Cleaner Air Oregon – Modeling Protocol, Risk Assessment Work Plan, Risk Assessment Report

Eagle Foundry Company

Prepared for:

Oregon Department of Environmental Quality

Cleaner Air Oregon Toxics Program

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Abbreviations

ACDP	Air Contaminant Discharge Permit
ASOS	automated surface observation systems
CAO	Cleaner Air Oregon
DEQ	Oregon Department of Environmental Quality
Eagle Foundry	Eagle Foundry Company
EPA	U.S. Environmental Protection Agency
facility	Eagle Foundry Company facility located at 23123 SE Eagle Creek Rd, Eagle Creek, Oregon
g/s	grams per second
L3RA	level 3 risk assessment
MFA	Maul Foster & Alongi, Inc.
NCEI	National Center for Environmental Information
NLCD	Notional Land Cover Database
OAR	Oregon Administrative Rule
PM	Particulate Matter
PTE	Permanent Total Enclosure
RA	Risk Assessment
RAL	Risk Action Level
RBC	risk-based concentration
RTI Document	RTI International, *Emission Estimation Protocol for Iron and Steel Foundries,* December 2012
TAC	toxic air contaminant
TEU	toxic emission units
TRV	toxicity reference value
ug/m^3	microgram per cubic meter

1 Introduction

Eagle Foundry Company (Eagle Foundry) owns and operates a facility specializing in iron and steel alloy components casting located at 23123 SE Eagle Creek Road, Eagle Creek, Oregon (the facility). The facility currently operates under Standard Air Contaminant Discharge Permit No. 03-2631-ST-01 issued by the Oregon Department of Environmental Quality (DEQ) on June 11, 2020.

Maul Foster & Alongi, Inc. (MFA) has been retained by Eagle Foundry to assist the facility with each step of the Cleaner Air Oregon (CAO) permitting process. On November 6, 2024, Eagle Foundry submitted the final version of the toxic air contaminant (TAC) emission inventory to the DEQ for review and approval to satisfy the initial step of the CAO permit application process as specified in Oregon Administrative Rule (OAR) 340-245-0030(1)(a). The DEQ completed internal review and approved the TAC emission inventory by letter dated December 4, 2024.

Per OAR 340-245-0030(1)(b), a CAO modeling protocol is typically required within 30 days after receiving DEQ approval of the emissions inventory. However, on December 13, 2024, the DEQ granted an extension to allow Eagle Foundry to submit a combined Modeling Protocol, Risk Assessment Work Plan, and Risk Assessment Report no later than March 4, 2025.

This report constitutes that combined submittal. It outlines the modeling methodology details, the Level 3 Risk Assessment (L3RA) methodology, and L3RA results, consistent with the requirements of OAR 340-245-0210(1).

2 Facility Description

2.1 Facility Location

The facility is located in Eagle Creek, Oregon, east of the Clackamas River. The area immediately surrounding the facility is characterized primarily by flat terrain, with rolling hills to the northeast. The facility is located within a mixture of residential, commercial, industrial and forest land-use zones. An aerial image of the facility location is shown in Figure 2-1. The topography of the area immediately surrounding the facility is presented in Figure 2-2.

2.2 Process Description

Purchased scrap steel is melted in an electric induction furnace where an electrical current generates a charge that melts the metal. Molds are produced at the Big Palmer and Small Palmer molding stations, which use a no bake molding system consisting of ceramic beads to create hollow internal sections. Molds are formed around wood patterns, which replicate the exterior of the desired castings.

Additional alloys are added to the molten metal to meet product specifications. Molten metal is transferred and poured into molds using overhead cranes. A riser in the mold provides an additional reservoir of feed metal to release the cavity air and counteract the shrinkage that occurs as the casting begins to cool. A small amount of hot top is added to the riser to act as a molten metal insulation while the casting solidifies. The castings are then transferred to the Cooling Bunker. Emissions from foundry operations are controlled by two baghouses EP2_3 and EP2_4.

When the metal has cooled sufficiently for the casting to hold its shape, it is separated from the mold by a mechanical method referred to as shakeout by the sand reclamation system. Eagle Foundry recycles a large proportion of mold materials for re-use. Sand handling processes involve pneumatic transport, storage, and screening recycled foundry sand.

After cooling, extraneous pieces of metal risers are removed either by break-off or by air arc, and collected for re-melting. The casting is then sent to finishing processes as appropriate. A range of finishing processes is usually then undertaken. These may include cleaning to remove residual sand, oxides and surface scale, by shot or mesh blasting; heat treatment, welding, and removal of excess metal or surface blemishes by grinding.

Process flow diagrams that depict Eagle Foundry operations are presented in Figure 2-3 and Figure 2-4.

3 Emission Estimates and Model Sources

Daily and annual TAC emission estimates for the process equipment and emission-control devices, considered to be toxic emission units (TEUs) as defined in OAR 340-245-0020(59), were prepared as shown in the TAC emission inventory dated November 6, 2024.

The TEUs identified in the TAC emission inventory are represented in a dispersion model developed to depict the facility. For the purposes of conducting the L3RA, each TEU in the dispersion model was modeled using a unit emission rate equivalent to 1 gram per second (g/s) for all modeled source types. Additional details describing unit emission rate modeling are provided in Section 4.4.

The annual and daily TAC emission estimates for significant TEUs are presented in Table 3-1 and Table 3-2. The annual and daily TAC emission estimates for gas combustion TEUs as defined under OAR 340-245-0050(5) are presented in Table 3-3 and Table 3-4. Release parameters for significant and gas combustion TEUs are presented in Table 3-5 and Table 3-6.

3.1 Foundry

The foundry building is separated into two areas, the Main Foundry and the Cooling Bunker. Melting and pouring operations take place in the Main Foundry, then castings are placed to cool in the Cooling Bunker. In March 2023, Eagle Foundry conducted a source test on the Main Foundry and Cooling Bunker baghouses to determine emission factors and verify that the Main Foundry building is a permanent total enclosure (PTE). The Main Foundry building was verified as a PTE using U.S.

Environmental Protection Agency (EPA) Method 204. The source test report dated October 13, 2023, was approved by the DEQ on November 20, 2023. Emissions for the Main Foundry and Cooling Bunker were calculated assuming 100 percent capture by the PTE.

3.1.1 Main Foundry

Emissions generated in the Main Foundry are from melting and pouring white iron and steel alloys, hot top usage, and fugitive emissions from the reclamation system. One hundred percent of emissions released in the Main Foundry are controlled by a baghouse. This baghouse is represented in the dispersion model as a point source with a unique model ID (EP2_3).

3.1.1.1 Pouring and Cooling (MF_IRON, MF_STEEL)

Emission factors for melting and pouring were provided by the DEQ on November 20, 2023, in their source test review memorandum based on the source test performed in March 2023. Because iron and steel alloys have different emission profiles when melted, the source test included separate test runs for white iron and steel production, and emission factors were generated for both white iron and steel. Annual emissions from melting and pouring were calculated for both white iron and steel production. MFA determined melting and pouring emissions from a steel alloy would result in a higher potential acute hazard index than any white iron alloy. Therefore, 100 percent of daily production was attributed to HK Steel, a specific alloy of steel, for the purposes of the L3RA.

3.1.1.2 Hot Top (HOTTOP)

Hot top is a molten metal insulation added to the riser while the casting solidifies. A small amount of hot top is burned and becomes airborne during the thermite reaction. Emissions from hot top usage were calculated based on the conservative assumption that one percent of the total mass of hot top material becomes airborne within the Main Foundry. Aluminum emissions from hot top are included in the Main Foundry iron and steel emission factors. The silica emissions from hot top are based on the silica content of the materials listed in the product safety data sheet and are controlled by baghouse EP2_3.

3.1.1.3 Reclamation System Fugitive Emissions (REC_MF)

Ten percent of emissions from the reclamation system are estimated to be fugitive emissions. These emissions are released within the Main Foundry building envelope and are controlled by the Main Foundry Baghouse (EP2_3). More information about the reclamation TEU is provided in Section 3.2.

3.1.2 Cooling Bunker (CB_IRON, CB_STEEL)

Emissions generated during cooling were calculated using the Cooling Bunker white iron and steel emission factors from the March 2023 source test. One hundred percent of emissions released in the Cooling Bunker are controlled by the Cooling Bunker baghouse. This baghouse is represented in the dispersion model as a point source with a unique model ID (EP2_4).

Annual emissions from cooling were calculated for both white iron and steel production. MFA determined cooling emissions from a steel alloy would result in a higher potential acute hazard index than any white iron alloy. Therefore, 100 percent of daily production was attributed to HK Steel for the purposes of the L3RA.

3.2 Reclamation (REC_MF, REC_R)

Emission estimates for the reclamation TEU were calculated based on the metal speciation from a 2021 dust analysis of the reclamation baghouse and a capture efficiency of 90 percent. The 10 percent of fugitive emissions (TEU ID REC_MF) that are not captured by the reclamation system are captured by the main foundry building permanent total enclosure and controlled by the Main Foundry baghouse. Ninety percent of emissions (TEU ID REC_R) are controlled by the reclamation baghouse, which is represented in the dispersion model as a point source with a unique model ID (EP2_3).

3.3 Finishing

3.3.1 Air Arc (AIRARC)

Eagle Foundry conducted a study observing the amount of time that Air Arc was engaged in cutting metal for a 30-minute time span during normal Air Arc operating hours. Eagle Foundry determined that Air Arc operators are engaged in cutting metal approximately 27.5 percent of total operating hours. The emissions calculations for Air Arc are based on the time spent cutting metal.

In addition, MFA used the TAC composition data for alloy MNB2 for daily emissions estimates. It was determined that MNB2 is the Air Arc cut alloy with the highest toxicity-weighted emission rate based on acute risk-based concentrations (RBCs). Assuming the cutting of MNB2 resulted in the maximum predicted acute hazard index. Annual emissions are based on the average TAC content of all Air Arc cut alloys. Particulate matter (PM) emissions were calculated using emission factors from the Versar, Inc. Title V Applicability Workbook, prepared for the Institute of Scrap Recycling Industries, 1996, Table D-5, Torch Cutting Emission Factors.

The Air Arc enclosure was verified as a PTE using EPA Method 204. The source test report dated October 13, 2023, was approved by the DEQ on November 20, 2023. Emissions for the air arc enclosure were calculated applying 100 percent capture by the PTE, and are controlled by the Small Palmer baghouse, which is represented in the dispersion model as a point source with a unique model ID (EP1_1).

3.3.2 Welding (WELD)

Finishing operations at Eagle Foundry include welding on castings or for general maintenance. Emissions for welding were calculated based on the alloy contents listed in safety data sheets, and a calculation method provided by the San Diego County Air Pollution Control District. Welding emissions are uncontrolled and emit through one of three stacks, which are represented in the dispersion model as point sources with unique model IDs (WELD1, WELD2, WELD3).

3.3.3 Grinding (GRIND_SS_C, GRIND_SS_F, GRIND_NSS_C, GRIND_NSS_F)

MFA calculated Total PM emissions using the collection efficiencies of particulate control devices and particle size fractions in Table 3-4 and Table 6-2 of RTI International, *Emission Estimation Protocol for Iron and Steel Foundries,* December 2012 (RTI document).

The grinding TEU is split into grinding stainless steel alloys (GRIND_SS_C, GRIND_F) and non-stainless steel alloys (GRIND_NSS_C, GRIND_NSS_F). Based on DEQ observation of the effectiveness of controls, in a letter dated August 11, 2023, the DEQ agreed that the finishing building enclosure provides 95 percent capture efficiency for this TEU.

MFA calculated controlled and fugitive Total PM emissions using the emission factors, collection efficiencies of particulate control devices, and particle size fractions in the RTI document. MFA speciated emissions using the maximum TAC composition between alloy composition data and 2021 baghouse dust data. As an additional conservative assumption, MFA updated the alloy composition used for daily emissions estimates with the composition of the stainless steel alloy or non-stainless steel alloy with the highest toxicity weighted emission rates based on acute RBCs (alloys HK and MNB2, respectively). This methodology resulted in the maximum predicted acute hazard indices. Annual emissions are based on the average TAC content of all stainless steel or non-stainless steel alloys.

Five percent of emissions from grinding are considered fugitive emissions and are assumed to be released through three bay doors, which are represented in the dispersion model as volume sources with unique model IDs (FIN_FUG1, FIN_FUG2, FIN_FUG3). Ninety-five percent of grinding emissions are captured and controlled by the finishing baghouse, which is represented in the model as a point source (EP3_1).

3.3.4 Abrasive Blasting (MESH, SHOT)

Eagle Foundry uses abrasive blasting to clean castings and remove residual sand and surface scale. The housing of both the Mesh Blast and Rotoblast units are fully enclosed. Eagle Foundry uses steel shot as blast material, which is recycled for reuse. The Mesh Blast exhaust is filtered using 16 cartridge filters.

MFA calculated Total PM emissions for both units using the emission factors and particle size fractions in Table 6-2 of the RTI document. MFA speciated emissions using the maximum TAC composition from the 2021 baghouse dust data.

The Mesh Blast is represented in the dispersion model as a point source with a unique ID (MESH). Emissions from the Rotoblast are controlled by the finishing baghouse. The finishing baghouse is represented in the dispersion model as a point source (EP3_1).

3.4 Material Handling

Material handling at Eagle Foundry includes the Big Palmer and Small Palmer molding systems, slag handling, and sand/ceramic bead handling. Sand/ceramic bead handling processes involve pneumatic transport, storage, and screening recycled foundry sand.

3.4.1 Palmer Molding System (MOLD_SP_V, MOLD_SP_CC, MOLD_SP_G, MOLD_SP_U, MOLD_SP_C, MOLD_BP_V, MOLD_BP_I, MOLD_BP_C, MOLD_BP_U)

The Palmer Molding System includes material handling activities for products used in both the Small Palmer and Big Palmer molding areas. MFA calculated PM emissions using an emission factor for

sand handling from AP-42 Chapter 12,10. MFA calculated emissions for volatile TACs using mass balance based on information in the product safety data sheets.

Particulate emissions from Big Palmer material handling activities are controlled by the existing Main Foundry baghouse (EP 2_3) and particulate emissions from the Small Palmer material handling activities are controlled by the existing Small Palmer baghouse (EP 1_1). Both baghouses are represented in the dispersion model as point sources.

3.4.2 Material Handling Silos (D1-1, D1-3, D1-4, D1-5)

MFA speciated TAC emissions from material handling through the silos by using the 2021 baghouse dust analysis for Overflow Bead Silo (D1-5), the Reclamation Bead Silo (D1-4), and the Small Palmer Silo (D1-1). MFA speciated TAC emissions from the New Bead Silo (D1-3) based on the product safety data sheet. All silos are vented to baghouses rather than having a bin vent direct to atmosphere.

The Small Palmer Silo is controlled by the Small Palmer Baghouse (EP1_1), and the New Bead Silo, Reclamation Bead Silo, and Overflow Bead Silo are controlled by the Screening Baghouse. The Screening baghouse is represented in the dispersion model as a point source with the model ID EP1_3.

3.4.3 Screening Station (SCREENING)

Screening Station emissions were calculated using the emission factor (0.2 lb/ton sand handled) specified in AP-42, Table 12.10-7 for baghouse-controlled sand handling. Eagle Foundry reclaims and reuses the casting sands. To develop a more accurate facility-specific emission rate, Eagle Foundry conducted a sand-to-metal usage study as part of the CAO inventory development process. Based on facility operations, the sand-to-metal mass ratio for Eagle Foundry is 1.16 (lb/lb). Therefore, total sand handling for the Screening Station was calculated by multiplying the value for maximum potential metal poured by 1.16. This throughput was then applied to the AP-42 emission factor.

The Screening baghouse controls PM emissions from the New Bead Silo (ID D1-3), the Overflow Bead Silo (ID D1-5), the Reclaimed Bead Silo (ID D1-4) and the Screening Station.

3.4.4 Slag Handling (SLAG)

MFA estimated emissions from slag handling (SLAG) using the methodology in AP-42, Section 13.2.4 (Equation 13,2,4-1). The TAC speciation of PM is based on a slag dust analysis conducted by Apex Laboratories in September 2023. Slag handling is represented in the dispersion model as an area source with the model ID SLAG.

3.5 Pattern Making (PTRN)

Emissions from pattern making are volatile TACs from urethane or lacquer products. MFA calculated emissions using a mass balance methodology based on the composition listed in the safety data sheet. The Pattern TEU is represented in the dispersion model as a volume source with the model ID PTRN.

3.6 Emergency Generator (EGEN)

Eagle Foundry uses a 100-kW diesel emergency generator to provide power to the induction furnace water cooling system in case of a power outage. The emergency generator has a maximum fuel consumption rate of 7.3 gallons per hour at 100 percent load. MFA calculated emissions using emission factors from the DEQ and the South Coast Air Quality Management District. The emergency generator is represented in the dispersion model as a point source with the model ID EGEN.

3.7 Gas Combustion TEUs

Four heat treat ovens are used to strengthen and modify the mechanical properties of the castings, and no melting of any kind takes place. The only emissions from the heat treat ovens are the result of propane combustion. Emission estimates are based on emission factors from the DEQ provided Combustion Source Emission Factor Search Tool, using Propane External Combustion Sources. Emission factors for sources less than 10 million British thermal units per hour were used.

3.8 Exempt TEUs

Operations at the site include activities and sources that are considered exempt TEUs per OAR 340-245-0060(3). All exempt TEUs are sources or activities supporting primary production activities. Exempt TEUs at Eagle Foundry are scrap handling, raw material handling, maintenance chemical usage, a diesel storage tank, two propane storage tanks, and a 30 hp propane generator that supports office functions during the loss of primary power.

4 Air Dispersion Modeling Methodology

The following subsections detail the dispersion model proposed methodology and setup, including input parameters and assumptions.

4.1 Model Selection

MFA set up the dispersion model of the facility using the models shown in Table 4-1. Lakes Environmental, a third-party overlay software, was used to execute the dispersion model.

Table 4-1. Model Selection

Model	Model Version
AERMOD	24142
AERMET	24142
AERMAP	18081
AERSURFACE	24142
BPIP	04274

4.2 Meteorological Data

In preparation for air dispersion modeling, MFA developed the meteorological and terrain data files shown in Table 4-2.

Table 4-2. Meteorological and Terrain Data

Dataset	Data Reference
Site-Specific	Station ID 41-005-0004 for Carus Spangler Rd. in Carus, Oregon (Oregon Department of Environmental Quality)
Surface	Station ID 94281 for Aurora State Airport, Oregon (National Oceanic and Atmospheric Administration)
Upper Air	Station ID 24232 for Salem, OR (National Oceanic and Atmospheric Administration/ Earth System Research Laboratory Radiosonde Database)
Terrain	U.S. Geological Survey National Elevation Dataset (1/3-arc seconds with horizontal resolution of 10 meters)

4.2.1 Site-Specific Meteorological Data

MFA reviewed an area of up to 16 miles away from Eagle Creek to determine if there were any meteorological stations that would be representative of site-specific conditions at the facility and have data completeness that is sufficient for dispersion modeling. The nearest station MFA was able to identify was the DEQ Carus Spangler Road meteorological station (DEQ Carus station) located 13.2 miles to the southwest of the facility in Carus, Oregon. The area around the DEQ Carus station is characterized by rural farmland with rolling hills and coniferous vegetation, which are similar to the geography near the facility.

The next closest station was the DEQ southeast Lafayette monitoring station, located approximately 15 miles northwest of the facility in Portland. Due to the urban environment around the southeast Lafayette monitoring station, MFA determined it was not representative of conditions around the facility.

Hourly averaged meteorological data, including wind speed, wind direction, standard deviation of horizontal wind direction (sigma theta), and dry-bulb temperature are collected at the DEQ Carus station. Meteorological data from the DEQ Carus station were downloaded from the DEQ's Air Monitoring Network webpage[1] for a five-year period between January 1, 2020, through December 31, 2024 (the modeling period). The modeling period was chosen as it represents the most current, consecutive five-year period available for the DEQ Carus station and had an average yearly data completeness of 98.4 percent during the modeling period. As a result, MFA used meteorological data from the DEQ Carus station as site-specific data for dispersion modeling.

[1] https://aqi.oregon.gov/ [accessed on January 7, 2025]

4.2.2 Surface Meteorological Data

Surface meteorological data were collected from the Aurora State Airport monitoring station (ID 94281) located in Aurora, Oregon (Aurora State met station). Hourly wind speed, wind direction, cloud cover, and temperature data for the years 2020 through 2024 were downloaded by file transfer protocol from the National Center for Environmental Information (NCEI). The Aurora State met station was chosen as it is located within relatively close proximity to the facility—approximately 21.8 miles to the southwest and has surrounding geography that is similar to the facility. The Portland-Troutdale International Airport was also considered. However, due to its location adjacent to the Columbia River and at the entrance to the Columbia River Gorge, it was determined meteorological conditions would not be representative of those at the facility.

The Aurora State met station is part of the National Weather Service automated surface observation systems (ASOS) network. The station collects wind speed and wind direction, both of which are collected once per second and an average is computed every 5 seconds. These data are referred as "ASOS 1-minute". Additionally, the station is part of the ice-free winds group (IFW) within the ASOS network. IFW stations collect wind data using a sonic anemometer, which essentially, has no minimum detection threshold to determine "calms". The 1-minute ASOS data (TD-6405) for the modeling period were extracted by file transfer protocol from the National Centers for Environmental Information. These data were processed using the EPA AERMINUTE program (discussed below).

4.2.3 Upper-Air Data

Upper-air meteorological data for Salem, OR (station ID 24232) were collected from the National Oceanic and Atmospheric Administration Earth System Research Laboratory Radiosonde Database in Forecast Systems Laboratory format. Upper-air meteorological data were extracted for calendar years 2020 through 2024.

4.2.4 Data Processing – AERMET

The surface and upper air meteorological data were processed using the EPA AERMET program to produce five years of model-ready meteorological data for use in the AERMOD dispersion model. The adjustment to the surface frictional velocity (ADJ_U*) option was selected as part of the AERMET processing. The land use surface characteristics were processed using AERSURFACE, and AERMINUTE was used to process and incorporate the ASOS 1-minute wind data into AERMET.

When ASOS 1-minute data are used, AERMET enables a default wind speed adjustment option. This option adds 0.26 meters per second (m/s) to all wind speeds to account for wind speed truncation (in units of whole knots) applied by the ASOS quality assurance system. Per the EPA technical memorandum titled "Use of ASOS meteorological data in AERMOD dispersion modeling"[2] dated March 8, 2013, a minimum wind speed detection threshold of 0.5 m/s was used to account for the adjustment. Wind direction randomization was not selected when running AERMET because ASOS 1-minute data increase the precision of wind direction measurements and, unlike non-ASOS data, are rounded to the nearest ten whole degrees.

An analysis of the data completeness for the modeling period was performed by MFA using the quality assurance feature available in the Lakes Environmental software. As shown in Table 4-3, a single quarter (Q1 2021) in the surface and profile files produced by AERMET had a data

[2] [2] https://www3.epa.gov/ttn/scram/guidance/clarification/20130308_Met_Data_Clarification.pdf

completeness of less than 90 percent. All other quarters met the 90 percent data completeness threshold. MFA processed the 2019 calendar year in the same manner as the 2020 to 2024 meteorological dataset and determined that Q1 of 2019 had 100 percent data completeness. Accordingly, MFA substituted Q1 of 2021 with data from Q1 of 2019. As shown in Table 4-3, the proposed modeling period, including the data substitution, meets the 90 percent completeness threshold for all quarters.

A wind rose for the complete meteorological dataset is presented in Figure 4-1, which shows a predominate bimodal wind distribution with winds blowing from the southwest and northeast.

4.3 AERSURFACE Land Use

State of Oregon National Land Cover Dataset land cover class definitions, along with concurrent percent impervious surface and percent tree canopy data were downloaded from the U.S. Geological Survey and processed using the AERSURFACE land-use tool to generate the surface characteristics necessary to run AERMET. The data was processed in AERSURFACE using the settings presented in Table 4-4.

Surface moisture conditions were determined following the methodology set forth in the AERSURFACE User's Guide dated February 2022. Section 2.2.3 in the AERSURFACE User's Guide states:

> "the surface moisture condition can be determined by comparing precipitation for the period of data to be processed to the 30-year climatological record. It is recommended the user specify "wet" conditions if precipitation is in the upper 30th-percentile, "dry" conditions if precipitation is in the lower 30th-percentile, and "average" conditions if precipitation is in the middle 40th-percentile."

Annual precipitation data for each year of the 5-year meteorological dataset were reviewed and compared against the climatological record to determine the representative surface moisture condition for each modeling year. Precipitation data from the Aurora State met station was downloaded using the Climate Data Online Tool[3] operated by the National Centers for Environmental Information. MFA determined the Aurora State met station only started collecting precipitation data in April 1998 and had a continuous data record for only 27 years, which is less than the 30-year period identified in the AERSURFACE User's Guide.

