation:

$$\text{Cancer Risk}_i = \text{Dose} \times \text{CPF} \times \text{ASF} \times \frac{\text{ED}}{\text{AT}} \times \text{FAH}$$

Where:

|                          |   |                                                                                 |
|--------------------------|---|---------------------------------------------------------------------------------|
| Cancer Risk <sub>i</sub> | = | Cancer risk for specific exposure pathway <i>i</i> (inhalation/non-inhalation)  |
| Dose                     | = | Daily Inhalation Dose (mg/kg-day)                                               |
| CPF                      | = | Cancer Potency (or Unit Risk Factor) (mg/kg-day) <sup>-1</sup>                  |
| ASF                      | = | Age sensitivity factor for a specified age group (unitless)                     |
| ED                       | = | Exposure duration (in years) for a specified age group                          |
| AT                       | = | Averaging time for lifetime cancer risk (years)                                 |
| FAH                      | = | Fraction of time spent at home (unitless) (residential inhalation pathway only) |

Per OEHHA Guidelines, South Coast AQMD assumes an exposure duration of 30 years for residential and sensitive receptors. For worker receptors, the exposure duration is reduced to 25 years.

### 5.2.4 Noncarcinogenic Health Impacts

Potential noncarcinogenic health effects (acute HI and chronic HI) associated with exposure to chemical emissions have been evaluated using the HARP2 model. Acute and chronic health hazards for different substances impact different target human organs (e.g., central nervous system, reproductive system, liver, etc.). For inhalation exposures, the model divides the predicted average air concentrations for each chemical at the receptor locations by the appropriate inhalation Reference Exposure Levels (RELs) provided by OEHHA. These ratios are chemical-specific to the chronic or acute hazard quotients.

Noncarcinogenic health effects were also evaluated in terms of their assumed potential additive effect on target organs or systems. For inhalation exposures, the target organ-specific HI is the sum of the individual

hazard quotients for each chemical affecting a specific target organ as defined in Section 8.3.1 of the OEHHA Guidelines, as shown below:

$$\text{Hazard Index (HI)}_{\text{Organ}} = \sum \left[ \frac{\text{GLC}}{\text{REL}_{\text{Organ}}} \right]_{\text{Chemical}}$$

Where:

- GLC = ground level concentration ( $\mu\text{g}/\text{m}^3$ ), annual average concentration for chronic and 1-hour max concentration for acute
- REL = Reference Exposure Level ( $\mu\text{g}/\text{m}^3$ )

In the case of a multi-pathway pollutant (i.e., pollutants with non-inhalation exposures), health risk impacts consider the additional noncancer risks associated with non-inhalation routes of exposure from certain pollutants.

### 5.2.5 Worker Adjustment Factor

Per South Coast AQMD’s AB 2588 and Rule 1402 Supplemental Guidelines, worker adjustment factors (WAFs) are needed for facilities that do not operate continuously. The adjustment reflects the pollutant concentration that an offsite worker breathes. WAFs are only applicable when estimating worker cancer risks and non-cancer chronic 8-hour HI, and the WAFs only affect the inhalation pathway. WAFs were calculated per source based on the potential operating hours, and it is conservatively assumed that the offsite worker and the facility have the same operating schedule, meaning the operating schedules completely overlap.

WAFs can typically be entered into HARP2 via the Inhalation Pathway. This method allows for one WAF to be used for the entire facility. For Carpenter, [REDACTED] the WAFs were directly applied to the worker cancer inhalation risk and the non-cancer chronic 8-hour risk for each source through post-processing in Microsoft Excel. [REDACTED]

| Source ID | Permit ID | Source Name                               | [REDACTED] | [REDACTED] | [REDACTED] | WAF  |
|-----------|-----------|-------------------------------------------|------------|------------|------------|------|
| 1         | G66773    | Prime Pour Line                           | [REDACTED] | [REDACTED] | [REDACTED] | 4.20 |
| 2         | F62238    | Rebond Pour Line                          | [REDACTED] | [REDACTED] | [REDACTED] | 3.36 |
| 3         | D22228    | Fire Pump Engine 1                        | [REDACTED] | [REDACTED] | [REDACTED] | 3.73 |
| 4         | D43309    | Fire Pump Engine 2                        | [REDACTED] | [REDACTED] | [REDACTED] | 3.73 |
| 5         | F49010    | Fiber Line 1 Oven                         | [REDACTED] | [REDACTED] | [REDACTED] | 4.20 |
| 6         | G20595    | Clayton Natural Gas Fired Steam Generator | [REDACTED] | [REDACTED] | [REDACTED] | 1.98 |
| 7         | G48365    | MDI Storage Tank                          | [REDACTED] | [REDACTED] | [REDACTED] | 1    |
| 8         | G48365    | Prime Pour TDI Tanks                      | [REDACTED] | [REDACTED] | [REDACTED] | 1    |
| 9         | NA        | Slab Gluing Loop 1                        | [REDACTED] | [REDACTED] | [REDACTED] | 3.36 |

## 6. RISK CHARACTERIZATION

The facility risk characterization section discusses the results of the modeling, including, noncancer health hazards, carcinogenic health hazards, zones of impact, maximum exposures, cancer burden calculations and affected populations. The following summarizes the key modeling parameters and results from this HRA.

### 6.1 Dose-Response and Dose Estimates

Dose-response assessment describes the quantitative relationship between the amount of exposure to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). For cancer health risk, CARB's Scientific Review Panel on Toxic Air Contaminants has approved a list of cancer potency factors developed by OEHHA or USEPA. The potency factors are provided in Appendix A of the OEHHA Guidelines and used in HARP2 ADMRT. The potency factors for the facility are listed in Table 3. For noncancer health effects, the dose-response information is used to determine the RELs. The RELs are provided in Appendix B of the OEHHA Guidelines and used in HARP2 ADMRT. The RELs for the facility are listed in Table 3.

### 6.2 Zone of Impact

As required, modeling receptor points were identified to include the property fence line, nearby workers, and local residential neighborhoods. In addition, any sensitive receptors within the ZOI were identified (see Figure 5 for ZOI residential cancer risk). The ZOI is commonly defined as the area surrounding the facility where receptors have a potential cancer risk equal or greater than 1 in 1 million, acute hazards equal or greater than 0.5, or chronic hazards equal or greater than 0.5. The ZOI is defined once the air dispersion modeling process has determined the pollutant concentrations at each designated off-site receptor and a risk analysis has been performed. The results from the HARP2 model provide the information necessary to identify the ZOI by generating the associated risk isopleths (i.e., a geographical presentation of areas of equal risk). Maps depicting the ZOIs for this HRA are provided in Figures 5 through 11, as applicable.

### 6.3 Carcinogenic Health Effects

#### 6.3.1 Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 8 and 9, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the PMI are listed below.

- ▶ Receptor ID – #3403
- ▶ UTM Coordinates – 462690.4 E, 3754197.4 N
- ▶ Cancer Risk –  $9.67 \times 10^{-7}$
- ▶ Driving Compound – Diesel Particulate Matter (DPM)
- ▶ Driving Emission Source – Fire Pump Engine 1 and Fire Pump Engine 2 (Source ID 3 and 4)
- ▶ Driving Pathway – Inhalation

The PMI is located along east side of the facility boundary, near the intersection of Freda Avenue and Grace Street, shown on Figure 5.

### 6.3.2 Maximum Exposed Individual Resident (MEIR)

Results for the MEIR by each pollutant and by each source are presented in Tables 10 and 11, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the MEIR are listed below.

- ▶ Receptor ID – #1165
- ▶ UTM Coordinates – 462693.1 E, 3754233.9 N
- ▶ Cancer Risk –  $7.66 \times 10^{-7}$
- ▶ Driving Compound – Diesel Particulate Matter
- ▶ Driving Emission Source – Fire Pump Engine 1 and Fire Pump Engine 2 (Source ID 3 and 4)
- ▶ Driving Pathway – Inhalation

The MEIR is located to the east of the facility, along Grace Street between Fern Avenue and Freda Avenue, shown on Figure 5. Figure 5 presents the cancer risk isopleths identifying the ZOI for residential modeling scenarios.

### 6.3.3 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 12 and 13, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the MEIW are listed below.

- ▶ Receptor ID – #1162
- ▶ UTM Coordinates – 462693.1 E, 3754058.9 N
- ▶ Cancer Risk –  $1.22 \times 10^{-7}$
- ▶ Driving Compound – Diesel Particulate Matter
- ▶ Driving Emission Source – Fire Pump Engine 1 and Fire Pump Engine 2 (Source ID 3 and 4)
- ▶ Driving Pathway – Inhalation

The MEIW is located to the south of the facility, along Lincoln Avenue, shown on Figure 7. Figure 7 presents the cancer risk isopleths identifying the ZOI for worker modeling scenarios.

### 6.3.4 Sensitive Receptors

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 11. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

### 6.3.5 Population Cancer Burden

AB 2588 requires an estimate of the number of impacted individuals in residences and off-site workplaces within the ZOI. Census data is used to determine affected populations within geographic areas defined by census tracts. A census tract centroid (geographical center) is identified as a receptor location, which represents exposure to the population within that census tract. Census tract information was obtained directly from the HARP2 ADMRT background data for census tracts located with the ZOI.

The ZOI is within Tract 313. For this HRA, affected populations were estimated based on census data from Calendar Year 2010, as published by the United States Census Bureau. The census tract receptors were inputted into AERMOD and are identified as receptors 3457-3461. The cancer burden results are presented in Tables 28, as follows:



- ▶ Total cancer burden – 0.00007

## 6.4 Noncancer Chronic Health Effects

### 6.4.1 Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 14 and 15, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the PMI are listed below.

- ▶ Receptor ID – #3392
- ▶ UTM Coordinates – 462639.6 E, 3754063 N
- ▶ Chronic Hazard – 0.450
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line and Prime Pour TDI Tanks (Source ID 1 and 8)
- ▶ Driving Target Organ – Respiratory System

The PMI is located along the south side of the facility boundary, along Lincoln Avenue as shown on Figure 6.

### 6.4.2 Maximum Exposed Individual Resident (MEIR)

Results for the MEIR by each pollutant and by each source are presented in Tables 16 and 17, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the MEIR are listed below.

- ▶ Receptor ID – #1207
- ▶ UTM Coordinates – 462718.1 E, 3754183.9 N
- ▶ Chronic Hazard – 0.243
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour TDI Tanks (Source ID 8)
- ▶ Driving Target Organ – Respiratory System

The MEIR is located to the east of the facility, along Grace Street between Lincoln Avenue and Freda Avenue, shown on Figure 6. Figure 6 presents the chronic hazard isopleths identifying the ZOI for residential modeling scenarios.

### 6.4.3 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 18 and 19, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- ▶ Receptor ID – #1162
- ▶ UTM Coordinates – 462693.1 E, 3754058.9 N
- ▶ Chronic Hazard – 0.355
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line and Prime Pour TDI Tanks (Source ID 1 and 8)
- ▶ Driving Target Organ – Respiratory System

The MEIW is located to the south of the facility, along Lincoln Avenue, shown on Figure 8. Figure 8 presents the chronic hazard isopleths identifying the ZOI for worker modeling scenarios.

#### **6.4.4 Sensitive Receptors**

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 11. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

### **6.5 Noncancer Chronic 8-Hour Health Effects**

#### **6.5.1 Maximum Exposed Individual Worker (MEIW)**

Results for the MEIW by each pollutant and by each source are presented in Tables 26 and 27, respectively. The receptor ID, UTM coordinates, chronic 8-hour hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- ▶ Receptor ID – #1122
- ▶ UTM Coordinates – 462668.1 E, 3754033.9 N
- ▶ Chronic Hazard – 0.543
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line (Source ID 1)
- ▶ Driving Target Organ – Respiratory System

The MEIW is located to the south of the facility, along Lincoln Avenue, shown on Figure 9. Figure 9 presents the chronic hazard isopleths identifying the ZOI for worker modeling scenarios.

### **6.6 Noncancer Acute Health Effects**

#### **6.6.1 Point of Maximum Impact (PMI)**

Results for the PMI by each pollutant and by each source are presented in Tables 20 and 21, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the PMI are listed below.

- ▶ Receptor ID – #3388
- ▶ UTM Coordinates – 462573.8 E, 3754017.4 N
- ▶ Acute Hazard – 0.041
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line (Source ID 1)
- ▶ Driving Target Organ – Respiratory System

The PMI is located along south side of the facility boundary, along Lincoln Avenue, shown on Figure 10.

#### **6.6.2 Maximum Exposed Individual Resident (MEIR)**

Results for the MEIR by each pollutant and by each source are presented in Tables 22 and 23, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the MEIR are listed below.

- ▶ Receptor ID – #1125
- ▶ UTM Coordinates – 462668.1 E, 3754258.9 N
- ▶ Acute Hazard – 0.021
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line and Prime Pour TDI Tanks (Source ID 1 and 8)
- ▶ Driving Target Organ – Respiratory System

The MEIR is located to the east of the facility, along Grace Street between Fern Avenue and Freda Avenue, shown on Figure 10. Figure 10 presents the acute hazard isopleths identifying the ZOI for residential modeling scenarios.

### **6.6.3 Maximum Exposed Individual Worker (MEIW)**

Results for the MEIW by each pollutant and by each source are presented in Tables 24 and 25, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- ▶ Receptor ID – #1017
- ▶ UTM Coordinates – 462593.1 E, 3754008.9 N
- ▶ Acute Hazard – 0.037
- ▶ Driving Compound – Toluene Diisocyanate (TDI)
- ▶ Driving Emission Source – Prime Pour Line and Prime Pour TDI Tanks (Source ID 1 and 8)
- ▶ Driving Target Organ – Respiratory System

The MEIW is located to the south of the facility, along Lincoln Avenue, shown on Figure 10. Figure 10 presents the acute hazard isopleths identifying the ZOI for worker modeling scenarios.

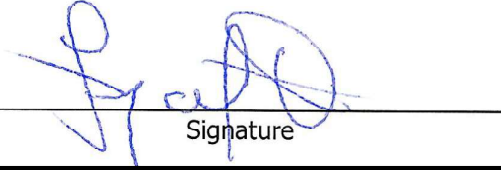
### **6.6.4 Sensitive Receptors**

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 11. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

## 7. CERTIFICATION

I, as the undersigned, certify that this Risk Reduction Plan meets the requirements set forth in South Coast Air Quality Management District Rule 1402, and that I am an official responsible for the processes and operations of this facility.

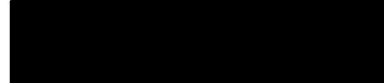
X

  
Signature

  
Date



Printed Name



Title

## 8. REFERENCES

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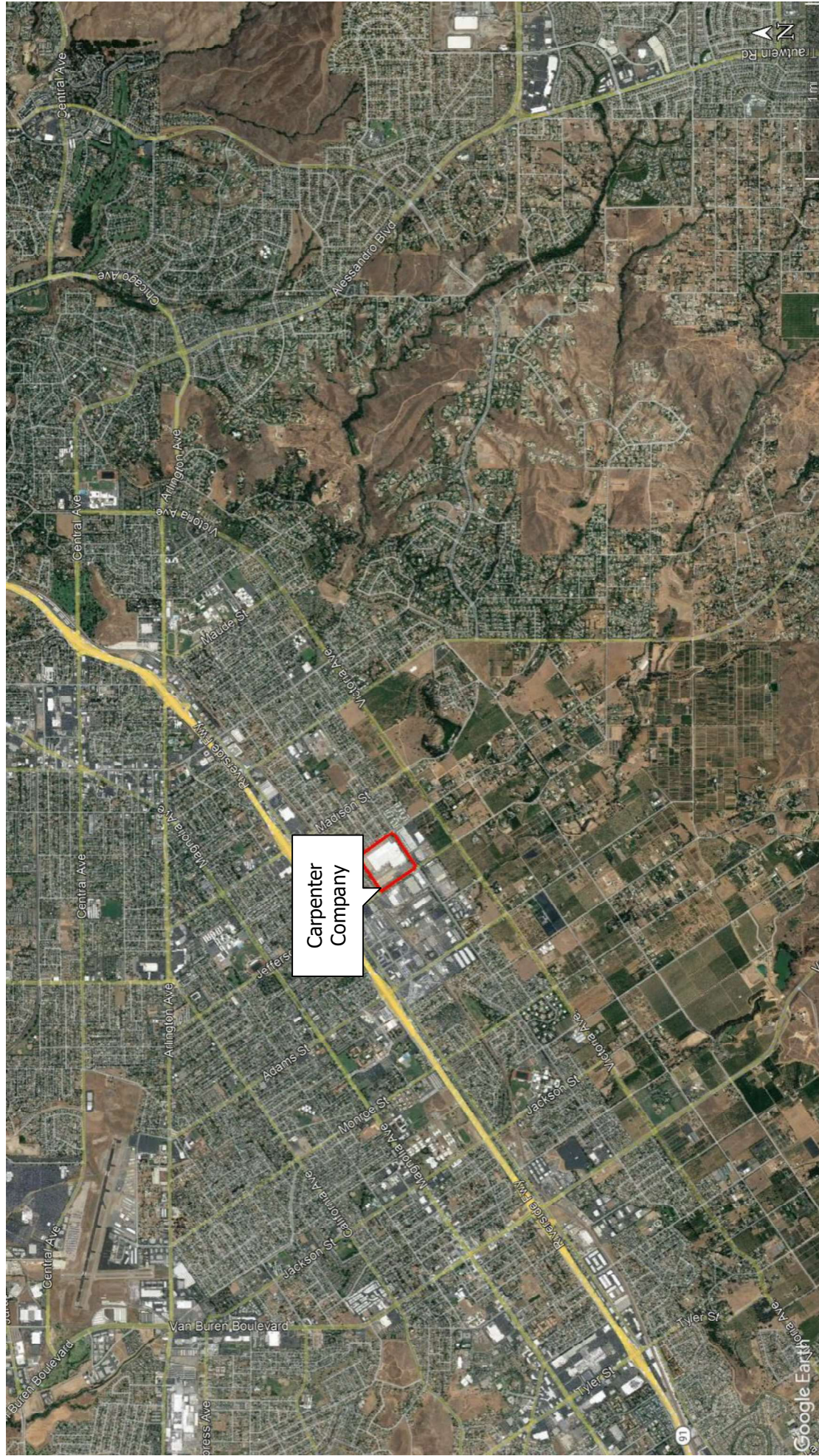
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[https://www3.epa.gov/ttn/scram/models/aermod/aermod\\_userguide.pdf](https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf)

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-----, 2020. AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information Assessment Act)

## **APPENDIX A. FIGURES**

---



Prepared By:



Prepared For:



**Carpenter Company**  
**7809 Lincoln Ave**  
**Riverside, CA 92504**

Description

**Location Map**

Project

**220501.0148**

Date

**June 2024**

Figure

**1**



Description  
**Vicinity Map**

Prepared For:  
**Carpenter Company  
7809 Lincoln Ave  
Riverside, CA 92504**

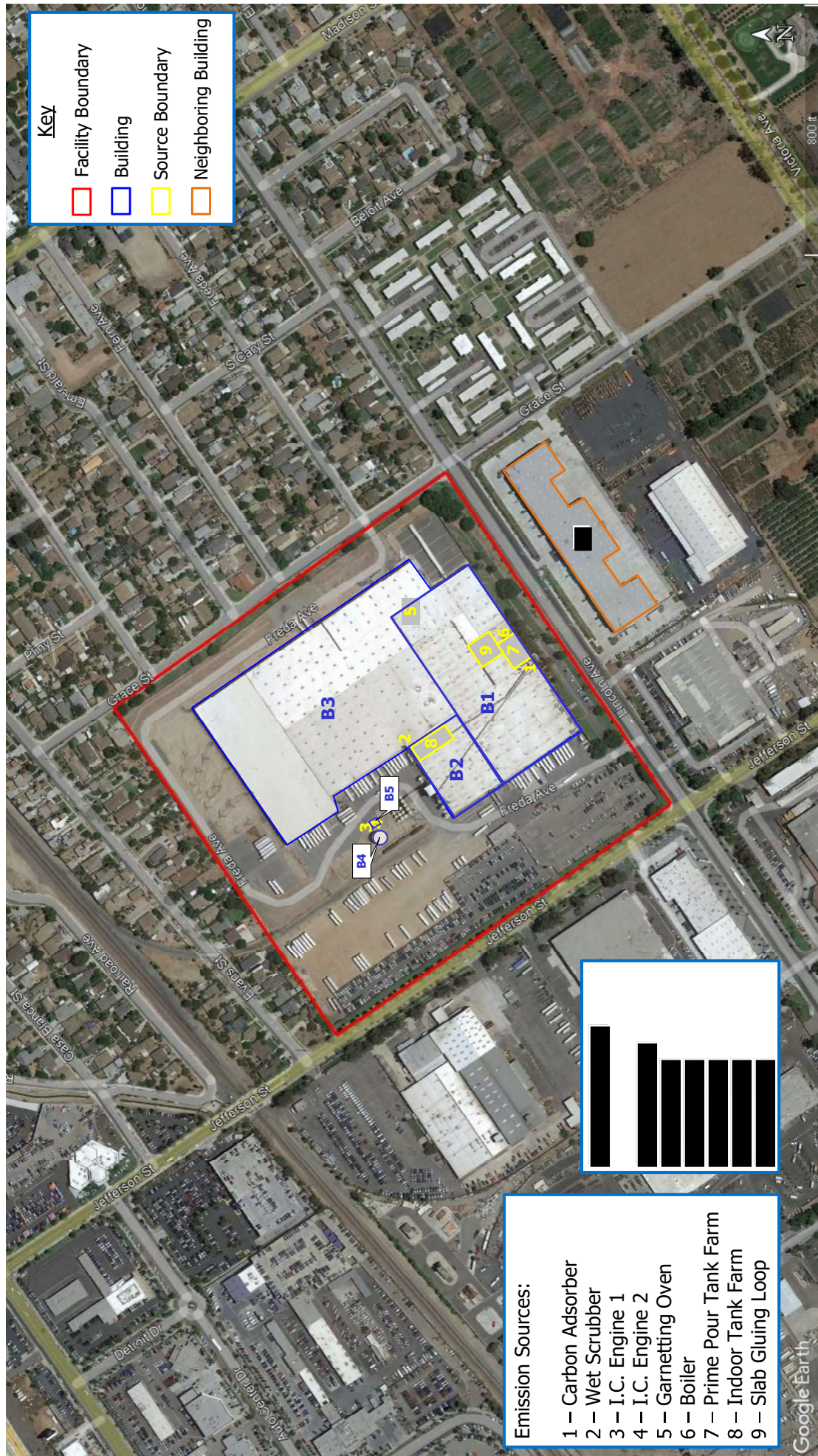
Prepared By:  
**Trinity  
Consultants**