MFA determined that, after review of meteorological stations in the region that collected precipitation, the Aurora State met station was the closest station to the DEQ Carus met station with a continuous record sufficient for soil moisture conditions. Therefore, precipitation data from the Aurora State met station was used to determine the soil moisture characteristics for both the surface and site-specific locations.

As shown in Table 4-5, the annual precipitation for all five years in the modeling dataset was within the middle 40th percentile of the 26-year climatological record. Accordingly, AERSURFACE was executed using the AVERAGE condition for all calendar years.

MFA executed the dispersion model using rural dispersion coefficients. To make this determination, MFA followed the land use procedure, as recommended by EPA's "Guideline on Air Quality Models"[4],

[3] https://www.ncdc.noaa.gov/cdo-web/ [Accessed January 7, 2025]
[4] Appendix W to Part 51 – "Guideline on Air Quality Models". See Section 7.2.1.1(b)(i).

to conclude that less than 50 percent of the land use in the modeling domain is represented by the urban land-use type. Table 4-6 presents the data from the National Land Cover Database (NLCD) that were used for this analysis.

Table 4-6. Dispersion Coefficient Analysis

NLCD 2021 Value	NLCD 2021 Class	Dispersion Coefficient	3 km Buffer Cell Count(1)
23	Developed, Medium Intensity	Urban	778
24	Developed, High Intensity	Urban	74
11	Open Water	Rural	239
21	Developed, Open Space	Rural	3,421
22	Developed, Low Intensity	Rural	3,062
31	Barren Land	Rural	4
41	Deciduous Forest	Rural	517
42	Evergreen Forest	Rural	2,739
43	Mixed Forest	Rural	3,117
52	Shrub/Scrub	Rural	301
71	Herbaceous	Rural	217
81	Hay/Pasture	Rural	15,517
82	Cultivated Crops	Rural	56
90	Woody Wetlands	Rural	872
95	Emergent Herbaceous Wetlands	Rural	417
Total Area (30-meter cells)			**31,431**
Total Urban Area (30-meter cells)			**852 (2.7% of Total)**
Total Rural Area (30-meter cells)			**30,579 (97.3% of Total)**

Notes
(1) Each cell represents land cover in a 30-meter grid.

Based on EPA's guidelines, MFA used the Land Use Procedure to classify the land use within the total area, bounded by a 3-kilometer radius from the facility. An estimated 2.7 percent of the total area within the boundary is classified as urban, while 97.3 percent of the total area is classified as rural. The rural dispersion coefficient is the default coefficient in AERMOD, as it results in higher predicted pollutant concentrations close to the facility. Because urban land use types account for less than 50 percent of the total 3-kilometer area and the rural dispersion coefficient is more conservative, MFA used the rural coefficient in the dispersion model.

4.4 Unit Emission Rates

Results from the air dispersion model runs, executed using unit emission rates for each TEU identified in the DEQ-approved TAC emissions inventory, can be used to derive the predicted concentrations for multiple TACs from a given TEU. MFA executed the dispersion model using unit emission rates for all TEUs, for both the annual and daily (i.e., 24-hour) averaging periods.

The maximum modeled unit concentration in micrograms per cubic meter (ug/m^3) for each averaging period is considered a modeled "dispersion factor" in units of ug/m^3 per g/s. When this "dispersion factor" is multiplied by the TAC emission rate for the modeled TEU, the result is the modeled concentration of the TAC. The dispersion factors were used to conduct the Level 3 Risk Assessment,

in combination with TAC emission rates for each TEU in g/s and the risk-based concentrations (RBCs) in ug/m^3 set forth under OAR 340-245-8010 Table 2.

4.5 Building Downwash and TEU Locations

The most recent version of the EPA Building Profile Input Program for PRIME (BPIP) was used to calculate direction-specific building downwash parameters for applicable building structures located at the facility as shown in Table 4-1.

The location of each significant TEU and gas combustion TEU included in the dispersion model and structures that are projected to influence downwash are shown in Figure 4-2. Table 4-7 presents a summary of the building heights included in the dispersion model.

4.6 Receptor Locations and Terrain

Receptors were defined consistent with Section 2.4 of the Oregon Department of Environmental Quality's (DEQ) *Recommended Procedures for Air Quality Dispersion Modeling*[5] as shown below in Table 4-8. Figure 4-3 presents the receptor spacing and locations within the modeling domain. Figure 4-4 presents the location and exposure categorization for receptors in the area immediately surrounding the facility.

Table 4-8. Receptor Locations

Receptor Spacing (meters)	Receptor Distance (meters)
25	Along the property boundary and out to at least 200 meters from the property boundary.
50	200 to 1,000
100	1,000 to 2,000
200	2,000 to 5,000
500	5,000 to 10,000

Terrain elevations for model receptors, TEU base elevations, and base elevations of downwash structures were derived from U.S. Geological Survey National Elevation Dataset data at a resolution of 1/3 arc-seconds (a horizontal resolution of roughly 10 meters) and processed using the current version of AERMAP.

MFA identified locations considered to be a "sensitive receptor" (e.g., daycare, school, or medical facilities) within approximately 1 kilometer of the facility property boundary. These sensitive receptor locations are shown in Figure 2-1. Several receptors in the receptor grid are positioned at these locations. As a result, MFA did not add any additional discrete receptors to the dispersion model.

[5] DEQ. 2022. Recommended Procedures for Air Quality Dispersion Modeling. Oregon Department of Environmental Quality. March.

4.7 Land-Use Zoning Classification Data for Determining Exposure Types

MFA reviewed the Department of Land Conservation and Development's statewide zoning data to determine land-use classifications for areas within the modeling domain. The Oregon statewide zoning classifications provide the basis for the initial categorization of exposure classifications (e.g., residential, nonresidential worker, nonresidential child, or acute) as shown in Table 4-9.

The zoning data were further evaluated against the local Oregon Metro Regional Land Information System zoning data, schools and hospital data obtained from the Oregon Health Authority, and early learning provider location data obtained from the Oregon Department of Education. MFA also reviewed aerial imagery via Esri ArcGIS software to determine whether the existing zoning information reflects actual land use and the corresponding exposure type categorization.

The zoning data and internal MFA review process indicate that multiple locations fall within roadway and/or rail rights-of-way interstitial spaces as shown in black in Figure 4-3 and Figure 4-4. These locations were used for dispersion modeling to maintain a uniform receptor grid. MFA did not conduct risk evaluations for any receptor location in roadways or rail rights-of-way within the 25-meter receptor grid. In the crosswalk-of-receptors, which will be provided to the DEQ in spreadsheet format due to the number of receptor locations, these locations are labeled as "Risk Not Assessed," even though they were modeled, and dispersion factors were generated.

Figure 4-5 presents the existing land-use classifications identified for the modeling domain, and Figure 4-6 is provided for the area immediately surrounding the facility. Figure 4-7 and Figure 4-8 present the corresponding exposure location categorizations for the modeling domain and the immediate area surrounding the facility, respectively.

5 Risk Assessment Work Plan

5.1 Conceptual Site Model

Sections 2 through 4 discuss the facility location, process description, significant TEUs, gas combustion TEUs and TAC emission estimates to satisfy the requirements for a conceptual site model set forth under OAR 340-245-0210(2)(a). Exposure locations are described in more detail in Section 5.2. Specific TEU designations are discussed in more detail in the following subsections.

5.1.1 Significant TEUs

Daily and annual TAC emission estimates for the process equipment and emission control devices considered to be TEUs as defined in OAR 340-245-0020(59), are presented in Table 3-1 and Table 3-2. Dispersion model IDs and source parameters for significant TEUs are presented in Table 3-5 and Table 3-6.

5.1.2 Gas Combustion TEUs

The specific procedures for assessing the risk of each TEU depends on the TEU designation per OAR 340-245-0050(4). In accordance with OAR 340-245-0050(5), the gas combustion "exemption applies to TEUs that solely combust natural gas, propane, [or] liquefied petroleum gas." MFA determined risk from gas combustion TEUs at each exposure location separately from the significant TEUs.

Daily and Annual TAC emission rates for the gas combustion TEUs are presented in Table 3-3 and Table 3-4, and dispersion model IDs and source parameters are presented in Table 3-5.

5.2 Exposure Assessment

5.2.1 Land-Use Zoning Classification—Exposure Types

Section 4.7 provides details relevant to the exposure assessment, including the dispersion modeling approach to estimate TAC concentrations at exposure locations and the corresponding exposure type classifications to satisfy the requirements under OAR 340-245-0210(2)(b).

5.2.2 Exposure Pathways

Cancer and noncancer risks resulting from facility TEUs are not expected to have additional exposure pathways (i.e., ingestion or injection) other than those already accounted for in each published RBC. Moreover, based on a review of land-use zoning classifications and aerial imagery, there are no known locations that might present additional exposure pathways. Since no additional exposure pathways have been observed, the Level 3 RA is sufficient, and a Level 4 RA is not warranted.

5.3 Risk Characterization

5.3.1 Risk-Based Concentrations

Excess cancer risk and chronic and acute noncancer risk were assessed using the most current RBCs available as shown in OAR 340-245-8010 Table 2. The TACs from the CAO emissions inventory and corresponding RBCs included in the Level 3 RA are presented in Table 5-1 and Table 5-2 for significant TEUs and gas combustion TEUs, respectively.

5.3.2 Risk Estimates

As described in Section 4.4, a single dispersion model was executed using a unit emission rate of 1 g/s for each TEU for both the 24-hour and annual averaging periods. The maximum modeled unit concentration in ug/m^3 for each averaging period was considered a modeled dispersion factor in units of ug/m^3 per g/s. When this dispersion factor is multiplied by the TAC emission rate for the modeled TEU, the result is the modeled concentration of the TAC.

The risk for a given TAC was calculated by dividing the maximum predicted model concentration of the TAC by the appropriate RBC. The resulting risk for all TACs was summed for each TEU at a given exposure location. This process was repeated for each TEU and the calculated risk for all TEUs was summed to obtain the total excess cancer risk, the total chronic noncancer hazard index, and the

total acute noncancer hazard index for a given exposure location. Eagle Foundry did not elect to assess noncancer risk by calculating separate hazard indices per target organ.

5.3.2.1 Example Calculation—Level 3 RA

Example calculations for estimating excess cancer risk and noncancer hazard index (representative of both chronic and acute assessments) for a single exposure location are presented in Equations 1 through 3.

Equation 1.

$$\text{Excess cancer risk (chances-in-a-million)} = \Sigma \frac{(\text{TAC annual emission rate [g/s]}) \text{ x } (\text{TEU dispersion factor } [\frac{\text{ug/m}^3}{\text{g/s}}])}{(\text{applicable RBC at exposure location } [\text{ug/m}^3])}$$

Equation 2.

$$\text{Chronic noncancer hazard index } = \Sigma \frac{(\text{TAC annual emission rate [g/s]}) \text{ x } (\text{TEU dispersion factor } [\frac{\text{ug/m}^3}{\text{g/s}}])}{(\text{applicable RBC at exposure location } [\text{ug/m}^3])}$$

Equation 3.

$$\text{Acute noncancer hazard index } = \Sigma \frac{(\text{TAC daily emission rate [g/s]}) \text{ x } (\text{TEU dispersion factor } [\frac{\text{ug/m}^3}{\text{g/s}}])}{(\text{applicable RBC at exposure location } [\text{ug/m}^3])}$$

The total facility excess cancer risk and chronic and acute noncancer hazard index was derived by summing each individual TAC risk contribution at each exposure location.

6 Risk Assessment Result Summary

MFA determined the total predicted excess cancer risk and chronic and acute noncancer risk (expressed numerically as the chronic and acute noncancer hazard index) at each modeled exposure location separately for significant TEUs and gas combustion TEUs following the applicable requirements set forth in OAR 340-245-0050(5).

The modeled dispersion factors at the locations of maximum predicted risk for each modeled TEU and exposure scenario are presented in Table 6-1. The Level 3 RA calculations are presented in Table 6-2 and Table 6-3 for the significant TEUs and Table 6-4 and Table 6-5 for gas combustion TEUs. A summary of the Level 3 RA results for significant TEUs and comparison against New Source Risk Action Levels (RALs) are presented in Table 6-6. Table 6-7 presents the results of the L3RAs rounded to the required number of significant figures per OAR 340-245-0200(4).

6.1 Predicted Risk Results

6.1.1 Excess Cancer Risk

The maximum predicted excess cancer risk for significant TEUs is 18.4 additional chances of developing cancer in a population of 1,000,000 people (chances-in-one-million) as shown in Table 6 2. The maximum predicted excess cancer risk for gas combustion TEUs is less than 0.1 chances-in-one-million as shown in Table 6-4.

6.1.2 Chronic Noncancer Hazard Index

The maximum predicted chronic noncancer hazard index for significant TEUs is 0.9 as shown in Table 6-3. The maximum predicted chronic noncancer hazard index for gas combustion TEUs is less than 0.1 as shown in Table 6-5.

6.1.3 Acute Noncancer Hazard Index

The maximum predicted acute noncancer hazard index for significant TEUs is 2.2 as shown in Table 6-3. The maximum predicted acute noncancer hazard index for gas combustion TEUs is less than 0.1 as shown in Table 6-5.

A summary of the L3RA results for Gas Combustion TEUs are presented in Table 6-6. A summary of the L3RA results and RAL analysis is presented in Section 6.2.

Table 6-6: Level 3 Risk Assessment Result Summary for Gas Combustion TEUs

Exposure Assessment	RA Result
Excess Cancer Risk (increased chances in a million)	
Residential	<0.1
Nonresidential Child	<0.1
Nonresidential Worker	<0.1
Chronic Noncancer Hazard Index	
Residential	<0.1
Nonresidential Child	<0.1
Nonresidential Worker	<0.1
Acute Noncancer Hazard Index	<0.1

The Level 3 RAs were performed consistent with the CAO rules in effect on the date of issuance of this report.

6.2 Risk Action Level Analysis

Table 6-7 compares the cancer risk and noncancer hazard index estimates for each exposure assessment to the source RALs established in OAR 340-245-8010 Table 1. The maximum cancer and chronic non-cancer risk assessments are above the source permit RAL. The maximum acute non-cancer risk assessment is above the community engagement level, but well below the level at which T-BACT is required.

Table 6-7: Level 3 Risk Assessment Result Summary and RAL Evaluations for Significant TEUs

Exposure Assessment	Existing Source RAL		Risk Assessment Result	Risk Action Level
	Source Permit Level	Community Engagement Level		
Excess Cancer Risk (increased chances in a million)				
Residential	*5*	*25*	*18.4*	*Source Permit Level*
Nonresidential Child	*5*	*25*	*0.3*	*Below Source Permit Level*
Nonresidential Worker	*5*	*25*	*1.9*	*Below Source Permit Level*
Chronic Noncancer Hazard Index				
Residential	*0.5*	*1*	*0.9*	*Source Permit Level*
Nonresidential Child	*0.5*	*1*	*<0.1*	*Below Source Permit Level*
Nonresidential Worker	*0.5*	*1*	*0.2*	*Below Source Permit Level*
Acute Noncancer Hazard Index				
Acute	*0.5*	*1*	*2.2*	*Community Engagement Level*

6.3 Uncertainty Analysis

Although the Level 3 RA was conducted using the most accurate and readily available information, there are various levels of uncertainty associated with the RA. Per OAR 340-245-0210(2)(d), known quantitative and qualitative uncertainties with the Level 3 RA include, but may not be limited to, the following:

<u>Acute Assessments:</u>

- To assess acute noncancer risk, the full 24-hour exposure duration was assumed, though, by definition, the duration of acute exposure can be less than 24 hours. While this RA assumed 24 hours of exposure, it is very unlikely that any individual would be exposed for a full 24 hours outside of a residential location. However, if the toxicity reference value is based on data collected for a lower exposure duration than the 24-hour exposure duration, the estimated risk may differ. Therefore, for TACs with RBCs that were developed using toxicity reference values based on longer exposure durations, the Level 3 RA may overestimate acute noncancer risk due to the 24-hour exposure duration assumption.
- The Level 3 RA was conducted assuming all sources at the facility are simultaneously operating at maximum capacity for 24 hours. It is highly unlikely that all TEUs at the facility will simultaneously operate at their maximum capacity for a 24-hour period. Therefore, the Level 3 RA likely overestimates acute noncancer risk due to unrealistic operating conditions.
- The Level 3 RA includes meteorological conditions which may only occur a few days or less in a one-year period that can result in worst-case dispersion characteristics. It is unlikely that these infrequent meteorological conditions would occur at the same time that the facility will be operating all TEUs at maximum capacity. Therefore, the Level 3 RA likely overestimates acute noncancer risk because of the improbability of facility operations at maximum capacity aligning with worst-case meteorological conditions.

- Dispersion modeling was used to determine the daily dispersion factors per exposure location for use in risk estimate calculations. This method determines, for each TEU, a single day within the one-year period of hourly meteorological data, during which the highest predicted concentration occurs at each exposure location. It is highly unlikely that the maximum predicted concentration at a given exposure location occurs on the same day for all TEUs at the facility. For example, the highest predicted concentration for finishing operations may occur at exposure location "X" on March 1 while, due to differences in location, release characteristics (i.e., stack height, velocity, etc.), and meteorological variation, the highest predicted concentration for the Main Foundry may occur at exposure location "X" on December 1. The maximum predicted concentrations are not paired-in-time and, as a result, the maximum predicted concentrations for different TEUs may occur on different days within the meteorological dataset. Therefore, the Level 3 RA likely overestimates acute noncancer risk because it is unlikely that the highest predicted concentration from each TEU occurs at every exposure location on the same day.

Cancer and Chronic Noncancer Assessments:

- The RBCs developed by the DEQ for excess cancer risk and chronic noncancer risk assume a 70-year exposure duration for 24 hours per day. It is unlikely that a person would remain at the same residence or in areas potentially impacted by emissions covered by the CAO program for 70 consecutive years for 24 hours per day. The risk assessments also account for a person being exposed to the local facility emission rate for the entire exposure duration. Therefore, the Level 3 RA overestimates cancer and chronic noncancer risk due to the unrealistic exposure duration assumption.
- The excess cancer and chronic noncancer risk assessments were performed assuming the facility will operate for the course of the calendar year at the maximum operational capacity. It is physically impossible that the facility could operate several of its TEUs at maximum capacity for an entire year without shutdown time for maintenance and cleaning of equipment. Therefore, the Level 3 RA overestimates cancer and chronic noncancer risk due to the overestimation of emissions resulting from continuous maximum capacity facility operation.

All Assessments:

- Only excess cancer risk and chronic and acute noncancer hazard index from TACs that have RBCs published by the DEQ were assessed. Table 5-3 presents the TACs emitted from the significant TEUs that do not have RBCs published by the DEQ. As a result, the Level 3 RA may not accurately assess cancer and/or noncancer risk associated with those TACs that do not yet have an associated RBC. However, the development of RBCs generally has a level of conservatism that will likely overestimate cancer and/or noncancer risk from TACs with known RBCs.

  Per OAR 340-247-0040(3), the DEQ and the Oregon Health Authority will begin review of the toxic air contaminants and Toxicity Reference Values (TRVs), published by the authoritative sources listed in OAR 340-247-0030, for changes since the last review. The DEQ will propose rule amendments to remove, revise, or add additional TRVs, if appropriate.

  The Air Toxics Advisory Committee has met and is reviewing DEQ-proposed changes to a number of the TRVs. One of the TRVs under review is the acute TRV for manganese. The current acute TRV (and resulting RBC) for manganese is based on chronic exposure, ranging from 5.3 years to 17 years. The proposal for the updated acute TRV, based on 24-hour exposure, increases the acute TRV for manganese from 0.3 ug/m^3 to 1.3 ug/m^3, which will result in lower predicted acute risk.

  Forty-seven percent of the total predicted acute hazard index at Eagle Foundry is from manganese. The initial proposed increase in the manganese TRV would lower the acute hazard

index from 2.2 to 1.4, if adopted into rule. Based on the proposed changes to the manganese TRV, which is based on more realistic exposure assumptions, the current manganese RBC used for this risk assessment overestimates acute risk.

7 Closing

MFA looks forward to working with the DEQ throughout the CAO permit application process. If there are any questions or comments regarding this modeling protocol, please contact Leslie Riley at lriley@maulfoster.com.

Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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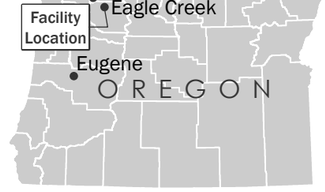
Figure 2-1
Aerial Image of Facility

Eagle Foundry
Eagle Creek, OR

Legend

- Early Learning Provider
- School
- Facility Boundary
- UTM Grid Guideline

Key Map



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Feet

Data Sources
Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023); schools obtained from Oregon Health Authority (2015); early learning providers obtained from Oregon Department of Education (2020).

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Path: X:\8006.63_ATTORNEY CLIENT PRIVILEGE\GIS\Pro\M8006_63_001_Air_Group.aprx\Fig2-1 Aerial Image
Print Date: 8/14/2023
Reviewed By: trilley
Produced By: jroberts
Project: M8006.63.001

Figure 2-2
Local Topography

Eagle Foundry
Eagle Creek, OR

Legend

- Facility Boundary
- UTM Grid Guideline

Key Map

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Feet

Data Sources
Base map obtained from U.S. Geological Survey (2023); tax lot data obtained from Oregon Metro (2023).

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UTM Y (meters): 5025500, 5025000, 5024500, 5024000, 5023500, 5023000, 5022500, 5022000, 5021500, 5021000, 5020500, 5020000

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Print Date: 8/14/2023
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Produced By: jroberts
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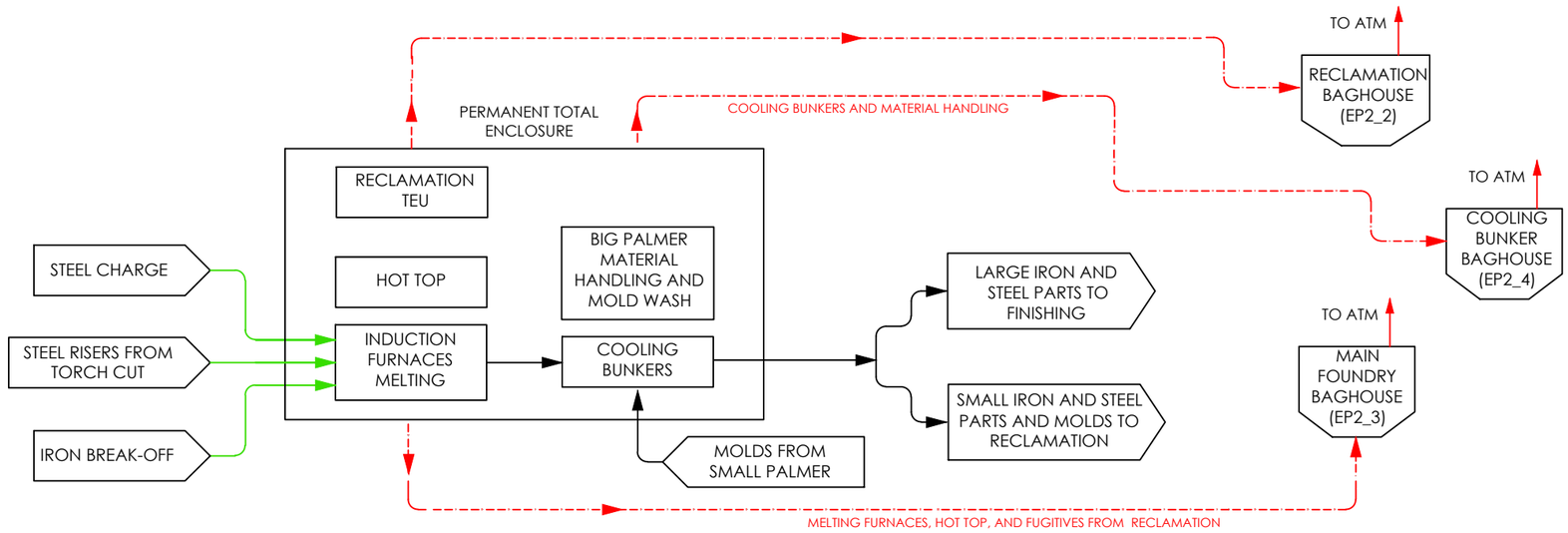
FOUNDRY



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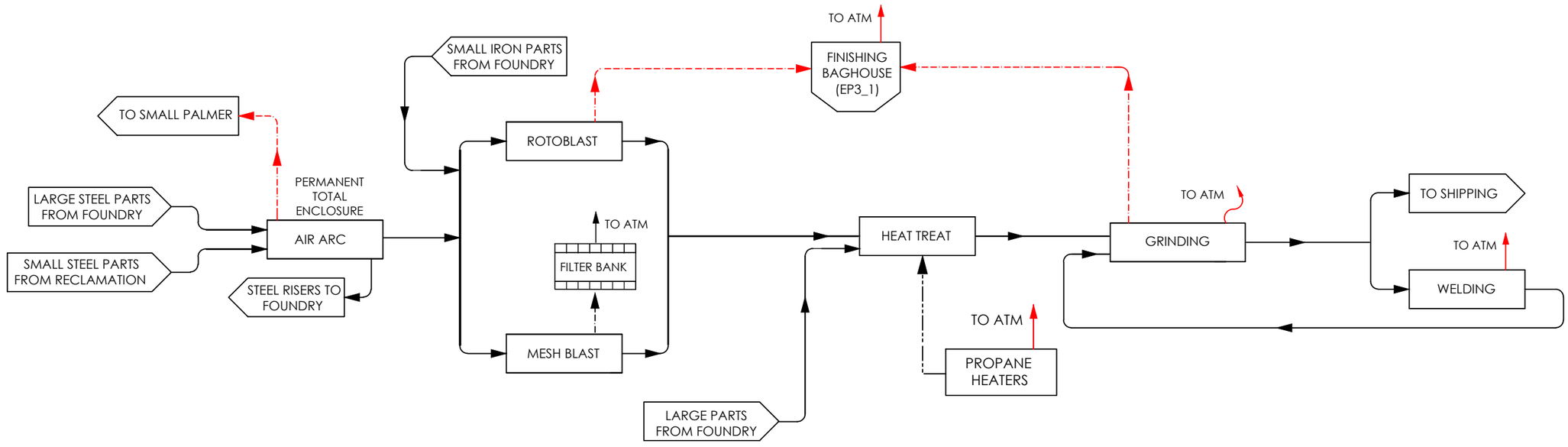

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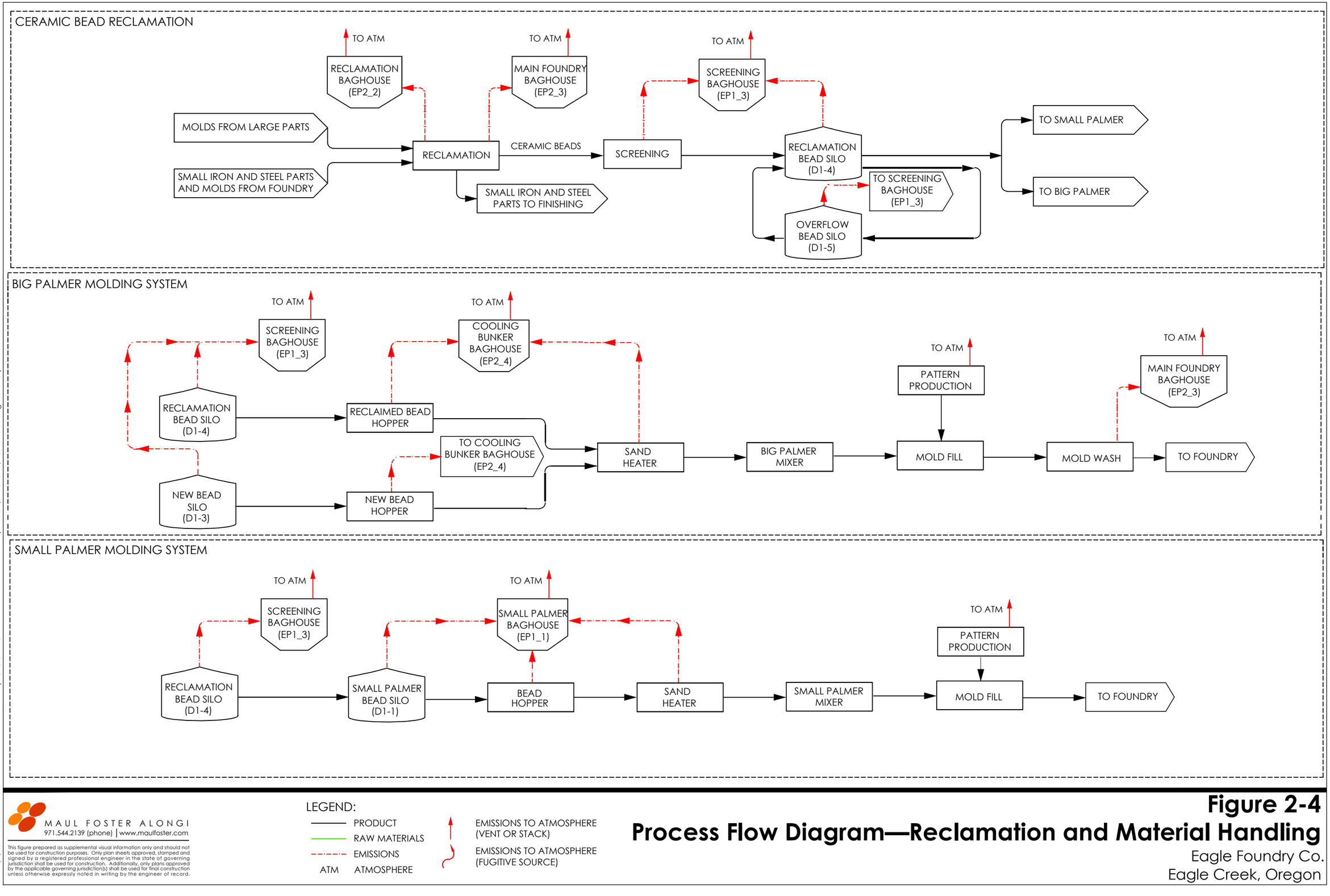
LEGEND:

- PRODUCT
- RAW MATERIALS
- EMISSIONS
- ATM ATMOSPHERE
- EMISSIONS TO ATMOSPHERE (VENT OR STACK)
- EMISSIONS TO ATMOSPHERE (FUGITIVE SOURCE)

Figure 2-3
Process Flow Diagram—Foundry and Finishing

Eagle Foundry Co.
Eagle Creek, Oregon



Filepath:G:\PROJECTS\M8006.63.01 Eagle Foundry

Printed by:Kendra Kline

Date: 1/4/2024 10:38:01 AM

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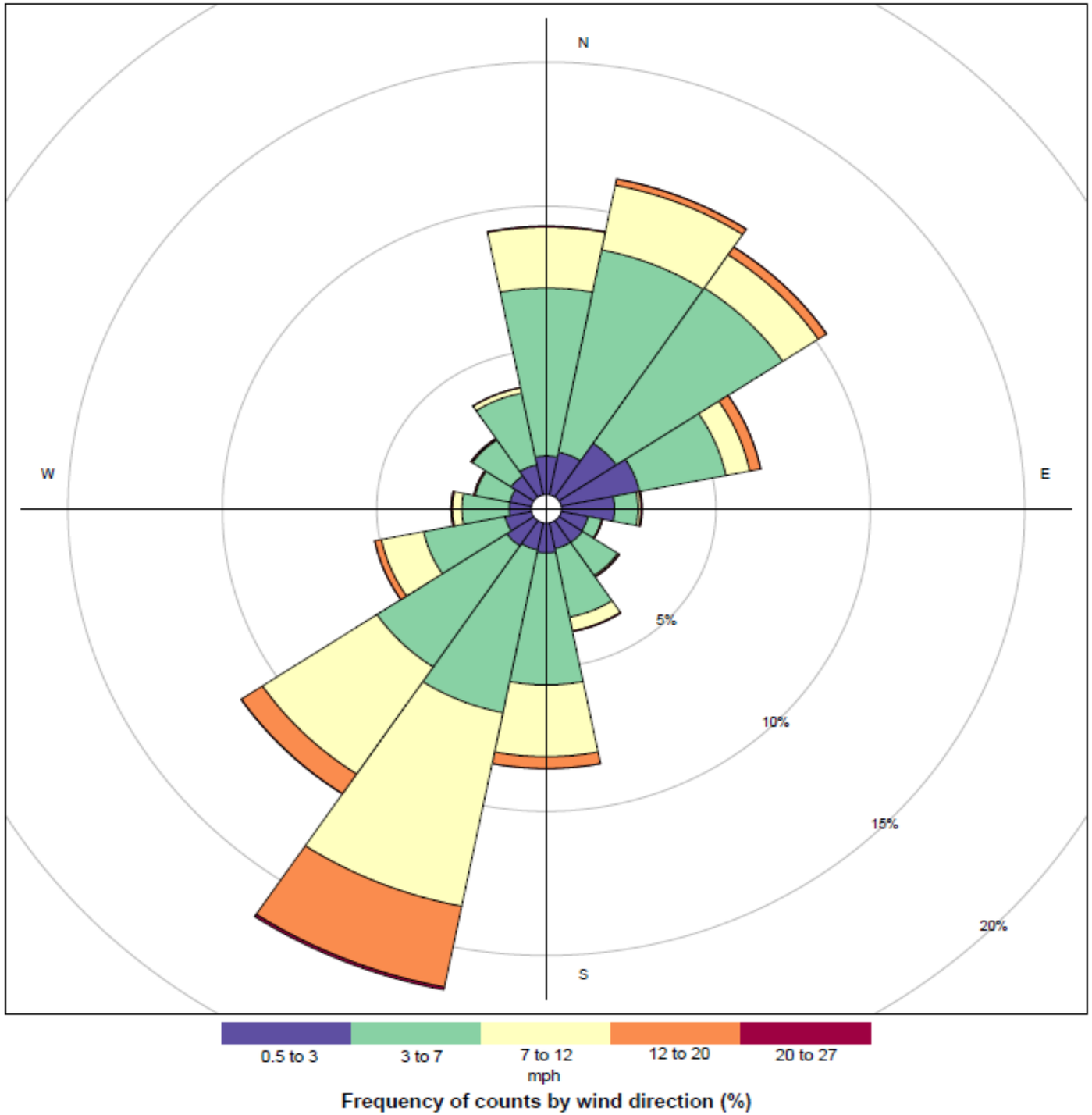
LEGEND:

- PRODUCT
- RAW MATERIALS
- EMISSIONS
- ATM ATMOSPHERE
- EMISSIONS TO ATMOSPHERE (VENT OR STACK)
- EMISSIONS TO ATMOSPHERE (FUGITIVE SOURCE)

Figure 2-4
Process Flow Diagram—Reclamation and Material Handling

Eagle Foundry Co.
Eagle Creek, Oregon



Frequency of counts by wind direction (%)

Figure 4-1
Wind Rose
2020-2024

Eagle Foundry
Eagle Creek, OR

Key Map

Note
mph = miles per hour.

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Figure 4-2
Emission Unit Locations

Eagle Foundry Co.
23123 SE Eagle Creek Rd
Eagle Creek, OR

Legend

- Point Source Location
- Volume/Area Source
- Building Locations
- Facility Boundary
- Tax Lot

Key Map

Notes
m = meters

0 50
Meters

Data Sources
Aerial photograph obtained from Google Earth(2024); tax lot data obtained from Oregon Metro (2023).

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Path: X:\8006.63_ATTORNEY CLIENT PRIVILEGE\Pro\M8006_63_001.aprx\Fig 2 Emission Unit Locations
Print Date: 11/26/2024
Reviewed By: iriley
Produced By: jelstrott
Project: M8006.63.001.006

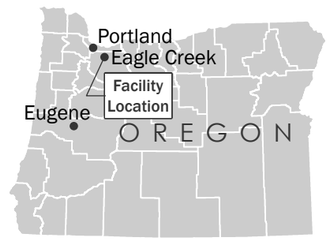
Figure 4-3
Receptor Locations in the Modeling Domain

Eagle Foundry
Eagle Creek, OR

Legend

- Receptor
- Receptor in Right of Way
- Facility Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map



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Feet

Data Sources
Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023).

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UTM X (meters): 536000, 538000, 540000, 542000, 544000, 546000, 548000, 550000, 552000, 554000, 556000, 558000, 560000, 562000, 564000, 566000

Cottrell, Aims, Happy Valley, Mount Hood Hwy, Boring, Bull Run, Rock Creek, Damascus, Kelso, Highway 26, Mt Hood Scenic Corridor, Sandy, Barton, Firwood, Holcomb, Eagle Creek, Redland, Logan, Dover, Echo Dell, Cedarhurst Park, Paradise Park, Currinsville, Henrici, Tracy, Milo McIver State Park, George, Bissell, Corner, Estacada, North Highland, Springwater

Path: X:\8006.63_ATTORNEY CLIENT PRIVILEGE\GIS\Pro\M8006_63_001_Air_Group.aprx\Fig4-4 Proposed Receptor Locs Modeling Domain
Print Date: 2/21/2025
Reviewed By: lriley
Produced By: jroberts
Project: M8006.63.001

Figure 4-4
Receptor Locations in the Immediate Area

Eagle Foundry
Eagle Creek, OR

Legend

Receptor RBC Classification

- Child
- Residential
- Worker
- Acute Only
- Risk Not Assessed
- Facility Boundary
- UTM Grid Guideline

Key Map

Notes

Risk-based classifications (RBC) were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

0 800
Feet

Data Sources

Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023).

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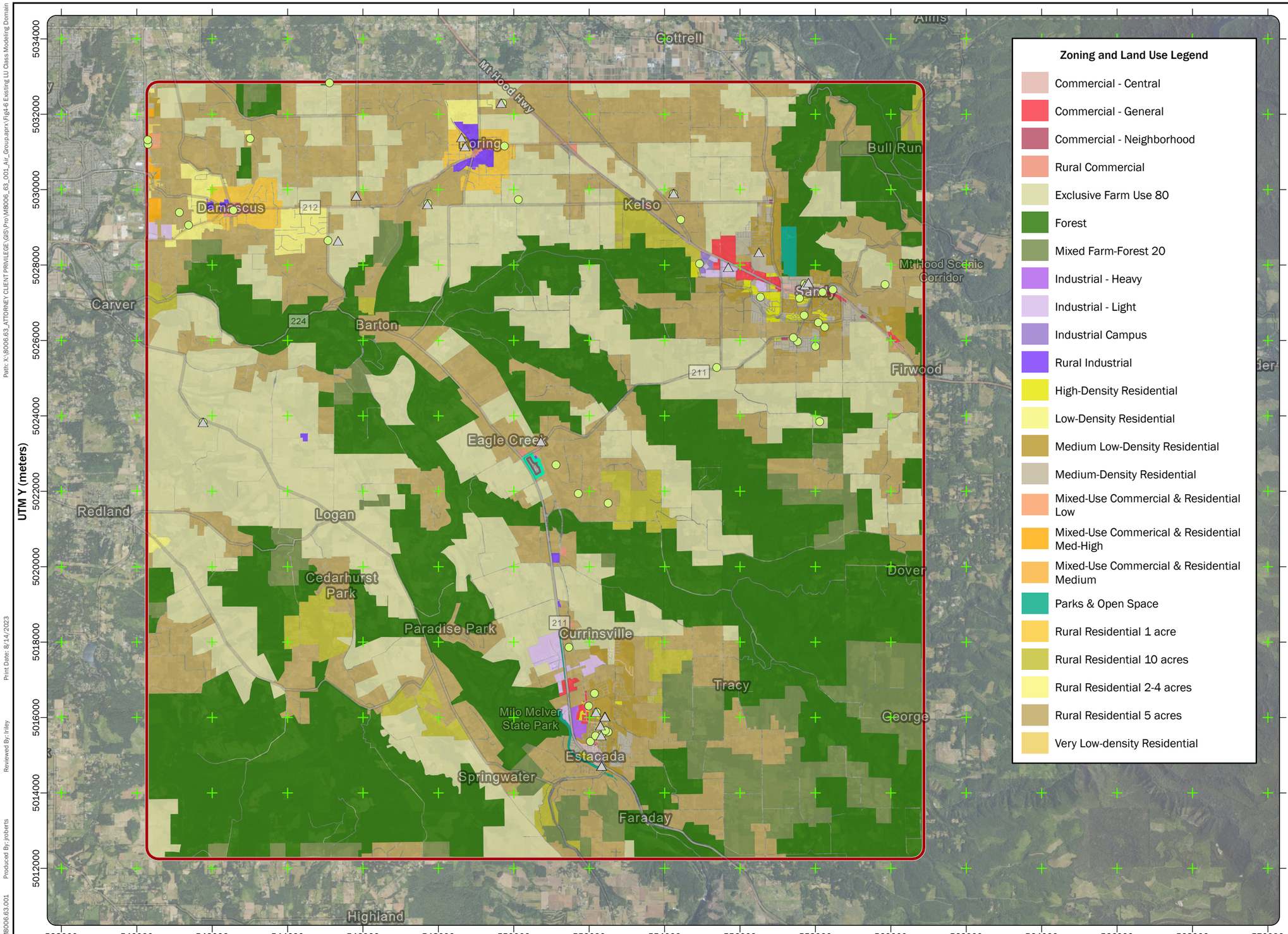
UTM Y (meters): 5023600, 5023400, 5023200, 5023000, 5022800, 5022600, 5022400, 5022200, 5022000, 5021800, 5021600, 5021400

UTM X (meters): 549000, 549200, 549400, 549600, 549800, 550000, 550200, 550400, 550600, 550800, 551000, 551200, 551400, 551600, 551800, 552000, 552200

Path: X:\8006.63_ATTORNEY CLIENT PRIVILEGE\GIS\Pro\M8006_63_001_Arr_Group.aprx\Fig4-5 Proposed Receptor Locs Immediate Area
Print Date: 2/21/2025
Reviewed By: lriley
Produced By: jroberts
Project: M8006.63.001

Figure 4-5
Existing Land Use Classification

Eagle Foundry
Eagle Creek, OR



Zoning and Land Use Legend

- Commercial - Central
- Commercial - General
- Commercial - Neighborhood
- Rural Commercial
- Exclusive Farm Use 80
- Forest
- Mixed Farm-Forest 20
- Industrial - Heavy
- Industrial - Light
- Industrial Campus
- Rural Industrial
- High-Density Residential
- Low-Density Residential
- Medium Low-Density Residential
- Medium-Density Residential
- Mixed-Use Commercial & Residential Low
- Mixed-Use Commerical & Residential Med-High
- Mixed-Use Commercial & Residential Medium
- Parks & Open Space
- Rural Residential 1 acre
- Rural Residential 10 acres
- Rural Residential 2-4 acres
- Rural Residential 5 acres
- Very Low-density Residential

Legend

- School
- Early Learning Provider
- Property Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map

0 7,000
Feet

Data Sources
Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023); schools obtained from Oregon Health Authority (2015); early learning providers obtained from Oregon Department of Education (2020); zoning and land use obtained from the Oregon Department of Land Conservation and Development (2017).

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Print Date: 8/14/2023
Reviewed By: jriley
Produced By: jroberts
Project: M8006.63.001

Figure 4-6
Existing Land Use Classification in the Immediate Area

Eagle Foundry
Eagle Creek, OR

Zoning and Land Use Legend

- Rural Commercial
- Exclusive Farm Use 80
- Forest
- Rural Industrial
- Rural Residential 5 acres

Legend

- School
- Early Learning Provider
- Property Boundary
- UTM Grid Guideline

Key Map

0 800
Feet

Data Sources
Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023); schools obtained from Oregon Health Authority (2015); early learning providers obtained from Oregon Department of Education (2020); zoning and land use obtained from the Oregon Department of Land Conservation and Development (2017).

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UTM Y (meters)
5023800
5023600
5023400
5023200
5023000
5022800
5022600
5022400
5022200
5022000
5021800
5021600

UTM X (meters)
549000
549200
549400
549600
549800
550000
550200
550400
550600
550800
551000
551200
551400
551600
551800
552000

Clackamas Hwy
SE McPartland
Goose Creek
Eagle Creek
224
SE Coop Rd
Eagle Creek Elementary School
SE Jackknife Rd
Eagle Creek-Sandy Hwy
SE Filbert Rd
Philip Foster Farm
Foster Cemetery
(ECC) Happy Hatchlings
SE Eagle Creek Rd
SE Dowty Rd
SE Weitz Ln
(ECC) Lesa's Daycare

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Print Date: 8/14/2023
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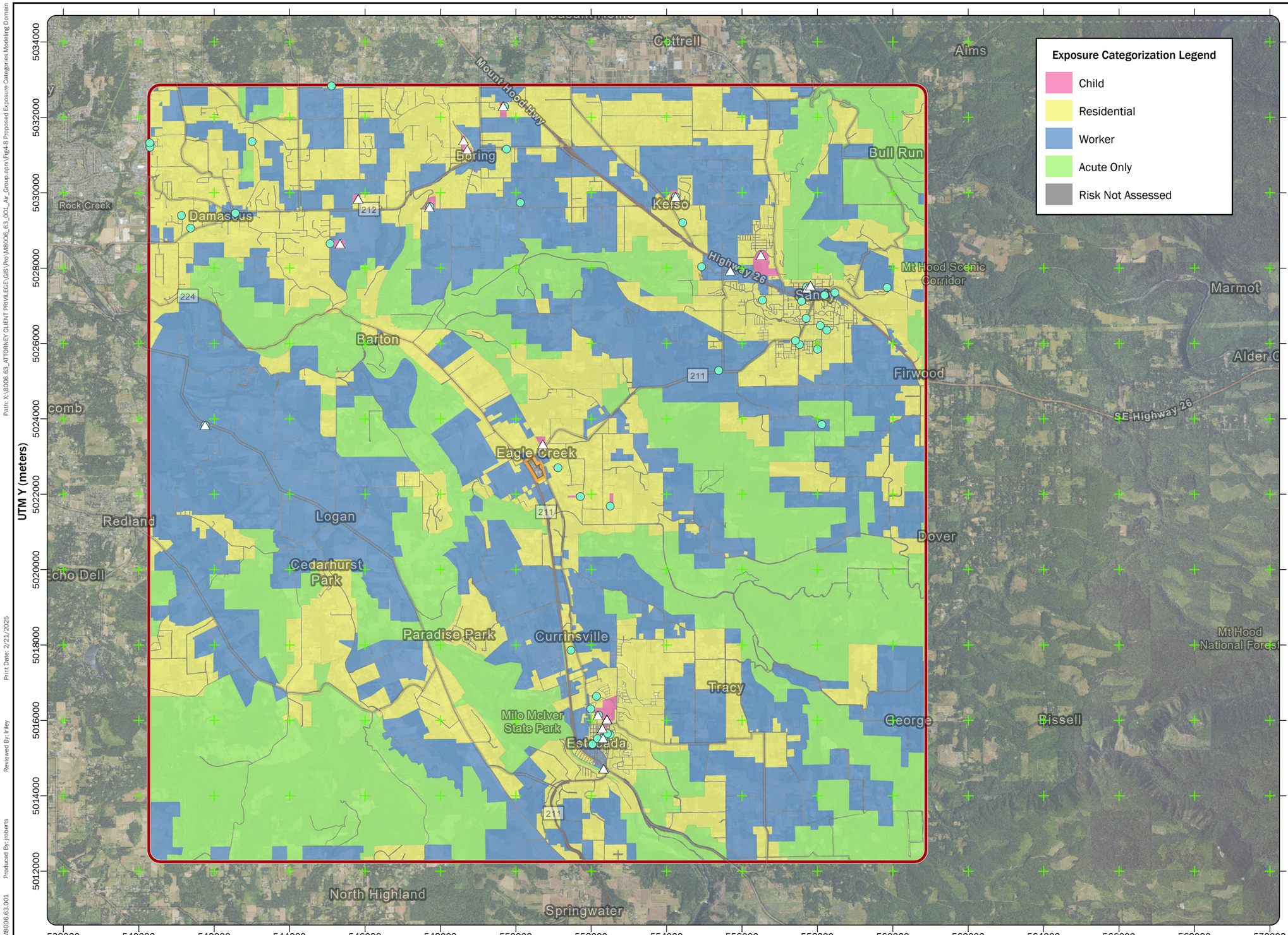
Project: M8006.63.001

Figure 4-7
Exposure Categorization

Eagle Foundry
Eagle Creek, OR



Legend

- School
- Early Learning Provider
- Property Boundary
- Modeling Domain Extent
- UTM Grid Guideline

Key Map

Notes

Land use classifications were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

0 — 7,000 Feet

Data Sources

Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023); schools obtained from Oregon Health Authority (2015); early learning providers obtained from Oregon Department of Education (2020); zoning and land use obtained from the Oregon Department of Land Conservation and Development (2017).