Project  
**220501.0148**

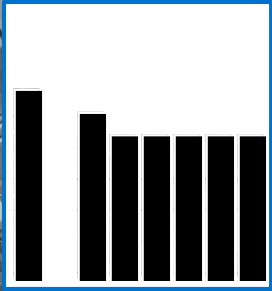
Date  
**June 2024**

Figure  
**2**





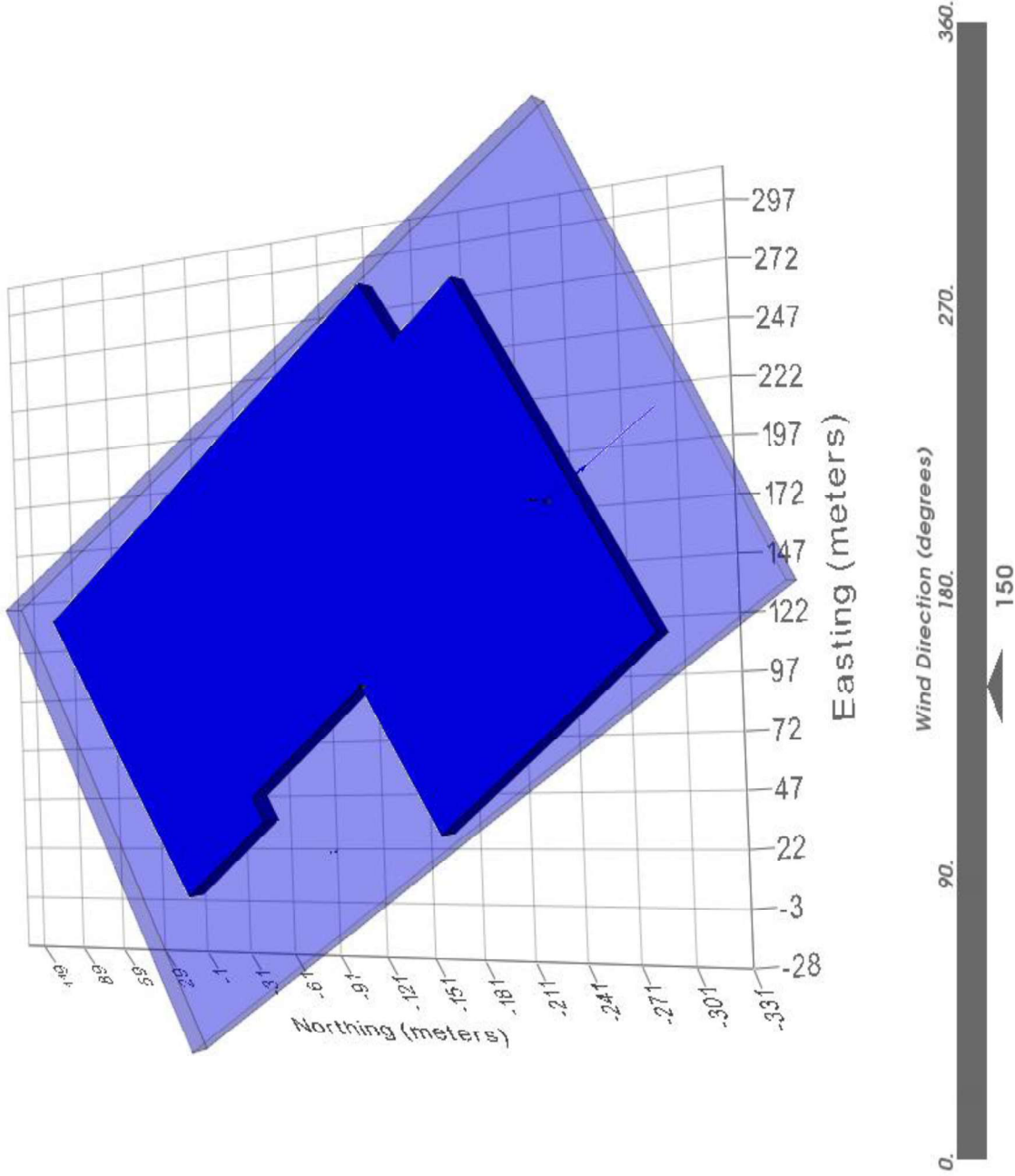
- Emission Sources:**
- 1 – Carbon Adsorber
  - 2 – Wet Scrubber
  - 3 – I.C. Engine 1
  - 4 – I.C. Engine 2
  - 5 – Garnetting Oven
  - 6 – Boiler
  - 7 – Prime Pour Tank Farm
  - 8 – Indoor Tank Farm
  - 9 – Slab Gluing Loop



**Key**

- Facility Boundary
- Building
- Source Boundary
- Neighboring Building

|                  |                                                                                        |                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prepared By:<br> | <b>Site Plot Plan</b><br>Carpentier Company<br>7809 Lincoln Ave<br>Riverside, CA 92504 | Description:<br><b>Site Plot Plan</b><br>Project:<br>220501.0148<br>Date:<br><span style="background-color: black; color: black;">████</span> 2024<br>Figure:<br>3 |
|------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|



BREEZE Downwash Analyst



Prepared For:

CARPENTER

Carpenter Company  
7809 Lincoln Ave  
Riverside, CA 92504

Description

Building Downwash

Project

220501.0148

Date

June 2024

Figure

4

463200 E, 3754500 N

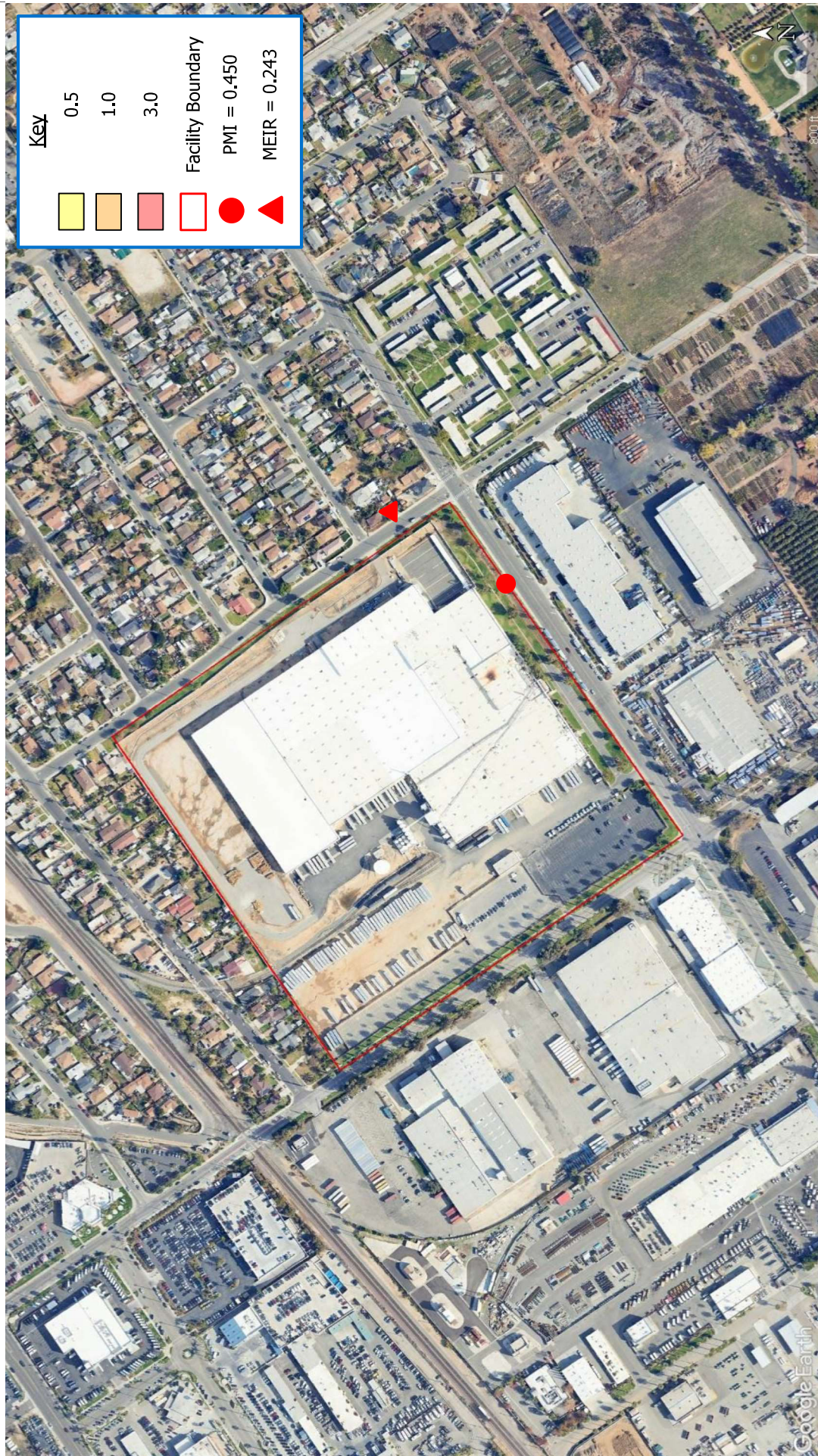


461800 E, 3753800 N

Cancer risk contours are not presented as the estimated risk at all the modeled receptors is below 1 chance in-one-million.

|                                                                                                       |                                                                                                                                                                                                                 |                                                          |                          |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------|
| Prepared By:<br> | Prepared For:<br><br><b>CARPENTER</b><br><b>Carpenter Company</b><br><b>7809 Lincoln Ave</b><br><b>Riverside, CA 92504</b> | Description<br><b>Cancer Risk Isoleths - Residential</b> |                          |
|                                                                                                       |                                                                                                                                                                                                                 | Project<br><b>220501.0148</b>                            | Date<br><b>June 2024</b> |
|                                                                                                       |                                                                                                                                                                                                                 | Figure<br><b>5</b>                                       |                          |

463200 E, 3754500 N



461800 E, 3753800 N

Chronic health risk contours are not presented as the estimated risk at all the modeled receptors is below 0.5 chance.



Prepared For:

**Carpenter Company**  
**7809 Lincoln Ave**  
**Riverside, CA 92504**

Description

**Chronic Hazard Isopleths - Residential**

Project

**220501.0148**

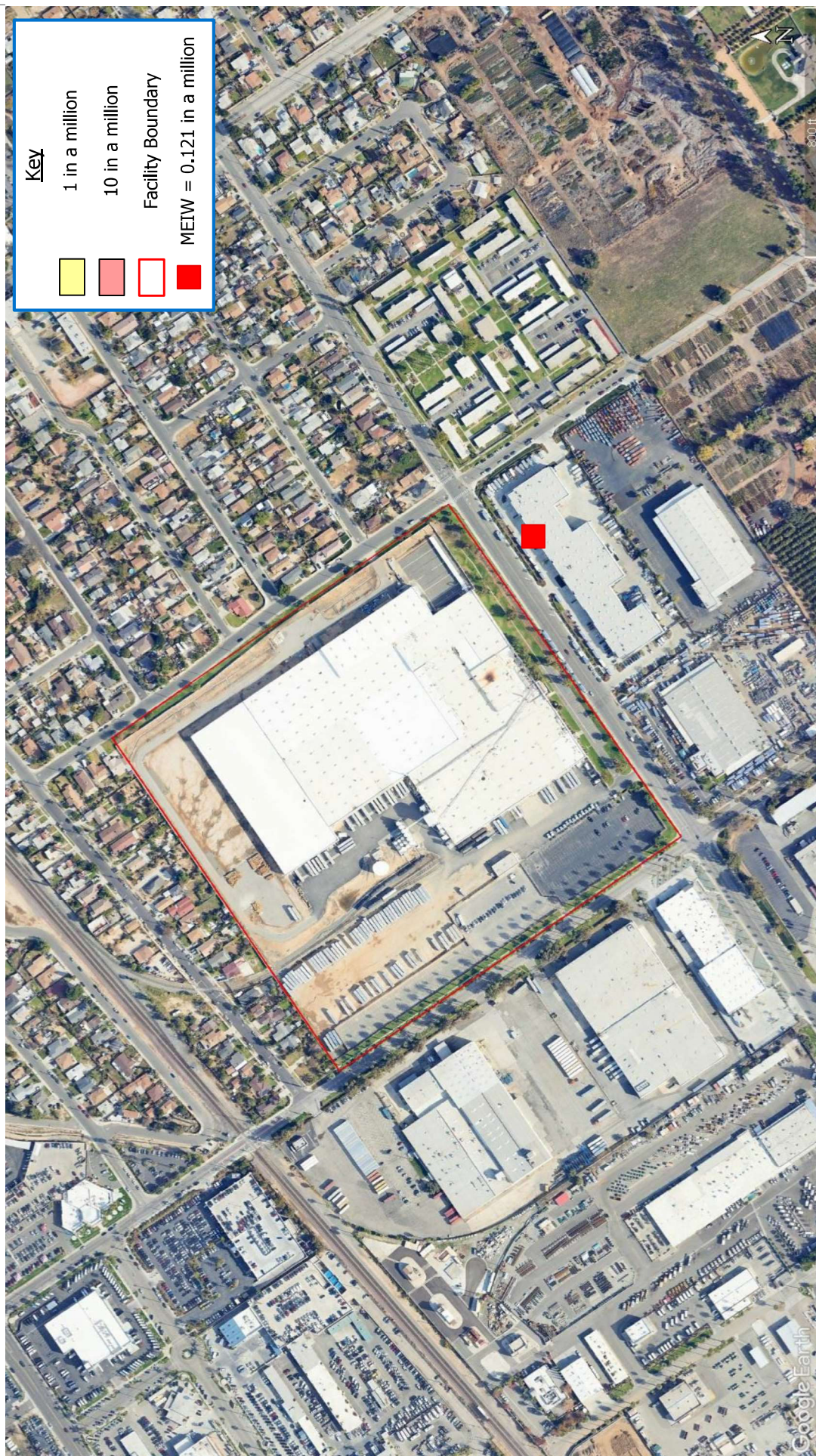
Date

**June 2024**

Figure

**6**

463200 E, 3754500 N



**Key**

- 1 in a million
- 10 in a million
- Facility Boundary
- MEIW = 0.121 in a million

461800 E, 3753800 N

Cancer risk contours are not presented as the estimated risk at all the modeled receptors is below 1 chance in-one-million.



Prepared For:

**CARPENTER**

**Carpenter Company  
7809 Lincoln Ave  
Riverside, CA 92504**

Description

**Cancer Risk Isoleths - Worker**

Project

**220501.0148**

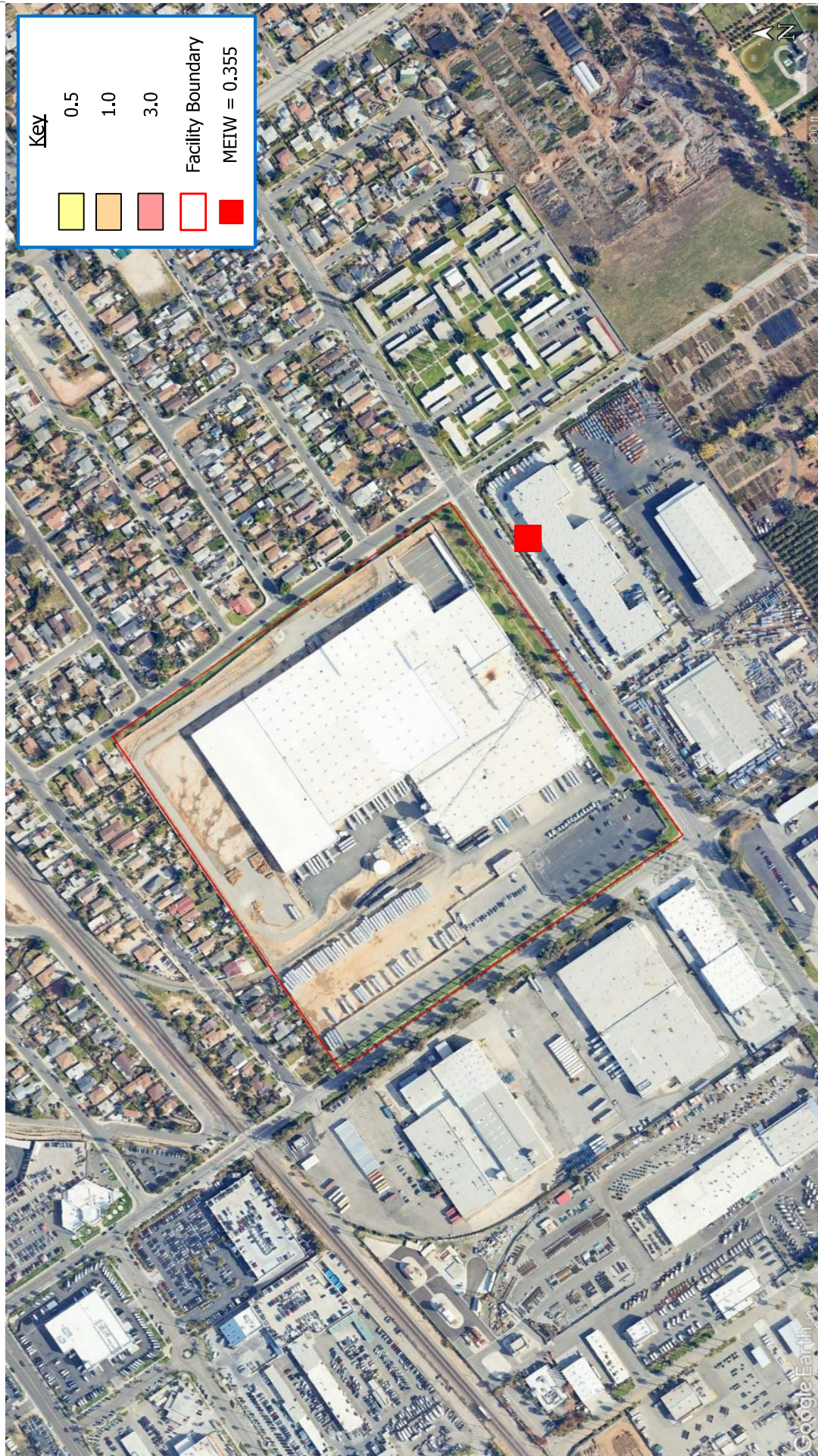
Date

**June 2024**

Figure

**7**

463200 E, 3754500 N



461800 E, 3753800 N

Chronic health risk contours are not presented as the estimated risk at all the modeled receptors is below 0.5 chance.



Prepared For:

**CARPENTER**

**Carpenter Company  
7809 Lincoln Ave  
Riverside, CA 92504**

Description

**Chronic Hazard Isopleths - Worker**

Project

**220501.0148**

Date

**June 2024**

Figure

**8**

463200 E, 3754500 N



|                   |
|-------------------|
| <b>Key</b>        |
| 0.5               |
| 1.0               |
| 3.0               |
| Facility Boundary |
| MEIW = 0.543      |

461800 E, 3753800 N

Prepared For:  
**Carpenter Company**  
**7809 Lincoln Ave**  
**Riverside, CA 92504**

Prepared By:  
**Trinity**  
 Consultants

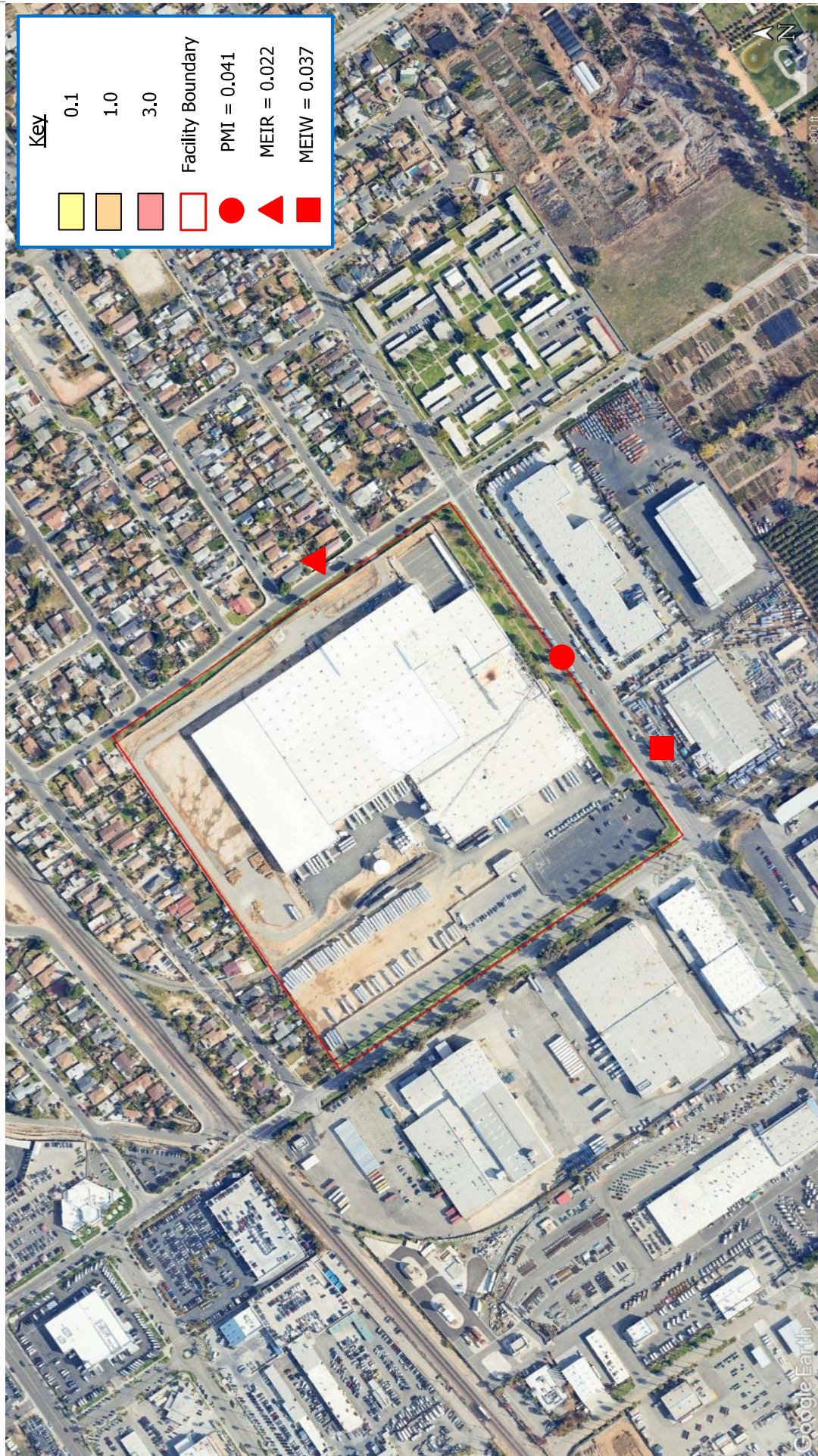
Description  
**8-HR Chronic Hazard Isoleths - Worker**

Project  
**220501.0148**

Date  
**June 2024**

Figure  
**9**

463200 E, 3754500 N



461800 E, 3753800 N

Acute health risk contours are not presented as the estimated risk at all the modeled receptors is below 0.1 chance.