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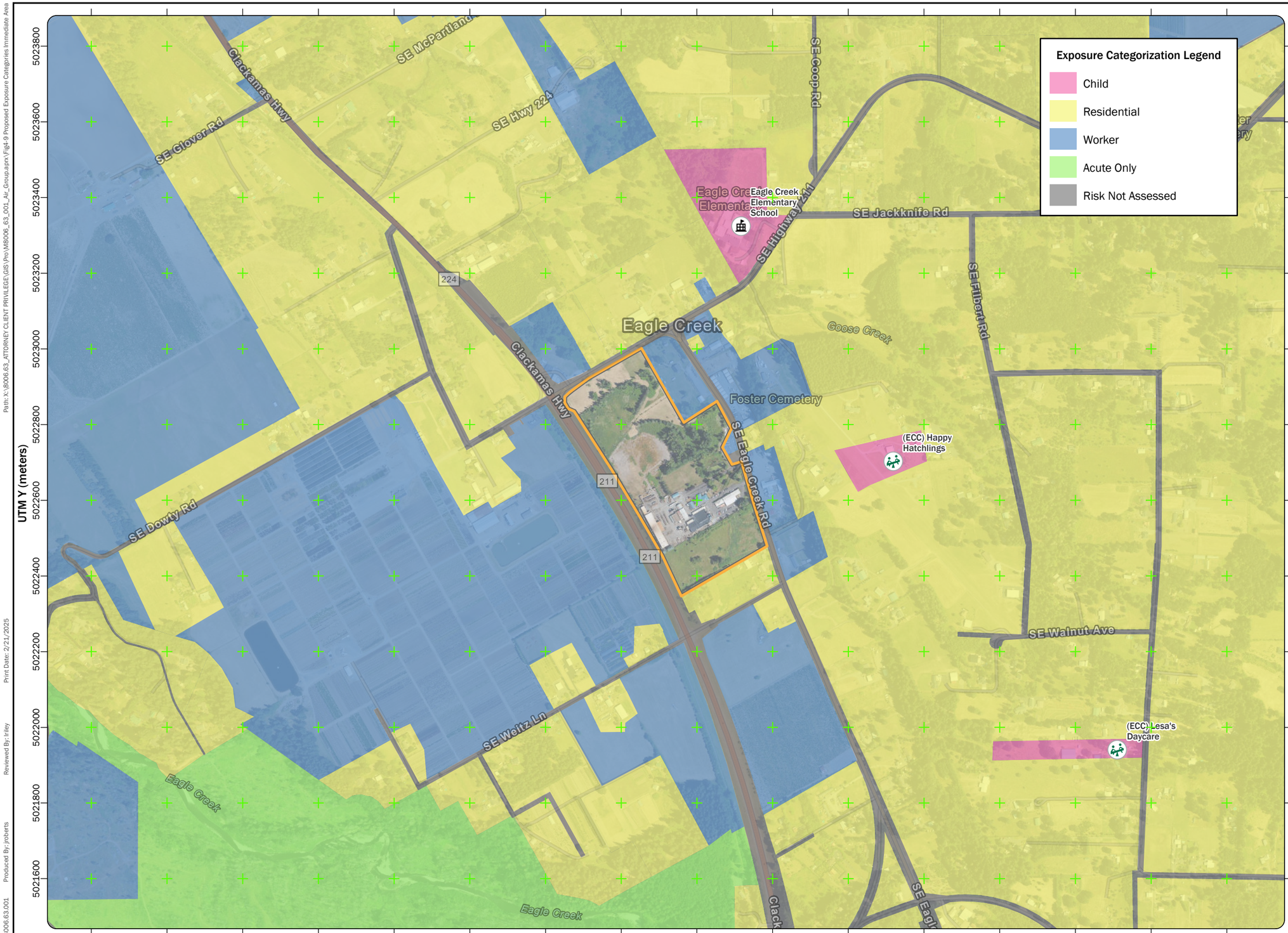
Print Date: 2/21/2025
Reviewed By: lriley
Produced By: jroberts
Project: M8006.63.001

Figure 4-8
Exposure Categorization in the Immediate Area

Eagle Foundry
Eagle Creek, OR



Legend

- School
- Early Learning Provider
- Property Boundary
- UTM Grid Guideline

Key Map

Notes

Land use classifications were revised to reflect exposure categories in Oregon Administrative Rule 340-245-8010 Table 2 using locations of sensitive receptors (i.e., schools, hospitals, early learning providers) and current property use from county tax lot data. Tax lot data were used to identify rights-of-way.

0 800
Feet

Data Sources

Aerial photograph obtained from State of Oregon (2022); tax lot data obtained from Oregon Metro (2023); schools obtained from Oregon Health Authority (2015); early learning providers obtained from Oregon Department of Education (2020); zoning and land use obtained from the Oregon Department of Land Conservation and Development (2017).

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Print Date: 2/21/2025
Reviewed By: lriley
Produced By: jroberts
Project: M8006.63.001

Tables

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Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]				
			Foundry				
			Main Foundry - WI	Main Foundry - Steel	Hot Top	BP Mat Handling	Reclamation to MF BH
			(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)
Model ID			--	--	--	--	--
Apportioning Fraction			--	--	--	--	--
ORGANIC COMPOUNDS							
Acetaldehyde	75-07-0	Yes	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	8,906	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--
INORGANIC COMPOUNDS							
Ammonia	7664-41-7	Yes	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	0.014	3.6E-03	--	--	4.3E-03
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	1.02	318	93.1
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)							
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--
METALS							
Aluminum and Compounds	7429-90-5	Yes	12.5	3.05	--	428	3.92
Antimony and Compounds	7440-36-0	Yes	0.096	0.026	--	--	9.6E-04
Arsenic and Compounds	7440-38-2	Yes	--	0.097	--	--	6.2E-04
Barium and Compounds	7440-39-3	No	0.48	0.21	--	--	0.024
Beryllium and compounds	7440-41-7	Yes	--	--	--	--	6.8E-05
Cadmium and Compounds	7440-43-9	Yes	0.024	0.013	--	--	3.7E-04
Chromium	7440-47-3	No	0.39	0.097	--	--	0.12
Chromium VI	18540-29-9	Yes	1.2E-03	3.7E-04	--	--	3.5E-03
Cobalt and Compounds	7440-48-4	Yes	0.016	3.9E-03	--	--	9.4E-04
Copper and Compounds	7440-50-8	Yes	0.62	0.13	--	--	0.079
Lead and Compounds	7439-92-1	Yes	0.35	--	--	--	0.029
Manganese and Compounds	7439-96-5	Yes	2.67	0.35	--	--	0.69
Mercury	7439-97-6	Yes	0.013	6.7E-03	--	--	--
Nickel and Compounds	7440-02-0	Yes	0.63	0.35	--	--	0.015
Phosphorus and Compounds	504	No	1.07	0.34	--	--	--
Selenium and Compounds	7782-49-2	Yes	--	--	--	--	6.0E-04
Silver and Compounds	7440-22-4	No	0.11	0.024	--	--	6.5E-04
Thallium	7440-28-0	No	--	--	--	--	3.9E-05
Vanadium (fume or dust)	7440-62-2	Yes	--	--	--	--	3.7E-03
Zinc and Compounds	7440-66-6	No	1.48	0.35	--	--	0.015
DIESEL PARTICULATE MATTER (DPM)							
DPM	200	Yes	--	--	--	--	--
Total TAC Emissions Estimate			**20.5**	**5.05**	**1.02**	**9,652**	**98.0**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]					
			Foundry					
			Total Main Foundry		Cooling Bunker - WI	Cooling Bunker - Steel	Total Cooling Bunker	
			(lb/yr)	(g/s)[a]	(lb/yr)	(lb/yr)	(lb/yr)	(g/s)[a]
Model ID			EP2_3		--	--	EP2_4	
Apportioning Fraction			--		--	--	--	
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	8,906	0.13	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	0.022	3.2E-07	0.067	0.017	0.084	1.2E-06
Silicon dioxide (amorphous)	7631-86-9	Yes	412	5.9E-03	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--
METALS								
Aluminum and Compounds	7429-90-5	Yes	447	6.4E-03	11.1	2.34	13.4	1.9E-04
Antimony and Compounds	7440-36-0	Yes	0.12	1.8E-06	0.068	0.024	0.092	1.3E-06
Arsenic and Compounds	7440-38-2	Yes	0.098	1.4E-06	0.29	0.088	0.37	5.4E-06
Barium and Compounds	7440-39-3	No	0.71	1.0E-05	0.24	0.077	0.32	4.5E-06
Beryllium and compounds	7440-41-7	Yes	6.8E-05	9.7E-10	--	--	--	--
Cadmium and Compounds	7440-43-9	Yes	0.037	5.3E-07	--	5.1E-03	5.1E-03	7.3E-08
Chromium	7440-47-3	No	0.60	8.7E-06	0.16	0.027	0.18	2.6E-06
Chromium VI	18540-29-9	Yes	5.1E-03	7.3E-08	1.9E-03	5.3E-04	2.5E-03	3.6E-08
Cobalt and Compounds	7440-48-4	Yes	0.021	3.0E-07	0.013	3.2E-03	0.016	2.3E-07
Copper and Compounds	7440-50-8	Yes	0.82	1.2E-05	0.51	0.12	0.63	9.0E-06
Lead and Compounds	7439-92-1	Yes	0.38	5.5E-06	0.29	0.059	0.34	5.0E-06
Manganese and Compounds	7439-96-5	Yes	3.71	5.3E-05	0.94	0.19	1.13	1.6E-05
Mercury	7439-97-6	Yes	0.020	2.8E-07	9.8E-03	4.7E-03	0.015	2.1E-07
Nickel and Compounds	7440-02-0	Yes	0.99	1.4E-05	0.42	0.11	0.52	7.5E-06
Phosphorus and Compounds	504	No	1.42	2.0E-05	0.27	0.28	0.55	7.9E-06
Selenium and Compounds	7782-49-2	Yes	6.0E-04	8.6E-09	--	--	--	--
Silver and Compounds	7440-22-4	No	0.14	2.0E-06	--	--	--	--
Thallium	7440-28-0	No	3.9E-05	5.6E-10	--	--	--	--
Vanadium (fume or dust)	7440-62-2	Yes	3.7E-03	5.4E-08	--	--	--	--
Zinc and Compounds	7440-66-6	No	1.84	2.6E-05	1.31	0.35	1.66	2.4E-05
DIESEL PARTICULATE MATTER (DPM)								
DPM	200	Yes	--	--	--	--	--	--
Total TAC Emissions Estimate			**9,776**	**0.14**	**15.7**	**3.68**	**19.3**	**2.8E-04**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]						
			Foundry		Welding				
			Reclamation to REC BH		Total Welding		Welding 1	Welding 2	Welding 3
			(lb/yr)	(g/s)[a]	(lb/yr)	(g/s)[a]	(g/s)[b]	(g/s)[b]	(g/s)[b]
Model ID			EP2_2		--	--	WELD1	WELD2	WELD3
Apportioning Fraction			--		--		0.33	0.33	0.33
ORGANIC COMPOUNDS									
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--
INORGANIC COMPOUNDS									
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	3.8E-03	5.5E-08	0.096	1.4E-06	4.6E-07	4.6E-07	4.6E-07
Silicon dioxide (amorphous)	7631-86-9	Yes	83.8	1.2E-03	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)									
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--	--
METALS									
Aluminum and Compounds	7429-90-5	Yes	3.53	5.1E-05	7.8E-03	1.1E-07	3.7E-08	3.7E-08	3.7E-08
Antimony and Compounds	7440-36-0	Yes	8.6E-04	1.2E-08	--	--	--	--	--
Arsenic and Compounds	7440-38-2	Yes	5.6E-04	8.1E-09	1.9E-04	2.7E-09	9.0E-10	9.0E-10	9.0E-10
Barium and Compounds	7440-39-3	No	0.022	3.2E-07	--	--	--	--	--
Beryllium and compounds	7440-41-7	Yes	6.1E-05	8.7E-10	--	--	--	--	--
Cadmium and Compounds	7440-43-9	Yes	3.3E-04	4.7E-09	--	--	--	--	--
Chromium	7440-47-3	No	0.11	1.5E-06	1.34	1.9E-05	6.4E-06	6.4E-06	6.4E-06
Chromium VI	18540-29-9	Yes	3.2E-03	4.5E-08	0.33	4.7E-06	1.6E-06	1.6E-06	1.6E-06
Cobalt and Compounds	7440-48-4	Yes	8.4E-04	1.2E-08	7.3E-03	1.1E-07	3.5E-08	3.5E-08	3.5E-08
Copper and Compounds	7440-50-8	Yes	0.071	1.0E-06	7.51	1.1E-04	3.6E-05	3.6E-05	3.6E-05
Lead and Compounds	7439-92-1	Yes	0.026	3.8E-07	--	--	--	--	--
Manganese and Compounds	7439-96-5	Yes	0.62	8.9E-06	1.10	1.6E-05	5.3E-06	5.3E-06	5.3E-06
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	0.013	1.9E-07	0.32	4.7E-06	1.6E-06	1.6E-06	1.6E-06
Phosphorus and Compounds	504	No	--	--	5.6E-04	8.1E-09	2.7E-09	2.7E-09	2.7E-09
Selenium and Compounds	7782-49-2	Yes	5.4E-04	7.7E-09	--	--	--	--	--
Silver and Compounds	7440-22-4	No	5.9E-04	8.4E-09	--	--	--	--	--
Thallium	7440-28-0	No	3.5E-05	5.1E-10	--	--	--	--	--
Vanadium (fume or dust)	7440-62-2	Yes	3.4E-03	4.8E-08	1.9E-04	2.7E-09	9.0E-10	9.0E-10	9.0E-10
Zinc and Compounds	7440-66-6	No	0.014	2.0E-07	--	--	--	--	--
DIESEL PARTICULATE MATTER (DPM)									
DPM	200	Yes	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**88.2**	**1.3E-03**	**10.7**	**1.5E-04**	**5.1E-05**	**5.1E-05**	**5.1E-05**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]				
			Finishing Baghouse				
			Grinding SS (Controlled)	Grinding NSS (Controlled)	Shot Blast	TOTAL to Finishing BH	
			(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(g/s)[a]
Model ID			--	--	--	EP3_1	
Apportioning Fraction			--	--	--	--	
ORGANIC COMPOUNDS							
Acetaldehyde	75-07-0	Yes	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--
INORGANIC COMPOUNDS							
Ammonia	7664-41-7	Yes	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	0.26	1.68	0.017	1.96	2.8E-05
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)							
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--
METALS							
Aluminum and Compounds	7429-90-5	Yes	0.17	1.09	0.019	1.28	1.8E-05
Antimony and Compounds	7440-36-0	Yes	9.0E-05	6.0E-04	4.8E-04	1.2E-03	1.7E-08
Arsenic and Compounds	7440-38-2	Yes	5.4E-04	3.6E-03	1.5E-03	5.6E-03	8.0E-08
Barium and Compounds	7440-39-3	No	4.8E-03	0.032	1.5E-04	0.037	5.3E-07
Beryllium and compounds	7440-41-7	Yes	1.8E-05	1.2E-04	3.1E-05	1.7E-04	2.4E-09
Cadmium and Compounds	7440-43-9	Yes	1.4E-04	9.3E-04	3.1E-05	1.1E-03	1.6E-08
Chromium	7440-47-3	No	9.00	45.0	0.073	54.1	7.8E-04
Chromium VI	18540-29-9	Yes	0.27	1.35	2.2E-03	1.62	2.3E-05
Cobalt and Compounds	7440-48-4	Yes	2.6E-03	0.017	2.1E-03	0.022	3.2E-07
Copper and Compounds	7440-50-8	Yes	0.026	0.10	0.079	0.21	3.0E-06
Lead and Compounds	7439-92-1	Yes	1.6E-04	1.0E-03	2.3E-04	1.4E-03	2.0E-08
Manganese and Compounds	7439-96-5	Yes	0.35	4.35	0.19	4.89	7.0E-05
Mercury	7439-97-6	Yes	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	5.37	1.83	0.030	7.23	1.0E-04
Phosphorus and Compounds	504	No	0.014	0.21	--	0.22	3.2E-06
Selenium and Compounds	7782-49-2	Yes	9.0E-05	6.0E-04	1.5E-05	7.0E-04	1.0E-08
Silver and Compounds	7440-22-4	No	1.8E-05	1.2E-04	3.1E-05	1.7E-04	2.4E-09
Thallium	7440-28-0	No	1.8E-05	1.2E-04	3.1E-05	1.7E-04	2.4E-09
Vanadium (fume or dust)	7440-62-2	Yes	2.1E-03	0.014	2.7E-03	0.019	2.7E-07
Zinc and Compounds	7440-66-6	No	1.2E-03	7.7E-03	2.7E-03	0.011	1.7E-07
DIESEL PARTICULATE MATTER (DPM)							
DPM	200	Yes	--	--	--	--	--
Total TAC Emissions Estimate			**15.5**	**55.7**	**0.43**	**71.6**	**1.0E-03**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]						
			Grinding Fugitives						
			Grinding SS (Fugitive)	Grinding NSS (Fugitive)	Total Grinding Fugitives		Grinding Fugitives 1	Grinding Fugitives 2	Grinding Fugitives 3
			(lb/yr)	(lb/yr)	(lb/yr)	(g/s)[a]	(g/s)[b]	(g/s)[b]	(g/s)[b]
Model ID			--	--	--	--	FIN_FUG1	FIN_FUG2	FIN_FUG3
Apportioning Fraction			--	--	--		0.33	0.33	0.33
ORGANIC COMPOUNDS									
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--
INORGANIC COMPOUNDS									
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	0.039	0.25	0.29	4.2E-06	1.4E-06	1.4E-06	1.4E-06
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)									
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--	--
METALS									
Aluminum and Compounds	7429-90-5	Yes	0.025	0.16	0.19	2.7E-06	9.1E-07	9.1E-07	9.1E-07
Antimony and Compounds	7440-36-0	Yes	1.4E-05	8.9E-05	1.0E-04	1.5E-09	4.9E-10	4.9E-10	4.9E-10
Arsenic and Compounds	7440-38-2	Yes	8.2E-05	5.4E-04	6.2E-04	8.9E-09	3.0E-09	3.0E-09	3.0E-09
Barium and Compounds	7440-39-3	No	7.3E-04	4.8E-03	5.5E-03	8.0E-08	2.7E-08	2.7E-08	2.7E-08
Beryllium and compounds	7440-41-7	Yes	2.7E-06	1.8E-05	2.1E-05	3.0E-10	9.9E-11	9.9E-11	9.9E-11
Cadmium and Compounds	7440-43-9	Yes	2.1E-05	1.4E-04	1.6E-04	2.3E-09	7.7E-10	7.7E-10	7.7E-10
Chromium	7440-47-3	No	1.35	6.77	8.12	1.2E-04	3.9E-05	3.9E-05	3.9E-05
Chromium VI	18540-29-9	Yes	0.041	0.20	0.24	3.5E-06	1.2E-06	1.2E-06	1.2E-06
Cobalt and Compounds	7440-48-4	Yes	4.0E-04	2.6E-03	3.0E-03	4.3E-08	1.4E-08	1.4E-08	1.4E-08
Copper and Compounds	7440-50-8	Yes	3.9E-03	0.016	0.020	2.8E-07	9.4E-08	9.4E-08	9.4E-08
Lead and Compounds	7439-92-1	Yes	2.3E-05	1.5E-04	1.8E-04	2.6E-09	8.6E-10	8.6E-10	8.6E-10
Manganese and Compounds	7439-96-5	Yes	0.052	0.65	0.71	1.0E-05	3.4E-06	3.4E-06	3.4E-06
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	0.81	0.28	1.08	1.6E-05	5.2E-06	5.2E-06	5.2E-06
Phosphorus and Compounds	504	No	2.1E-03	0.031	0.033	4.8E-07	1.6E-07	1.6E-07	1.6E-07
Selenium and Compounds	7782-49-2	Yes	1.4E-05	8.9E-05	1.0E-04	1.5E-09	4.9E-10	4.9E-10	4.9E-10
Silver and Compounds	7440-22-4	No	2.7E-06	1.8E-05	2.1E-05	3.0E-10	9.9E-11	9.9E-11	9.9E-11
Thallium	7440-28-0	No	2.7E-06	1.8E-05	2.1E-05	3.0E-10	9.9E-11	9.9E-11	9.9E-11
Vanadium (fume or dust)	7440-62-2	Yes	3.1E-04	2.1E-03	2.4E-03	3.4E-08	1.1E-08	1.1E-08	1.1E-08
Zinc and Compounds	7440-66-6	No	1.7E-04	1.2E-03	1.3E-03	1.9E-08	6.4E-09	6.4E-09	6.4E-09
DIESEL PARTICULATE MATTER (DPM)									
DPM	200	Yes	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**2.33**	**8.38**	**10.7**	**1.5E-04**	**5.1E-05**	**5.1E-05**	**5.1E-05**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]					
			Small Palmer BH					
			Small Palmer	Small Palmer Mat Handling	Small Palmer Silo	Air Arc	Total to Small Palmer BH	
			(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(g/s)[a]
Model ID			--	--	--	--	EP1_1	
Apportioning Fraction			--	--	--	--	--	
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	2,500	--	--	2,500	0.036
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	12.4	--	--	12.4	1.8E-04
Toluene	108-88-3	Yes	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	3.5E-03	--	--	5.1E-03	8.6E-03	1.2E-07
Silicon dioxide (amorphous)	7631-86-9	Yes	--	319	0.66	--	320	4.6E-03
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--
METALS								
Aluminum and Compounds	7429-90-5	Yes	1.55	392	9.2E-03	--	394	5.7E-03
Antimony and Compounds	7440-36-0	Yes	2.2E-04	--	1.3E-06	--	2.2E-04	3.2E-09
Arsenic and Compounds	7440-38-2	Yes	1.8E-04	--	4.9E-07	--	1.8E-04	2.6E-09
Barium and Compounds	7440-39-3	No	9.0E-03	--	4.5E-05	--	9.1E-03	1.3E-07
Beryllium and compounds	7440-41-7	Yes	1.5E-05	--	9.7E-08	--	1.5E-05	2.1E-10
Cadmium and Compounds	7440-43-9	Yes	3.4E-05	--	9.7E-08	--	3.4E-05	4.9E-10
Chromium	7440-47-3	No	0.015	--	1.1E-04	9.3E-03	0.024	3.4E-07
Chromium VI	18540-29-9	Yes	4.4E-04	--	3.2E-06	2.8E-04	7.2E-04	1.0E-08
Cobalt and Compounds	7440-48-4	Yes	2.5E-04	--	1.7E-06	--	2.5E-04	3.6E-09
Copper and Compounds	7440-50-8	Yes	0.039	--	3.2E-04	7.9E-04	0.040	5.7E-07
Lead and Compounds	7439-92-1	Yes	4.7E-03	--	2.2E-05	--	4.7E-03	6.7E-08
Manganese and Compounds	7439-96-5	Yes	0.12	--	8.5E-04	0.039	0.16	2.2E-06
Mercury	7439-97-6	Yes	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	5.6E-03	--	5.5E-05	5.9E-03	0.012	1.7E-07
Phosphorus and Compounds	504	No	--	--	--	4.3E-04	4.3E-04	6.2E-09
Selenium and Compounds	7782-49-2	Yes	7.4E-05	--	4.9E-07	--	7.4E-05	1.1E-09
Silver and Compounds	7440-22-4	No	9.2E-05	--	5.6E-07	--	9.3E-05	1.3E-09
Thallium	7440-28-0	No	1.5E-05	--	9.7E-08	--	1.5E-05	2.1E-10
Vanadium (fume or dust)	7440-62-2	Yes	1.0E-03	--	5.1E-06	--	1.0E-03	1.5E-08
Zinc and Compounds	7440-66-6	No	0.025	--	1.0E-04	--	0.025	3.6E-07
DIESEL PARTICULATE MATTER (DPM)								
DPM	200	Yes	--	--	--	--	--	--
Total TAC Emissions Estimate			**1.77**	**3,224**	**0.67**	**0.061**	**3,226**	**0.046**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]					
			Screening Station Baghouse					
			Reclaimed Bead Silo	Reclaimed Bead Overflow Silo	New Bead Silo	Screening Station	Total to Screening BH	
			(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(g/s)[a]
Model ID			--	--	--	--	EP1_3	
Apportioning Fraction			--	--	--	--	--	
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	--	--	0.031	0.031	4.5E-07
Silicon dioxide (amorphous)	7631-86-9	Yes	0.66	0.66	0.47	675	677	9.7E-03
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--
METALS								
Aluminum and Compounds	7429-90-5	Yes	9.2E-03	9.2E-03	0.63	9.31	9.96	1.4E-04
Antimony and Compounds	7440-36-0	Yes	1.3E-06	1.3E-06	--	1.3E-03	1.3E-03	1.9E-08
Arsenic and Compounds	7440-38-2	Yes	4.9E-07	4.9E-07	--	5.0E-04	5.0E-04	7.2E-09
Barium and Compounds	7440-39-3	No	4.5E-05	4.5E-05	--	0.046	0.046	6.6E-07
Beryllium and compounds	7440-41-7	Yes	9.7E-08	9.7E-08	--	9.9E-05	9.9E-05	1.4E-09
Cadmium and Compounds	7440-43-9	Yes	9.7E-08	9.7E-08	--	9.9E-05	9.9E-05	1.4E-09
Chromium	7440-47-3	No	1.1E-04	1.1E-04	--	0.11	0.11	1.6E-06
Chromium VI	18540-29-9	Yes	3.2E-06	3.2E-06	--	3.3E-03	3.3E-03	4.7E-08
Cobalt and Compounds	7440-48-4	Yes	1.7E-06	1.7E-06	--	1.7E-03	1.7E-03	2.5E-08
Copper and Compounds	7440-50-8	Yes	3.2E-04	3.2E-04	--	0.33	0.33	4.7E-06
Lead and Compounds	7439-92-1	Yes	2.2E-05	2.2E-05	--	0.022	0.022	3.2E-07
Manganese and Compounds	7439-96-5	Yes	8.5E-04	8.5E-04	--	0.87	0.87	1.3E-05
Mercury	7439-97-6	Yes	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	5.5E-05	5.5E-05	--	0.056	0.056	8.0E-07
Phosphorus and Compounds	504	No	--	--	--	--	--	--
Selenium and Compounds	7782-49-2	Yes	4.9E-07	4.9E-07	--	5.0E-04	5.0E-04	7.2E-09
Silver and Compounds	7440-22-4	No	5.6E-07	5.6E-07	--	5.7E-04	5.7E-04	8.2E-09
Thallium	7440-28-0	No	9.7E-08	9.7E-08	--	9.9E-05	9.9E-05	1.4E-09
Vanadium (fume or dust)	7440-62-2	Yes	5.1E-06	5.1E-06	--	5.2E-03	5.2E-03	7.5E-08
Zinc and Compounds	7440-66-6	No	1.0E-04	1.0E-04	--	0.11	0.11	1.5E-06
DIESEL PARTICULATE MATTER (DPM)								
DPM	200	Yes	--	--	--	--	--	--
Total TAC Emissions Estimate			**0.67**	**0.67**	**1.10**	**686**	**688**	**9.9E-03**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-1
Annual TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]							
			Mesh Blast		Slag Handling		Pattern Making		Emergency Generator	
			(lb/yr)	(g/s)[a]	(lb/yr)	(g/s)[a]	(lb/yr)	(g/s)[a]	(lb/yr)	(g/s)[a]
Model ID			MESH		SLAG		PTRN		EGEN	
Apportioning Fraction			--		--		--		--	
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	0.57	8.2E-06
Acrolein	107-02-8	Yes	--	--	--	--	--	--	0.025	3.6E-07
Benzene	71-43-2	Yes	--	--	--	--	--	--	0.14	2.0E-06
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	0.16	2.3E-06
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	8.0E-03	1.1E-07
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	1.26	1.8E-05
Hexane	110-54-3	Yes	--	--	--	--	--	--	0.020	2.8E-07
Isopropanol	67-63-0	Yes	--	--	--	--	2.68	3.9E-05	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	9.40	1.4E-04	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	2.68	3.9E-05	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	44.8	6.4E-04	0.077	1.1E-06
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	35.4	5.1E-04	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	0.031	4.5E-07
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	0.58	8.4E-06
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	0.14	2.0E-06
Molybdenum trioxide	1313-27-5	No	5.3E-03	7.6E-08	4.9E-04	7.0E-09	--	--	--	--
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	2.6E-05	3.7E-10
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	0.014	2.1E-07
PAHs (excluding Naphthalene)*	401	Yes	--	--	--	--	--	--	0.026	3.8E-07
METALS										
Aluminum and Compounds	7429-90-5	Yes	6.1E-03	8.7E-08	0.019	2.7E-07	--	--	--	--
Antimony and Compounds	7440-36-0	Yes	1.5E-04	2.2E-09	2.2E-06	3.1E-11	--	--	--	--
Arsenic and Compounds	7440-38-2	Yes	4.6E-04	6.7E-09	2.2E-06	3.1E-11	--	--	1.2E-03	1.7E-08
Barium and Compounds	7440-39-3	No	4.8E-05	7.0E-10	4.2E-05	6.0E-10	--	--	--	--
Beryllium and compounds	7440-41-7	Yes	9.7E-06	1.4E-10	4.3E-07	6.2E-12	--	--	--	--
Cadmium and Compounds	7440-43-9	Yes	9.7E-06	1.4E-10	4.3E-07	6.2E-12	--	--	1.1E-03	1.6E-08
Chromium	7440-47-3	No	0.023	3.3E-07	0.010	1.5E-07	--	--	--	--
Chromium VI	18540-29-9	Yes	6.9E-04	1.0E-08	6.3E-05	9.1E-10	--	--	7.3E-05	1.0E-09
Cobalt and Compounds	7440-48-4	Yes	6.7E-04	9.6E-09	1.4E-05	2.1E-10	--	--	--	--
Copper and Compounds	7440-50-8	Yes	0.025	3.6E-07	9.8E-05	1.4E-09	--	--	3.0E-03	4.3E-08
Lead and Compounds	7439-92-1	Yes	7.5E-05	1.1E-09	1.6E-06	2.4E-11	--	--	6.1E-03	8.7E-08
Manganese and Compounds	7439-96-5	Yes	0.062	8.9E-07	0.031	4.5E-07	--	--	2.3E-03	3.3E-08
Mercury	7439-97-6	Yes	--	--	1.7E-07	2.5E-12	--	--	1.5E-03	2.1E-08
Nickel and Compounds	7440-02-0	Yes	9.7E-03	1.4E-07	1.6E-04	2.3E-09	--	--	2.8E-03	4.1E-08
Phosphorus and Compounds	504	No	--	--	2.2E-04	3.1E-09	--	--	--	--
Selenium and Compounds	7782-49-2	Yes	4.8E-06	7.0E-11	2.2E-06	3.1E-11	--	--	1.6E-03	2.3E-08
Silver and Compounds	7440-22-4	No	9.7E-06	1.4E-10	4.3E-07	6.2E-12	--	--	--	--
Thallium	7440-28-0	No	9.7E-06	1.4E-10	4.3E-07	6.2E-12	--	--	--	--
Vanadium (fume or dust)	7440-62-2	Yes	8.6E-04	1.2E-08	2.3E-05	3.3E-10	--	--	--	--
Zinc and Compounds	7440-66-6	No	8.5E-04	1.2E-08	8.7E-06	1.2E-10	--	--	--	--
DIESEL PARTICULATE MATTER (DPM)										
DPM	200	Yes	--	--	--	--	--	--	24.5	3.5E-04
Total TAC Emissions Estimate			**0.14**	**1.9E-06**	**0.062**	**8.9E-07**	**95.0**	**1.4E-03**	**27.5**	**4.0E-04**

Notes

g/s = gram per second, lb/yr = pound/yr; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-2
Daily TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]						
			Foundry						
			Main Foundry - WI	Main Foundry - Steel	Hot Top	BP Mat Handling	Reclamation to MF BH	Total Main Foundry	
			(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(g/s)[a]
Model ID			--	--	--	--	--	EP2_3	
Apportioning Fraction			--	--	--	--	--	--	
ORGANIC COMPOUNDS									
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	37.1	--	37.1	0.19
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--
INORGANIC COMPOUNDS									
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	6.9E-05	--	--	1.6E-05	8.6E-05	4.5E-07
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	4.3E-03	1.32	0.36	1.69	8.9E-03
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)									
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)	401	Yes	--	--	--	--	--	--	--
METALS									
Aluminum and Compounds	7429-90-5	Yes	--	0.059	--	1.78	0.015	1.86	9.7E-03
Antimony and Compounds	7440-36-0	Yes	--	5.0E-04	--	--	3.7E-06	5.0E-04	2.6E-06
Arsenic and Compounds	7440-38-2	Yes	--	1.9E-03	--	--	2.4E-06	1.9E-03	9.8E-06
Barium and Compounds	7440-39-3	No	--	4.0E-03	--	--	9.4E-05	4.1E-03	2.1E-05
Beryllium and compounds	7440-41-7	Yes	--	--	--	--	2.6E-07	2.6E-07	1.4E-09
Cadmium and Compounds	7440-43-9	Yes	--	2.4E-04	--	--	1.4E-06	2.4E-04	1.3E-06
Chromium	7440-47-3	No	--	0.028	--	--	4.5E-04	0.028	1.5E-04
Chromium VI	18540-29-9	Yes	--	1.1E-04	--	--	1.4E-05	1.2E-04	6.3E-07
Cobalt and Compounds	7440-48-4	Yes	--	7.5E-05	--	--	3.6E-06	7.9E-05	4.1E-07
Copper and Compounds	7440-50-8	Yes	--	2.5E-03	--	--	3.0E-04	2.8E-03	1.5E-05
Lead and Compounds	7439-92-1	Yes	--	--	--	--	1.1E-04	1.1E-04	5.9E-07
Manganese and Compounds	7439-96-5	Yes	--	1.3E-03	--	--	2.6E-03	3.9E-03	2.1E-05
Mercury	7439-97-6	Yes	--	1.3E-04	--	--	--	1.3E-04	6.8E-07
Nickel and Compounds	7440-02-0	Yes	--	0.12	--	--	5.7E-05	0.12	6.4E-04
Phosphorus and Compounds	504	No	--	6.6E-03	--	--	--	6.6E-03	3.5E-05
Selenium and Compounds	7782-49-2	Yes	--	--	--	--	2.3E-06	2.3E-06	1.2E-08
Silver and Compounds	7440-22-4	No	--	4.6E-04	--	--	2.5E-06	4.6E-04	2.4E-06
Thallium	7440-28-0	No	--	--	--	--	1.5E-07	1.5E-07	7.9E-10
Vanadium (fume or dust)	7440-62-2	Yes	--	--	--	--	1.4E-05	1.4E-05	7.6E-08
Zinc and Compounds	7440-66-6	No	--	6.7E-03	--	--	5.9E-05	6.8E-03	3.6E-05
DIESEL PARTICULATE MATTER (DPM)									
DPM	200	Yes	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**0**	**0.23**	**4.3E-03**	**40.2**	**0.38**	**40.8**	**0.21**

Notes

g/s = gram per second, lb = pound; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day])
x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s])
x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-2
Daily TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]										
			Foundry						Welding				
			Cooling Bunker - WI	Cooling Bunker - Steel	Total Cooling Bunker		Reclamation to REC BH		Total Welding		Welding 1	Welding 2	Welding 3
			(lb/day)	(lb/day)	(lb/day)	(g/s)[a]	(lb/day)	(g/s)[a]	(lb/day)	(g/s)[a]	(g/s)[b]	(g/s)[b]	(g/s)[b]
Model ID			--	--	EP2_4		EP2_2		--	--	WELD1	WELD2	WELD3
Apportioning Fraction			--	--	--		--		--		0.33	0.33	0.33
ORGANIC COMPOUNDS													
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS													
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	--	3.2E-04	3.2E-04	1.7E-06	1.5E-05	7.7E-08	0.019	1.0E-04	3.3E-05	3.3E-05	3.3E-05
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	0.32	1.7E-03	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)													
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)	401	Yes	--	--	--	--	--	--	--	--	--	--	--
METALS													
Aluminum and Compounds	7429-90-5	Yes	--	0.045	0.045	2.4E-04	0.014	7.1E-05	--	--	--	--	--
Antimony and Compounds	7440-36-0	Yes	--	4.6E-04	4.6E-04	2.4E-06	3.3E-06	1.7E-08	--	--	--	--	--
Arsenic and Compounds	7440-38-2	Yes	--	1.7E-03	1.7E-03	8.8E-06	2.2E-06	1.1E-08	--	--	--	--	--
Barium and Compounds	7440-39-3	No	--	1.5E-03	1.5E-03	7.7E-06	8.4E-05	4.4E-07	--	--	--	--	--
Beryllium and compounds	7440-41-7	Yes	--	--	--	--	2.3E-07	1.2E-09	--	--	--	--	--
Cadmium and Compounds	7440-43-9	Yes	--	9.7E-05	9.7E-05	5.1E-07	1.3E-06	6.7E-09	--	--	--	--	--
Chromium	7440-47-3	No	--	7.6E-03	7.6E-03	4.0E-05	4.1E-04	2.1E-06	0.040	2.1E-04	7.1E-05	7.1E-05	7.1E-05
Chromium VI	18540-29-9	Yes	--	1.5E-04	1.5E-04	7.9E-07	1.2E-05	6.4E-08	2.0E-03	1.1E-05	3.5E-06	3.5E-06	3.5E-06
Cobalt and Compounds	7440-48-4	Yes	--	6.1E-05	6.1E-05	3.2E-07	3.2E-06	1.7E-08	--	--	--	--	--
Copper and Compounds	7440-50-8	Yes	--	2.3E-03	2.3E-03	1.2E-05	2.7E-04	1.4E-06	4.6E-03	2.4E-05	8.1E-06	8.1E-06	8.1E-06
Lead and Compounds	7439-92-1	Yes	--	1.1E-03	1.1E-03	6.0E-06	1.0E-04	5.3E-07	--	--	--	--	--
Manganese and Compounds	7439-96-5	Yes	--	6.8E-04	6.8E-04	3.6E-06	2.4E-03	1.3E-05	0.013	6.7E-05	2.2E-05	2.2E-05	2.2E-05
Mercury	7439-97-6	Yes	--	9.1E-05	9.1E-05	4.8E-07	--	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	--	0.037	0.037	1.9E-04	5.1E-05	2.7E-07	0.042	2.2E-04	7.3E-05	7.3E-05	7.3E-05
Phosphorus and Compounds	504	No	--	5.4E-03	5.4E-03	2.8E-05	--	--	--	--	--	--	--
Selenium and Compounds	7782-49-2	Yes	--	--	--	--	2.1E-06	1.1E-08	--	--	--	--	--
Silver and Compounds	7440-22-4	No	--	--	--	--	2.3E-06	1.2E-08	--	--	--	--	--
Thallium	7440-28-0	No	--	--	--	--	1.4E-07	7.1E-10	--	--	--	--	--
Vanadium (fume or dust)	7440-62-2	Yes	--	--	--	--	1.3E-05	6.8E-08	--	--	--	--	--
Zinc and Compounds	7440-66-6	No	--	6.7E-03	6.7E-03	3.5E-05	5.3E-05	2.8E-07	--	--	--	--	--
DIESEL PARTICULATE MATTER (DPM)													
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**0**	**0.11**	**0.11**	**5.8E-04**	**0.34**	**1.8E-03**	**0.12**	**6.3E-04**	**2.1E-04**	**2.1E-04**	**2.1E-04**

Notes

g/s = gram per second, lb = pound; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-2
Daily TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]											
			Finishing Baghouse					Grinding Fugitives						
			Grinding SS (Controlled)	Grinding NSS (Controlled)	Shot Blast	TOTAL to Finishing BH		Grinding SS (Fugitive)	Grinding NSS (Fugitive)	Total Grinding Fugitives		Grinding Fugitives 1	Grinding Fugitives 2	Grinding Fugitives 3
			(lb/day)	(lb/day)	(lb/day)	(lb/day)	(g/s)[a]	(lb/day)	(lb/day)	(lb/day)	(g/s)[a]	(g/s)[b]	(g/s)[b]	(g/s)[b]
Model ID			--	--	--	EP3_1		--	--	--	--	FIN_FUG1	FIN_FUG2	FIN_FUG3
Apportioning Fraction			--	--	--	--		--	--	--	--	0.33	0.33	0.33
ORGANIC COMPOUNDS														
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS														
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	1.0E-03	6.6E-03	2.8E-04	7.9E-03	4.1E-05	1.5E-04	9.9E-04	1.1E-03	6.0E-06	2.0E-06	2.0E-06	2.0E-06
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)														
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)	401	Yes	--	--	--	--	--	--	--	--	--	--	--	--
METALS														
Aluminum and Compounds	7429-90-5	Yes	6.4E-04	4.2E-03	3.2E-04	5.2E-03	2.7E-05	9.6E-05	6.3E-04	7.3E-04	3.8E-06	1.3E-06	1.3E-06	1.3E-06
Antimony and Compounds	7440-36-0	Yes	3.5E-07	2.3E-06	8.1E-06	1.1E-05	5.6E-08	5.2E-08	3.4E-07	4.0E-07	2.1E-09	6.9E-10	6.9E-10	6.9E-10
Arsenic and Compounds	7440-38-2	Yes	2.1E-06	1.4E-05	2.5E-05	4.0E-05	2.1E-07	3.1E-07	2.1E-06	2.4E-06	1.3E-08	4.2E-09	4.2E-09	4.2E-09
Barium and Compounds	7440-39-3	No	1.9E-05	1.2E-04	2.6E-06	1.4E-04	7.6E-07	2.8E-06	1.8E-05	2.1E-05	1.1E-07	3.7E-08	3.7E-08	3.7E-08
Beryllium and compounds	7440-41-7	Yes	6.9E-08	4.6E-07	5.2E-07	1.0E-06	5.5E-09	1.0E-08	6.9E-08	7.9E-08	4.1E-10	1.4E-10	1.4E-10	1.4E-10
Cadmium and Compounds	7440-43-9	Yes	5.4E-07	3.6E-06	5.2E-07	4.6E-06	2.4E-08	8.1E-08	5.3E-07	6.2E-07	3.2E-09	1.1E-09	1.1E-09	1.1E-09
Chromium	7440-47-3	No	0.035	4.4E-03	1.2E-03	0.040	2.1E-04	5.2E-03	6.6E-04	5.9E-03	3.1E-05	1.0E-05	1.0E-05	1.0E-05
Chromium VI	18540-29-9	Yes	1.0E-03	1.3E-04	3.7E-05	1.2E-03	6.3E-06	1.6E-04	2.0E-05	1.8E-04	9.2E-07	3.1E-07	3.1E-07	3.1E-07
Cobalt and Compounds	7440-48-4	Yes	1.0E-05	6.7E-05	3.5E-05	1.1E-04	5.9E-07	1.5E-06	1.0E-05	1.2E-05	6.1E-08	2.0E-08	2.0E-08	2.0E-08
Copper and Compounds	7440-50-8	Yes	1.0E-04	--	1.3E-03	1.4E-03	7.6E-06	1.5E-05	--	1.5E-05	7.9E-08	2.6E-08	2.6E-08	2.6E-08
Lead and Compounds	7439-92-1	Yes	6.0E-07	4.0E-06	4.0E-06	8.5E-06	4.5E-08	9.0E-08	6.0E-07	6.9E-07	3.6E-09	1.2E-09	1.2E-09	1.2E-09
Manganese and Compounds	7439-96-5	Yes	1.3E-03	0.11	3.3E-03	0.12	6.1E-04	2.0E-04	0.017	0.017	8.9E-05	3.0E-05	3.0E-05	3.0E-05
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	0.027	7.0E-03	5.1E-04	0.034	1.8E-04	4.0E-03	1.1E-03	5.1E-03	2.7E-05	8.8E-06	8.8E-06	8.8E-06
Phosphorus and Compounds	504	No	5.3E-05	6.1E-04	--	6.7E-04	3.5E-06	8.0E-06	9.2E-05	1.0E-04	5.3E-07	1.8E-07	1.8E-07	1.8E-07
Selenium and Compounds	7782-49-2	Yes	3.5E-07	2.3E-06	2.6E-07	2.9E-06	1.5E-08	5.2E-08	3.4E-07	4.0E-07	2.1E-09	6.9E-10	6.9E-10	6.9E-10
Silver and Compounds	7440-22-4	No	6.9E-08	4.6E-07	5.2E-07	1.0E-06	5.5E-09	1.0E-08	6.9E-08	7.9E-08	4.1E-10	1.4E-10	1.4E-10	1.4E-10
Thallium	7440-28-0	No	6.9E-08	4.6E-07	5.2E-07	1.0E-06	5.5E-09	1.0E-08	6.9E-08	7.9E-08	4.1E-10	1.4E-10	1.4E-10	1.4E-10
Vanadium (fume or dust)	7440-62-2	Yes	8.0E-06	5.3E-05	4.6E-05	1.1E-04	5.6E-07	1.2E-06	7.9E-06	9.2E-06	4.8E-08	1.6E-08	1.6E-08	1.6E-08
Zinc and Compounds	7440-66-6	No	4.5E-06	2.9E-05	4.5E-05	7.9E-05	4.1E-07	6.7E-07	4.4E-06	5.1E-06	2.7E-08	8.9E-09	8.9E-09	8.9E-09
DIESEL PARTICULATE MATTER (DPM)														
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**0.065**	**0.14**	**7.2E-03**	**0.21**	**1.1E-03**	**9.8E-03**	**0.020**	**0.030**	**1.6E-04**	**5.3E-05**	**5.3E-05**	**5.3E-05**

Notes

g/s = gram per second, lb = pound; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-2
Daily TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]											
			Small Palmer BH						Screening Station Baghouse					
			Small Palmer	Small Palmer Mat	Small Palmer Silo	AirArc	Total to Small Palmer BH		Reclaimed Bead Silo	Reclaimed Bead Overflow	New Bead Silo	Screening Station	Total to Screening BH	
			(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(g/s)[a]	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(g/s)[a]
Model ID			--	--	--	--	EP1_1		--	--	--	--	EP1_3	
Apportioning Fraction			--	--	--	--	--		--	--	--	--	--	
ORGANIC COMPOUNDS														
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Acrolein	107-02-8	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Hexane	110-54-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Isopropanol	67-63-0	Yes	--	10.4	--	--	10.4	0.055	--	--	--	--	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	108-95-2	Yes	--	0.052	--	--	0.052	2.7E-04	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	--	--	--	--	--	--
INORGANIC COMPOUNDS														
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum trioxide	1313-27-5	No	1.4E-05	--	--	3.0E-05	4.3E-05	2.3E-07	--	--	--	1.2E-04	1.2E-04	6.3E-07
Silicon dioxide (amorphous)	7631-86-9	Yes	--	1.33	1.5E-03	--	1.33	7.0E-03	1.5E-03	1.5E-03	1.1E-03	2.60	2.60	0.014
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)														
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (excluding Naphthalene)	401	Yes	--	--	--	--	--	--	--	--	--	--	--	--
METALS														
Aluminum and Compounds	7429-90-5	Yes	5.9E-03	1.63	2.1E-05	--	1.64	8.6E-03	2.1E-05	2.1E-05	1.4E-03	0.036	0.037	2.0E-04
Antimony and Compounds	7440-36-0	Yes	8.4E-07	--	2.9E-09	--	8.4E-07	4.4E-09	2.9E-09	2.9E-09	--	5.0E-06	5.0E-06	2.6E-08
Arsenic and Compounds	7440-38-2	Yes	6.9E-07	--	1.1E-09	--	6.9E-07	3.6E-09	1.1E-09	1.1E-09	--	1.9E-06	1.9E-06	1.0E-08
Barium and Compounds	7440-39-3	No	3.5E-05	--	1.0E-07	--	3.5E-05	1.8E-07	1.0E-07	1.0E-07	--	1.8E-04	1.8E-04	9.2E-07
Beryllium and compounds	7440-41-7	Yes	5.7E-08	--	2.2E-10	--	5.7E-08	3.0E-10	2.2E-10	2.2E-10	--	3.8E-07	3.8E-07	2.0E-09
Cadmium and Compounds	7440-43-9	Yes	1.3E-07	--	2.2E-10	--	1.3E-07	6.9E-10	2.2E-10	2.2E-10	--	3.8E-07	3.8E-07	2.0E-09
Chromium	7440-47-3	No	5.6E-05	--	2.4E-07	2.0E-05	7.6E-05	4.0E-07	2.4E-07	2.4E-07	--	4.2E-04	4.2E-04	2.2E-06
Chromium VI	18540-29-9	Yes	1.7E-06	--	7.3E-09	5.9E-07	2.3E-06	1.2E-08	7.3E-09	7.3E-09	--	1.3E-05	1.3E-05	6.6E-08
Cobalt and Compounds	7440-48-4	Yes	9.5E-07	--	3.9E-09	--	9.6E-07	5.0E-09	3.9E-09	3.9E-09	--	6.6E-06	6.6E-06	3.5E-08
Copper and Compounds	7440-50-8	Yes	1.5E-04	--	7.3E-07	0	1.5E-04	7.9E-07	7.3E-07	7.3E-07	--	1.3E-03	1.3E-03	6.6E-06
Lead and Compounds	7439-92-1	Yes	1.8E-05	--	5.0E-08	--	1.8E-05	9.4E-08	5.0E-08	5.0E-08	--	8.6E-05	8.6E-05	4.5E-07
Manganese and Compounds	7439-96-5	Yes	4.5E-04	--	1.9E-06	5.0E-04	9.5E-04	5.0E-06	1.9E-06	1.9E-06	--	3.3E-03	3.3E-03	1.8E-05
Mercury	7439-97-6	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Nickel and Compounds	7440-02-0	Yes	2.1E-05	--	1.2E-07	3.2E-05	5.3E-05	2.8E-07	1.2E-07	1.2E-07	--	2.1E-04	2.1E-04	1.1E-06
Phosphorus and Compounds	504	No	--	--	--	2.8E-06	2.8E-06	1.5E-08	--	--	--	--	--	--
Selenium and Compounds	7782-49-2	Yes	2.8E-07	--	1.1E-09	--	2.9E-07	1.5E-09	1.1E-09	1.1E-09	--	1.9E-06	1.9E-06	1.0E-08
Silver and Compounds	7440-22-4	No	3.6E-07	--	1.3E-09	--	3.6E-07	1.9E-09	1.3E-09	1.3E-09	--	2.2E-06	2.2E-06	1.2E-08
Thallium	7440-28-0	No	5.7E-08	--	2.2E-10	--	5.7E-08	3.0E-10	2.2E-10	2.2E-10	--	3.8E-07	3.8E-07	2.0E-09
Vanadium (fume or dust)	7440-62-2	Yes	3.9E-06	--	1.2E-08	--	3.9E-06	2.0E-08	1.2E-08	1.2E-08	--	2.0E-05	2.0E-05	1.1E-07
Zinc and Compounds	7440-66-6	No	9.6E-05	--	2.4E-07	--	9.7E-05	5.1E-07	2.4E-07	2.4E-07	--	4.1E-04	4.1E-04	2.2E-06
DIESEL PARTICULATE MATTER (DPM)														
DPM	200	Yes	--	--	--	--	--	--	--	--	--	--	--	--
Total TAC Emissions Estimate			**6.8E-03**	**13.4**	**1.5E-03**	**5.9E-04**	**13.4**	**0.071**	**1.5E-03**	**1.5E-03**	**2.5E-03**	**2.64**	**2.64**	**0.014**