Prepared For:

CARPENTER

Carpenter Company  
7809 Lincoln Ave  
Riverside, CA 92504

Description

Acute Hazard Isopleths

Project

220501.0148

Date

June 2024

Figure

10



463200 E, 3754500 N



**Key**

- Facility Boundary
- Sensitive Receptors

Casa Blanca School

Google Earth

800 ft

461800 E, 3753800 N

Prepared By: **Trinity Consultants**

Prepared For: **CARPENTER**  
**Carpenter Company**  
**7809 Lincoln Ave**  
**Riverside, CA 92504**

Description: **Sensitive Receptors**

Project: **220501.0148**

Date: **June 2024**

Figure: **11**

**APPENDIX B. TABLES**

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**Table ES-1. Comparison to 2019 HRA**

Carpenter Company  
Facility ID: 7730

| Risk           | 2019 HRA |          |      | Risk Reduction Plan HRA |         |          |      |          |         |
|----------------|----------|----------|------|-------------------------|---------|----------|------|----------|---------|
|                | Risk     | Receptor | X    | Y                       | Risk    | Receptor | X    | Y        |         |
| Cancer         | PMI      | 1.58E-06 | 3395 | 462688.9                | 3754097 | 9.67E-07 | 3403 | 462690.4 | 3754197 |
|                | MEIR     | 1.12E-06 | 1207 | 462718.1                | 3754184 | 7.66E-07 | 1165 | 462693.1 | 3754234 |
|                | MEIW     | 2.08E-07 | 1162 | 462693.1                | 3754059 | 1.22E-07 | 1162 | 462693.1 | 3754059 |
| Chronic        | PMI      | 3.80E+00 | 3395 | 462688.9                | 3754097 | 4.50E-01 | 3392 | 462639.6 | 3754063 |
|                | MEIR     | 2.28E+00 | 1251 | 462743.1                | 3754159 | 2.43E-01 | 1207 | 462718.1 | 3754184 |
|                | MEIW     | 1.92E+00 | 1204 | 462718.1                | 3754084 | 3.55E-01 | 1162 | 462693.1 | 3754059 |
| 8-Hour Chronic | MEIW     | 3.19E+00 | 1204 | 462718.1                | 3754084 | 5.43E-01 | 1122 | 462668.1 | 3754034 |
|                | PMI      | 3.55E-01 | 3408 | 462633.2                | 3754279 | 4.13E-02 | 3388 | 462573.8 | 3754017 |
| Acute          | MEIR     | 3.42E-01 | 1019 | 462593.1                | 3754384 | 2.11E-02 | 1125 | 462668.1 | 3754259 |
|                | MEIW     | 2.84E-01 | 1017 | 462593.1                | 3754009 | 3.65E-02 | 1017 | 462593.1 | 3754009 |



**Table 1. Summary of Health Risk Results**

Carpenter Company  
 Facility ID: 7730

| Receptor Description          | Cancer Risk | Receptor ID | Chronic <sup>1</sup> Hazard Index | Receptor ID | Chronic 8-hr <sup>2</sup> Hazard Index | Receptor ID | Acute <sup>3</sup> Hazard Index | Receptor ID |
|-------------------------------|-------------|-------------|-----------------------------------|-------------|----------------------------------------|-------------|---------------------------------|-------------|
| PMI (Point of Maximum Impact) | 9.67E-07    | 3403        | 4.50E-01                          | 3392        |                                        |             | 4.13E-02                        | 3388        |
| MEIR (Residence)              | 7.66E-07    | 1165        | 2.43E-01                          | 1207        |                                        |             | 2.11E-02                        | 1125        |
| MEIW (Worker)                 | 1.22E-07    | 1162        | 3.55E-01                          | 1162        | 5.43E-01                               | 1122        | 3.65E-02                        | 1017        |

1. Chronic hazard index is presented for the respiratory system, because the respiratory system had the maximum chronic hazard index.
2. Chronic 8-hr hazard index is presented for the respiratory system, because the respiratory system had the maximum chronic 8-hr hazard index.
3. Acute hazard index is presented for the respiratory system, because the respiratory system had the maximum acute hazard index.



**Table 2a. Emission Rate by Substance and Source**

Carpenter Company  
Facility ID: 7730

| Stack ID             | Device ID | Permit ID | Source Name        | Substance Name               | CAS No.  | 1-Hour Maximum (lb/hr) | 1-Hour Maximum (g/s) | Annual Average (lb/yr) | Annual Average (g/s) |
|----------------------|-----------|-----------|--------------------|------------------------------|----------|------------------------|----------------------|------------------------|----------------------|
| 1                    | 42        | G66773    | Prime Pour Line    | Methyl Diphenyl Diisocyanate | 101688   | 2.99E-07               | 3.77E-08             | 6.22E-04               | 8.95E-09             |
|                      | 36        |           |                    | Toluene Diisocyanate         | 26471625 | 1.74E-03               | 2.19E-04             | 3.61E+00               | 5.20E-05             |
| 2                    | 9         | F62238    | Rebond Pour Line   | Methyl Diphenyl Diisocyanate | 101688   | 2.31E-03               | 2.91E-04             | 6.00E+00               | 8.64E-05             |
| 3                    | 1         | D22228    | Fire Pump Engine 1 | PAHs                         | 1151     | 8.42E-07               | 1.06E-07             | 1.97E-03               | 2.84E-08             |
|                      |           |           |                    | Diesel Particulate Matter    | 9901     | 7.80E-04               | 9.82E-05             | 1.82E+00               | 2.62E-05             |
|                      |           |           |                    | Formaldehyde                 | 50000    | 4.02E-05               | 5.06E-06             | 9.40E-02               | 1.35E-06             |
|                      |           |           |                    | Benzene                      | 71432    | 4.34E-06               | 5.46E-07             | 1.01E-02               | 1.46E-07             |
|                      |           |           |                    | Acetaldehyde                 | 75070    | 1.82E-05               | 2.30E-06             | 4.27E-02               | 6.13E-07             |
|                      |           |           |                    | Naphthalene                  | 91203    | 4.58E-07               | 5.78E-08             | 1.07E-03               | 1.54E-08             |
|                      |           |           |                    | Ethyl Benzene                | 100414   | 2.54E-07               | 3.20E-08             | 5.94E-04               | 8.54E-09             |
|                      |           |           |                    | Butadiene [1,3]              | 106990   | 5.06E-06               | 6.37E-07             | 1.18E-02               | 1.70E-07             |
|                      |           |           |                    | Acrolein                     | 107028   | 7.89E-07               | 9.94E-08             | 1.85E-03               | 2.65E-08             |
|                      |           |           |                    | Toluene                      | 108883   | 2.45E-06               | 3.09E-07             | 5.74E-03               | 8.25E-08             |
|                      |           |           |                    | Hexane                       | 110543   | 6.26E-07               | 7.89E-08             | 1.46E-03               | 2.11E-08             |
|                      |           |           |                    | Xylenes                      | 1330207  | 9.87E-07               | 1.24E-07             | 2.31E-03               | 3.32E-08             |
|                      |           |           |                    | Lead Compounds               | 7439921  | 1.93E-07               | 2.43E-08             | 4.52E-04               | 6.50E-09             |
|                      |           |           |                    | Manganese                    | 7439965  | 7.21E-08               | 9.09E-09             | 1.69E-04               | 2.43E-09             |
|                      |           |           |                    | Mercury                      | 7439976  | 4.65E-08               | 5.86E-09             | 1.09E-04               | 1.57E-09             |
|                      |           |           |                    | Nickel                       | 7440020  | 9.08E-08               | 1.14E-08             | 2.12E-04               | 3.05E-09             |
|                      |           |           |                    | Arsenic Compounds            | 7440382  | 3.72E-08               | 4.69E-09             | 8.71E-05               | 1.25E-09             |
|                      |           |           |                    | Cadmium                      | 7440439  | 3.49E-08               | 4.40E-09             | 8.17E-05               | 1.17E-09             |
|                      |           |           |                    | Copper                       | 7440508  | 9.54E-08               | 1.20E-08             | 2.23E-04               | 3.21E-09             |
|                      |           |           |                    | Hydrochloric Acid            | 7647010  | 4.34E-06               | 5.46E-07             | 1.01E-02               | 1.46E-07             |
| Ammonia              | 7664417   | 1.86E-05  | 2.35E-06           | 4.36E-02                     | 6.27E-07 |                        |                      |                        |                      |
| Selenium             | 7782492   | 5.12E-08  | 6.45E-09           | 1.20E-04                     | 1.72E-09 |                        |                      |                        |                      |
| Chromium, Hexavalent | 18540299  | 2.33E-09  | 2.93E-10           | 5.45E-06                     | 7.83E-11 |                        |                      |                        |                      |



**Table 2a. Emission Rate by Substance and Source**

Carpenter Company  
Facility ID: 7730

| Stack ID             | Device ID | Permit ID | Source Name        | Substance Name            | CAS No.  | 1-Hour Maximum (lb/hr) | 1-Hour Maximum (g/s) | Annual Average (lb/yr) | Annual Average (g/s) |
|----------------------|-----------|-----------|--------------------|---------------------------|----------|------------------------|----------------------|------------------------|----------------------|
| 4                    | 2         | D43309    | Fire Pump Engine 2 | PAHs                      | 1151     | 8.42E-07               | 1.06E-07             | 1.97E-03               | 2.84E-08             |
|                      |           |           |                    | Diesel Particulate Matter | 9901     | 7.80E-04               | 9.82E-05             | 1.82E+00               | 2.62E-05             |
|                      |           |           |                    | Formaldehyde              | 50000    | 4.02E-05               | 5.06E-06             | 9.40E-02               | 1.35E-06             |
|                      |           |           |                    | Benzene                   | 71432    | 4.34E-06               | 5.46E-07             | 1.01E-02               | 1.46E-07             |
|                      |           |           |                    | Acetaldehyde              | 75070    | 1.82E-05               | 2.30E-06             | 4.27E-02               | 6.13E-07             |
|                      |           |           |                    | Napthalene                | 91203    | 4.58E-07               | 5.78E-08             | 1.07E-03               | 1.54E-08             |
|                      |           |           |                    | Ethyl Benzene             | 100414   | 2.54E-07               | 3.20E-08             | 5.94E-04               | 8.54E-09             |
|                      |           |           |                    | Butadiene [1,3]           | 106990   | 5.06E-06               | 6.37E-07             | 1.18E-02               | 1.70E-07             |
|                      |           |           |                    | Acrolein                  | 107028   | 7.89E-07               | 9.94E-08             | 1.85E-03               | 2.65E-08             |
|                      |           |           |                    | Toluene                   | 108883   | 2.45E-06               | 3.09E-07             | 5.74E-03               | 8.25E-08             |
|                      |           |           |                    | Hexane                    | 110543   | 6.26E-07               | 7.89E-08             | 1.46E-03               | 2.11E-08             |
|                      |           |           |                    | Xylenes                   | 1330207  | 9.87E-07               | 1.24E-07             | 2.31E-03               | 3.32E-08             |
|                      |           |           |                    | Lead Compounds            | 7439921  | 1.93E-07               | 2.43E-08             | 4.52E-04               | 6.50E-09             |
|                      |           |           |                    | Manganese                 | 7439965  | 7.21E-08               | 9.09E-09             | 1.69E-04               | 2.43E-09             |
|                      |           |           |                    | Mercury                   | 7439976  | 4.65E-08               | 5.86E-09             | 1.09E-04               | 1.57E-09             |
|                      |           |           |                    | Nickel                    | 7440020  | 9.08E-08               | 1.14E-08             | 2.12E-04               | 3.05E-09             |
|                      |           |           |                    | Arsenic Compounds         | 7440382  | 3.72E-08               | 4.69E-09             | 8.71E-05               | 1.25E-09             |
|                      |           |           |                    | Cadmium                   | 7440439  | 3.49E-08               | 4.40E-09             | 8.17E-05               | 1.17E-09             |
|                      |           |           |                    | Copper                    | 7440508  | 9.54E-08               | 1.20E-08             | 2.23E-04               | 3.21E-09             |
|                      |           |           |                    | Hydrochloric Acid         | 7647010  | 4.34E-06               | 5.46E-07             | 1.01E-02               | 1.46E-07             |
| Ammonia              | 7664417   | 1.86E-05  | 2.35E-06           | 4.36E-02                  | 6.27E-07 |                        |                      |                        |                      |
| Selenium             | 7782492   | 5.12E-08  | 6.45E-09           | 1.20E-04                  | 1.72E-09 |                        |                      |                        |                      |
| Chromium, Hexavalent | 18540299  | 2.33E-09  | 2.93E-10           | 5.45E-06                  | 7.83E-11 |                        |                      |                        |                      |
| 5                    | 32        | F49010    | Fiber Line 1 Oven  | PAHs                      | 1151     | 1.09E-07               | 1.37E-08             | 2.26E-04               | 3.25E-09             |
|                      |           |           |                    | Formaldehyde              | 50000    | 1.85E-05               | 2.33E-06             | 3.84E-02               | 5.53E-07             |
|                      |           |           |                    | Benzene                   | 71432    | 8.69E-06               | 1.10E-06             | 1.81E-02               | 2.60E-07             |
|                      |           |           |                    | Acetaldehyde              | 75070    | 4.67E-06               | 5.89E-07             | 9.72E-03               | 1.40E-07             |
|                      |           |           |                    | Napthalene                | 91203    | 3.26E-07               | 4.11E-08             | 6.78E-04               | 9.75E-09             |
|                      |           |           |                    | Ethyl Benzene             | 100414   | 1.03E-05               | 1.30E-06             | 2.15E-02               | 3.09E-07             |
|                      |           |           |                    | Acrolein                  | 107028   | 2.93E-06               | 3.70E-07             | 6.10E-03               | 8.78E-08             |
|                      |           |           |                    | Toluene                   | 108883   | 3.98E-05               | 5.01E-06             | 8.27E-02               | 1.19E-06             |
|                      |           |           |                    | Hexane                    | 110543   | 6.85E-06               | 8.62E-07             | 1.42E-02               | 2.05E-07             |
|                      |           |           |                    | Xylenes                   | 1330207  | 2.96E-05               | 3.72E-06             | 6.15E-02               | 8.84E-07             |
|                      |           |           |                    | Ammonia                   | 7664417  | 3.48E-03               | 4.38E-04             | 7.23E+00               | 1.04E-04             |



**Table 2a. Emission Rate by Substance and Source**

Carpenter Company  
Facility ID: 7730

| Stack ID | Device ID | Permit ID | Source Name                               | Substance Name               | CAS No.  | 1-hour Maximum (lb/hr) | 1-Hour Maximum (g/s) | Annual Average (lb/yr) | Annual Average (g/s) |
|----------|-----------|-----------|-------------------------------------------|------------------------------|----------|------------------------|----------------------|------------------------|----------------------|
| 6        | 21        | G20595    | Clayton Natural Gas Fired Steam Generator | PAHs                         | 1151     | 4.61E-07               | 5.80E-08             | 2.04E-03               | 2.93E-08             |
|          |           |           |                                           | Formaldehyde                 | 50000    | 7.83E-05               | 9.87E-06             | 3.46E-01               | 4.98E-06             |
|          |           |           |                                           | Benzene                      | 71432    | 3.69E-05               | 4.64E-06             | 1.63E-01               | 2.34E-06             |
|          |           |           |                                           | Acetaldehyde                 | 75070    | 1.98E-05               | 2.50E-06             | 8.75E-02               | 1.26E-06             |
|          |           |           |                                           | Naphthalene                  | 91203    | 1.38E-06               | 1.74E-07             | 6.11E-03               | 8.79E-08             |
|          |           |           |                                           | Ethyl Benzene                | 100414   | 4.38E-05               | 5.51E-06             | 1.93E-01               | 2.78E-06             |
|          |           |           |                                           | Acrolein                     | 107028   | 1.24E-05               | 1.57E-06             | 5.50E-02               | 7.91E-07             |
|          |           |           |                                           | Toluene                      | 108883   | 1.69E-04               | 2.12E-05             | 7.45E-01               | 1.07E-05             |
|          |           |           |                                           | Hexane                       | 110543   | 2.90E-05               | 3.66E-06             | 1.28E-01               | 1.84E-06             |
|          |           |           |                                           | Xylenes                      | 1330207  | 1.25E-04               | 1.58E-05             | 5.54E-01               | 7.97E-06             |
|          |           |           | Ammonia                                   | 7664417                      | 1.47E-02 | 1.86E-03               | 6.52E+01             | 9.37E-04               |                      |
| 7        | 27        | G48365    | MDI Storage Tank                          | Methyl Diphenyl Diisocyanate | 101688   | 8.47E-08               | 1.07E-08             | 7.42E-04               | 1.07E-08             |
| 8        | 35        | G48365    | Prime Pour TDI Tanks                      | Toluene Diisocyanate         | 26471625 | 3.98E-04               | 5.01E-05             | 3.49E+00               | 5.01E-05             |
| 9        | 39        | NA        | Slab Gluing Loop 1                        | Methyl Diphenyl Diisocyanate | 101688   | 1.35E-11               | 1.70E-12             | 3.52E-08               | 5.06E-13             |

1. Emission rates are consistent with the 2019 HRA with the exception of TDI and MDI in the Rebond Line, to reflect the material substitution.



**Table 2b. Total Emission Rate by Substance**

Carpenter Company  
 Facility ID: 7730

| Substance Name               | CAS No.  | 1-Hour Maximum (lb/hr) | 1-Hour Maximum (g/s) | Annual Average (lb/yr) | Annual Average (g/s) |
|------------------------------|----------|------------------------|----------------------|------------------------|----------------------|
| PAHs                         | 1151     | 2.25E-06               | 2.84E-07             | 6.20E-03               | 8.92E-08             |
| Diesel Exhaust Particulates  | 9901     | 1.56E-03               | 1.96E-04             | 3.65E+00               | 5.25E-05             |
| Formaldehyde                 | 50000    | 1.77E-04               | 2.23E-05             | 5.73E-01               | 8.23E-06             |
| Benzene                      | 71432    | 5.42E-05               | 6.83E-06             | 2.01E-01               | 2.89E-06             |
| Acetaldehyde                 | 75070    | 6.09E-05               | 7.68E-06             | 1.83E-01               | 2.63E-06             |
| Naphthalene                  | 91203    | 2.62E-06               | 3.31E-07             | 8.93E-03               | 1.28E-07             |
| Ethyl Benzene                | 100414   | 5.46E-05               | 6.88E-06             | 2.16E-01               | 3.11E-06             |
| Methyl Diphenyl Diisocyanate | 101688   | 2.31E-03               | 2.91E-04             | 6.00E+00               | 8.64E-05             |
| Butadiene [1,3]              | 106990   | 1.01E-05               | 1.27E-06             | 2.37E-02               | 3.41E-07             |
| Acrolein                     | 107028   | 1.69E-05               | 2.14E-06             | 6.48E-02               | 9.32E-07             |
| Toluene                      | 108883   | 2.13E-04               | 2.69E-05             | 8.39E-01               | 1.21E-05             |
| Hexane                       | 110543   | 3.71E-05               | 4.68E-06             | 1.45E-01               | 2.09E-06             |
| Xylenes                      | 1330207  | 1.57E-04               | 1.98E-05             | 6.20E-01               | 8.92E-06             |
| Lead Compounds               | 7439921  | 3.86E-07               | 4.87E-08             | 9.04E-04               | 1.30E-08             |
| Manganese                    | 7439965  | 1.44E-07               | 1.82E-08             | 3.38E-04               | 4.86E-09             |
| Mercury                      | 7439976  | 9.31E-08               | 1.17E-08             | 2.18E-04               | 3.13E-09             |
| Nickel                       | 7440020  | 1.82E-07               | 2.29E-08             | 4.25E-04               | 6.11E-09             |
| Arsenic Compounds            | 7440382  | 7.45E-08               | 9.38E-09             | 1.74E-04               | 2.51E-09             |
| Cadmium                      | 7440439  | 6.98E-08               | 8.80E-09             | 1.63E-04               | 2.35E-09             |
| Copper                       | 7440508  | 1.91E-07               | 2.40E-08             | 4.46E-04               | 6.42E-09             |
| Hydrochloric Acid            | 7647010  | 8.67E-06               | 1.09E-06             | 2.03E-02               | 2.92E-07             |
| Ammonia                      | 7664417  | 1.83E-02               | 2.30E-03             | 7.25E+01               | 1.04E-03             |
| Selenium                     | 7782492  | 1.02E-07               | 1.29E-08             | 2.40E-04               | 3.45E-09             |
| Chromium, Hexavalent         | 18540299 | 4.65E-09               | 5.86E-10             | 1.09E-05               | 1.57E-10             |
| Toluene Diisocyanate         | 26471625 | 2.14E-03               | 2.69E-04             | 7.10E+00               | 1.02E-04             |

1. Emission rates are consistent with the 2019 HRA with the exception of TDI and MDI in the Rebound Line, to reflect the material substitution.





Table 3. Toxicity Data by Substance - Exposure Pathways

Carpenter Company  
Facility ID: 7730

| Substance Name                | CAS No.  | Cancer Potency Values <sup>1</sup>   |                                | Chronic RELs <sup>2</sup>       |                     | Chronic 8-HR <sup>2</sup> Inhalation REL (µg/m <sup>3</sup> ) | Acute <sup>2</sup> Inhalation REL (µg/m <sup>3</sup> ) | Multi Pathway Substance | Modeled Exposure Pathways <sup>3</sup> |                |        | Home-Grown Produce |
|-------------------------------|----------|--------------------------------------|--------------------------------|---------------------------------|---------------------|---------------------------------------------------------------|--------------------------------------------------------|-------------------------|----------------------------------------|----------------|--------|--------------------|
|                               |          | Inhalation (mg/kg-day) <sup>-1</sup> | Oral (mg/kg-day) <sup>-1</sup> | Inhalation (µg/m <sup>3</sup> ) | Oral (mg/kg BW-day) |                                                               |                                                        |                         | Inhalation                             | Soil Ingestion | Dermal |                    |
| PAHs                          | 1151     | 3.90E+00                             | 12                             | -                               | -                   | -                                                             | -                                                      | X                       | W,R                                    | W,R            | W,R    | R                  |
| Diesel Particulate Matter     | 9901     | 1.10E+00                             | -                              | 5.00E+00                        | -                   | -                                                             | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Formaldehyde                  | 50000    | 2.10E-02                             | -                              | 9.00E+00                        | -                   | 9.00E+00                                                      | 5.50E+01                                               | -                       | W,R                                    | -              | -      | -                  |
| Benzene                       | 71432    | 1.00E-01                             | -                              | 3.00E+00                        | -                   | 3.00E+00                                                      | 2.70E+01                                               | -                       | W,R                                    | -              | -      | -                  |
| Acetaldehyde                  | 75070    | 1.00E-02                             | -                              | 1.40E+02                        | -                   | 3.00E+02                                                      | 4.70E+02                                               | -                       | W,R                                    | -              | -      | -                  |
| Naphthalene                   | 91203    | 1.20E-01                             | -                              | 9.00E+00                        | -                   | -                                                             | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Ethyl Benzene                 | 100414   | 8.70E-03                             | -                              | 2.00E+03                        | -                   | -                                                             | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Methyl Diphenyl Dithiocyanate | 101688   | -                                    | -                              | 8.00E-02                        | -                   | 1.60E-01                                                      | 1.20E+01                                               | -                       | W,R                                    | -              | -      | -                  |
| Butadiene [1,3]               | 106990   | 6.00E-01                             | -                              | 2.00E+00                        | -                   | 9.00E+00                                                      | 6.60E+02                                               | -                       | W,R                                    | -              | -      | -                  |
| Acrolein                      | 107028   | -                                    | -                              | 3.50E-01                        | -                   | 7.00E-01                                                      | 2.50E+00                                               | -                       | W,R                                    | -              | -      | -                  |
| Toluene                       | 108883   | -                                    | -                              | 4.20E+02                        | -                   | 8.30E+02                                                      | 5.00E+03                                               | -                       | W,R                                    | -              | -      | -                  |
| Hexane                        | 110543   | -                                    | -                              | 7.00E+03                        | -                   | -                                                             | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Xylenes                       | 1330207  | -                                    | -                              | 7.00E+02                        | -                   | -                                                             | 2.20E+04                                               | -                       | W,R                                    | -              | -      | -                  |
| Lead Compounds                | 7439921  | 4.20E-02                             | 0.0085                         | -                               | -                   | -                                                             | -                                                      | X                       | W,R                                    | W,R            | W,R    | R                  |
| Manganese                     | 7439965  | -                                    | -                              | 9.00E-02                        | -                   | 1.70E-01                                                      | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Mercury                       | 7439976  | -                                    | -                              | 3.00E-02                        | 0.00016             | 6.00E-02                                                      | 6.00E-01                                               | X                       | W,R                                    | W,R            | W,R    | R                  |
| Nickel                        | 7440020  | 9.10E-01                             | -                              | 1.40E-02                        | 0.011               | 6.00E-02                                                      | 2.00E-01                                               | X                       | W,R                                    | W,R            | W,R    | R                  |
| Arsenic Compounds             | 7440382  | 1.20E+01                             | 1.50E+00                       | 1.50E-02                        | 3.50E-06            | 1.50E-02                                                      | 2.00E-01                                               | X                       | W,R                                    | W,R            | W,R    | R                  |
| Cadmium                       | 7440439  | 1.50E+01                             | -                              | 2.00E-02                        | 5.00E-04            | -                                                             | -                                                      | X                       | W,R                                    | W,R            | W,R    | R                  |
| Copper                        | 7440508  | -                                    | -                              | -                               | -                   | -                                                             | 1.00E+02                                               | -                       | W,R                                    | -              | -      | -                  |
| Hydrochloric Acid             | 7647010  | -                                    | -                              | 9.00E+00                        | -                   | -                                                             | 2.10E+03                                               | -                       | W,R                                    | -              | -      | -                  |
| Ammonia                       | 7664417  | -                                    | -                              | 2.00E+02                        | -                   | -                                                             | 3.20E+03                                               | -                       | W,R                                    | -              | -      | -                  |
| Selenium                      | 7782492  | -                                    | -                              | 2.00E+01                        | 5.00E-03            | -                                                             | -                                                      | -                       | W,R                                    | -              | -      | -                  |
| Chromium, Hexavalent          | 18540299 | 5.10E+02                             | 5.00E-01                       | 2.00E-01                        | 2.00E-02            | -                                                             | -                                                      | X                       | W,R                                    | W,R            | W,R    | R                  |
| Toluene Dithiocyanate         | 26471625 | 3.90E-02                             | -                              | 8.00E-03                        | -                   | 1.50E-02                                                      | 2.00E+00                                               | -                       | W,R                                    | W,R            | W,R    | -                  |

1. Cancer potency values from OEHHA Appendix A: Hot Spots Unit Risk and Cancer Potency Values, updated October 2020, and CARB HARP2 pollutant database.  
 2. Noncancer chronic and acute RELs from OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary, updated November 2019, and CARB HARP2 pollutant database.  
 3. W: Modeled for worker receptors, R: Modeled for residential receptors



Table 4. Toxicity Data by Substance - Target Organs

Carpenter Company  
Facility ID: 7730

| Substance Name              | CAS No.  | Acute Target Organs |     |       |      |      |       |      | Chronic Target Organs |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  |   |  |
|-----------------------------|----------|---------------------|-----|-------|------|------|-------|------|-----------------------|-----|------|------|-----|------|----|-----|-------|------|------|-------|------|------|-----|------|------|-----|------|--|--|---|--|
|                             |          | CV                  | CNS | IMMUN | KIDN | GILV | REPRO | RESP | SKIN                  | EYE | BONE | ENDO | HEM | ODOR | CV | CNS | IMMUN | KIDN | GILV | REPRO | RESP | SKIN | EYE | BONE | ENDO | HEM | ODOR |  |  |   |  |
| PAHs                        | 1151     |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  |   |  |
| Diesel Particulate Matter   | 9901     |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      | X    |     |      |      |     |      |  |  |   |  |
| Formaldehyde                | 50000    |                     |     |       |      |      |       |      | X                     |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Benzene                     | 71432    |                     |     | X     |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  | X |  |
| Acetaldehyde                | 75070    |                     |     |       |      |      |       |      | X                     |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Naphthalene                 | 91203    |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Ethyl Benzene               | 100414   |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      | X    | X     | X    |      |     |      |      |     |      |  |  | X |  |
| Methyl Diphenyl Disocyanate | 101688   |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Butadiene [1,3]             | 106990   |                     |     |       |      |      |       |      | X                     |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Acrolein                    | 107028   |                     |     |       |      |      |       |      | X                     |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Toluene                     | 108883   |                     |     | X     |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Hexane                      | 110543   |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  |   |  |
| Xylenes                     | 1330207  |                     |     | X     |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Lead                        | 7439921  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  |   |  |
| Manganese                   | 7439965  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      |      |     |      |      |     |      |  |  |   |  |
| Mercury                     | 7439976  |                     |     | X     |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Nickel                      | 7440020  |                     |     |       | X    |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  | X |  |
| Arsenic                     | 7440382  |                     |     | X     |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Cadmium                     | 7440439  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Copper                      | 7440508  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Hydrochloric acid           | 7647010  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Ammonia                     | 7664417  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       | X    |      |     |      |      |     |      |  |  |   |  |
| Selenium                    | 7782492  |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      | X    |     |      |      |     |      |  |  |   |  |
| Chromium, hexavalent        | 18540299 |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      | X    |     |      |      |     |      |  |  |   |  |
| Toluene Diisocyanate        | 26471625 |                     |     |       |      |      |       |      |                       |     |      |      |     |      |    |     |       |      |      |       |      | X    |     |      |      |     |      |  |  |   |  |

CV: Cardiovascular System  
 CNS: Central Nervous System  
 IMMUN: Immune System  
 KIDN: Kidney  
 GILV: Alimentary System (Liver)  
 REPRO: Reproductive and Development System  
 RESP: Respiratory System  
 SKIN: Skin  
 EYE: Eye  
 BONE: Bone and Teeth  
 ENDO: Endocrine System  
 HEM: Hematologic System



**Table 5. Emission Source Parameters**

Carpenter Company  
 Facility ID: 7730

| Stack ID | Device ID | Permit ID | Source Name                               | UTM East (m) | UTM North (m) | Base Elevation (m) | Release Height (ft) | Diameter (ft) | Temperature (F) | Velocity (ft/s) | X (ft) <sup>1</sup> | Y (ft) <sup>1</sup> | Emission Rate <sup>2</sup> (g/s-m <sup>2</sup> ) | Angle |
|----------|-----------|-----------|-------------------------------------------|--------------|---------------|--------------------|---------------------|---------------|-----------------|-----------------|---------------------|---------------------|--------------------------------------------------|-------|
| 1        | 36        | 648365    | Prime Pour Line                           |              |               | 268.10             |                     |               |                 |                 |                     |                     |                                                  |       |
| 2        | 9         | F62238    | Rebond Pour Line                          |              |               | 267.26             |                     |               |                 |                 |                     |                     |                                                  |       |
| 3        | 1         | D22228    | Fire Pump Engine 1                        |              |               | 265.80             |                     |               |                 |                 |                     |                     |                                                  |       |
| 4        | 2         | D43309    | Fire Pump Engine 2                        |              |               | 265.80             |                     |               |                 |                 |                     |                     |                                                  |       |
| 5        | 32        | F49010    | Fiber Line 1 Oven                         |              |               | 268.09             |                     |               |                 |                 |                     |                     |                                                  |       |
| 6        | 21        | G20595    | Clayton Natural Gas Fired Steam Generator |              |               | 268.18             |                     |               |                 |                 |                     |                     |                                                  |       |
| 7        | 27        | G48365    | MDI Storage Tank                          |              |               | 268.08             |                     |               |                 |                 | 48.2                | 98.4                | 2.27E-03                                         | 55.3  |
| 8        | 35        | G48365    | Prime Pour TDI Tanks                      |              |               | 267.34             |                     |               |                 |                 | 101.7               | 51.5                | 2.05E-03                                         | 55.5  |
| 9        | 39        | NA        | Slab Gluing Loop 1                        |              |               | 268.04             |                     |               |                 |                 | 67.3                | 102.4               | 1.56E-03                                         | 145.9 |

1. Square length or rectangular side.

2. Calculated assumed 1 g/s.



**Table 6. Building Dimensions**

Carpenter Company  
 Facility ID: 7730

|                   | Receptor | Height (m) <sup>1</sup> | East UTM <sup>2</sup> | North UTM <sup>2</sup> |
|-------------------|----------|-------------------------|-----------------------|------------------------|
| Facility Center   | -        | -                       | 462468.1              | 3754183.9              |
|                   | 3383     | -                       | 462491.7              | 3753960.4              |
|                   | 3384     | -                       | 462508.1              | 3753971.8              |
|                   | 3385     | -                       | 462524.5              | 3753983.2              |
|                   | 3386     | -                       | 462541                | 3753994.6              |
|                   | 3387     | -                       | 462557.4              | 3754006                |
|                   | 3388     | -                       | 462573.8              | 3754017.4              |
|                   | 3389     | -                       | 462590.3              | 3754028.8              |
|                   | 3390     | -                       | 462606.7              | 3754040.2              |
|                   | 3391     | -                       | 462623.1              | 3754051.6              |
|                   | 3392     | -                       | 462639.6              | 3754063                |
|                   | 3393     | -                       | 462656                | 3754074.4              |
|                   | 3394     | -                       | 462672.4              | 3754085.8              |
|                   | 3395     | -                       | 462688.9              | 3754097.2              |
|                   | 3396     | -                       | 462705.3              | 3754108.6              |
|                   | 3397     | -                       | 462721.7              | 3754120                |
|                   | 3398     | -                       | 462737                | 3754130.6              |
| 3399              | -        | 462736.2                | 3754131.8             |                        |
| 3400              | -        | 462724.8                | 3754148.2             |                        |
| 3401              | -        | 462713.3                | 3754164.6             |                        |
| 3402              | -        | 462701.9                | 3754181               |                        |
| 3403              | -        | 462690.4                | 3754197.4             |                        |
| 3404              | -        | 462679                  | 3754213.8             |                        |
| 3405              | -        | 462667.5                | 3754230.2             |                        |
| 3406              | -        | 462656.1                | 3754246.6             |                        |
| 3407              | -        | 462644.7                | 3754263               |                        |
| 3408              | -        | 462633.2                | 3754279.4             |                        |
| 3409              | -        | 462621.8                | 3754295.8             |                        |
| 3410              | -        | 462610.3                | 3754312.2             |                        |
| 3411              | -        | 462598.9                | 3754328.6             |                        |
| Facility Boundary |          |                         |                       |                        |



**Table 6. Building Dimensions**

Carpenter Company  
 Facility ID: 7730

| Receptor | Height (m) <sup>1</sup> | East UTM <sup>2</sup> | North UTM <sup>2</sup> |
|----------|-------------------------|-----------------------|------------------------|
| 3412     | -                       | 462587.4              | 3754345                |
| 3413     | -                       | 462576                | 3754361.4              |
| 3414     | -                       | 462564.6              | 3754377.8              |
| 3415     | -                       | 462553.1              | 3754394.2              |
| 3416     | -                       | 462541.7              | 3754410.6              |
| 3417     | -                       | 462530.2              | 3754427                |
| 3418     | -                       | 462518.8              | 3754443.4              |
| 3419     | -                       | 462507.3              | 3754459.8              |
| 3420     | -                       | 462505.9              | 3754461.9              |
| 3421     | -                       | 462491.5              | 3754452                |
| 3422     | -                       | 462475                | 3754440.8              |
| 3423     | -                       | 462458.5              | 3754429.5              |
| 3424     | -                       | 462441.9              | 3754418.2              |
| 3425     | -                       | 462425.4              | 3754406.9              |
| 3426     | -                       | 462408.9              | 3754395.6              |
| 3427     | -                       | 462392.4              | 3754384.3              |
| 3428     | -                       | 462375.9              | 3754373                |
| 3429     | -                       | 462359.4              | 3754361.8              |
| 3430     | -                       | 462342.9              | 3754350.5              |
| 3431     | -                       | 462326.4              | 3754339.2              |
| 3432     | -                       | 462309.8              | 3754327.9              |
| 3433     | -                       | 462293.3              | 3754316.6              |
| 3434     | -                       | 462276.8              | 3754305.3              |
| 3435     | -                       | 462260.3              | 3754294.1              |
| 3436     | -                       | 462243.8              | 3754282.8              |
| 3437     | -                       | 462227.3              | 3754271.5              |
| 3438     | -                       | 462210.8              | 3754260.2              |
| 3439     | -                       | 462194.3              | 3754248.9              |
| 3440     | -                       | 462179.9              | 3754239.1              |
| 3441     | -                       | 462181.4              | 3754236.9              |

Facility Boundary



**Table 6. Building Dimensions**

Carpenter Company  
 Facility ID: 7730

|                      | Receptor | Height (m) <sup>1</sup> | East UTM <sup>2</sup> | North UTM <sup>2</sup> |
|----------------------|----------|-------------------------|-----------------------|------------------------|
| Facility Boundary    | 3442     | -                       | 462192.7              | 3754220.4              |
|                      | 3443     | -                       | 462204                | 3754203.9              |
|                      | 3444     | -                       | 462215.2              | 3754187.4              |
|                      | 3445     | -                       | 462226.5              | 3754170.9              |
|                      | 3446     | -                       | 462237.8              | 3754154.4              |
|                      | 3447     | -                       | 462249.1              | 3754137.9              |
|                      | 3448     | -                       | 462260.4              | 3754121.4              |
|                      | 3449     | -                       | 462271.7              | 3754104.9              |
|                      | 3450     | -                       | 462283                | 3754088.4              |
|                      | 3451     | -                       | 462294.3              | 3754071.9              |
|                      | 3452     | -                       | 462305.6              | 3754055.4              |
|                      | 3453     | -                       | 462316.9              | 3754038.9              |
|                      | 3454     | -                       | 462328.2              | 3754022.3              |
|                      | 3455     | -                       | 462339.4              | 3754005.8              |
|                      | 3456     | -                       | 462350.7              | 3753989.3              |
|                      | 3457     | -                       | 462362                | 3753972.8              |
|                      | 3458     | -                       | 462373.3              | 3753956.3              |
| 3459                 | -        | 462384.6                | 3753939.8             |                        |
| 3460                 | -        | 462395.9                | 3753923.3             |                        |
| 3461                 | -        | 462407.2                | 3753906.8             |                        |
| Neighboring Business | -        | 12.19                   | 462584.7              | 3753968.1              |

1. Heights for facility building is based on information supplied by Carpenter.

2. UTM coordinates based on NAD 83.



**Table 7a. Sensitive Receptors**

Carpenter Company  
 Facility ID: 7730

| Receptor Name      | Receptor ID | UTM East (m) | UTM North (m) |
|--------------------|-------------|--------------|---------------|
| Casa Blanca School | 1444        | 462843.1     | 3754483.9     |
|                    | 1445        | 462843.1     | 3754508.9     |
|                    | 1488        | 462868.1     | 3754458.9     |
|                    | 1489        | 462868.1     | 3754483.9     |
|                    | 1490        | 462868.1     | 3754508.9     |
|                    | 1491        | 462868.1     | 3754533.9     |
|                    | 1534        | 462893.1     | 3754483.9     |
|                    | 1535        | 462893.1     | 3754508.9     |
|                    | 1536        | 462893.1     | 3754533.9     |
|                    | 1580        | 462918.1     | 3754508.9     |
|                    | 1581        | 462918.1     | 3754533.9     |
|                    | 1582        | 462918.1     | 3754558.9     |
|                    | 1625        | 462943.1     | 3754508.9     |
|                    | 1626        | 462943.1     | 3754533.9     |
|                    | 1627        | 462943.1     | 3754558.9     |



**Table 7b. Sensitive Receptor Ground Level Concentrations**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1488 (Casa Blanca School)  
 Location: 462868.1 UTM E, 3754458.9 UTM N

| Chemical Name                | CAS      | Concentration (ug/m <sup>3</sup> ) |          |          |
|------------------------------|----------|------------------------------------|----------|----------|
|                              |          | Annual                             | 8-hour   | Hourly   |
| PAHs                         | 1151     | 7.75E-08                           | 7.75E-08 | 1.68E-05 |
| Diesel Particulate Matter    | 9901     | 5.51E-05                           | 5.51E-05 | 1.33E-02 |
| Formaldehyde                 | 50000    | 5.90E-06                           | 5.90E-06 | 1.10E-03 |
| Benzene                      | 71432    | 1.75E-06                           | 1.75E-06 | 2.72E-04 |
| Acetaldehyde                 | 75070    | 2.06E-06                           | 2.06E-06 | 4.16E-04 |
| Napthalene                   | 91203    | 8.64E-08                           | 8.64E-08 | 1.52E-05 |
| Ethyl Benzene                | 100414   | 1.73E-06                           | 1.73E-06 | 2.40E-04 |
| Methyl Diphenyl Diisocyanate | 101688   | 6.19E-05                           | 6.19E-05 | 1.08E-02 |
| Butadiene [1,3]              | 106990   | 3.58E-07                           | 3.58E-07 | 8.60E-05 |
| Acrolein                     | 107028   | 5.42E-07                           | 5.42E-07 | 8.01E-05 |
| Toluene                      | 108883   | 6.76E-06                           | 6.76E-06 | 9.49E-04 |
| Hexane                       | 110543   | 1.18E-06                           | 1.18E-06 | 1.67E-04 |
| Xylenes                      | 1330207  | 4.96E-06                           | 4.96E-06 | 6.91E-04 |
| Lead Compounds               | 7439921  | 1.37E-08                           | 1.37E-08 | 3.28E-06 |
| Manganese                    | 7439965  | 5.10E-09                           | 5.10E-09 | 1.23E-06 |
| Mercury                      | 7439976  | 3.29E-09                           | 3.29E-09 | 7.91E-07 |
| Nickel                       | 7440020  | 6.42E-09                           | 6.42E-09 | 1.54E-06 |
| Arsenic Compounds            | 7440382  | 2.63E-09                           | 2.63E-09 | 6.33E-07 |
| Cadmium                      | 7440439  | 2.47E-09                           | 2.47E-09 | 5.93E-07 |
| Copper                       | 7440508  | 6.74E-09                           | 6.74E-09 | 1.62E-06 |
| Hydrochloric Acid            | 7647010  | 3.06E-07                           | 3.06E-07 | 7.38E-05 |
| Ammonia                      | 7664417  | 5.77E-04                           | 5.77E-04 | 7.96E-02 |
| Selenium                     | 7782492  | 3.62E-09                           | 3.62E-09 | 8.71E-07 |
| Chromium, Hexavalent         | 18540299 | 1.65E-10                           | 1.65E-10 | 3.96E-08 |
| Toluene Diisocyanate         | 26471625 | 1.47E-04                           | 1.47E-04 | 1.31E-02 |