Notes

g/s = gram per second, lb = pound; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-2
Daily TAC Emission Rates—Significant TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Emissions Estimate [1]							
			Mesh Blast		Slag Handling		Pattern Making		Emergency Generator	
			(lb/day)	(g/s)[a]	(lb/day)	(g/s)[a]	(lb/day)	(g/s)[a]	(lb/day)	(g/s)[a]
Model ID			MESH		SLAG		PTRN		EGEN	
Apportioning Fraction			--		--		--		--	
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	0.011	6.0E-05
Acrolein	107-02-8	Yes	--	--	--	--	--	--	4.9E-04	2.6E-06
Benzene	71-43-2	Yes	--	--	--	--	--	--	2.7E-03	1.4E-05
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	3.2E-03	1.7E-05
Ethylbenzene	100-41-4	Yes	--	--	--	--	--	--	1.6E-04	8.4E-07
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	0.025	1.3E-04
Hexane	110-54-3	Yes	--	--	--	--	--	--	3.9E-04	2.1E-06
Isopropanol	67-63-0	Yes	--	--	--	--	0.011	5.9E-05	--	--
Methyl Ethyl Ketone	78-93-3	Yes	--	--	--	--	0.039	2.1E-04	--	--
n-Butyl Alcohol	71-36-3	No	--	--	--	--	0.011	5.9E-05	--	--
Phenol	108-95-2	Yes	--	--	--	--	--	--	--	--
Toluene	108-88-3	Yes	--	--	--	--	0.19	9.8E-04	1.5E-03	8.1E-06
1,2,4-Trimethylbenzene	95-63-6	Yes	--	--	--	--	0.15	7.7E-04	--	--
Xylene (mixed)	1330-20-7	Yes	--	--	--	--	--	--	6.2E-04	3.2E-06
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	0.012	6.1E-05
Hydrochloric Acid	7647-01-0	Yes	--	--	--	--	--	--	2.7E-03	1.4E-05
Molybdenum trioxide	1313-27-5	No	2.7E-04	1.4E-06	2.0E-06	1.0E-08	--	--	--	--
Silicon dioxide (amorphous)	7631-86-9	Yes	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	5.1E-07	2.7E-09
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	2.9E-04	1.5E-06
PAHs (excluding Naphthalene)	401	Yes	--	--	--	--	--	--	5.3E-04	2.8E-06
METALS										
Aluminum and Compounds	7429-90-5	Yes	3.1E-04	1.6E-06	7.6E-05	4.0E-07	--	--	--	--
Antimony and Compounds	7440-36-0	Yes	7.7E-06	4.0E-08	8.8E-09	4.6E-11	--	--	--	--
Arsenic and Compounds	7440-38-2	Yes	2.3E-05	1.2E-07	8.8E-09	4.6E-11	--	--	2.3E-05	1.2E-07
Barium and Compounds	7440-39-3	No	2.4E-06	1.3E-08	1.7E-07	8.9E-10	--	--	--	--
Beryllium and compounds	7440-41-7	Yes	4.9E-07	2.6E-09	1.8E-09	9.3E-12	--	--	--	--
Cadmium and Compounds	7440-43-9	Yes	4.9E-07	2.6E-09	1.8E-09	9.3E-12	--	--	2.2E-05	1.1E-07
Chromium	7440-47-3	No	1.2E-03	6.1E-06	4.3E-05	2.2E-07	--	--	--	--
Chromium VI	18540-29-9	Yes	3.5E-05	1.8E-07	2.6E-07	1.3E-09	--	--	1.5E-06	7.7E-09
Cobalt and Compounds	7440-48-4	Yes	3.4E-05	1.8E-07	5.9E-08	3.1E-10	--	--	--	--
Copper and Compounds	7440-50-8	Yes	1.3E-03	6.7E-06	4.0E-07	2.1E-09	--	--	6.0E-05	3.1E-07
Lead and Compounds	7439-92-1	Yes	3.8E-06	2.0E-08	6.7E-09	3.5E-11	--	--	1.2E-04	6.4E-07
Manganese and Compounds	7439-96-5	Yes	3.1E-03	1.6E-05	1.3E-04	6.7E-07	--	--	4.5E-05	2.4E-07
Mercury	7439-97-6	Yes	--	--	7.1E-10	3.7E-12	--	--	2.9E-05	1.5E-07
Nickel and Compounds	7440-02-0	Yes	4.9E-04	2.6E-06	6.4E-07	3.3E-09	--	--	5.7E-05	3.0E-07
Phosphorus and Compounds	504	No	--	--	8.8E-07	4.6E-09	--	--	--	--
Selenium and Compounds	7782-49-2	Yes	2.4E-07	1.3E-09	8.8E-09	4.6E-11	--	--	3.2E-05	1.7E-07
Silver and Compounds	7440-22-4	No	4.9E-07	2.6E-09	1.8E-09	9.3E-12	--	--	--	--
Thallium	7440-28-0	No	4.9E-07	2.6E-09	1.8E-09	9.3E-12	--	--	--	--
Vanadium (fume or dust)	7440-62-2	Yes	4.4E-05	2.3E-07	9.4E-08	4.9E-10	--	--	--	--
Zinc and Compounds	7440-66-6	No	4.3E-05	2.3E-07	3.5E-08	1.9E-10	--	--	--	--
DIESEL PARTICULATE MATTER (DPM)										
DPM	200	Yes	--	--	--	--	--	--	0.49	2.6E-03
Total TAC Emissions Estimate			**6.8E-03**	**3.6E-05**	**2.5E-04**	**1.3E-06**	**0.40**	**2.1E-03**	**0.55**	**2.9E-03**

Notes

g/s = gram per second, lb = pound; RBC = risk-based concentration.

TAC = toxic air contaminant; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

Table 3-3
Annual TAC Emission Rates—Gas Combustion TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Gas Combustion Emissions Estimate					
			Total Heat Treat		Heat Treat Furnace 1	Heat Treat Furnace 2	Heat Treat Furnace 3	Heat Treat Furnace 4
			(lb/yr) [1]	(g/s) [a]	(g/s) [b]	(g/s) [b]	(g/s) [b]	(g/s) [b]
Model ID			--	--	HT_1	HT_2	HT_3	HT_4
Apportioning Fraction			--	--	0.25	0.25	0.25	0.25
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	0.082	1.2E-06	2.9E-07	2.9E-07	2.9E-07	2.9E-07
Acrolein	107-02-8	Yes	0.052	7.4E-07	1.9E-07	1.9E-07	1.9E-07	1.9E-07
Benzene	71-43-2	Yes	0.15	2.2E-06	5.5E-07	5.5E-07	5.5E-07	5.5E-07
Ethylbenzene	100-41-4	Yes	0.18	2.6E-06	6.5E-07	6.5E-07	6.5E-07	6.5E-07
Formaldehyde	50-00-0	Yes	0.33	4.7E-06	1.2E-06	1.2E-06	1.2E-06	1.2E-06
Hexane	110-54-3	Yes	0.12	1.7E-06	4.3E-07	4.3E-07	4.3E-07	4.3E-07
Toluene	108-88-3	Yes	0.70	1.0E-05	2.5E-06	2.5E-06	2.5E-06	2.5E-06
Xylene (mixed)	1330-20-7	Yes	0.52	7.5E-06	1.9E-06	1.9E-06	1.9E-06	1.9E-06
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	64.7	9.3E-04	2.3E-04	2.3E-04	2.3E-04	2.3E-04
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
Naphthalene	91-20-3	Yes	6.5E-03	9.3E-08	2.3E-08	2.3E-08	2.3E-08	2.3E-08
PAHs (excluding Naphthalene)	401	Yes	2.2E-03	3.1E-08	7.8E-09	7.8E-09	7.8E-09	7.8E-09
Total TAC Emissions Estimate			**66.8**	**9.6E-04**	**2.4E-04**	**2.4E-04**	**2.4E-04**	**2.4E-04**

Notes

g/s = gram per second; lb/yr = pound per year; RBC = risk-based concentration; TEU = toxic emission unit.

[a] Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction) (2)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

Table 3-4
Daily TAC Emission Rates—Gas Combustion TEUs
Eagle Foundry Company

Toxic Air Contaminant	CAS/DEQ ID	RBC? (Yes/No)	Gas Combustion Emissions Estimate					
			Total Heat Treat		Heat Treat Furnace 1	Heat Treat Furnace 2	Heat Treat Furnace 3	Heat Treat Furnace 4
			(lb/day) [1]	(g/s) [a]	(g/s) [b]	(g/s) [b]	(g/s) [b]	(g/s) [b]
Model ID			--	--	HT_1	HT_2	HT_3	HT_4
Apportioning Fraction			--	--	0.25	0.25	0.25	0.25
ORGANIC COMPOUNDS								
Acetaldehyde	75-07-0	Yes	3.4E-04	1.8E-06	4.5E-07	4.5E-07	4.5E-07	4.5E-07
Acrolein	107-02-8	Yes	2.2E-04	1.1E-06	2.8E-07	2.8E-07	2.8E-07	2.8E-07
Benzene	71-43-2	Yes	6.4E-04	3.3E-06	8.4E-07	8.4E-07	8.4E-07	8.4E-07
Ethylbenzene	100-41-4	Yes	7.5E-04	4.0E-06	9.9E-07	9.9E-07	9.9E-07	9.9E-07
Formaldehyde	50-00-0	Yes	1.4E-03	7.1E-06	1.8E-06	1.8E-06	1.8E-06	1.8E-06
Hexane	110-54-3	Yes	5.0E-04	2.6E-06	6.6E-07	6.6E-07	6.6E-07	6.6E-07
Toluene	108-88-3	Yes	2.9E-03	1.5E-05	3.8E-06	3.8E-06	3.8E-06	3.8E-06
Xylene (mixed)	1330-20-7	Yes	2.2E-03	1.1E-05	2.8E-06	2.8E-06	2.8E-06	2.8E-06
INORGANIC COMPOUNDS								
Ammonia	7664-41-7	Yes	0.27	1.4E-03	3.5E-04	3.5E-04	3.5E-04	3.5E-04
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)								
Naphthalene	91-20-3	Yes	2.7E-05	1.4E-07	3.5E-08	3.5E-08	3.5E-08	3.5E-08
PAHs (excluding Naphthalene)	401	Yes	9.0E-06	4.7E-08	1.2E-08	1.2E-08	1.2E-08	1.2E-08
Total TAC Emissions Estimate			**0.28**	**1.5E-03**	**3.7E-04**	**3.7E-04**	**3.7E-04**	**3.7E-04**

Notes

g/s = gram per second; lb/day = pound per day; RBC = risk-based concentration; TEU = toxic emission unit.

[a] Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

[b] Emission rate (g/s) = (total emission rate [g/s]) x (apportioning fraction) (2)

References

[1] Emission estimates obtained from the emissions inventory dated November, 2024.

[2] Emission estimates equally apportioned among the defined model source representations.

Table 3-5
Model Source Parameters—Point Sources
Eagle Foundry Company

Point Sources											
Model ID	Model Source Description	UTM Coordinates [1] (m)		Emission Rate [2] (g/s)	Discharge Orientation [1]	Base Elevation [3] (m)	Release Height [1] (m)	Stack Diameter [1] (m)	Exit Velocity [1] (m/s)	Exit Flowrate [a] (m^3/s)	Exit Temperature [1] (K)
		Easting	Northing								
Significant Toxic Emission Units											
EP2_3	Main Foundry Baghouse (White Iron and Steel Melting and Pouring, Hot Top, Big Palmer Material Handling, Reclamation	550638.32	5022565.5	1	VERTICAL	107.29	11.43	1.55	12.5	23.6	Ambient
EP2_4	Foundry Cooling Bunker	550641.02	5022558.8	1	VERTICAL	107.34	11.43	1.42	15.0	23.6	Ambient
EP2_2	Reclamation Baghouse	550591.98	5022555.4	1	VERTICAL	107.25	6.858	0.91	13.7	8.97	Ambient
EP1_1	Small Palmer Baghouse (Small Palmer, Small Palmer Material Handling, Small Palmer Silo, Air Arc)	550542.2	5022571.2	1	VERTICAL	107.13	4.877	0.98	6.3	4.72	Ambient
EP1_3	Screening Station Baghouse (Screening Station, Reclaimed Bead Silo, Reclaimed Bead Overflow Silo, New Bead Silo)	550563.47	5022527.4	1	VERTICAL	107.09	6.096	0.36	23.8	2.36	Ambient
MESH	Mesh Blast	550508.04	5022530.2	1	VERTICAL	107.67	5.029	0.46	28.7	4.72	Ambient
EP3_1	Finishing Baghouse (Controlled Grinding, Rotoblast)	550480.71	5022531.3	1	VERTICAL	107.60	9.144	0.91	21.6	14.2	Ambient
WELD1	Welding Stack 1	550511.05	5022517.7	1	VERTICAL	107.71	10.058	0.20	10.9	0.35	Ambient
WELD2	Welding Stack 2	550497.73	5022500.2	1	VERTICAL	107.60	10.058	0.15	19.4	0.35	Ambient
WELD3	Welding Stack 3	550497.47	5022500.9	1	VERTICAL	107.59	10.058	0.20	10.9	0.35	Ambient
EGEN	Diesel Emergency Generator	550615.26	5022532	1	VERTICAL	107.37	1.829	0.15	5.17	0.094	748
Gas Combustion Toxic Emission Units											
HT_1	Heat Treat Propane Combustion	550501.78	5022501.5	1	VERTICAL	107.65	11.5824	0.76	5.17	2.36	428
HT_2	Heat Treat Propane Combustion	550507.53	5022490.2	1	VERTICAL	107.74	11.5824	0.76	5.17	2.36	428
HT_3	Heat Treat Propane Combustion	550511.52	5022492.2	1	VERTICAL	107.82	11.5824	0.76	5.17	2.36	428
HT_4	Heat Treat Propane Combustion	550511.36	5022482.3	1	VERTICAL	107.72	11.5824	0.76	5.17	2.36	428

Notes

K = kelvin; m = meter; m^3 = cubic meters; s = second; UTM = universal transverse mercator.

[a] Exit flowrate (m^3/s) = ($\pi/4$) x (stack diameter [m])^2 x (exit velocity [m/s])

References

[1] Value based on information provided by Eagle Foundry Company.

[2] Dispersion model was executed using unit-emission rates.

[3] Base elevation derived from the US Geological Survey National Elevation Dataset downloaded and processed using AERMET.

Table 3-6
Model Source Parameters—Volume and Area Sources
Eagle Foundry Company

Volume and Area Sources									
Model ID	Model Source Description	UTM Coordinates [1] (m)		Emission Rate [2] (g/s)	Base Elevation [3] (m)	Release Height [1] (m)	Length of Side (m)	Initial Lateral Dimension [a] (m)	Initial Vertical Dimension (m)
		Easting	Northing						
Volume Sources									
PTRN	Pattern Making Mass Balance	550649.934	5022593.18	1	107.16	4.572	0.46 [1]	0.11	2.127
FIN_FUG1	Grinding Fugitive Emissions	550486.529	5022562.19	1	107.71	1.372	2.13 [1]	0.50	3.120
FIN_FUG2	Grinding Fugitive Emissions	550509.592	5022519.70	1	107.72	1.372	2.13 [1]	0.50	3.120
FIN_FUG3	Grinding Fugitive Emissions	550522.293	5022496.99	1	107.76	1.372	2.13 [1]	0.50	3.120
Area Source									
SLAG	Slag Handling	550597.06	5022521.13	1.15	107.37	0.762	1.07 [5]	0.25	--

Notes

g = gram; m = meter; s = second; UTM = universal transverse mercator.

[a] Initial lateral dimension (m) = (length of side [m]) / (4.3); see Reference (4).

References

[1] Value based on information provided by Eagle Foundry Company.

[2] Dispersion model was executed using unit-emission rates.

[3] Base elevation derived from the US Geological Survey National Elevation Dataset downloaded and processed using AERMET.

[4] See "User's Guide for the AMS/EPA Regulatory Model (AERMOD)," EPA-454/B-18-001 dated April 2018. See Table 3-2. Assumes elevated source on or adjacent to a building. Building and downwash structure heights presented in Table 4-7, Summary of Proposed Downwash Structure Heights.

[5] Engineering judgement based on pile size.

Table 4-3
Assessment of Missing Meteorological Data
Eagle Foundry Company

Quarter [1]	Non-modeling Period [2]			Pre-Substitution Meteorological Data Assessment (Modeling Period)															
	2019			2020			2021			2022			2023			2024			
	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)
Q1	2,160	0	100% [4]	2,184	7	99.7%	2,160	258	88.1% [5]	2,160	0	100%	2,160	35	98.4%	2,184	21	99.0%
Q2	2,184	23	98.9%	2,184	0	100%	2,184	39	98.2%	2,184	11	99.5%	2,184	22	99.0%	2,184	119	94.6%
Q3	2,208	13	99.4%	2,208	10	99.5%	2,208	26	98.8%	2,208	12	99.5%	2,208	0	100%	2,208	22	99.0%
Q4	2,208	0	100%	2,208	43	98.1%	2,208	22	99.0%	2,208	23	99.0%	2,208	6	100%	2,208	36	98.4%

Quarter [1]	Post-Substitution Meteorological Data Assessment (Modeling Period)														
	2020			2021			2022			2023			2024		
	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)	Total Hours	Missing Hours [3]	Available [a] (%)
Q1	2,184	7	99.7%	2,160	0	100%	2,160	0	100%	2,160	35	98.4%	2,184	21	99.0%
Q2	2,184	0	100%	2,184	39	98.2%	2,184	11	99.5%	2,184	22	99.0%	2,184	119	94.6%
Q3	2,208	10	99.5%	2,208	26	98.8%	2,208	12	99.5%	2,208	0	100%	2,208	22	99.0%
Q4	2,208	43	98.1%	2,208	22	99.0%	2,208	23	99.0%	2,208	6	100%	2,208	36	98.4%

Notes

Q1 = quarter 1; Q2 = quarter 2; Q3= quarter 3; Q4 = quarter 4; SFC = Surface

[a] Available hours (%) = (1 - [{missing hours} / {total hours}]) x (100%)

References

[1] Site-specific meteorological data obtained from the Oregon Department of Environmental Quality for the Carus Spangler Road station and integrated surface hourly data for the Auora State Airport station (WBAN: 94281) obtained from the National Oceanic and Atmospheric Administration National Climatic Data Center .

[2] Represents the 2019 calendar year that had individual quarters appropriate for data substitution for the chosen modeling dataset.

[3] The number of missing hours was determined by generating a SFC QA excel file generated by AERMET version 24142.

[4] Q1 2019 was chosen as a substitute for Q1 2021 due to the excellent data completeness.

[5] Data completeness for this quarter is less than 90 percent. Therefore, the calendar quarter requires meteorological data substitution.

Table 4-4
AERSURFACE Settings
Eagle Foundry Company

Parameter	Setting
Study radius for surface roughness	1.0 kilometer
Are the surface data collected at an airport?	Yes
Should continuous snow cover be assumed?	No
Is this an arid region?	No
Number of sectors	12
Months assumed to constitute "winter"	December, January, and February
Months assumed to constitute "spring"	March, April, and May
Months assumed to constitute "summer"	June, July, and August
Months assumed to constitute "autumn"	September, October, and November
Period for land use calculations	Monthly

Table 4-5
Surface Soil Moisture Condition Assessment
Eagle Foundry Company

Calendar Year	Total Precipitation [1] (in)	Climatic Significance [2] (in)	Calendar Year Soil Moisture [3] (in)
2020	36.1	Middle 40th Percentile	Average
2021	37.4	Middle 40th Percentile	Average
2022	37.2	Middle 40th Percentile	Average
2023	36.1	Middle 40th Percentile	Average
2024	40.4	Middle 40th Percentile	Average

26-Year Climate Precipitation Data [4]		
Average Annual Precipitation	[5]	38.0
Lower 30th Percentile Annual Precipitation	[6]	35.8
Upper 70th Percentile Annual Precipitation	[7]	41.0

References:

[1] Climatological data obtained from Western Regional Climate Center for the Aurora State Airport in Canby, OR (Station ID: 94281). The Aurora station was chosen as it is the same station used for the ISD data for AERMET and also represents the closest station to the Carus Spangler DEQ station used as site-specific data. The Aurora State station only has 26 consecutive years of precipitation data. Therefore, the climatological period consists of a 26-year period. No other stations were identified around the modeling domain that had 3 0-consecutive years of precipitation data or were closer to both stations.

[2] Climatic significance represents annual precipitation compared to 26-year climatological period.

[3] Surface moisture conditions correspond to "Dry", "Average" or "Wet" soil content determined by comparing annual precipitation to 26-year climatological period. This method is consistent with the methodology set forth in the current version of the USEPA AERSURFACE User's Guide dated February, 2020.

[4] Represents 26-year period between January 1999 and December 2024.

[5] Represents average annual precipitation during 26-year climatological period.

[6] Represents lower limit of middle 40th percentile annual precipitation during 26-year climatological period.

[7] Represents upper limit of middle 40th percentile annual precipitation during 26-year climatological period.

Table 4-7
Summary of Downwash Structure Heights
Eagle Foundry Company

Downwash Structure Model ID	Description	Base Elevation [1]		Number of Building Tiers	Tier Height [2]	
		(ft)	(m)		(ft)	(m)
BLD_1	Office	351.1	107.03	1	20.0	6.10
BLD_2	Lunch Room	351.7	107.20	1	16.0	4.88
BLD_3	Pattern Building	352.0	107.30	1	21.0	6.40
BLD_4	Pattern Storage A	352.1	107.32	1	15.0	4.57
BLD_5	Pattern Storage B	352.1	107.32	1	18.0	5.49
BLD_6	Manufacturing A	352.1	107.31	1	27.0	8.23
BLD_7	Manufacturing B	351.6	107.16	1	16.0	4.88
BLD_9	Scrap Prep B	351.7	107.19	1	17.0	5.18
BLD_10	Maintenance	352.0	107.29	1	27.0	8.23
BLD_11	Torch Cut	351.8	107.24	1	19.0	5.79
BLD_12	Molding A	351.8	107.22	1	20.0	6.10
BLD_13	Molding B	351.2	107.05	1	10.0	3.05
BLD_14	Finishing	353.7	107.80	1	32.0	9.75
BLD_15	Warehouse	353.6	107.78	1	20.0	6.10
BLD_16	Pattern Storage C	352.0	107.29	1	18.5	5.64
BLD_17	Pattern Storage D	351.6	107.16	1	19.0	5.79

Notes

ft = feet; m = meter.

References

[1] Base elevation derived from 1/3-arc second United States Geological Survey National Elevation Data processed using AERMAP.

[2] Information provided by Eagle Foundry Company. Value represents height above base elevation.