**Table 8. PMI Cancer Risk by Substance and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3403  
 Location: 462690.4 UTM E, 3754197.4 UTM N

| Chemical Name                | CAS      | Concentration<br>( $\mu\text{g}/\text{m}^3$ ) | Inhalation      | Soil            | Dermal          | Mother's Milk   | Homegrown Produce | Total           | Contribution   |
|------------------------------|----------|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|----------------|
| PAHs                         | 1151     | 1.29E-06                                      | 2.41E-09        | 8.96E-09        | 2.23E-09        | 2.13E-08        | 6.06E-08          | 9.56E-08        | 9.88%          |
| Diesel Particulate Matter    | 9901     | 1.09E-03                                      | 8.08E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 8.08E-07        | 83.54%         |
| Formaldehyde                 | 50000    | 7.62E-05                                      | 1.08E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 1.08E-09        | 0.11%          |
| Benzene                      | 71432    | 1.56E-05                                      | 1.05E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 1.05E-09        | 0.11%          |
| Acetaldehyde                 | 75070    | 3.05E-05                                      | 2.06E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 2.06E-10        | 0.02%          |
| Napthalene                   | 91203    | 9.96E-07                                      | 8.09E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 8.09E-11        | 0.01%          |
| Ethyl Benzene                | 100414   | 1.17E-05                                      | 6.88E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 6.88E-11        | 0.01%          |
| Methyl Diphenyl Diisocyanate | 101688   | 1.63E-03                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Butadiene [1,3]              | 106990   | 7.04E-06                                      | 2.86E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 2.86E-09        | 0.30%          |
| Acrolein                     | 107028   | 4.32E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Toluene                      | 108883   | 4.71E-05                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Hexane                       | 110543   | 8.39E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Xylenes                      | 1330207  | 3.38E-05                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Lead Compounds               | 7439921  | 2.69E-07                                      | 5.39E-12        | 6.58E-11        | 1.60E-12        | 1.19E-12        | 1.82E-11          | 9.22E-11        | 0.01%          |
| Manganese                    | 7439965  | 1.00E-07                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Mercury                      | 7439976  | 6.48E-08                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Nickel                       | 7440020  | 1.26E-07                                      | 7.78E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 7.78E-11        | 0.01%          |
| Arsenic Compounds            | 7440382  | 5.18E-08                                      | 2.97E-10        | 2.24E-09        | 1.09E-10        | 0.00E+00        | 1.94E-09          | 4.58E-09        | 0.47%          |
| Cadmium                      | 7440439  | 4.86E-08                                      | 4.93E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 4.93E-10        | 0.05%          |
| Copper                       | 7440508  | 1.33E-07                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Hydrochloric Acid            | 7647010  | 6.04E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Ammonia                      | 7664417  | 3.85E-03                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Selenium                     | 7782492  | 7.13E-08                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Chromium, Hexavalent         | 18540299 | 3.24E-09                                      | 1.12E-09        | 1.98E-11        | 7.58E-13        | 0.00E+00        | 8.41E-10          | 1.98E-09        | 0.20%          |
| Toluene Diisocyanate         | 26471625 | 1.93E-03                                      | 5.10E-08        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 5.10E-08        | 5.28%          |
| <b>Total</b>                 |          |                                               | <b>8.69E-07</b> | <b>1.13E-08</b> | <b>2.34E-09</b> | <b>2.13E-08</b> | <b>6.34E-08</b>   | <b>9.67E-07</b> | <b>100.00%</b> |



**Table 9. PMI Cancer Risk by Source and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3403  
 Location: 462690,4 UTM E, 3754197,4 UTM N

| Source ID | Source Name                               | Inhalation      | Soil            | Dermal          | Mother's Milk   | Homegrown Produce | Total           | Contribution   |
|-----------|-------------------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|----------------|
| 1         | Prime Pour Line                           | 5.88E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 5.88E-09        | 0.61%          |
| 2         | Rebond Pour Line                          | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| 3         | Fire Pump Engine 1                        | 4.07E-07        | 5.21E-09        | 1.07E-09        | 9.64E-09        | 2.88E-08          | 4.52E-07        | 46.70%         |
| 4         | Fire Pump Engine 2                        | 4.09E-07        | 5.25E-09        | 1.07E-09        | 9.70E-09        | 2.90E-08          | 4.54E-07        | 47.00%         |
| 5         | Fiber Line 1 Oven                         | 3.12E-10        | 2.01E-10        | 5.00E-11        | 4.77E-10        | 1.36E-09          | 2.40E-09        | 0.25%          |
| 6         | Clayton Natural Gas Fired Steam Generator | 9.75E-10        | 6.27E-10        | 1.56E-10        | 1.49E-09        | 4.24E-09          | 7.49E-09        | 0.77%          |
| 7         | MDI Storage Tank                          | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| 8         | Prime Pour TDI Tanks                      | 4.51E-08        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 4.51E-08        | 4.67%          |
| 9         | Slab Gluing Loop 1                        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
|           | <b>Total</b>                              | <b>8.69E-07</b> | <b>1.13E-08</b> | <b>2.34E-09</b> | <b>2.13E-08</b> | <b>6.34E-08</b>   | <b>9.67E-07</b> | <b>100.00%</b> |



**Table 10. MEIR Cancer Risk by Substance and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1165  
 Location: 462693.1 UTM E, 3754233.9 UTM N

| Chemical Name                | CAS      | Concentration<br>( $\mu\text{g}/\text{m}^3$ ) | Inhalation      | Soil            | Dermal          | Mother's Milk   | Homegrown Produce | Total           | Contribution   |
|------------------------------|----------|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|----------------|
| PAHs                         | 1151     | 1.01E-06                                      | 1.88E-09        | 7.01E-09        | 1.75E-09        | 1.67E-08        | 4.75E-08          | 7.48E-08        | 9.76%          |
| Diesel Particulate Matter    | 9901     | 8.71E-04                                      | 6.49E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 6.49E-07        | 84.65%         |
| Formaldehyde                 | 5000     | 5.68E-05                                      | 8.07E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 8.07E-10        | 0.11%          |
| Benzene                      | 71432    | 1.04E-05                                      | 7.06E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 7.06E-10        | 0.09%          |
| Acetaldehyde                 | 75070    | 2.34E-05                                      | 1.58E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 1.58E-10        | 0.02%          |
| Napthalene                   | 91203    | 7.22E-07                                      | 5.86E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 5.86E-11        | 0.01%          |
| Ethyl Benzene                | 100414   | 6.92E-06                                      | 4.07E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 4.07E-11        | 0.01%          |
| Methyl Diphenyl Diisocyanate | 101688   | 7.11E-04                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Butadiene [1,3]              | 106990   | 5.65E-06                                      | 2.30E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 2.30E-09        | 0.30%          |
| Acrolein                     | 107028   | 2.77E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Toluene                      | 108883   | 2.83E-05                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Hexane                       | 110543   | 5.10E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Xylenes                      | 1330207  | 2.01E-05                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Lead Compounds               | 7439921  | 2.16E-07                                      | 4.33E-12        | 5.28E-11        | 1.29E-12        | 9.59E-13        | 1.46E-11          | 7.40E-11        | 0.01%          |
| Manganese                    | 7439965  | 8.06E-08                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Mercury                      | 7439976  | 5.20E-08                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Nickel                       | 7440020  | 1.01E-07                                      | 6.25E-11        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 6.25E-11        | 0.01%          |
| Arsenic Compounds            | 7440382  | 4.16E-08                                      | 2.38E-10        | 1.80E-09        | 8.75E-11        | 0.00E+00        | 1.56E-09          | 3.68E-09        | 0.48%          |
| Cadmium                      | 7440439  | 3.90E-08                                      | 3.96E-10        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 3.96E-10        | 0.05%          |
| Copper                       | 7440508  | 1.07E-07                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Hydrochloric Acid            | 7647010  | 4.85E-06                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Ammonia                      | 7664417  | 2.26E-03                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Selenium                     | 7782492  | 5.72E-08                                      | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%          |
| Chromium, Hexavalent         | 18540299 | 2.60E-09                                      | 8.98E-10        | 1.59E-11        | 6.08E-13        | 0.00E+00        | 6.76E-10          | 1.59E-09        | 0.21%          |
| Toluene Diisocyanate         | 26471625 | 1.25E-03                                      | 3.29E-08        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 3.29E-08        | 4.29%          |
| <b>Total</b>                 |          |                                               | <b>6.89E-07</b> | <b>8.88E-09</b> | <b>1.84E-09</b> | <b>1.67E-08</b> | <b>4.97E-08</b>   | <b>7.66E-07</b> | <b>100.00%</b> |



**Table 11. MEIR Cancer Risk by Source and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1165  
 Location: 462693.1 UTM E, 3754233.9 UTM N

| Source ID | Source Name                                               | Inhalation      | Soil            | Dermal          | Mother's Milk   | Homegrown Produce | Total           | Contribution |
|-----------|-----------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-----------------|--------------|
| 1         | Prime Pour Line                                           | 3.32E-09        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 3.32E-09        | 0.43%        |
| 2         | Rebond Pour Line                                          | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%        |
| 3         | Fire Pump Engine 1                                        | 3.27E-07        | 4.19E-09        | 8.56E-10        | 7.74E-09        | 2.32E-08          | 3.63E-07        | 47.35%       |
| 4         | Fire Pump Engine 2                                        | 3.29E-07        | 4.21E-09        | 8.60E-10        | 7.79E-09        | 2.33E-08          | 3.65E-07        | 47.60%       |
| 5         | Fiber Line 1 Oven                                         | 1.40E-10        | 8.98E-11        | 2.24E-11        | 2.13E-10        | 6.07E-10          | 1.07E-09        | 0.14%        |
| 6         | Clayton Natural Gas Fired Water-Tube Type Steam Generator | 6.14E-10        | 3.95E-10        | 9.84E-11        | 9.39E-10        | 2.67E-09          | 4.72E-09        | 0.62%        |
| 7         | MDI Storage Tank                                          | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%        |
| 8         | Prime Pour TDI Tanks                                      | 2.96E-08        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 2.96E-08        | 3.86%        |
| 9         | Slab Gluing Loop 1                                        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00          | 0.00E+00        | 0.00%        |
|           | <b>Total</b>                                              | <b>6.89E-07</b> | <b>8.88E-09</b> | <b>1.84E-09</b> | <b>1.67E-08</b> | <b>4.97E-08</b>   | <b>7.66E-07</b> | <b>100%</b>  |



**Table 12. MEIW Cancer Risk by Substance and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1162  
 Location: 462693.1 UTM E, 3754058.9 UTM N

| Chemical Name                | CAS      | Concentration<br>( $\mu\text{g}/\text{m}^3$ ) | Inhalation <sup>1</sup> | Soil            | Dermal          | Total           | Contribution   |
|------------------------------|----------|-----------------------------------------------|-------------------------|-----------------|-----------------|-----------------|----------------|
| PAHs                         | 1151     | 1.78E-06                                      | 7.05E-10                | 3.00E-09        | 2.60E-09        | 6.31E-09        | 5.18%          |
| Diesel Particulate Matter    | 9901     | 4.21E-04                                      | 9.72E-08                | 0.00E+00        | 0.00E+00        | 9.72E-08        | 79.79%         |
| Formaldehyde                 | 5000     | 2.47E-04                                      | 6.28E-10                | 0.00E+00        | 0.00E+00        | 6.28E-10        | 0.52%          |
| Benzene                      | 71432    | 1.09E-04                                      | 1.24E-09                | 0.00E+00        | 0.00E+00        | 1.24E-09        | 1.02%          |
| Acetaldehyde                 | 75070    | 6.69E-05                                      | 8.48E-11                | 0.00E+00        | 0.00E+00        | 8.48E-11        | 0.07%          |
| Naphthalene                  | 91203    | 4.23E-06                                      | 5.99E-11                | 0.00E+00        | 0.00E+00        | 5.99E-11        | 0.05%          |
| Ethyl Benzene                | 100414   | 1.26E-04                                      | 1.23E-10                | 0.00E+00        | 0.00E+00        | 1.23E-10        | 0.10%          |
| Methyl Diphenyl Diisocyanate | 101688   | 1.07E-03                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Butadiene [1,3]              | 106990   | 2.73E-06                                      | 3.44E-10                | 0.00E+00        | 0.00E+00        | 3.44E-10        | 0.28%          |
| Acrolein                     | 107028   | 3.63E-05                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Toluene                      | 108883   | 4.87E-04                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Hexane                       | 110543   | 8.39E-05                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Xylenes                      | 1330207  | 3.62E-04                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Lead Compounds               | 7439921  | 1.04E-07                                      | 9.20E-13                | 4.02E-12        | 4.18E-13        | 5.36E-12        | 0.00%          |
| Manganese                    | 7439965  | 3.90E-08                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Mercury                      | 7439976  | 2.51E-08                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Nickel                       | 7440020  | 4.90E-08                                      | 9.36E-12                | 0.00E+00        | 0.00E+00        | 9.36E-12        | 0.01%          |
| Arsenic Compounds            | 7440382  | 2.01E-08                                      | 3.74E-11                | 1.37E-10        | 5.47E-11        | 2.29E-10        | 0.19%          |
| Cadmium                      | 7440439  | 1.89E-08                                      | 5.94E-11                | 0.00E+00        | 0.00E+00        | 5.94E-11        | 0.05%          |
| Copper                       | 7440508  | 5.15E-08                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Hydrochloric Acid            | 7647010  | 2.34E-06                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Ammonia                      | 7664417  | 4.25E-02                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Selenium                     | 7782492  | 2.77E-08                                      | 0.00E+00                | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%          |
| Chromium, Hexavalent         | 18540299 | 1.26E-09                                      | 1.35E-10                | 2.85E-12        | 1.98E-13        | 1.38E-10        | 0.11%          |
| Toluene Diisocyanate         | 26471625 | 2.73E-03                                      | 1.54E-08                | 0.00E+00        | 0.00E+00        | 1.54E-08        | 12.63%         |
| <b>Total</b>                 |          |                                               | <b>1.16E-07</b>         | <b>3.15E-09</b> | <b>2.66E-09</b> | <b>1.22E-07</b> | <b>100.00%</b> |

1. Inhalation risk for MEIW is adjusted by Worker Adjustment Factors (WAFs). WAFs for each source was calculated based on the source's potential operating hours. The WAFs were then applied to the inhalation risk from each pollutant based on the source then summed.



**Table 13. MEIW Cancer Risk by Source and Exposure Pathway**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1162  
 Location: 462693.1 UTM E, 3754058.9 UTM N

| Source ID | Source Name                                                   | Inhalation      | Soil            | Dermal          | Total           | Contribution |
|-----------|---------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| 1         | Prime Pour Line                                               | 1.24E-08        | 0.00E+00        | 0.00E+00        | 1.24E-08        | 10.20%       |
| 2         | Rebond Pour Line                                              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%        |
| 3         | Fire Pump Engine 1                                            | 4.91E-08        | 6.58E-10        | 5.36E-10        | 5.03E-08        | 41.51%       |
| 4         | Fire Pump Engine 2                                            | 4.92E-08        | 6.59E-10        | 5.37E-10        | 5.04E-08        | 41.59%       |
| 5         | Fiber Line 1 Oven                                             | 3.78E-11        | 2.89E-11        | 2.50E-11        | 9.17E-11        | 0.08%        |
| 6         | Clayton Natural Gas Fired Water-<br>Tube Type Steam Generator | 2.36E-09        | 1.80E-09        | 1.56E-09        | 5.72E-09        | 4.73%        |
| 7         | MDI Storage Tank                                              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%        |
| 8         | Prime Pour TDI Tanks                                          | 2.29E-09        | 0.00E+00        | 0.00E+00        | 2.29E-09        | 1.89%        |
| 9         | Slab Gluing Loop 1                                            | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00%        |
|           | <b>Total</b>                                                  | <b>1.15E-07</b> | <b>3.15E-09</b> | <b>2.66E-09</b> | <b>1.21E-07</b> | <b>100%</b>  |

1. Inhalation risk for MEIW is adjusted by Worker Adjustment Factors (WAFs). WAFs for each source was calculated based on the source's potential operating hours. The WAFs were then applied to the inhalation risk from each source.



Table 14. PMI Chronic Hazard by Substance

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3392  
 Location: 462639.6 UTM E, 3754063 UTM N

| Chemical Name               | CAS      | Concentration (ug/m <sup>3</sup> ) | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GI/IV           | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|-----------------------------|----------|------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|---------------------------------|---------------------------|
| PAHs                        | 1151     | 1.97E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Diesel Particulate Matter   | 9901     | 3.97E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 7.94E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 7.94E-05         | 0.00E+00                        | 0.0%                      |
| Formaldehyde                | 50000    | 2.82E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.14E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 3.14E-05                        | 0.0%                      |
| Benzene                     | 71432    | 1.25E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Acetaldehyde                | 75070    | 7.55E-05                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.40E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 5.40E-07                        | 0.0%                      |
| Naphthalene                 | 91203    | 4.86E-06                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.40E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 5.40E-07                        | 0.0%                      |
| Ethyl Benzene               | 109414   | 1.47E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 7.33E-08           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 7.33E-08                        | 0.0%                      |
| Methyl Diphenyl Disocyanate | 101688   | 1.41E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.76E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 1.76E-02                        | 3.9%                      |
| Butadiene [1,3]             | 106990   | 2.58E-06                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.20E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 1.20E-04                        | 0.0%                      |
| Acrolein                    | 107028   | 4.20E-05                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.35E-06           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 1.35E-06                        | 0.0%                      |
| Toluene                     | 108883   | 5.65E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Hexane                      | 110543   | 9.74E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Xylenes                     | 1330207  | 4.20E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.99E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 5.99E-07                        | 0.0%                      |
| Lead Compounds              | 7439921  | 9.84E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Manganese                   | 7439965  | 3.68E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Mercury                     | 7439976  | 2.37E-08                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.23E-06           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 3.23E-06                        | 0.0%                      |
| Nickel                      | 7440020  | 4.62E-08                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 6.61E-08           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 6.61E-08                        | 0.0%                      |
| Arsenic Compounds           | 7440382  | 1.90E-08                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.23E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 1.23E-04                        | 0.0%                      |
| Copper                      | 7440508  | 1.78E-08                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 8.90E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 8.90E-07                        | 0.0%                      |
| Chromium                    | 7440519  | 4.86E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Hydrochloric Acid           | 7647010  | 2.21E-06                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.45E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 2.45E-07                        | 0.0%                      |
| Ammonia                     | 7664117  | 4.93E-02                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.47E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 2.47E-04                        | 0.1%                      |
| Selenium                    | 7782492  | 2.61E-08                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.93E-09           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 5.93E-09                        | 0.0%                      |
| Chromium, Hexavalent        | 18540299 | 1.19E-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        | 0.00E+00         | 0.00E+00                        | 0.0%                      |
| Toluene Diisocyanate        | 26471625 | 3.45E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.32E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 4.32E-01         | 95.9%                           |                           |
| <b>Total</b>                |          |                                    | <b>1.24E-04</b>       | <b>1.28E-04</b>        | <b>0.00E+00</b> | <b>5.17E-06</b> | <b>3.67E-07</b> | <b>1.28E-04</b>     | <b>4.50E-01</b>    | <b>1.23E-04</b> | <b>1.95E-06</b> | <b>0.00E+00</b> | <b>7.33E-08</b>  | <b>4.51E-05</b> | <b>0.00E+00</b> | <b>4.50E-01</b>  | <b>100.0%</b>                   |                           |

1. Contribution by pollutant is based on the target organ with the maximum chronic hazard.



**Table 15. PMI Chronic Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3392  
 Location: 462639.6 UTM E, 3754063 UTM N

| Source ID    | Source Name                               | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ   | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|--------------|-------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|--------------------|---------------------------------|---------------------------|
| 1            | Prime Pour Line                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.10E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 2.10E-01                        | 46.6%                     |
| 2            | Rebond Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.76E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.76E-02                        | 3.9%                      |
| 3            | Fire Pump Engine 1                        | 6.17E-05              | 6.39E-05               | 0.00E+00        | 2.94E-06        | 1.47E-07        | 6.38E-05            | 1.05E-04           | 6.15E-05        | 1.84E-09        | 0.00E+00        | 3.23E-11         | 2.02E-06        | 0.00E+00        |                    | 1.09E-04                        | 0.0%                      |
| 4            | Fire Pump Engine 2                        | 6.19E-05              | 6.37E-05               | 0.00E+00        | 2.55E-06        | 1.47E-07        | 6.41E-05            | 1.06E-04           | 6.18E-05        | 1.85E-09        | 0.00E+00        | 3.24E-11         | 2.03E-06        | 0.00E+00        |                    | 1.06E-04                        | 0.0%                      |
| 5            | Fiber Line 1 Oven                         | 0.00E+00              | 4.43E-09               | 0.00E+00        | 5.29E-10        | 5.29E-10        | 5.29E-10            | 2.86E-06           | 0.00E+00        | 1.40E-08        | 0.00E+00        | 5.29E-10         | 2.97E-07        | 0.00E+00        |                    | 2.86E-06                        | 0.0%                      |
| 6            | Clayton Natural Gas Fired Steam Generator | 0.00E+00              | 6.08E-07               | 0.00E+00        | 7.27E-08        | 7.27E-08        | 7.27E-08            | 3.93E-04           | 0.00E+00        | 1.93E-06        | 0.00E+00        | 7.27E-08         | 4.08E-05        | 0.00E+00        | Respiratory System | 3.93E-04                        | 0.1%                      |
| 7            | MDI Storage Tank                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.57E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 3.57E-05                        | 0.0%                      |
| 8            | Prime Pour TDI Tanks                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.22E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 2.22E-01                        | 49.3%                     |
| 9            | Slab Gilling Loop 1                       | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 8.59E-10           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 8.59E-10                        | 0.0%                      |
| <b>Total</b> |                                           | <b>1.24E-04</b>       | <b>1.28E-04</b>        | <b>0.00E+00</b> | <b>5.17E-06</b> | <b>3.67E-07</b> | <b>1.28E-04</b>     | <b>4.50E-01</b>    | <b>1.23E-04</b> | <b>1.95E-06</b> | <b>0.00E+00</b> | <b>7.33E-08</b>  | <b>4.51E-05</b> | <b>0.00E+00</b> |                    | <b>4.50E-01</b>                 | <b>100.0%</b>             |

1. Contribution by source is based on the target organ with the maximum chronic hazard.



**Table 16. MEIR Chronic Hazard by Substance**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1207  
 Location: 462718.1 UTM E, 3754183.9 UTM N

| Chemical Name               | CAS      | Concentration<br>(ug/m <sup>3</sup> ) | Cardiovascular<br>System | Central<br>Nervous<br>System | Immune<br>System | Kidney          | GI/LV           | Reproductive<br>System | Respiratory<br>System | Skin            | Eye             | Bone/<br>Teeth  | Endocrine<br>System | Blood           | Odor            | Max Target<br>Organ | Chronic Risk @<br>Max Target<br>Organ | Contribution <sup>1</sup> |
|-----------------------------|----------|---------------------------------------|--------------------------|------------------------------|------------------|-----------------|-----------------|------------------------|-----------------------|-----------------|-----------------|-----------------|---------------------|-----------------|-----------------|---------------------|---------------------------------------|---------------------------|
| PAHs                        | 1151     | 9.54E-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        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Diesel Particulate Matter   | 9901     | 7.54E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.51E-04              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.51E-04            | 0.00E+00                              | 0.1%                      |
| Formaldehyde                | 5000     | 6.25E-05                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 6.95E-06              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 6.95E-06            | 0.00E+00                              | 0.0%                      |
| Benzene                     | 71432    | 1.53E-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            | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Acetaldehyde                | 75070    | 2.36E-05                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.69E-07              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.69E-07            | 0.00E+00                              | 0.0%                      |
| Naphthalene                 | 91203    | 8.61E-07                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 9.57E-08              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 9.57E-08            | 0.00E+00                              | 0.0%                      |
| Ethyl Benzene               | 109414   | 1.35E-05                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 6.74E-09              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 6.74E-09            | 0.00E+00                              | 0.0%                      |
| Methyl Diphenyl Disocyanate | 101688   | 1.41E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.76E-02              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.76E-02            | 0.00E+00                              | 7.2%                      |
| Butadiene [1,3]             | 106990   | 4.90E-06                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.45E-06              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 2.45E-06            | 0.00E+00                              | 0.0%                      |
| Acrolein                    | 107028   | 4.52E-06                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.29E-05              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.29E-05            | 0.00E+00                              | 0.0%                      |
| Toluene                     | 108883   | 5.33E-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        | 1.27E-07        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Hexane                      | 110543   | 9.38E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Xylenes                     | 1330207  | 3.88E-05                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 5.55E-08              | 0.00E+00        | 5.55E-08        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 5.55E-08            | 0.00E+00                              | 0.0%                      |
| Lead Compounds              | 7439921  | 1.87E-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        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Manganese                   | 7439965  | 6.98E-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            | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Mercury                     | 7439976  | 4.50E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 6.14E-06              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 6.14E-06            | 0.00E+00                              | 0.0%                      |
| Nickel                      | 7440020  | 8.78E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.26E-07              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.26E-07            | 0.00E+00                              | 0.0%                      |
| Arsenic Compounds           | 7440382  | 3.60E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.34E-04              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 2.34E-04            | 0.00E+00                              | 0.1%                      |
| Copper                      | 7440439  | 3.38E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 3.54E-06              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 3.54E-06            | 0.00E+00                              | 0.0%                      |
| Chromium                    | 7440508  | 9.23E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.69E-06              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.69E-06            | 0.00E+00                              | 0.0%                      |
| Hydrochloric Acid           | 7647010  | 4.20E-06                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 4.66E-07              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 4.66E-07            | 0.00E+00                              | 0.0%                      |
| Ammonia                     | 7664117  | 4.47E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00                              | 0.0%                      |
| Selenium                    | 7782492  | 4.95E-08                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.24E-05              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 2.24E-05            | 0.00E+00                              | 0.0%                      |
| Chromium, Hexavalent        | 18540299 | 2.25E-09                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.13E-08              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 1.13E-08            | 0.00E+00                              | 0.0%                      |
| Toluene Disocyanate         | 26471625 | 1.80E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.25E-01              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        | 2.25E-01            | 0.00E+00                              | 92.6%                     |
| <b>Total</b>                |          |                                       | <b>2.35E-04</b>          | <b>2.42E-04</b>              | <b>0.00E+00</b>  | <b>9.68E-06</b> | <b>5.64E-07</b> | <b>2.43E-04</b>        | <b>6.74E-09</b>       | <b>2.34E-04</b> | <b>1.82E-07</b> | <b>0.00E+00</b> | <b>6.74E-09</b>     | <b>1.14E-05</b> | <b>0.00E+00</b> | <b>2.43E-01</b>     | <b>100.0%</b>                         |                           |

1. Contribution by pollutant is based on the target organ with the maximum chronic hazard.



**Table 17. MEIR Chronic Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1207  
 Location: 462718.1 UTM E, 3754183.9 UTM N

| Source ID    | Source Name                               | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GLY             | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ   | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|--------------|-------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|--------------------|---------------------------------|---------------------------|
| 1            | Prime Pour Line                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.57E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 2.57E-02           | 10.6%                           |                           |
| 2            | Rebond Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.76E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.76E-02           | 7.2%                            |                           |
| 3            | Fire Pump Engine 1                        | 1.17E-04              | 1.21E-04               | 0.00E+00        | 4.83E-06        | 2.78E-07        | 1.21E-04            | 2.00E-04           | 1.17E-04        | 3.50E-09        | 0.00E+00        | 6.12E-11         | 3.84E-06        | 0.00E+00        | 2.00E-04           | 0.1%                            |                           |
| 4            | Fire Pump Engine 2                        | 1.18E-04              | 1.21E-04               | 0.00E+00        | 4.83E-06        | 2.79E-07        | 1.22E-04            | 2.01E-04           | 1.17E-04        | 3.52E-09        | 0.00E+00        | 6.15E-11         | 3.86E-06        | 0.00E+00        | 2.01E-04           | 0.1%                            |                           |
| 5            | Fiber Line 1 Oven                         | 0.00E+00              | 1.35E-08               | 0.00E+00        | 0.00E+00        | 1.62E-09        | 1.62E-09            | 8.74E-06           | 0.00E+00        | 4.29E-08        | 0.00E+00        | 1.62E-09         | 9.07E-07        | 0.00E+00        | 8.74E-06           | 0.0%                            |                           |
| 6            | Clayton Natural Gas Fired Steam Generator | 0.00E+00              | 4.18E-08               | 0.00E+00        | 5.00E-09        | 5.00E-09        | 5.00E-09            | 2.70E-05           | 0.00E+00        | 1.33E-07        | 0.00E+00        | 5.00E-09         | 2.81E-06        | 0.00E+00        | Respiratory System | 2.70E-05                        | 0.0%                      |
| 7            | MDI Storage Tank                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.81E-06           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.81E-06           | 0.0%                            |                           |
| 8            | Prime Pour TDI Tanks                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.99E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.99E-01           | 82.0%                           |                           |
| 9            | Slab Gilling Loop 1                       | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 7.23E-11           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 7.23E-11           | 0.0%                            |                           |
| <b>Total</b> |                                           | <b>2.35E-04</b>       | <b>2.42E-04</b>        | <b>0.00E+00</b> | <b>9.68E-06</b> | <b>5.64E-07</b> | <b>2.43E-04</b>     | <b>2.43E-01</b>    | <b>2.34E-04</b> | <b>1.82E-07</b> | <b>0.00E+00</b> | <b>6.74E-09</b>  | <b>1.14E-05</b> | <b>0.00E+00</b> | <b>2.43E-01</b>    | <b>100%</b>                     |                           |

1. Contribution by source is based on the target organ with the maximum chronic hazard.



Table 18. MEIWF Chronic Hazard by Substance

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1162  
 Location: 462693.1 UTM E, 3754058.9 UTM N

| Chemical Name               | CAS      | Concentration (ug/m <sup>3</sup> ) | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GI/LV           | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|-----------------------------|----------|------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|---------------------------------|---------------------------|
| PAHs                        | 1151     | 1.78E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Diesel Particulate Matter   | 9901     | 4.21E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 8.42E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 8.42E-05         | 0.00E+00                        | 0.00%                     |
| Formaldehyde                | 5000     | 2.47E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.75E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 2.75E-05         | 0.00E+00                        | 0.00%                     |
| Benzene                     | 71432    | 1.08E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Acetaldehyde                | 75070    | 6.69E-05                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.78E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 4.78E-07         | 0.00E+00                        | 0.00%                     |
| Naphthalene                 | 91203    | 4.23E-06                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.70E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 4.70E-07         | 0.00E+00                        | 0.00%                     |
| Ethyl Benzene               | 109414   | 1.26E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 6.31E-08        | 6.31E-08        | 6.31E-08            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 6.31E-08         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Methyl Diphenyl Disocyanate | 101688   | 1.07E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.34E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.34E-02         | 0.00E+00                        | 3.89%                     |
| Butadiene [1,3]             | 106990   | 2.73E-06                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.04E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.04E-04         | 0.00E+00                        | 0.00%                     |
| Acrolein                    | 107028   | 3.63E-05                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.04E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.04E-04         | 0.00E+00                        | 0.00%                     |
| Toluene                     | 108883   | 4.87E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 1.16E-06        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Hexane                      | 110543   | 8.39E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Xylenes                     | 1330207  | 3.62E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.16E-07           | 0.00E+00        | 5.16E-07        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 5.16E-07         | 0.00E+00                        | 0.00%                     |
| Lead Compounds              | 7439921  | 1.04E-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        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Manganese                   | 7439965  | 3.90E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Mercury                     | 7439976  | 2.51E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Nickel                      | 7440020  | 4.90E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Arsenic Compounds           | 7440382  | 2.01E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Copper                      | 7440439  | 1.89E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Hydrochloric Acid           | 7647010  | 2.34E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Ammonia                     | 7664417  | 4.25E-02                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.60E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 2.60E-07         | 0.00E+00                        | 0.00%                     |
| Selenium                    | 7782492  | 2.77E-09                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.12E-04           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 2.12E-04         | 0.00E+00                        | 0.13%                     |
| Chromium, Hexavalent        | 18540299 | 1.26E-09                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 6.29E-09           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 6.29E-09         | 0.00E+00                        | 0.00%                     |
| Toluene Disocyanate         | 26471625 | 2.73E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.41E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 3.41E-01         | 0.00E+00                        | 96.1%                     |
| <b>Total</b>                |          |                                    | <b>3.81E-05</b>       | <b>4.08E-05</b>        | <b>0.00E+00</b> | <b>2.96E-06</b> | <b>9.59E-08</b> | <b>4.13E-05</b>     | <b>3.55E-01</b>    | <b>3.80E-05</b> | <b>1.68E-06</b> | <b>0.00E+00</b> | <b>6.31E-08</b>  | <b>3.97E-05</b> | <b>0.00E+00</b> | <b>3.55E-01</b>  | <b>100.0%</b>                   |                           |

1. Contribution by pollutant is based on the target organ with the maximum chronic hazard.



**Table 19. MELW Chronic Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1162  
 Location: 462693.1 UTM E, 3754058.9 UTM N

| Source ID    | Source Name                          | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ   | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|--------------|--------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|--------------------|---------------------------------|---------------------------|
| 1            | Prime Pour Line                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.68E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.68E-01                        | 47.3%                     |
| 2            | Rebond Pour Line                     | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.33E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.33E-02                        | 3.8%                      |
| 3            | Fire Pump Engine 1                   | 1.90E-05              | 2.01E-05               | 0.00E+00        | 1.45E-06        | 1.64E-08        | 2.06E-05            | 6.53E-05           | 1.90E-05        | 1.96E-09        | 0.00E+00        | 0.00E+00         | 2.14E-06        | 0.00E+00        |                    | 6.53E-05                        | 0.0%                      |
| 4            | Fire Pump Engine 2                   | 1.91E-05              | 2.02E-05               | 0.00E+00        | 1.45E-06        | 1.64E-08        | 2.06E-05            | 6.54E-05           | 1.90E-05        | 1.96E-09        | 0.00E+00        | 0.00E+00         | 2.14E-06        | 0.00E+00        |                    | 6.54E-05                        | 0.0%                      |
| 5            | Fiber Line 1 Oven<br>Clayton Natural | 0.00E+00              | 3.95E-09               | 0.00E+00        | 4.73E-10        | 4.73E-10        | 4.73E-10            | 2.56E-06           | 0.00E+00        | 1.25E-08        | 0.00E+00        | 4.73E-10         | 2.65E-07        | 0.00E+00        |                    | 2.56E-06                        | 0.0%                      |
| 6            | Gas Fired Steam Generator            | 0.00E+00              | 5.24E-07               | 0.00E+00        | 6.26E-08        | 6.26E-08        | 6.26E-08            | 3.39E-04           | 0.00E+00        | 1.66E-06        | 0.00E+00        | 6.26E-08         | 3.51E-05        | 0.00E+00        | Respiratory System | 3.39E-04                        | 0.1%                      |
| 7            | MDI Storage Tank                     | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.44E-05           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.44E-05                        | 0.0%                      |
| 8            | Prime Pour TDI Tanks                 | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.73E-01           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.73E-01                        | 48.8%                     |
| 9            | Sleb Gluing Loop 1                   | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.16E-10           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 3.16E-10                        | 0.0%                      |
| <b>Total</b> |                                      | <b>3.81E-05</b>       | <b>4.08E-05</b>        | <b>0.00E+00</b> | <b>2.96E-06</b> | <b>9.59E-08</b> | <b>4.13E-05</b>     | <b>3.55E-01</b>    | <b>3.80E-05</b> | <b>1.68E-06</b> | <b>0.00E+00</b> | <b>6.31E-08</b>  | <b>3.97E-05</b> | <b>0.00E+00</b> |                    | <b>3.55E-01</b>                 | <b>100.0%</b>             |

1. Contribution by source is based on the target organ with the maximum chronic hazard.



Table 20. PMI Acute Hazard by Substance

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3388  
 Location: 462573.8 UTM E, 3754017.4 UTM N

| Chemical Name                | CAS      | Concentration (ug/m <sup>3</sup> ) | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ | Acute Risk @ Max Target Organ | Contribution <sup>1</sup> |
|------------------------------|----------|------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|-------------------------------|---------------------------|
| PAHs                         | 1151     | 4.52E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Diesel Particulate Matter    | 9901     | 3.36E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Formaldehyde                 | 50000    | 3.25E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 5.92E-05        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Benzene                      | 71432    | 9.04E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Acetaldehyde                 | 75070    | 1.17E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 2.49E-06        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Naphthalene                  | 91203    | 4.66E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Ethyl Benzene                | 100414   | 8.62E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Methyl Diphenyl Diisocyanate | 101688   | 4.90E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 9.9%                      |
| Butadiene [1,3]              | 106990   | 2.18E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Acrolein                     | 107028   | 2.75E-04                           | 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-04        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.3%                      |
| Toluene                      | 108883   | 3.38E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 6.77E-07        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Hexane                       | 110543   | 5.91E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Xylenes                      | 1330207  | 2.48E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 1.13E-07        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Lead Compounds               | 7439921  | 8.31E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Manganese                    | 7439965  | 3.10E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Mercury                      | 7439976  | 2.00E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Nickel                       | 7440020  | 3.91E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Arsenic Compounds            | 7440382  | 1.60E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Cadmium                      | 7440439  | 1.50E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Copper                       | 7440508  | 4.11E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Hydrochloric Acid            | 7647010  | 1.87E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 8.90E-08        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Ammonia                      | 7664417  | 2.87E-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        | 8.98E-05        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.2%                      |
| Selenium                     | 7782492  | 2.20E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Chromium, Hexavalent         | 18540299 | 1.00E-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        | 0.00E+00         | 0.00E+00                      | 0.0%                      |
| Toluene Diisocyanate         | 26471625 | 7.40E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                      | 89.6%                     |
| <b>Total</b>                 |          |                                    | <b>8.01E-06</b>       | <b>1.21E-05</b>        | <b>5.30E-05</b> | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>4.52E-05</b>     | <b>4.13E-02</b>    | <b>0.00E+00</b> | <b>2.62E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>3.35E-05</b> | <b>0.00E+00</b> | <b>4.13E-02</b>  | <b>100.0%</b>                 |                           |

1. Contribution by pollutant is based on the target organ with the maximum acute hazard.



**Table 21. PMI Acute Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 3388  
 Location: 462573.8 UTM E, 3754017.4 UTM N

| Source ID | Source Name                               | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ   | Acute Risk @ Max Target Organ | Contribution <sup>1</sup> |
|-----------|-------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|--------------------|-------------------------------|---------------------------|
| 1         | Prime Pour Line                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.47E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 2.47E-02                      | 59.8%                     |
| 2         | Rebond Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.08E-03           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 4.08E-03                      | 9.9%                      |
| 3         | Fire Pump Engine 1                        | 3.95E-06              | 5.61E-06               | 1.31E-05        | 0.00E+00        | 0.00E+00        | 9.17E-06            | 7.72E-06           | 0.00E+00        | 2.52E-05        | 0.00E+00        | 0.00E+00         | 3.41E-06        | 0.00E+00        |                    | 7.72E-06                      | 0.0%                      |
| 4         | Fire Pump Engine 2                        | 4.06E-06              | 5.76E-06               | 1.34E-05        | 0.00E+00        | 0.00E+00        | 9.43E-06            | 7.94E-06           | 0.00E+00        | 2.39E-05        | 0.00E+00        | 0.00E+00         | 3.51E-06        | 0.00E+00        |                    | 7.94E-06                      | 0.0%                      |
| 5         | Fiber Line 1 Oven                         | 0.00E+00              | 9.10E-08               | 3.15E-06        | 0.00E+00        | 0.00E+00        | 3.15E-06            | 2.23E-05           | 0.00E+00        | 2.56E-05        | 0.00E+00        | 0.00E+00         | 3.15E-06        | 0.00E+00        |                    | 2.23E-05                      | 0.1%                      |
| 6         | Clayton Natural Gas Fired Steam Generator | 0.00E+00              | 6.75E-07               | 2.34E-05        | 0.00E+00        | 0.00E+00        | 2.34E-05            | 1.65E-04           | 0.00E+00        | 1.90E-04        | 0.00E+00        | 0.00E+00         | 2.34E-05        | 0.00E+00        | Respiratory System | 1.65E-04                      | 0.4%                      |
| 7         | MDI Storage Tank                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.01E-06           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 3.01E-06                      | 0.0%                      |
| 8         | Prime Pour TDI Tanks                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.23E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.23E-02                      | 29.8%                     |
| 9         | Slab Gluing Loop 1                        | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.95E-10           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                    | 1.95E-10                      | 0.0%                      |
|           | <b>Total</b>                              | <b>8.01E-06</b>       | <b>1.21E-05</b>        | <b>5.30E-05</b> | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>4.52E-05</b>     | <b>4.13E-02</b>    | <b>0.00E+00</b> | <b>2.62E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>3.35E-05</b> | <b>0.00E+00</b> |                    | <b>4.13E-02</b>               | <b>100.0%</b>             |

1. Contribution by source is based on the target organ with the maximum acute hazard.



Table 22. MEIR Acute Hazard by Substance

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1125  
 Location: 462668.1 UTM E, 3754258.9 UTM N

| Chemical Name                | CAS      | Concentration<br>(ug/m <sup>3</sup> ) | Cardiovascular<br>System | Central<br>Nervous<br>System | Immune<br>System | Kidney          | GI/LV           | Reproductive<br>System | Respiratory<br>System | Skin            | Eye             | Bone/<br>Teeth  | Endocrine<br>System | Blood           | Odor            | Max Target<br>Organ       | Acute Risk @<br>Max Target<br>Organ | Contribution <sup>1</sup> |
|------------------------------|----------|---------------------------------------|--------------------------|------------------------------|------------------|-----------------|-----------------|------------------------|-----------------------|-----------------|-----------------|-----------------|---------------------|-----------------|-----------------|---------------------------|-------------------------------------|---------------------------|
| PAHs                         | 1151     | 4.38E-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            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Diesel Particulate Matter    | 9901     | 3.51E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Formaldehyde                 | 50000    | 2.81E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Benzene                      | 71432    | 6.64E-04                              | 0.00E+00                 | 0.00E+00                     | 2.46E-05         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 5.10E-05        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Acetaldehyde                 | 75070    | 1.07E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.28E-06              | 0.00E+00        | 2.28E-06        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 2.28E-06                            | 0.0%                      |
| Naphthalene                  | 91203    | 3.82E-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            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Ethyl Benzene                | 100414   | 5.67E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Methyl Diphenyl Diisocyanate | 101688   | 5.01E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Butadiene [1,3]              | 106990   | 2.28E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Acrolein                     | 107028   | 1.93E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 7.72E-05        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 7.72E-05                            | 0.4%                      |
| Toluene                      | 106883   | 2.25E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 4.50E-07        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 4.50E-07                            | 0.0%                      |
| Hexane                       | 110543   | 3.96E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Xylenes                      | 1330207  | 1.63E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 7.43E-08        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 7.43E-08                            | 0.0%                      |
| Lead Compounds               | 7439921  | 8.70E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Manganese                    | 7439965  | 3.25E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Mercury                      | 7439976  | 2.10E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Nickel                       | 7440020  | 4.09E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Arsenic Compounds            | 7440382  | 1.68E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Cadmium                      | 7440439  | 1.57E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Copper                       | 7440508  | 4.30E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Hydrochloric Acid            | 7647010  | 1.86E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 9.31E-08        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 9.31E-08                            | 0.0%                      |
| Ammonia                      | 7664172  | 1.88E-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        | 5.67E-05        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 5.67E-05                            | 0.3%                      |
| Selenium                     | 7782492  | 2.31E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Chromium, Hexavalent         | 18540299 | 1.05E-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        |                           | 0.00E+00                            | 0.0%                      |
| Toluene Diisocyanate         | 26471625 | 3.35E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| <b>Total</b>                 |          |                                       | <b>8.38E-06</b>          | <b>1.24E-05</b>              | <b>4.50E-05</b>  | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>3.68E-05</b>        | <b>2.11E-02</b>       | <b>0.00E+00</b> | <b>1.90E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>     | <b>2.46E-05</b> | <b>0.00E+00</b> | <b>Respiratory System</b> | <b>2.11E-02</b>                     | <b>100.0%</b>             |