Table 4-10
Summary Of Statewide Zoning And Exposure Type Categorization
Eagle Foundry Company

Oregon Statewide Zoning Descriptions [1]	Corresponding Exposure Type Classification	Risk Assessments To Be Performed
Beaches and Dunes	Acute-only	Acute Noncancer
Coastal Estuarine	Acute-only	Acute Noncancer
Coastal Shorelands	Acute-only	Acute Noncancer
Combo equal emphasis	Acute-only	Acute Noncancer
Combo with priority emphasis	Acute-only	Acute Noncancer
Commercial - Central	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - General	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - Neighborhood	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Commercial - Office	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 160+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 20+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 40+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Exclusive Farm Use 80	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Federal Forest	Acute-only	Acute Noncancer
Federal Range	Acute-only	Acute Noncancer
Forest	Acute-only	Acute Noncancer
Future Urban Development	Residential	Cancer, Chronic and Acute Noncancer
High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Indian reservation/tribal trust	Residential	Cancer, Chronic and Acute Noncancer
Industrial - Heavy	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial - Light	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial Campus	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Industrial Office	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Marginal Farm Land 10+	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Medium High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Medium Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Medium-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Mineral and Aggregate	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 160+	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 20	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 40	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed Farm-Forest 80	Residential for structure, Non-Residential Worker for property	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Extremely High	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. High	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Low	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Med-high	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. Medium	Residential	Cancer, Chronic and Acute Noncancer
Mixed-Use Com. & Res. V.High	Residential	Cancer, Chronic and Acute Noncancer
No Data	Acute-only	Acute Noncancer
Open Space/Conservation	Acute-only	Acute Noncancer
Other	Acute-only	Acute Noncancer
Parks & Open Space	Acute-only	Acute Noncancer
Prime Forest 80	Acute-only	Acute Noncancer
Public & semi-public Uses	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Public Facilities	Non-Residential Worker or Child (if applicable)	Cancer, Chronic and Acute Noncancer
Rural Commercial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Rural Industrial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Rural Residential 1 acre	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 10 acres	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 2-4 acres	Residential	Cancer, Chronic and Acute Noncancer
Rural Residential 5 acres	Residential	Cancer, Chronic and Acute Noncancer
Secondary Forest 80	Acute-only	Acute Noncancer
UC Rural Commercial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
UC Rural Industrial	Non-Residential Worker	Cancer, Chronic and Acute Noncancer
Very High-density Res.	Residential	Cancer, Chronic and Acute Noncancer
Very Low-density Res.	Residential	Cancer, Chronic and Acute Noncancer

Reference

[1] Oregon statewide zoning descriptions obtained from the Department of Land Conservation and Development statewide zoning dataset.

Table 5-1
Applicable RBCs—Significant TEUs
Eagle Foundry Company

TAC	CAS/DEQ ID	RBC? (Yes/No)	Noncancer TBACT RAL [1]	Risk-Based Concentration [1] (ug/m^3)						
				Residential Chronic		Nonresidential Chronic				Acute
				Cancer	Noncancer	Child Cancer	Child Noncancer	Worker Cancer	Worker Noncancer	Noncancer
METALS										
Aluminum and Compounds	7429-90-5	Yes	HI5	--	5	--	22	--	22	--
Antimony and Compounds	7440-36-0	Yes	HI3	--	0.3	--	1.3	--	1.3	1
Arsenic and Compounds	7440-38-2	Yes	HI3	0.000024	0.00017	0.0013	0.0024	0.00062	0.0024	0.2
Beryllium and compounds	7440-41-7	Yes	HI3	0.00042	0.007	0.011	0.031	0.005	0.031	0.02
Cadmium and Compounds	7440-43-9	Yes	HI3	0.00056	0.005	0.014	0.037	0.0067	0.037	0.03
Chromium VI	18540-29-9	Yes	HI3	0.000031	0.083	0.00052	0.88	0.001	0.88	0.3
Cobalt and Compounds	7440-48-4	Yes	HI3	--	0.1	--	0.44	--	0.44	--
Copper and Compounds	7440-50-8	Yes	HI3	--	--	--	--	--	--	100
Lead and Compounds	7439-92-1	Yes	HI3	--	0.15	--	0.66	--	0.66	0.15
Manganese and Compounds	7439-96-5	Yes	HI3	--	0.09	--	0.4	--	0.4	0.3
Mercury	7439-97-6	Yes	HI3	--	0.077	--	0.63	--	0.63	0.6
Nickel and Compounds	7440-02-0	Yes	HI3	0.0038	0.014	0.1	0.062	0.046	0.062	0.2
Selenium and Compounds	7782-49-2	Yes	HI3	--	--	--	--	--	--	2
Vanadium (fume or dust)	7440-62-2	Yes	HI3	--	0.1	--	0.44	--	0.44	0.8
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	HI3	--	500	--	2,200	--	2,200	1,200
Hydrochloric Acid	7647-01-0	Yes	HI3	--	20	--	88	--	88	2,100
Silicon dioxide (respirable)	7631-86-9	Yes	HI5	--	3	--	13	--	13	--
ORGANIC COMPOUNDS										
Acetaldehyde	75-07-0	Yes	HI3	0.45	140	12	620	5.5	620	470
Acrolein	107-02-8	Yes	HI5	--	0.35	--	1.5	--	1.5	6.9
Benzene	71-43-2	Yes	HI3	0.13	3	3.3	13	1.5	13	29
1,3-Butadiene	106-99-0	Yes	HI3	0.033	2	0.86	8.8	0.4	8.8	660
Ethylbenzene	100-41-4	Yes	HI3	0.4	260	10	1,100	4.8	1,100	22,000
Formaldehyde	50-00-0	Yes	HI3	0.17	9	4.3	40	2	40	49
Hexane	110-54-3	Yes	HI3	--	700	--	3,100	--	3,100	--
Isopropanol	67-63-0	Yes	HI3	--	200	--	880	--	880	3,200
Methyl Ethyl Ketone	78-93-3	Yes	HI3	--	5,000	--	22,000	--	22,000	5,000
Phenol	108-95-2	Yes	HI3	--	200	--	880	--	880	5,800
Toluene	108-88-3	Yes	HI3	--	5,000	--	22,000	--	22,000	7,500
1,2,4-Trimethylbenzene	95-63-6	Yes	HI3	--	60	--	260	--	260	--
Xylene (mixed)	1330-20-7	Yes	HI3	--	220	--	970	--	970	8,700
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)										
Benzo[a]pyrene	50-32-8	Yes	HI3	0.000043	0.002	0.0016	0.0088	0.003	0.0088	0.002
Naphthalene	91-20-3	Yes	HI3	0.029	3.7	0.76	16	0.35	16	200
PAHs	401	Yes	--	0.000043	--	0.0016	--	0.003	--	--
DIESEL PARTICULATE MATTER (DPM)										
DPM	200	Yes	HI3	0.1	5	2.6	22	1.2	22	--

Notes

ug/m^3 = microgram per cubic meter; RAL = risk action level; RBC = risk-based concentration, TBACT = toxics best available control technology.

References

[1] See Oregon Administrative Rule 340-245-8010 Table 2.

Table 5-2
Applicable RBCs—Gas Combustion TEUS
Eagle Foundry Company

TAC	CAS/DEQ ID	RBC? (Yes/No)	Risk-Based Concentration [1] (ug/m^3)						
			Residential Chronic		Nonresidential Chronic				Acute
			Cancer	Noncancer	Child Cancer	Child Noncancer	Worker Cancer	Worker Noncancer	Noncancer
INORGANIC COMPOUNDS									
Ammonia	7664-41-7	Yes	--	500	--	2,200	--	2,200	1,200
ORGANIC COMPOUNDS									
Acetaldehyde	75-07-0	Yes	0.45	140	12	620	5.5	620	470
Acrolein	107-02-8	Yes	--	0.35	--	1.5	--	1.5	6.9
Benzene	71-43-2	Yes	0.13	3	3.3	13	1.5	13	29
Ethylbenzene	100-41-4	Yes	0.4	260	10	1,100	4.8	1,100	22,000
Formaldehyde	50-00-0	Yes	0.17	9	4.3	40	2	40	49
Hexane	110-54-3	Yes	--	700	--	3,100	--	3,100	--
Toluene	108-88-3	Yes	--	5,000	--	22,000	--	22,000	7,500
Xylenes (mixed isomers)	1330-20-7	Yes	--	220	--	970	--	970	8,700
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)									
PAHs	401	Yes	0.000043	--	0.0016	--	0.003	--	--
Naphthalene	91-20-3	Yes	0.029	3.7	0.76	16	0.35	16	200

Notes

ug/m^3 = microgram per cubic meter; RAL = risk action level; RBC = risk-based concentration, TBACT = toxics best available control technology.

References

[1] See Oregon Administrative Rule 340-245-8010 Table 2.

Table 5-3
List of TACs With No Published RBCs—Significant TEUs
Eagle Foundry Company

TAC	CAS/DEQ ID	RBC? [1] (Yes/No)
Barium and Compounds	7440-39-3	No
Phosphorus and Compounds	504	No
Silver and Compounds	7440-22-4	No
Thallium	7440-28-0	No
Zinc and Compounds	7440-66-6	No
Molybdenum trioxide	1313-27-5	No
n-Butyl Alcohol	71-36-3	No

Notes

RBC = risk-based concentration; TAC = toxic air contaminant.

References

[1] Oregon Administrative Rule 340-245-8010 Table 2.

Table 6-1
Maximum Predicted Risk Exposure Location Per TEU
Eagle Foundry Company

Modeled TEU	Cancer						Chronic Noncancer						Acute Noncancer	
	Residential		Child		Worker		Residential		Child		Worker			
	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])	Exposure Location [1] (Location of Maximum Risk)	Dispersion Factor (ug/m^3/[g/s])
SIGNIFICANT TEUS														
EP2_2	8,434	22.5417	1,598	5.4545	1,129	25.4237	8,433	22.1497	1,598	5.4545	1,129	25.4237	1,129	158.1239
EP2_3	8,434	11.4402	1,598	4.6188	1,129	6.5858	8,433	11.4395	1,598	4.6188	1,129	6.5858	1,129	55.67819
EP2_4	8,434	10.8322	1,598	4.5244	1,129	5.3803	8,433	10.8626	1,598	4.5244	1,129	5.3803	1,129	48.54038
WELD1	8,434	12.7367	1,598	5.2891	1,129	67.5126	8,433	11.1992	1,598	5.2891	1,129	67.5126	1,129	418.58273
WELD2	8,434	11.8317	1,598	5.1523	1,129	64.6782	8,433	10.1948	1,598	5.1523	1,129	64.6782	1,129	411.33638
WELD3	8,434	12.3678	1,598	5.2110	1,129	73.9091	8,433	10.6430	1,598	5.2110	1,129	73.9091	1,129	476.41137
EP3_1	8,434	5.9053	1,598	4.6197	1,129	26.5763	8,433	5.2344	1,598	4.6197	1,129	26.5763	1,129	127.19561
EP1_1	8,434	37.4581	1,598	6.7387	1,129	67.1449	8,433	36.9017	1,598	6.7387	1,129	67.1449	1,129	260.91917
EP1_3	8,434	24.7647	1,598	5.7537	1,129	30.6004	8,433	22.7558	1,598	5.7537	1,129	30.6004	1,129	140.19515
MESH	8,434	29.5221	1,598	5.7488	1,129	73.4679	8,433	28.8691	1,598	5.7488	1,129	73.4679	1,129	331.10117
EGEN	8,434	51.2557	1,598	8.2145	1,129	45.2234	8,433	51.9710	1,598	8.2145	1,129	45.2234	1,129	336.48008
PTRN	8,434	52.9936	1,598	6.6170	1,129	51.0921	8,433	53.9798	1,598	6.6170	1,129	51.0921	1,129	629.09490
FIN_FUG1	8,434	46.3701	1,598	7.4244	1,129	204.2333	8,433	46.1036	1,598	7.4244	1,129	204.2333	1,129	1,276.66367
FIN_FUG2	8,434	67.4786	1,598	6.9379	1,129	245.3190	8,433	67.1523	1,598	6.9379	1,129	245.3190	1,129	3,308.12549
FIN_FUG3	8,434	86.5709	1,598	6.6696	1,129	200.8808	8,433	86.0619	1,598	6.6696	1,129	200.8808	1,129	1,647.27020
SLAG	8,434	144.1318	1,598	7.2234	1,129	214.0727	8,433	132.4010	1,598	7.2234	1,129	214.0727	1,129	2,420.08941
GAS COMBUSTION TEUS														
HT_1	1580	6.89633	1,598	2.60584	1,126	12.40841	1580	6.89633	1,598	2.60584	1,126	12.40841	1,128	100.56718
HT_2	1580	7.00231	1,598	2.56623	1,126	10.29707	1580	7.00231	1,598	2.56623	1,126	10.29707	1,128	120.53760
HT_3	1580	7.02561	1,598	2.55241	1,126	11.44570	1580	7.02561	1,598	2.55241	1,126	11.44570	1,128	120.79984
HT_4	1580	7.06338	1,598	2.52161	1,126	9.17661	1580	7.06338	1,598	2.52161	1,126	9.17661	1,128	105.74794

Notes

g/s = gram per second; ug/m^3 = microgram per cubic meter; TEU = toxic emission unit; UTM = universal transverse mercator.

References

[1] Exposure location represents the following receptor ID coordinates in the unit emission rate dispersion model with the highest predicted cumulative cancer or noncancer risk:

Receptor ID	UTM X (m)	UTM Y (m)
1,126	550,420.75	5,022,380.00
1,128	550,420.75	5,022,430.00
1,129	550,420.75	5,022,455.00
1,580	550,720.75	5,022,755.00
1,598	550,720.75	5,023,205.00
8,433	550,582.27	5,022,373.46
8,434	550,561.56	5,022,362.42