1. Contribution by pollutant is based on the target organ with the maximum acute hazard.



**Table 23. MEIR Acute Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1125  
 Location: 462668.1 UTM E, 3754258.9 UTM N

| Source ID    | Source Name                               | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GI/LV           | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ | Acute Risk @ Max Target Organ | Contribution <sup>1</sup> |
|--------------|-------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|-------------------------------|---------------------------|
| 1            | Prime Pour Line                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 8.28E-03           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 8.28E-03         | 39.3%                         |                           |
| 2            | Rebond Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.17E-03           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 4.17E-03         | 19.8%                         |                           |
| 3            | Fire Pump Engine 1                        | 4.12E-06              | 5.85E-06               | 1.36E-05        | 0.00E+00        | 0.00E+00        | 9.57E-06            | 8.06E-06           | 0.00E+00        | 2.42E-05        | 0.00E+00        | 0.00E+00         | 3.56E-06        | 0.00E+00        | 8.06E-06         | 0.0%                          |                           |
| 4            | Fire Pump Engine 2                        | 4.26E-06              | 6.05E-06               | 1.41E-05        | 0.00E+00        | 0.00E+00        | 9.89E-06            | 8.33E-06           | 0.00E+00        | 2.50E-05        | 0.00E+00        | 0.00E+00         | 3.68E-06        | 0.00E+00        | 8.33E-06         | 0.0%                          |                           |
| 5            | Fiber Line 1 Oven                         | 0.00E+00              | 2.88E-08               | 9.95E-07        | 0.00E+00        | 0.00E+00        | 9.95E-07            | 7.04E-06           | 0.00E+00        | 8.08E-06        | 0.00E+00        | 0.00E+00         | 9.95E-07        | 0.00E+00        | 7.04E-06         | 0.0%                          |                           |
| 6            | Clayton Natural Gas Fired Steam Generator | 0.00E+00              | 4.72E-07               | 1.64E-05        | 0.00E+00        | 0.00E+00        | 1.64E-05            | 1.15E-04           | 0.00E+00        | 1.32E-04        | 0.00E+00        | 0.00E+00         | 1.64E-05        | 0.00E+00        | 1.15E-04         | 0.5%                          |                           |
| 7            | MDI Storage Tank                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.09E-07           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 3.09E-07         | 0.0%                          |                           |
| 8            | Prime Pour TDI Tanks                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 8.49E-03           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 8.49E-03         | 40.3%                         |                           |
| 9            | Sabb Gilling Loop 1                       | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 5.12E-11           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 5.12E-11         | 0.0%                          |                           |
| <b>Total</b> |                                           | <b>8.38E-06</b>       | <b>1.24E-05</b>        | <b>4.50E-05</b> | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>3.68E-05</b>     | <b>2.11E-02</b>    | <b>0.00E+00</b> | <b>1.90E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>2.46E-05</b> | <b>0.00E+00</b> | <b>2.11E-02</b>  | <b>100.0%</b>                 |                           |

1. Contribution by source is based on the target organ with the maximum acute hazard.





Table 24. MEIWA Acute Hazard by Substance

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1017  
 Location: 462593.1 UTM E, 3754008.9 UTM N

| Chemical Name                | CAS      | Concentration<br>(ug/m <sup>3</sup> ) | Cardiovascular<br>System | Central<br>Nervous<br>System | Immune<br>System | Kidney          | GI/LV           | Reproductive<br>System | Respiratory<br>System | Skin            | Eye             | Bone/<br>Teeth  | Endocrine<br>System | Blood           | Odor            | Max Target<br>Organ       | Acute Risk @<br>Max Target<br>Organ | Contribution <sup>1</sup> |
|------------------------------|----------|---------------------------------------|--------------------------|------------------------------|------------------|-----------------|-----------------|------------------------|-----------------------|-----------------|-----------------|-----------------|---------------------|-----------------|-----------------|---------------------------|-------------------------------------|---------------------------|
| PAHs                         | 1151     | 4.75E-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            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Diesel Particulate Matter    | 9901     | 3.54E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Formaldehyde                 | 50000    | 3.41E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 6.20E-05        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Benzene                      | 71432    | 9.45E-04                              | 0.00E+00                 | 0.00E+00                     | 3.50E-05         | 0.00E+00        | 0.00E+00        | 3.50E-05               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.50E-05        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Acetaldehyde                 | 75070    | 1.23E-03                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 2.61E-06              | 0.00E+00        | 2.61E-06        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 2.61E-06                            | 0.0%                      |
| Naphthalene                  | 91203    | 4.88E-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            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Ethyl Benzene                | 100414   | 9.00E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Methyl Diphenyl Diisocyanate | 101688   | 4.42E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Butadiene [1,3]              | 106990   | 2.29E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 3.48E-07               | 3.69E-03              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 3.69E-03                            | 10.1%                     |
| Acrolein                     | 107028   | 2.87E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.15E-04              | 0.00E+00        | 1.15E-04        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 1.15E-04                            | 0.3%                      |
| Toluene                      | 106883   | 3.53E-03                              | 0.00E+00                 | 7.06E-07                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 7.06E-07              | 0.00E+00        | 7.06E-07        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 7.06E-07                            | 0.0%                      |
| Hexane                       | 110543   | 6.17E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 0.00E+00              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Xylenes                      | 1330207  | 2.59E-03                              | 0.00E+00                 | 1.18E-07                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 1.18E-07              | 0.00E+00        | 1.18E-07        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 1.18E-07                            | 0.0%                      |
| Lead Compounds               | 7439921  | 8.75E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Manganese                    | 7439965  | 3.27E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Mercury                      | 7439976  | 2.11E-06                              | 0.00E+00                 | 3.51E-06                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 3.51E-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                            | 0.0%                      |
| Nickel                       | 7440020  | 4.12E-06                              | 0.00E+00                 | 0.00E+00                     | 2.06E-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                            | 0.0%                      |
| Arsenic Compounds            | 7440382  | 1.69E-06                              | 0.00E+00                 | 8.44E-06                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 8.44E-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                            | 0.0%                      |
| Cadmium                      | 7440439  | 1.58E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Copper                       | 7440508  | 4.33E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Hydrochloric Acid            | 7647010  | 1.97E-04                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 9.37E-08              | 0.00E+00        | 9.37E-08        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 9.37E-08                            | 0.0%                      |
| Ammonia                      | 7664171  | 3.00E-01                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 9.37E-05              | 0.00E+00        | 9.37E-05        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 9.37E-05                            | 0.3%                      |
| Selenium                     | 7782492  | 2.32E-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        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 0.00E+00                            | 0.0%                      |
| Chromium, Hexavalent         | 18540299 | 1.06E-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        |                           | 0.00E+00                            | 0.0%                      |
| Toluene Diisocyanate         | 26471625 | 6.52E-02                              | 0.00E+00                 | 0.00E+00                     | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00               | 3.26E-02              | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00        | 0.00E+00        |                           | 3.26E-02                            | 89.3%                     |
| <b>Total</b>                 |          |                                       | <b>8.44E-06</b>          | <b>1.28E-05</b>              | <b>5.56E-05</b>  | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>4.73E-05</b>        | <b>3.65E-02</b>       | <b>0.00E+00</b> | <b>2.74E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>     | <b>3.50E-05</b> | <b>0.00E+00</b> | <b>Respiratory System</b> | <b>3.65E-02</b>                     | <b>100.0%</b>             |

1. Contribution by pollutant is based on the target organ with the maximum acute hazard.



**Table 25. MEIW Acute Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1017  
 Location: 462593.1 UTM E, 3754008.9 UTM N

| Source ID | Source Name                               | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bones/Teeth     | Endocrine System | Blood           | Odor            | Max Target Organ | Acute Risk @ Max Target Organ | Contribution <sup>1</sup> |
|-----------|-------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|-------------------------------|---------------------------|
| 1         | Prime Pour Line                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 2.23E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 2.23E-02         | 2.23E-02                      | 61.1%                     |
| 2         | Rebond Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 3.68E-03           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 3.68E-03         | 3.68E-03                      | 10.1%                     |
| 3         | Fire Pump Engine 1                        | 4.17E-06              | 5.92E-06               | 1.38E-05        | 0.00E+00        | 0.00E+00        | 9.68E-06            | 8.15E-06           | 0.00E+00        | 2.45E-05        | 0.00E+00        | 0.00E+00         | 3.60E-06        | 0.00E+00        | 8.15E-06         | 8.15E-06                      | 0.0%                      |
| 4         | Fire Pump Engine 2                        | 4.27E-06              | 6.06E-06               | 1.41E-05        | 0.00E+00        | 0.00E+00        | 9.91E-06            | 8.34E-06           | 0.00E+00        | 2.51E-05        | 0.00E+00        | 0.00E+00         | 3.69E-06        | 0.00E+00        | 8.34E-06         | 8.34E-06                      | 0.0%                      |
| 5         | Fiber Line 1 Oven                         | 0.00E+00              | 8.63E-08               | 2.99E-06        | 0.00E+00        | 0.00E+00        | 2.99E-06            | 2.11E-05           | 0.00E+00        | 2.93E-05        | 0.00E+00        | 0.00E+00         | 2.99E-06        | 0.00E+00        | 2.11E-05         | 2.11E-05                      | 0.1%                      |
| 6         | Clayton Natural Gas Fired Steam Generator | 0.00E+00              | 7.13E-07               | 2.47E-05        | 0.00E+00        | 0.00E+00        | 2.47E-05            | 1.75E-04           | 0.00E+00        | 2.00E-04        | 0.00E+00        | 0.00E+00         | 2.47E-05        | 0.00E+00        | 1.75E-04         | 1.75E-04                      | 0.5%                      |
| 7         | MDI Storage Tank                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.94E-06           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.94E-06         | 1.94E-06                      | 0.0%                      |
| 8         | Prime Pour TDI Tanks                      | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.03E-02           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.03E-02         | 1.03E-02                      | 28.2%                     |
| 9         | Slab Gluing Loop 1                        | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.83E-10           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 1.83E-10         | 1.83E-10                      | 0.0%                      |
|           | <b>Total</b>                              | <b>8.44E-06</b>       | <b>1.28E-05</b>        | <b>5.50E-05</b> | <b>0.00E+00</b> | <b>0.00E+00</b> | <b>4.73E-05</b>     | <b>3.65E-02</b>    | <b>0.00E+00</b> | <b>2.74E-04</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>3.50E-05</b> | <b>0.00E+00</b> | <b>3.65E-02</b>  | <b>3.65E-02</b>               | <b>100.0%</b>             |

1. Contribution by source is based on the target organ with the maximum acute hazard.



**Table 26. MEIWF Chronic 8-hour Hazard by Substance**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1122  
 Location: 462668.1 UTM E, 3754033.9 UTM N

| Chemical Name               | CAS      | Concentration (ug/m <sup>3</sup> ) | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye             | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|-----------------------------|----------|------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|---------------------------------|---------------------------|
| PAHs                        | 1151     | 1.42E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Diesel Particulate Matter   | 9901     | 3.76E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Formaldehyde                | 50000    | 1.91E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 4.61E-05                        | 0.00%                     |
| Benzene                     | 71432    | 8.30E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Acetaldehyde                | 75070    | 5.23E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 3.98E-07                        | 0.00%                     |
| Napthalene                  | 91203    | 3.26E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Ethyl Benzene               | 100414   | 9.62E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Methyl Diphenyl Disocyanate | 101688   | 6.74E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 1.41E-02                        | 2.6%                      |
| Butadiene [1,3]             | 106990   | 2.44E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Acrolein                    | 107028   | 2.77E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 7.98E-05                        | 0.00%                     |
| Toluene                     | 108883   | 3.72E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Hexane                      | 110543   | 6.40E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Xylenes                     | 1330207  | 2.76E-04                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Lead Compounds              | 7439921  | 9.52E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Manganese                   | 7439965  | 3.48E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Mercury                     | 7439976  | 2.25E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Nickel                      | 7440020  | 2.25E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Arsenic Compounds           | 7440382  | 1.80E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 2.72E-06                        | 0.00%                     |
| Cadmium                     | 7440439  | 1.68E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 4.47E-06                        | 0.00%                     |
| Copper                      | 7440508  | 4.60E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Hydrochloric Acid           | 7647010  | 2.09E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Ammonia                     | 7664417  | 3.24E-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        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Chromium, Hexavalent        | 18540299 | 1.12E-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        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Selenium                    | 7782492  | 2.47E-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         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00                        | 0.00%                     |
| Toluene Diisocyanate        | 26471625 | 2.72E-03                           | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 0.00E+00           | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | 0.00E+00         | 5.29E-01                        | 97.4%                     |
| <b>Total</b>                |          |                                    | <b>4.47E-06</b>       | <b>6.63E-06</b>        | <b>2.72E-06</b> | <b>1.40E-06</b> | <b>0.00E+00</b> | <b>6.87E-06</b>     | <b>5.43E-01</b>    | <b>4.47E-06</b> | <b>8.95E-07</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>5.64E-05</b> | <b>0.00E+00</b> | <b>5.43E-01</b>  | <b>100.0%</b>                   |                           |

1. Contribution by pollutant is based on the target organ with the maximum chronic hazard.



**Table 27. METW Chronic 8-hour Hazard by Source**

Carpenter Company  
 Facility ID: 7730  
 Receptor ID: 1122  
 Location: 462668.1 UTM E, 3754033.9 UTM N

| Source ID    | Source Name                              | Cardiovascular System | Central Nervous System | Immune System   | Kidney          | GILV            | Reproductive System | Respiratory System | Skin            | Eye              | Bone/Teeth      | Endocrine System | Blood           | Odor            | Max Target Organ          | Chronic Risk @ Max Target Organ | Contribution <sup>1</sup> |
|--------------|------------------------------------------|-----------------------|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|-----------------|------------------|-----------------|------------------|-----------------|-----------------|---------------------------|---------------------------------|---------------------------|
| 1            | Prime Pour Line                          | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.56E-01           | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        | Respiratory System        | 4.56E-01                        | 84.0%                     |
| 2            | Rebond Pour Line                         | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.41E-02           | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                           | 1.41E-02                        | 2.6%                      |
| 3            | Fire Pump Engine 1                       | 2.23E-06              | 3.31E-06               | 1.36E-06        | 6.97E-07        | 0.00E+00        | 3.43E-06            | 8.67E-06           | 2.23E-06        | 2.66E-09         | 0.00E+00        | 0.00E+00         | 1.30E-06        | 0.00E+00        |                           | 8.67E-06                        | 0.0%                      |
| 4            | Fire Pump Engine 2                       | 2.24E-06              | 3.32E-06               | 1.36E-06        | 6.99E-07        | 0.00E+00        | 3.44E-06            | 8.69E-06           | 2.24E-06        | 2.66E-09         | 0.00E+00        | 0.00E+00         | 1.30E-06        | 0.00E+00        |                           | 8.69E-06                        | 0.0%                      |
| 5            | Fiber Line 1 Oven                        | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.50E-06           | 0.00E+00        | 1.15E-08         | 0.00E+00        | 0.00E+00         | 6.93E-07        | 0.00E+00        |                           | 1.50E-06                        | 0.0%                      |
| 6            | Clyton Natural Gas Fired Steam Generator | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 1.15E-04           | 0.00E+00        | 8.78E-07         | 0.00E+00        | 0.00E+00         | 5.31E-05        | 0.00E+00        |                           | 1.15E-04                        | 0.0%                      |
| 7            | MDI Storage Tank                         | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 9.34E-06           | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                           | 9.34E-06                        | 0.0%                      |
| 8            | Prime Pour TDI Tanks                     | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 7.28E-02           | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                           | 7.28E-02                        | 13.4%                     |
| 9            | Slab Gluing Loop 1                       | 0.00E+00              | 0.00E+00               | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00            | 4.50E-10           | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00         | 0.00E+00        | 0.00E+00        |                           | 4.50E-10                        | 0.0%                      |
| <b>Total</b> |                                          | <b>4.47E-06</b>       | <b>6.63E-06</b>        | <b>2.72E-06</b> | <b>1.40E-06</b> | <b>0.00E+00</b> | <b>6.88E-06</b>     | <b>5.44E-01</b>    | <b>4.47E-06</b> | <b>1.895E-07</b> | <b>0.00E+00</b> | <b>0.00E+00</b>  | <b>5.64E-05</b> | <b>0.00E+00</b> | <b>Respiratory System</b> | <b>5.44E-01</b>                 | <b>100.0%</b>             |

1. Contribution by source is based on the target organ with the maximum chronic hazard.



**Table 28. Cancer Burden**

Carpenter Company  
 Facility ID: 7730

| Census Tract | Census Block | Cancer Risk | Receptor | Population <sup>1</sup> | Cancer Burden <sup>2</sup> |
|--------------|--------------|-------------|----------|-------------------------|----------------------------|
| 313          | 1004         | 2.10E-07    | 3457     | 70                      | 1.47E-05                   |
|              | 1006         | 1.66E-07    | 3458     | 135                     | 2.25E-05                   |
|              | 2028         | 1.37E-07    | 3459     | 86                      | 1.18E-05                   |
|              | 2031         | 1.16E-07    | 3460     | 100                     | 1.16E-05                   |
|              | 2033         | 9.90E-08    | 3461     | 104                     | 1.03E-05                   |
| <b>Total</b> |              |             |          | <b>495</b>              | <b>0.00007</b>             |

1. Population from 2010 Census data, pulled from HARP2 ADMRT database

2. Cancer Burden = (Maximum Cancer Risk) x (Population)

## **APPENDIX C. SCAQMD PERMITS**

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South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765-4178  
**PERMIT TO CONSTRUCT/OPERATE**

Page 1  
Permit No.  
G66773  
A/N 631215

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for the annual renewal fee (Rule 301(d)) is not received by the expiration date, contact the District.

**Legal Owner  
or Operator:**

CARPENTER CO  
7809 LINCOLN AVE  
RIVERSIDE, CA 92504-4442

ID 7730

**Equipment Location:** 7809 LINCOLN AVE, RIVERSIDE, CA 92504-4497

**Equipment Description :**

Flexible Polyurethane Foam (Slabstock) Manufacturing System consisting of:

1. Line Mixer, 20 HP, 1-Gallon Capacity.
2. Pour Belt Conveyor, 5 HP, with Two 3-HP Side Conveyors and One Hooded Enclosure.
3. Seven Polyol Metering Pumps, each Positive Displacement with a 100-HP Motor.
4. One Polyol Metering Pump, Viking, Positive Displacement with a 7.5-HP Motor.
5. One Polyol Metering Pump, Bosch, Positive Displacement with a 40-HP Motor.
6. Polyol/CaCO<sub>3</sub> Metering Pump, Positive Displacement with a 4-HP Motor.
7. Toluene Diisocyanate (TDI) Metering Pump, Positive Displacement with a 75-HP Motor.
8. One MDI Metering Pump, Bosch, Positive Displacement with a 75-HP Motor.
9. Water Metering Pump, Positive Displacement with a 15-HP Motor.
10. Carbon Dioxide Metering Pump, Positive Displacement with a 17-HP Motor.
11. Methyl Formate Metering Pump, Positive Displacement with a 5-HP Motor.

**Conditions :**

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. This equipment shall not be operated unless it is vented to air pollution control equipment which is in full use and which has been issued a valid permit by the South Coast AQMD.

**ORIGINAL**



South Coast Air Quality Management District  
 21865 Copley Drive, Diamond Bar, CA 91765-4178  
**PERMIT TO CONSTRUCT/OPERATE**

Page 2  
 Permit No.  
 G66773  
 A/N 631215

4. This equipment shall not be operated unless the hooded enclosure is fully closed (except during operations of start-up, changeover, platen adjustments, and/or flushing, not to exceed 5 minutes per event).
5. This equipment shall comply with all applicable requirements of Rule 1175.
6. The total quantity of cleaning solvent emitted to the atmosphere from the cleaning operations of this equipment shall not exceed 15 pounds per month.
7. The operator shall not use, in this equipment, any blowing agent except for carbon dioxide and methyl formate.
8. This equipment shall not process more than 3,412.5 tons of TDI in any one calendar month, nor 23,270.41 tons per year.
9. Materials used in this equipment shall not contain any toxic compound identified in Rule 1401, Table I, with effective date of September 1, 2017 or earlier, except for the following at the annual limits shown below:

| Toxic Compound                  | CAS No.  | Annual Usage (Lb/Year) |
|---------------------------------|----------|------------------------|
| Toluene-2, 4-diisocyanate       | 584-84-9 | 37,232,654             |
| Toluene-2, 6-diisocyanate       | 91-08-7  | 9,308,161              |
| Methylene diphenyl diisocyanate | 101-68-8 | 5,214,727              |
| Diethanolamine                  | 111-42-2 | 71,749                 |
| Methanol                        | 67-56-1  | 23,000                 |
| Styrene                         | 100-42-5 | 226                    |
| Acrylonitrile                   | 107-13-1 | 44                     |

10. Safety data sheets for all materials used in this equipment shall be kept current and be made available to the Executive Officer or his representative upon request.
11. The total amount of TDI emissions from this facility shall not exceed 1,890 pounds in one year.

For the purpose of this condition, "total amount of TDI emissions" shall be calculated as follows:

For flexible polyurethane foam (slabstock) manufacturing system, pounds of TDI emissions (pounds of TDI processed) x (0.00000318).

For polyurethane foam reprocessing system, pounds of TDI emissions = (pounds of TDI processed) x (0.000265).

For TDI storage tank(s), pounds of TDI emissions = (pounds of TDI processed) x (0.0000003).

12. Records shall be maintained to demonstrate compliance with Condition Nos. 6, 8, 9 and 11 in this permit. Records shall be kept in a format acceptable to the South Coast AQMD, shall be retained at the facility for a minimum of two years, and shall be made available to South Coast AQMD personnel upon request.

**ORIGINAL**





South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765-4178  
**PERMIT TO CONSTRUCT/OPERATE**

Page 3  
Permit No.  
G66773  
A/N 631215

**NOTICE**

In accordance with Rule 206, this Permit to Operate or copy shall be posted on or within 8 meters of the equipment.

This permit does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

Executive Officer

A handwritten signature in black ink, appearing to read "J Aspell", is written over a horizontal line.

BY JASON ASPELL/GJ02

10/22/2021

**ORIGINAL**



# PERMIT TO OPERATE

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

*Rebond  
10/24/02*

LEGAL OWNER  
OR OPERATOR:

CARPENTER CO  
P O BOX 7788  
RIVERSIDE, CA 92513-7788 ~~XXXXXXXXXX-05-2000~~

ID 007730

**Equipment Location:** 7809 LINCOLN AVE, RIVERSIDE, CA 92504-4497

**Equipment Description:**

POLYURETHANE FOAM REPROCESSING SYSTEM CONSISTING OF:

1. HAMMERMILL GRINDER.
2. AIR SEPARATOR
3. BOTTOM CONVEYOR, 2 HP.
4. TWO TOPSIDE CONVEYORS, 1 HP.
5. TOP/COMPRESSION CONVEYOR, 2 HP.
6. FOUR COMPARTMENT BIN HOPPER
7. BLENDER/SEPARATOR.
8. WET MIXER, 20 HP.
9. MOLDER

**Conditions:**

- 1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
- 2) THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
- 3) THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE GRINDER, AIR SEPARATOR, BLENDER/SEPARATOR, WET MIXER, AND MOLDER ARE VENTED ONLY TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED A PERMIT BY THE EXECUTIVE OFFICER.

**ORIGINAL**



## PERMIT TO OPERATE

### CONTINUATION OF PERMIT TO OPERATE

- 4) EXCEPT WHEN METHYLENE BISPHENYL DIISOCYANATE (MDI) IS USED IN PLACE OF TOLUENE DIISOCYANATE (TDI), THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE WET MIXER AND MOLDER ARE VENTED ONLY TO AIR POLLUTION CONTROL EQUIPMENT WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED A PERMIT BY THE EXECUTIVE OFFICER.
- 5) THE TOTAL AMOUNT OF MATERIALS PROCESSED BY THIS EQUIPMENT SHALL NOT EXCEED 5,085,000 IN ANY ONE MONTH.
- 6) THE TOTAL AMOUNT OF TDI PREPOLYMER PROCESSED BY THIS EQUIPMENT SHALL NOT EXCEED 560,000 POUNDS IN ANY ONE MONTH.
- 7) THE OPERATOR SHALL KEEP RECORDS OF THE MONTHLY AMOUNT OF TDI PREPOLYMER PROCESSED THROUGH THIS EQUIPMENT AND MONTHLY TDI EMISSIONS WHICH IS TO BE CALCULATED USING 0.265 POUNDS OF TDI EMISSION FOR EVERY 1,000 POUNDS OF TDI PREPOLYMER PROCESSED THROUGH THIS EQUIPMENT.
- 8) THE TOTAL AMOUNT OF TDI EMISSIONS FROM THIS FACILITY SHALL NOT EXCEED 1,890 POUNDS IN ONE YEAR WHICH IS CALCULATED BY ACCUMULATING THE MONTHLY EMISSION RECORDS AS SPECIFIED UNDER CONDITION NO. 7 ABOVE.
- 9) THE OPERATOR SHALL KEEP ADEQUATE RECORDS TO DEMONSTRATE COMPLIANCE WITH CONDITION NOS. 5, 6, 7, AND 8. SUCH RECORDS SHALL BE RETAINED AT FOR LEAST TWO YEARS AND BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

#### NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

By Dorris M. Bailey/rs04  
7/29/2003

ORIGINAL



South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765-4178  
**PERMIT TO CONSTRUCT/OPERATE**

Page 1  
Permit No.  
G46661  
A/N 592188

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for the annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

**Legal Owner  
or Operator:**

CARPENTER CO  
P O BOX 7788  
RIVERSIDE, CA 92513-7788

ID 7730

**Equipment Location:** 7809 LINCOLN AVE, RIVERSIDE, CA 92504-4497

**Equipment Description :**

Air Pollution Control System consisting of:

1. Carbon Adsorption Canister, Camfil, Model VDB/35/31, 20'L × 10'W × 9'H., with 21,500 Pounds Activated Carbon and a Pre-Filter.
2. Exhaust System with a 125 HP Blower venting Polyurethane Foam (Slabstock) Manufacturing System and Wet Mixer of the Polyurethane Foam Reprocessing System.

**Conditions :**

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. The TDI emissions concentration at the exhaust outlet of the carbon adsorption system shall not exceed 125 parts per billion in volumes (ppbv).
4. The spent carbon shall be disposed of by a licensed recycler to a permitted disposal facility.
5. The operator shall measure and record TDI concentrations under the following conditions:
  - A. The operator shall perform the TDI concentration measurements at the outlet of the carbon adsorption system.
  - B. The operator shall perform the TDI concentration measurements at the time when the flexible polyurethane foam (slabstock) manufacturing system and/or the wet mixer of the polyurethane foam reprocessing system is in operation.
  - C. The operator shall perform the TDI concentration measurements using a monitoring device with a TDI detection range of 0-200 ppb in volumes, and a minimum accuracy of ± 15% of reading ± 1 ppb.
  - D. The operator shall perform the TDI concentration measurements at least two times in an operation day.

**ORIGINAL**



PERMIT TO CONSTRUCT/OPERATE

- E. The emission monitoring equipment shall be maintained and calibrated according to the manufacturer's specifications.
6. The operator shall replace the activated carbon in the carbon adsorption canister whenever a TDI concentration measurement obtained at the outlet of the carbon adsorption system is greater than 125 ppb.
7. The operator shall install and maintain an operation non-resettable totalizing time meter on the blower (display reading shall be readily available) to determine this equipment elapsed operation time.
8. The operator shall perform at least one active carbon capacity test to monitor the remaining carbon service life every 1,035 blower operation hours, or within the number of blower operation hours as follows:
- Number of blower operation hours between the two carbon activity tests =  $4,140 \text{ hours} \times (R - 25\%)$
- Where:  
R = % of the remaining carbon service life resulted from the most recent carbon capacity test, or  
R = 100% when the canister is replaced with the fresh activated carbon
9. The operator shall replace the activated carbon in the carbon adsorption canister within 1,035 blower operation hours after a test result has indicated the remaining adsorption capacity is less than a quarter ( $\frac{1}{4}$ ) of its original capacity.
10. The operator shall maintain adequate records to verify compliance with condition nos. 5, 6, 8 and 9 above. Such records shall be kept on the premises for at least two years and be made available to the executive officer or his representative upon request. The records shall include, at minimum, the following information:
- A. The TDI concentration from the outlet of the adsorption system.
  - B. The TDI concentration measurement time and date.
  - C. The date and blower operation hours at time of the active carbon capacity test.
  - D. The carbon capacity test results.
  - E. The date and blower operation hours at time of the active carbon was replaced.
  - F. The reason(s) for the replacement of activated carbon.

ORIGINAL



South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765-4178

**PERMIT TO CONSTRUCT/OPERATE**

Page 3  
Permit No.  
G46661  
A/N 592188

**NOTICE**

In accordance with Rule 206, this Permit to Operate or copy shall be posted on or within 8 meters of the equipment.

This permit does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

Executive Officer

A handwritten signature in cursive script that reads "Dorris M. Bailey".

By Dorris M. Bailey/SJ02

5/27/2017

**ORIGINAL**



## PERMIT TO OPERATE

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for the annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner  
or Operator:

CARPENTER CO  
P O BOX 7788  
RIVERSIDE, CA 92513-7788

ID 7730

**Equipment Location:** 7809 LINCOLN AVE, RIVERSIDE, CA 92504-4497

### Equipment Description :

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. WET ELECTROSTATIC SCRUBBER, PERFHLEX USA LTD., MODEL NO. TAS 55-7500, 35'-0" L. X 8'-0" W. X 16'-0" H., AND TWO 100-HP AND ONE 7½-HP WATER PUMPS.
2. EXHAUST SYSTEM WITH 125-HP BLOWER VENTING THE MOLDER OF THE POLYURETHANE FOAM REPROCESSING SYSTEM.

### Conditions :

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL NOT BE OPERATED AT A WATER PRESSURE OF LESS THAN 15 PSIG.
4. THE OPERATOR SHALL INSTALL AND MAINTAIN A PRESSURE GAUGE TO ACCURATELY INDICATE THE WATER PRESSURE DURING OPERATION OF THIS EQUIPMENT.
5. THE SPENT WASTE WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATORY REQUIREMENTS. IF IT IS DETERMINED TO BE HAZARDOUS, A HAZARDOUS WASTE TRANSPORTER SHALL HANDLE THE PROPER DISPOSAL OF ANY AND ALL WASTE FROM THIS EQUIPMENT.
6. THE OPERATOR OF THIS EQUIPMENT SHALL CONDUCT SOURCE TESTS IN ACCORDANCE WITH THE FOLLOWING CONDITIONS:
  - A. AT LEAST ONE SOURCE TEST SHALL BE CONDUCTED FOR EVERY 8,142,074 POUNDS OF TDI PROCESSED IN THE MOLDER OF THE POLYURETHANE FOAM REPROCESSING SYSTEM.

**ORIGINAL**



**PERMIT TO OPERATE**

- B. THE SOURCE TEST SHALL BE CONDUCTED TO VERIFY COMPLIANCE WITH THE TDI EMISSION RATE SPECIFIED BY THE PERMIT TO OPERATE FOR THE POLYURETHANE FOAM REPROCESSING SYSTEM.
- C. SOURCE TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH A SOURCE TEST PROTOCOL PREVIOUSLY APPROVED BY THE DISTRICT.
- 7. THE OPERATOR SHALL MAINTAIN ADEQUATE RECORDS TO VERIFY COMPLIANCE WITH CONDITION NO. 6 ABOVE. SUCH RECORDS SHALL BE KEPT ON THE PREMISES FOR AT LEAST TWO YEARS AND BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE UPON REQUEST.

**NOTICE**

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

By Dorris M. Bailey/SJ02

3/6/2012

**ORIGINAL**



**PERMIT TO OPERATE**

9150 FLAIR DRIVE, EL MONTE, CALIFORNIA 91731

Permit No.  
D22228  
A/N 208120  
Page 1

*This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership. If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.*

23

**Legal Owner**

ID 007730

**Or Operator:**

E.R. CARPENTER CO., INC.  
P.O. BOX 7788  
RIVERSIDE, CA 92513  
ATTN: WAYNE H. MILLER

**Equipment**

**located at:** 7809 LINCOLN AVENUE, RIVERSIDE, CA 92513

**Equipment Description:**

INTERNAL COMBUSTION ENGINE, CUMMINS, DIESEL-FUELED,  
MODEL NO. NT-280-IF, SERIAL NO. 10228403, 6 CYLINDERS, FOUR CYCLE,  
TURBO-CHARGED, 255 BHP, WITH 1 EXHAUST.

**Conditions:**

1. Operation of this equipment must be conducted in compliance with all data and specifications submitted with the application under which this Permit is issued unless otherwise noted below.
2. This equipment must be properly maintained and kept in good operating conditions at all times.
3. The ignition timing of this engine shall be inspected, adjusted, and certified at a minimum of once every three years of operation. Inspections, adjustments, and certifications must be performed by a qualified mechanic and done in accordance with the engine manufacturer's specifications and procedures.

**ORIGINAL**



**PERMIT TO OPERATE**

9150 FLAIR DRIVE, EL MONTE, CALIFORNIA 91731

Permit No.  
D22228  
A/N 208120  
Page 2

**CONTINUATION OF PERMIT TO OPERATE**

**NOTICE**

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THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

**EXECUTIVE OFFICER**

By Raquel Puerta/Creighton  
May 22, 1990

**ORIGINAL**

**PERMIT TO OPERATE**

9150 FLAIR DRIVE, EL MONTE, CALIFORNIA 91731

Permit No.  
**D43309**  
A/N 217581  
Page 1

**This initial permit shall be renewed by 11/01 ANNUALLY unless the equipment is moved, or changes ownership. If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.**

**Legal Owner  
Or Operator:**

E.R. CARPENTER CO., INC.  
P. O. BOX 7788  
RIVERSIDE, CALIFORNIA 92513  
ATTN: WAYNE H. MILLER

**ID 7730****Equipment**

located at: 7809 LINCOLN AVENUE, RIVERSIDE, CA. 92504

**Equipment Description:**

INTERNAL COMBUSTION ENGINE, CUMMINS, DIESEL-FUELED, EMERGENCY FIRE WATER PUMP DRIVER, MODEL NO. NT-280-IF, S/N 10227170, TURBOCHARGED, 6 CYLINDERS, FOUR CYCLE, 255 BHP, WITH 1 EXHAUST.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. AN ELAPSED TIME METER SHALL BE INSTALLED/MAINTAINED, SO AS TO INDICATE IN CUMULATIVE HOURS, THE AMOUNT OF TIME THE ENGINE HAS OPERATED.
4. THE ENGINE IS LIMITED TO AN OPERATING SCHEDULE OF NO MORE THAN 13.8 HOURS IN ANY ONE DAY AND NO MORE THAN 125 HOURS (CUMULATIVE) IN ANY ONE CALENDAR YEAR UNLESS ADDITIONAL HOURS ARE OTHERWISE AUTHORIZED BY THE EXECUTIVE OFFICER. THIS EQUIPMENT SHALL ONLY OPERATE DURING MAINTENANCE TESTING, PERFORMANCE TESTING, OR IN CASES OF EMERGENCY.
5. THE UNCONTROLLED EMISSION RATE OF REACTIVE ORGANIC GASES SHALL NOT EXCEED 0.45 LB/HR; THE UNCONTROLLED EMISSION RATE OF OXIDES OF NITROGEN SHALL NOT EXCEED 6.57 LB/HR.
6. AN OPERATING RECORD OF THIS EQUIPMENT SHALL BE MAINTAINED IN A FORMAT APPROVED IN WRITING BY THE DIRECTOR OF ENFORCEMENT. THE RECORD SHALL INCLUDE, AT A MINIMUM, THE HOURS AND DAYS OF OPERATION AND THE QUANTITY OF FUEL USED. THE OPERATING RECORD SHALL BE KEPT FOR A MINIMUM OF TWO YEARS AND MADE AVAILABLE UPON REQUEST OF DISTRICT PERSONNEL.

**ORIGINAL**



**PERMIT TO OPERATE**

9150 FLAIR DRIVE, EL MONTE, CALIFORNIA 91731

Permit No.  
**D43309**  
A/N 217581  
Page 2

**CONTINUATION OF PERMIT TO OPERATE**

7. FUEL OIL SUPPLIED TO THIS ENGINE SHALL BE NO. 2 OR LIGHTER GRADE AS DESCRIBED BY THE LATEST ASTM SPECIFICATIONS AND SHALL HAVE A SULFUR CONTENT OF NOT MORE THAN 0.05% BY WEIGHT.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

*Dorris M. Bailey*

By Dorris M. Bailey/eb  
September 24, 1991

ORIGINAL



AQMD

APR 04 2002

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
21865 East Copley Drive, Diamond Bar, CA 91765

**PERMIT TO OPERATE**

page 1  
Permit No.  
F49010  
A/N 335120

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner  
or Operator:

CARPENTER CO  
P O BOX 7788  
RIVERSIDE, CA 92513

ID 007730

**Equipment Location:** 7809 LINCOLN AVE RIVERSIDE CA 92504 4497

**Equipment Description:**

POLYESTER FIBER GARNETTING AND BONDING SYSTEM CONSISTING OF:

1. THREE BALE FEEDERS, EACH WITH AN OPENER, A BEATER, AND A VERTICAL FINE OPENER, MODEL M10X60, FIBER CONTROLS CORP.
2. THREE PNEUMATIC TRANSFER BLOWERS, EACH 5 HP.
3. VERTICAL FINE OPENER WITH EXTENDED FEED TABLE, MODEL 310VFOX60W, FIBER CONTROLS CORP.
4. RESERVE BLENDING BOX WITH TWO BLOW-IN HOODS AND TWO TRANSFER BLOWERS, EACH 5HP, FIBER CONTROL CORP.
5. VIBRATING CHUTE HOPPER-FEEDER, SPINNBAU BREMEN.
6. FIBER CARDING (GARNETTING) MACHINE, MODEL DOUBLE DOFFER CARD TYPE 1866, SPINNBAU BREMEN.
7. TOPLINER, MODEL CL-4004, AUTEFA.
8. LAP DRAFTING, MODEL LAP DRAWING FRAME, TYPE VSTG-4, SPINNBAU BREMEN.
9. THERMAL BONDING OVEN, MODEL VARIO AIR WE, FLEISSNER, INC., WITH THREE CYCLOMAX, LOW NOX GAS BURNERS, EACH 1,600,000 BTU PER HR.
10. CUTTING AND ROLL-UP MACHINE, FLEISSNER.

**Conditions:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITIONS AT ALL TIME.

**ORIGINAL**



**PERMIT TO OPERATE**

CONTINUATION OF PERMIT TO OPERATE

3. THIS EQUIPMENT SHALL NOT BE OPERATED UNLESS THE GARNETTING SECTION IS VENTED ONLY TO THE AIR POLLUTION CONTROL SYSTEM WHICH IS IN FULL USE AND WHICH HAS BEEN ISSUED A PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

*Dorris M. Bailey*

By Dorris M. Bailey/PIRP  
2/13/2002

**ORIGINAL**



Group III Unit  
Installed 12/21/12

**PERMIT TO CONSTRUCT/OPERATE**

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.  
If the billing for the annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Source test every 5 years

Legal Owner  
or Operator:

CARPENTER CO  
P O BOX 7788  
RIVERSIDE, CA 92513-7788

ID 7730

**Equipment Location:** 7809 LINCOLN AVE, RIVERSIDE, CA 92504-4497

**Equipment Description :**

BOILER, CLAYTON, WATER-TUBE TYPE, MODEL SFG200M-1FMB-SE, WITH A LOW NOX BURNER, MODEL UH-33887, 7,876,471 BTU PER HOUR, NATURAL GAS FIRED, WITH A 15-HP COMBUSTION AIR BLOWER.

**Conditions :**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL EMIT NO MORE THAN 9 PPM OF OXIDES OF NITROGEN (NOX), CALCULATED AS NO<sub>2</sub>, AND NO MORE THAN 100 PPM OF CARBON MONOXIDE (CO), ALL MEASURED BY VOLUME ON A DRY BASIS AT 3% O<sub>2</sub>.
4. THIS EQUIPMENT SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULE 1146.
5. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL CONDUCT SOURCE TESTS UNDER THE FOLLOWING CONDITIONS:
  - A. THE SOURCE TESTS SHALL BE CONDUCTED NO LATER THAN 180 DAYS AFTER THE INITIAL START-UP OF THIS EQUIPMENT UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.
  - B. THE SOURCE TESTS SHALL BE CONDUCTED TO VERIFY COMPLIANCE WITH THE NOX AND CO EMISSION LIMITS SPECIFIED IN CONDITION NO. 3, ABOVE.
  - C. SOURCE TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SCAQMD METHOD 100.1.

**ORIGINAL**



**PERMIT TO CONSTRUCT/OPERATE**

- D. THE TESTS SHALL BE CONDUCTED WHILE THE BOILER IS OPERATING AT MAXIMUM, MINIMUM AND NORMAL FIRING RATES. THE SAMPLING TIMES SHALL BE AT LEAST 15 CONSECUTIVE MINUTES FOR MAXIMUM AND MINIMUM LOADS AND AT LEAST 30 CONSECUTIVE MINUTES FOR NORMAL OPERATING LOAD.
- E. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT [ADDRESSED TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, P.O. BOX 4941, DIAMOND BAR, CA 91765] WITHIN 45 DAYS AFTER THE SOURCE TESTING DATE. THE SOURCE TEST REPORT SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, EMISSIONS RATE IN POUNDS PER HOUR AND CONCENTRATION IN PPMV AT THE OUTLET OF THE BOILER.
- F. A TESTING LABORATORY CERTIFIED BY THE CALIFORNIA AIR RESOURCES BOARD IN THE REQUIRED TEST METHODS FOR CRITERIA POLLUTANTS TO BE MEASURED, AND IN COMPLIANCE WITH DISTRICT RULE 304 (NO CONFLICT OF INTEREST) SHALL CONDUCT THE TEST.
- G. SAMPLING FACILITIES SHALL COMPLY WITH THE DISTRICT GUIDELINES FOR CONSTRUCTION OF SAMPLING AND TESTING FACILITIES, PURSUANT TO RULE 217.
6. THE OPERATOR SHALL NOT OPERATE THE BOILER AT THIS FACILITY UNDER PERMIT TO OPERATE (D93227). ONCE THIS EQUIPMENT IS CONSTRUCTED AND OPERATING, THE BOILER UNDER PERMIT TO OPERATE (D93227) SHALL BE REMOVED AND THE PERMIT TO OPERATE (D93227) SHALL BE INACTIVATED.
7. THE OPERATOR SHALL MAINTAIN ADEQUATE RECORDS TO VERIFY COMPLIANCE WITH CONDITION NO. 3 ABOVE. SUCH RECORDS SHALL BE KEPT ON THE PREMISES FOR AT LEAST TWO YEARS AND BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR HIS REPRESENTATIVE UPON REQUEST.

**ORIGINAL**





**PERMIT TO CONSTRUCT/OPERATE**

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EXECUTIVE OFFICER

By Dorris M. Bailey/SJ02

9/19/2012

**ORIGINAL**