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
EP2_2											
Cumulative TEU Risk			**--**	**--**	**0.042**	**--**	**--**	**5.2E-04**	**--**	**--**	**1.6E-03**
Dispersion Factor (ug/m^3/[g/s])			**22.5**			**5.45**			**25.4**		
Silicon dioxide (amorphous)	7631-86-9	1.2E-03	0.027	--	[4]	6.6E-03	--	[4]	0.031	--	[4]
Aluminum and Compounds	7429-90-5	5.1E-05	1.1E-03	--	[4]	2.8E-04	--	[4]	1.3E-03	--	[4]
Antimony and Compounds	7440-36-0	1.2E-08	2.8E-07	--	[4]	6.8E-08	--	[4]	3.2E-07	--	[4]
Arsenic and Compounds	7440-38-2	8.1E-09	1.8E-07	2.4E-05	7.6E-03	4.4E-08	1.3E-03	3.4E-05	2.1E-07	6.2E-04	3.3E-04
Beryllium and compounds	7440-41-7	8.7E-10	2.0E-08	4.2E-04	4.7E-05	4.8E-09	0.011	4.3E-07	2.2E-08	5.0E-03	4.4E-06
Cadmium and Compounds	7440-43-9	4.7E-09	1.1E-07	5.6E-04	1.9E-04	2.6E-08	0.014	1.8E-06	1.2E-07	6.7E-03	1.8E-05
Chromium VI	18540-29-9	4.5E-08	1.0E-06	3.1E-05	0.033	2.5E-07	5.2E-04	4.8E-04	1.2E-06	1.0E-03	1.2E-03
Cobalt and Compounds	7440-48-4	1.2E-08	2.7E-07	--	[4]	6.6E-08	--	[4]	3.1E-07	--	[4]
Copper and Compounds	7440-50-8	1.0E-06	2.3E-05	--	[4]	5.6E-06	--	[4]	2.6E-05	--	[4]
Lead and Compounds	7439-92-1	3.8E-07	8.6E-06	--	[4]	2.1E-06	--	[4]	9.7E-06	--	[4]
Manganese and Compounds	7439-96-5	8.9E-06	2.0E-04	--	[4]	4.9E-05	--	[4]	2.3E-04	--	[4]
Nickel and Compounds	7440-02-0	1.9E-07	4.3E-06	3.8E-03	1.1E-03	1.0E-06	0.10	1.0E-05	4.9E-06	0.046	1.1E-04
Selenium and Compounds	7782-49-2	7.7E-09	1.7E-07	--	[4]	4.2E-08	--	[4]	2.0E-07	--	[4]
Vanadium (fume or dust)	7440-62-2	4.8E-08	1.1E-06	--	[4]	2.6E-07	--	[4]	1.2E-06	--	[4]
EP2_3											
Cumulative TEU Risk			**--**	**--**	**0.75**	**--**	**--**	**6.5E-03**	**--**	**--**	**0.018**
Dispersion Factor (ug/m^3/[g/s])			**11.4**			**4.62**			**6.59**		
Isopropanol	67-63-0	0.13	1.47	--	[4]	0.59	--	[4]	0.84	--	[4]
Silicon dioxide (amorphous)	7631-86-9	5.9E-03	0.068	--	[4]	0.027	--	[4]	0.039	--	[4]
Aluminum and Compounds	7429-90-5	6.4E-03	0.074	--	[4]	0.030	--	[4]	0.042	--	[4]
Antimony and Compounds	7440-36-0	1.8E-06	2.0E-05	--	[4]	8.2E-06	--	[4]	1.2E-05	--	[4]
Arsenic and Compounds	7440-38-2	1.4E-06	1.6E-05	2.4E-05	0.67	6.5E-06	1.3E-03	5.0E-03	9.2E-06	6.2E-04	0.015
Beryllium and compounds	7440-41-7	9.7E-10	1.1E-08	4.2E-04	2.6E-05	4.5E-09	0.011	4.1E-07	6.4E-09	5.0E-03	1.3E-06
Cadmium and Compounds	7440-43-9	5.3E-07	6.1E-06	5.6E-04	0.011	2.4E-06	0.014	1.7E-04	3.5E-06	6.7E-03	5.2E-04
Chromium VI	18540-29-9	7.3E-08	8.4E-07	3.1E-05	0.027	3.4E-07	5.2E-04	6.5E-04	4.8E-07	1.0E-03	4.8E-04
Cobalt and Compounds	7440-48-4	3.0E-07	3.4E-06	--	[4]	1.4E-06	--	[4]	2.0E-06	--	[4]
Copper and Compounds	7440-50-8	1.2E-05	1.4E-04	--	[4]	5.5E-05	--	[4]	7.8E-05	--	[4]
Lead and Compounds	7439-92-1	5.5E-06	6.3E-05	--	[4]	2.5E-05	--	[4]	3.6E-05	--	[4]
Manganese and Compounds	7439-96-5	5.3E-05	6.1E-04	--	[4]	2.5E-04	--	[4]	3.5E-04	--	[4]
Mercury	7439-97-6	2.8E-07	3.2E-06	--	[4]	1.3E-06	--	[4]	1.9E-06	--	[4]
Nickel and Compounds	7440-02-0	1.4E-05	1.6E-04	3.8E-03	0.043	6.6E-05	0.10	6.6E-04	9.4E-05	0.046	2.0E-03
Selenium and Compounds	7782-49-2	8.6E-09	9.8E-08	--	[4]	4.0E-08	--	[4]	5.6E-08	--	[4]
Vanadium (fume or dust)	7440-62-2	5.4E-08	6.2E-07	--	[4]	2.5E-07	--	[4]	3.5E-07	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
EP2_4											
Cumulative TEU Risk			**--**	**--**	**2.45**	**--**	**--**	**0.019**	**--**	**--**	**0.048**
Dispersion Factor (ug/m^3/[g/s])			**10.8**			**4.52**			**5.38**		
Aluminum and Compounds	7429-90-5	1.9E-04	2.1E-03	--	[4]	8.7E-04	--	[4]	1.0E-03	--	[4]
Antimony and Compounds	7440-36-0	1.3E-06	1.4E-05	--	[4]	6.0E-06	--	[4]	7.1E-06	--	[4]
Arsenic and Compounds	7440-38-2	5.4E-06	5.8E-05	2.4E-05	2.42	2.4E-05	1.3E-03	0.019	2.9E-05	6.2E-04	0.046
Cadmium and Compounds	7440-43-9	7.3E-08	7.9E-07	5.6E-04	1.4E-03	3.3E-07	0.014	2.4E-05	3.9E-07	6.7E-03	5.8E-05
Chromium VI	18540-29-9	3.6E-08	3.9E-07	3.1E-05	0.012	1.6E-07	5.2E-04	3.1E-04	1.9E-07	1.0E-03	1.9E-04
Cobalt and Compounds	7440-48-4	2.3E-07	2.5E-06	--	[4]	1.1E-06	--	[4]	1.3E-06	--	[4]
Copper and Compounds	7440-50-8	9.0E-06	9.8E-05	--	[4]	4.1E-05	--	[4]	4.9E-05	--	[4]
Lead and Compounds	7439-92-1	5.0E-06	5.4E-05	--	[4]	2.2E-05	--	[4]	2.7E-05	--	[4]
Manganese and Compounds	7439-96-5	1.6E-05	1.8E-04	--	[4]	7.4E-05	--	[4]	8.8E-05	--	[4]
Mercury	7439-97-6	2.1E-07	2.3E-06	--	[4]	9.4E-07	--	[4]	1.1E-06	--	[4]
Nickel and Compounds	7440-02-0	7.5E-06	8.1E-05	3.8E-03	0.021	3.4E-05	0.10	3.4E-04	4.0E-05	0.046	8.8E-04
WELD1											
Cumulative TEU Risk			**--**	**--**	**0.65**	**--**	**--**	**0.016**	**--**	**--**	**0.11**
Dispersion Factor (ug/m^3/[g/s])			**12.7**			**5.29**			**67.5**		
Aluminum and Compounds	7429-90-5	3.7E-08	4.8E-07	--	[4]	2.0E-07	--	[4]	2.5E-06	--	[4]
Arsenic and Compounds	7440-38-2	9.0E-10	1.1E-08	2.4E-05	4.8E-04	4.7E-09	1.3E-03	3.6E-06	6.1E-08	6.2E-04	9.8E-05
Chromium VI	18540-29-9	1.6E-06	2.0E-05	3.1E-05	0.64	8.3E-06	5.2E-04	0.016	1.1E-04	1.0E-03	0.11
Cobalt and Compounds	7440-48-4	3.5E-08	4.5E-07	--	[4]	1.9E-07	--	[4]	2.4E-06	--	[4]
Copper and Compounds	7440-50-8	3.6E-05	4.6E-04	--	[4]	1.9E-04	--	[4]	2.4E-03	--	[4]
Manganese and Compounds	7439-96-5	5.3E-06	6.7E-05	--	[4]	2.8E-05	--	[4]	3.6E-04	--	[4]
Nickel and Compounds	7440-02-0	1.6E-06	2.0E-05	3.8E-03	5.2E-03	8.2E-06	0.10	8.2E-05	1.1E-04	0.046	2.3E-03
Vanadium (fume or dust)	7440-62-2	9.0E-10	1.1E-08	--	[4]	4.7E-09	--	[4]	6.1E-08	--	[4]
WELD2											
Cumulative TEU Risk			**--**	**--**	**0.60**	**--**	**--**	**0.016**	**--**	**--**	**0.10**
Dispersion Factor (ug/m^3/[g/s])			**11.8**			**5.15**			**64.7**		
Aluminum and Compounds	7429-90-5	3.7E-08	4.4E-07	--	[4]	1.9E-07	--	[4]	2.4E-06	--	[4]
Arsenic and Compounds	7440-38-2	9.0E-10	1.1E-08	2.4E-05	4.4E-04	4.6E-09	1.3E-03	3.6E-06	5.8E-08	6.2E-04	9.4E-05
Chromium VI	18540-29-9	1.6E-06	1.9E-05	3.1E-05	0.60	8.1E-06	5.2E-04	0.016	1.0E-04	1.0E-03	0.10
Cobalt and Compounds	7440-48-4	3.5E-08	4.2E-07	--	[4]	1.8E-07	--	[4]	2.3E-06	--	[4]
Copper and Compounds	7440-50-8	3.6E-05	4.3E-04	--	[4]	1.9E-04	--	[4]	2.3E-03	--	[4]
Manganese and Compounds	7439-96-5	5.3E-06	6.2E-05	--	[4]	2.7E-05	--	[4]	3.4E-04	--	[4]
Nickel and Compounds	7440-02-0	1.6E-06	1.8E-05	3.8E-03	4.8E-03	8.0E-06	0.10	8.0E-05	1.0E-04	0.046	2.2E-03
Vanadium (fume or dust)	7440-62-2	9.0E-10	1.1E-08	--	[4]	4.6E-09	--	[4]	5.8E-08	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
WELD3											
Cumulative TEU Risk			**--**	**--**	**0.63**	**--**	**--**	**0.016**	**--**	**--**	**0.12**
Dispersion Factor (ug/m^3/[g/s])			**12.4**			**5.21**			**73.9**		
Aluminum and Compounds	7429-90-5	3.7E-08	4.6E-07	--	[4]	2.0E-07	--	[4]	2.8E-06	--	[4]
Arsenic and Compounds	7440-38-2	9.0E-10	1.1E-08	2.4E-05	4.6E-04	4.7E-09	1.3E-03	3.6E-06	6.6E-08	6.2E-04	1.1E-04
Chromium VI	18540-29-9	1.6E-06	1.9E-05	3.1E-05	0.63	8.2E-06	5.2E-04	0.016	1.2E-04	1.0E-03	0.12
Cobalt and Compounds	7440-48-4	3.5E-08	4.3E-07	--	[4]	1.8E-07	--	[4]	2.6E-06	--	[4]
Copper and Compounds	7440-50-8	3.6E-05	4.5E-04	--	[4]	1.9E-04	--	[4]	2.7E-03	--	[4]
Manganese and Compounds	7439-96-5	5.3E-06	6.5E-05	--	[4]	2.7E-05	--	[4]	3.9E-04	--	[4]
Nickel and Compounds	7440-02-0	1.6E-06	1.9E-05	3.8E-03	5.1E-03	8.1E-06	0.10	8.1E-05	1.2E-04	0.046	2.5E-03
Vanadium (fume or dust)	7440-62-2	9.0E-10	1.1E-08	--	[4]	4.7E-09	--	[4]	6.6E-08	--	[4]
EP3_1											
Cumulative TEU Risk			**--**	**--**	**4.63**	**--**	**--**	**0.21**	**--**	**--**	**0.68**
Dispersion Factor (ug/m^3/[g/s])			**5.91**			**4.62**			**26.6**		
Aluminum and Compounds	7429-90-5	1.8E-05	1.1E-04	--	[4]	8.5E-05	--	[4]	4.9E-04	--	[4]
Antimony and Compounds	7440-36-0	1.7E-08	9.9E-08	--	[4]	7.7E-08	--	[4]	4.4E-07	--	[4]
Arsenic and Compounds	7440-38-2	8.0E-08	4.7E-07	2.4E-05	0.020	3.7E-07	1.3E-03	2.9E-04	2.1E-06	6.2E-04	3.4E-03
Beryllium and compounds	7440-41-7	2.4E-09	1.4E-08	4.2E-04	3.4E-05	1.1E-08	0.011	1.0E-06	6.4E-08	5.0E-03	1.3E-05
Cadmium and Compounds	7440-43-9	1.6E-08	9.3E-08	5.6E-04	1.7E-04	7.3E-08	0.014	5.2E-06	4.2E-07	6.7E-03	6.3E-05
Chromium VI	18540-29-9	2.3E-05	1.4E-04	3.1E-05	4.45	1.1E-04	5.2E-04	0.21	6.2E-04	1.0E-03	0.62
Cobalt and Compounds	7440-48-4	3.2E-07	1.9E-06	--	[4]	1.5E-06	--	[4]	8.4E-06	--	[4]
Copper and Compounds	7440-50-8	3.0E-06	1.8E-05	--	[4]	1.4E-05	--	[4]	8.0E-05	--	[4]
Lead and Compounds	7439-92-1	2.0E-08	1.2E-07	--	[4]	9.4E-08	--	[4]	5.4E-07	--	[4]
Manganese and Compounds	7439-96-5	7.0E-05	4.2E-04	--	[4]	3.2E-04	--	[4]	1.9E-03	--	[4]
Nickel and Compounds	7440-02-0	1.0E-04	6.1E-04	3.8E-03	0.16	4.8E-04	0.10	4.8E-03	2.8E-03	0.046	0.060
Selenium and Compounds	7782-49-2	1.0E-08	6.0E-08	--	[4]	4.7E-08	--	[4]	2.7E-07	--	[4]
Vanadium (fume or dust)	7440-62-2	2.7E-07	1.6E-06	--	[4]	1.2E-06	--	[4]	7.1E-06	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
EP1_1											
Cumulative TEU Risk			**--**	**--**	**0.018**	**--**	**--**	**1.6E-04**	**--**	**--**	**1.2E-03**
Dispersion Factor (ug/m^3/[g/s])			**37.5**			**6.74**			**67.1**		
Isopropanol	67-63-0	0.036	1.35	--	[4]	0.24	--	[4]	2.41	--	[4]
Phenol	108-95-2	1.8E-04	6.7E-03	--	[4]	1.2E-03	--	[4]	0.012	--	[4]
Silicon dioxide (amorphous)	7631-86-9	4.6E-03	0.17	--	[4]	0.031	--	[4]	0.31	--	[4]
Aluminum and Compounds	7429-90-5	5.7E-03	0.21	--	[4]	0.038	--	[4]	0.38	--	[4]
Antimony and Compounds	7440-36-0	3.2E-09	1.2E-07	--	[4]	2.1E-08	--	[4]	2.1E-07	--	[4]
Arsenic and Compounds	7440-38-2	2.6E-09	9.7E-08	2.4E-05	4.0E-03	1.7E-08	1.3E-03	1.3E-05	1.7E-07	6.2E-04	2.8E-04
Beryllium and compounds	7440-41-7	2.1E-10	8.0E-09	4.2E-04	1.9E-05	1.4E-09	0.011	1.3E-07	1.4E-08	5.0E-03	2.9E-06
Cadmium and Compounds	7440-43-9	4.9E-10	1.8E-08	5.6E-04	3.3E-05	3.3E-09	0.014	2.4E-07	3.3E-08	6.7E-03	4.9E-06
Chromium VI	18540-29-9	1.0E-08	3.9E-07	3.1E-05	0.013	7.0E-08	5.2E-04	1.3E-04	6.9E-07	1.0E-03	6.9E-04
Cobalt and Compounds	7440-48-4	3.6E-09	1.3E-07	--	[4]	2.4E-08	--	[4]	2.4E-07	--	[4]
Copper and Compounds	7440-50-8	5.7E-07	2.2E-05	--	[4]	3.9E-06	--	[4]	3.9E-05	--	[4]
Lead and Compounds	7439-92-1	6.7E-08	2.5E-06	--	[4]	4.5E-07	--	[4]	4.5E-06	--	[4]
Manganese and Compounds	7439-96-5	2.2E-06	8.4E-05	--	[4]	1.5E-05	--	[4]	1.5E-04	--	[4]
Nickel and Compounds	7440-02-0	1.7E-07	6.2E-06	3.8E-03	1.6E-03	1.1E-06	0.10	1.1E-05	1.1E-05	0.046	2.4E-04
Selenium and Compounds	7782-49-2	1.1E-09	4.0E-08	--	[4]	7.2E-09	--	[4]	7.2E-08	--	[4]
Vanadium (fume or dust)	7440-62-2	1.5E-08	5.4E-07	--	[4]	9.8E-08	--	[4]	9.8E-07	--	[4]
EP1_3											
Cumulative TEU Risk			**--**	**--**	**0.050**	**--**	**--**	**6.0E-04**	**--**	**--**	**2.3E-03**
Dispersion Factor (ug/m^3/[g/s])			**24.8**			**5.75**			**30.6**		
Silicon dioxide (amorphous)	7631-86-9	9.7E-03	0.24	--	[4]	0.056	--	[4]	0.30	--	[4]
Aluminum and Compounds	7429-90-5	1.4E-04	3.5E-03	--	[4]	8.2E-04	--	[4]	4.4E-03	--	[4]
Antimony and Compounds	7440-36-0	1.9E-08	4.7E-07	--	[4]	1.1E-07	--	[4]	5.8E-07	--	[4]
Arsenic and Compounds	7440-38-2	7.2E-09	1.8E-07	2.4E-05	7.4E-03	4.1E-08	1.3E-03	3.2E-05	2.2E-07	6.2E-04	3.5E-04
Beryllium and compounds	7440-41-7	1.4E-09	3.5E-08	4.2E-04	8.4E-05	8.2E-09	0.011	7.5E-07	4.4E-08	5.0E-03	8.7E-06
Cadmium and Compounds	7440-43-9	1.4E-09	3.5E-08	5.6E-04	6.3E-05	8.2E-09	0.014	5.9E-07	4.4E-08	6.7E-03	6.5E-06
Chromium VI	18540-29-9	4.7E-08	1.2E-06	3.1E-05	0.038	2.7E-07	5.2E-04	5.2E-04	1.4E-06	1.0E-03	1.4E-03
Cobalt and Compounds	7440-48-4	2.5E-08	6.1E-07	--	[4]	1.4E-07	--	[4]	7.6E-07	--	[4]
Copper and Compounds	7440-50-8	4.7E-06	1.2E-04	--	[4]	2.7E-05	--	[4]	1.4E-04	--	[4]
Lead and Compounds	7439-92-1	3.2E-07	8.0E-06	--	[4]	1.9E-06	--	[4]	9.9E-06	--	[4]
Manganese and Compounds	7439-96-5	1.3E-05	3.1E-04	--	[4]	7.2E-05	--	[4]	3.8E-04	--	[4]
Nickel and Compounds	7440-02-0	8.0E-07	2.0E-05	3.8E-03	5.2E-03	4.6E-06	0.10	4.6E-05	2.4E-05	0.046	5.3E-04
Selenium and Compounds	7782-49-2	7.2E-09	1.8E-07	--	[4]	4.1E-08	--	[4]	2.2E-07	--	[4]
Vanadium (fume or dust)	7440-62-2	7.5E-08	1.9E-06	--	[4]	4.3E-07	--	[4]	2.3E-06	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
MESH											
Cumulative TEU Risk			**--**	**--**	**0.019**	**--**	**--**	**1.5E-04**	**--**	**--**	**1.7E-03**
Dispersion Factor (ug/m^3/[g/s])			**29.5**			**5.75**			**73.5**		
Aluminum and Compounds	7429-90-5	8.7E-08	2.6E-06	--	[4]	5.0E-07	--	[4]	6.4E-06	--	[4]
Antimony and Compounds	7440-36-0	2.2E-09	6.4E-08	--	[4]	1.3E-08	--	[4]	1.6E-07	--	[4]
Arsenic and Compounds	7440-38-2	6.7E-09	2.0E-07	2.4E-05	8.2E-03	3.8E-08	1.3E-03	2.9E-05	4.9E-07	6.2E-04	7.9E-04
Beryllium and compounds	7440-41-7	1.4E-10	4.1E-09	4.2E-04	9.8E-06	8.0E-10	0.011	7.3E-08	1.0E-08	5.0E-03	2.1E-06
Cadmium and Compounds	7440-43-9	1.4E-10	4.1E-09	5.6E-04	7.4E-06	8.0E-10	0.014	5.7E-08	1.0E-08	6.7E-03	1.5E-06
Chromium VI	18540-29-9	1.0E-08	2.9E-07	3.1E-05	9.5E-03	5.7E-08	5.2E-04	1.1E-04	7.3E-07	1.0E-03	7.3E-04
Cobalt and Compounds	7440-48-4	9.6E-09	2.8E-07	--	[4]	5.5E-08	--	[4]	7.0E-07	--	[4]
Copper and Compounds	7440-50-8	3.6E-07	1.1E-05	--	[4]	2.1E-06	--	[4]	2.7E-05	--	[4]
Lead and Compounds	7439-92-1	1.1E-09	3.2E-08	--	[4]	6.2E-09	--	[4]	7.9E-08	--	[4]
Manganese and Compounds	7439-96-5	8.9E-07	2.6E-05	--	(4)	5.1E-06	--	(4)	6.5E-05	--	(4)
Nickel and Compounds	7440-02-0	1.4E-07	4.1E-06	3.8E-03	1.1E-03	8.0E-07	0.10	8.0E-06	1.0E-05	0.046	2.2E-04
Selenium and Compounds	7782-49-2	7.0E-11	2.1E-09	--	[4]	4.0E-10	--	[4]	5.1E-09	--	[4]
Vanadium (fume or dust)	7440-62-2	1.2E-08	3.7E-07	--	[4]	7.1E-08	--	[4]	9.1E-07	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
EGEN											
Cumulative TEU Risk			**--**	**--**	**0.68**	**--**	**--**	**3.3E-03**	**--**	**--**	**0.021**
Dispersion Factor (ug/m^3/[g/s])			**51.3**			**8.21**			**45.2**		
Acetaldehyde	75-07-0	8.2E-06	4.2E-04	0.45	9.4E-04	6.8E-05	12.0	5.6E-06	3.7E-04	5.50	6.8E-05
Acrolein	107-02-8	3.6E-07	1.8E-05	--	[4]	2.9E-06	--	[4]	1.6E-05	--	[4]
Benzene	71-43-2	2.0E-06	1.0E-04	0.13	7.7E-04	1.6E-05	3.30	4.9E-06	8.8E-05	1.50	5.9E-05
1,3-Butadiene	106-99-0	2.3E-06	1.2E-04	0.033	3.5E-03	1.9E-05	0.86	2.2E-05	1.0E-04	0.40	2.6E-04
Ethylbenzene	100-41-4	1.1E-07	5.9E-06	0.40	1.5E-05	9.4E-07	10.0	9.4E-08	5.2E-06	4.80	1.1E-06
Formaldehyde	50-00-0	1.8E-05	9.3E-04	0.17	5.5E-03	1.5E-04	4.30	3.5E-05	8.2E-04	2.00	4.1E-04
Hexane	110-54-3	2.8E-07	1.4E-05	--	[4]	2.3E-06	--	[4]	1.3E-05	--	[4]
Toluene	108-88-3	1.1E-06	5.7E-05	--	[4]	9.1E-06	--	[4]	5.0E-05	--	[4]
Xylene (mixed)	1330-20-7	4.5E-07	2.3E-05	--	[4]	3.7E-06	--	[4]	2.0E-05	--	[4]
Ammonia	7664-41-7	8.4E-06	4.3E-04	--	[4]	6.9E-05	--	[4]	3.8E-04	--	[4]
Hydrochloric Acid	7647-01-0	2.0E-06	1.0E-04	--	[4]	1.6E-05	--	[4]	8.8E-05	--	[4]
Benzo(a)pyrene	50-32-8	3.7E-10	1.9E-08	4.3E-05	4.4E-04	3.0E-09	1.6E-03	1.9E-06	1.7E-08	3.0E-03	5.6E-06
Naphthalene	91-20-3	2.1E-07	1.1E-05	0.029	3.7E-04	1.7E-06	0.76	2.2E-06	9.4E-06	0.35	2.7E-05
PAHs (excluding Naphthalene)*	401	3.8E-07	1.9E-05	4.3E-05	0.45	3.1E-06	1.6E-03	2.0E-03	1.7E-05	3.0E-03	5.7E-03
Arsenic and Compounds	7440-38-2	1.7E-08	8.6E-07	2.4E-05	0.036	1.4E-07	1.3E-03	1.1E-04	7.6E-07	6.2E-04	1.2E-03
Cadmium and Compounds	7440-43-9	1.6E-08	8.1E-07	5.6E-04	1.4E-03	1.3E-07	0.014	9.2E-06	7.1E-07	6.7E-03	1.1E-04
Chromium VI	18540-29-9	1.0E-09	5.4E-08	3.1E-05	1.7E-03	8.6E-09	5.2E-04	1.7E-05	4.7E-08	1.0E-03	4.7E-05
Copper and Compounds	7440-50-8	4.3E-08	2.2E-06	--	[4]	3.5E-07	--	[4]	1.9E-06	--	[4]
Lead and Compounds	7439-92-1	8.7E-08	4.5E-06	--	[4]	7.2E-07	--	[4]	3.9E-06	--	[4]
Manganese and Compounds	7439-96-5	3.3E-08	1.7E-06	--	[4]	2.7E-07	--	[4]	1.5E-06	--	[4]
Mercury	7439-97-6	2.1E-08	1.1E-06	--	[4]	1.7E-07	--	[4]	9.5E-07	--	[4]
Nickel and Compounds	7440-02-0	4.1E-08	2.1E-06	3.8E-03	5.5E-04	3.4E-07	0.10	3.4E-06	1.9E-06	0.046	4.0E-05
Selenium and Compounds	7782-49-2	2.3E-08	1.2E-06	--	[4]	1.9E-07	--	[4]	1.0E-06	--	[4]
DPM	200	3.5E-04	0.018	0.10	0.18	2.9E-03	2.60	1.1E-03	0.016	1.20	0.013

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
PTRN											
Cumulative TEU Risk			**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Dispersion Factor (ug/m^3/[g/s])			**53.0**			**6.62**			**51.1**		
Isopropanol	67-63-0	3.9E-05	2.0E-03	--	[4]	2.6E-04	--	[4]	2.0E-03	--	[4]
Methyl Ethyl Ketone	78-93-3	1.4E-04	7.2E-03	--	[4]	8.9E-04	--	[4]	6.9E-03	--	[4]
Toluene	108-88-3	6.4E-04	0.034	--	[4]	4.3E-03	--	[4]	0.033	--	[4]
1,2,4-Trimethylbenzene	95-63-6	5.1E-04	0.027	--	[4]	3.4E-03	--	[4]	0.026	--	[4]
FIN_FUG1											
Cumulative TEU Risk			**--**	**--**	**1.82**	**--**	**--**	**0.017**	**--**	**--**	**0.26**
Dispersion Factor (ug/m^3/[g/s])			**46.4**			**7.42**			**204**		
Aluminum and Compounds	7429-90-5	9.1E-07	4.2E-05	--	[4]	6.7E-06	--	[4]	1.9E-04	--	[4]
Antimony and Compounds	7440-36-0	4.9E-10	2.3E-08	--	[4]	3.7E-09	--	[4]	1.0E-07	--	[4]
Arsenic and Compounds	7440-38-2	3.0E-09	1.4E-07	2.4E-05	5.8E-03	2.2E-08	1.3E-03	1.7E-05	6.1E-07	6.2E-04	9.8E-04
Beryllium and compounds	7440-41-7	9.9E-11	4.6E-09	4.2E-04	1.1E-05	7.3E-10	0.011	6.7E-08	2.0E-08	5.0E-03	4.0E-06
Cadmium and Compounds	7440-43-9	7.7E-10	3.6E-08	5.6E-04	6.4E-05	5.7E-09	0.014	4.1E-07	1.6E-07	6.7E-03	2.3E-05
Chromium VI	18540-29-9	1.2E-06	5.4E-05	3.1E-05	1.75	8.7E-06	5.2E-04	0.017	2.4E-04	1.0E-03	0.24
Cobalt and Compounds	7440-48-4	1.4E-08	6.7E-07	--	[4]	1.1E-07	--	[4]	2.9E-06	--	[4]
Copper and Compounds	7440-50-8	9.4E-08	4.3E-06	--	[4]	7.0E-07	--	[4]	1.9E-05	--	[4]
Lead and Compounds	7439-92-1	8.6E-10	4.0E-08	--	[4]	6.4E-09	--	[4]	1.7E-07	--	[4]
Manganese and Compounds	7439-96-5	3.4E-06	1.6E-04	--	[4]	2.5E-05	--	[4]	6.9E-04	--	[4]
Nickel and Compounds	7440-02-0	5.2E-06	2.4E-04	3.8E-03	0.063	3.9E-05	0.10	3.9E-04	1.1E-03	0.046	0.023
Selenium and Compounds	7782-49-2	4.9E-10	2.3E-08	--	[4]	3.7E-09	--	[4]	1.0E-07	--	[4]
Vanadium (fume or dust)	7440-62-2	1.1E-08	5.3E-07	--	[4]	8.5E-08	--	[4]	2.3E-06	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
FIN_FUG2											
Cumulative TEU Risk			**--**	**--**	**2.64**	**--**	**--**	**0.016**	**--**	**--**	**0.32**
Dispersion Factor (ug/m^3/[g/s])			**67.5**			**6.94**			**245**		
Aluminum and Compounds	7429-90-5	9.1E-07	6.1E-05	--	[4]	6.3E-06	--	[4]	2.2E-04	--	[4]
Antimony and Compounds	7440-36-0	4.9E-10	3.3E-08	--	[4]	3.4E-09	--	[4]	1.2E-07	--	[4]
Arsenic and Compounds	7440-38-2	3.0E-09	2.0E-07	2.4E-05	8.4E-03	2.1E-08	1.3E-03	1.6E-05	7.3E-07	6.2E-04	1.2E-03
Beryllium and compounds	7440-41-7	9.9E-11	6.7E-09	4.2E-04	1.6E-05	6.8E-10	0.011	6.2E-08	2.4E-08	5.0E-03	4.8E-06
Cadmium and Compounds	7440-43-9	7.7E-10	5.2E-08	5.6E-04	9.3E-05	5.3E-09	0.014	3.8E-07	1.9E-07	6.7E-03	2.8E-05
Chromium VI	18540-29-9	1.2E-06	7.9E-05	3.1E-05	2.54	8.1E-06	5.2E-04	0.016	2.9E-04	1.0E-03	0.29
Cobalt and Compounds	7440-48-4	1.4E-08	9.7E-07	--	[4]	1.0E-07	--	[4]	3.5E-06	--	[4]
Copper and Compounds	7440-50-8	9.4E-08	6.3E-06	--	[4]	6.5E-07	--	[4]	2.3E-05	--	[4]
Lead and Compounds	7439-92-1	8.6E-10	5.8E-08	--	[4]	5.9E-09	--	[4]	2.1E-07	--	[4]
Manganese and Compounds	7439-96-5	3.4E-06	2.3E-04	--	[4]	2.3E-05	--	[4]	8.3E-04	--	[4]
Nickel and Compounds	7440-02-0	5.2E-06	3.5E-04	3.8E-03	0.092	3.6E-05	0.10	3.6E-04	1.3E-03	0.046	0.028
Selenium and Compounds	7782-49-2	4.9E-10	3.3E-08	--	[4]	3.4E-09	--	[4]	1.2E-07	--	[4]
Vanadium (fume or dust)	7440-62-2	1.1E-08	7.7E-07	--	[4]	7.9E-08	--	[4]	2.8E-06	--	[4]
FIN_FUG3											
Cumulative TEU Risk			**--**	**--**	**3.39**	**--**	**--**	**0.015**	**--**	**--**	**0.26**
Dispersion Factor (ug/m^3/[g/s])			**86.6**			**6.67**			**201**		
Aluminum and Compounds	7429-90-5	9.1E-07	7.8E-05	--	[4]	6.0E-06	--	[4]	1.8E-04	--	[4]
Antimony and Compounds	7440-36-0	4.9E-10	4.3E-08	--	[4]	3.3E-09	--	[4]	9.9E-08	--	[4]
Arsenic and Compounds	7440-38-2	3.0E-09	2.6E-07	2.4E-05	0.011	2.0E-08	1.3E-03	1.5E-05	6.0E-07	6.2E-04	9.6E-04
Beryllium and compounds	7440-41-7	9.9E-11	8.5E-09	4.2E-04	2.0E-05	6.6E-10	0.011	6.0E-08	2.0E-08	5.0E-03	4.0E-06
Cadmium and Compounds	7440-43-9	7.7E-10	6.6E-08	5.6E-04	1.2E-04	5.1E-09	0.014	3.7E-07	1.5E-07	6.7E-03	2.3E-05
Chromium VI	18540-29-9	1.2E-06	1.0E-04	3.1E-05	3.26	7.8E-06	5.2E-04	0.015	2.3E-04	1.0E-03	0.23
Cobalt and Compounds	7440-48-4	1.4E-08	1.2E-06	--	[4]	9.6E-08	--	[4]	2.9E-06	--	[4]
Copper and Compounds	7440-50-8	9.4E-08	8.1E-06	--	[4]	6.2E-07	--	[4]	1.9E-05	--	[4]
Lead and Compounds	7439-92-1	8.6E-10	7.4E-08	--	[4]	5.7E-09	--	[4]	1.7E-07	--	[4]
Manganese and Compounds	7439-96-5	3.4E-06	2.9E-04	--	[4]	2.3E-05	--	[4]	6.8E-04	--	[4]
Nickel and Compounds	7440-02-0	5.2E-06	4.5E-04	3.8E-03	0.12	3.5E-05	0.10	3.5E-04	1.0E-03	0.046	0.023
Selenium and Compounds	7782-49-2	4.9E-10	4.3E-08	--	[4]	3.3E-09	--	[4]	9.9E-08	--	[4]
Vanadium (fume or dust)	7440-62-2	1.1E-08	9.9E-07	--	[4]	7.6E-08	--	[4]	2.3E-06	--	[4]

Table 6-2
Level 3 Risk Assessment Results for Significant TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**8,434**			**1,598**			**1,129**		
Cumulative Facility-wide Risk			**--**	**--**	**18.4**	**--**	**--**	**0.3**	**--**	**--**	**1.9**
SLAG											
Cumulative TEU Risk			**--**	**--**	**4.5E-03**	**--**	**--**	**1.3E-05**	**--**	**--**	**2.2E-04**
Dispersion Factor (ug/m^3/[g/s])			**144**			**7.22**			**214**		
Aluminum and Compounds	7429-90-5	2.7E-07	3.9E-05	--	[4]	1.9E-06	--	[4]	5.7E-05	--	[4]
Antimony and Compounds	7440-36-0	3.1E-11	4.5E-09	--	[4]	2.3E-10	--	[4]	6.7E-09	--	[4]
Arsenic and Compounds	7440-38-2	3.1E-11	4.5E-09	2.4E-05	1.9E-04	2.3E-10	1.3E-03	1.7E-07	6.7E-09	6.2E-04	1.1E-05
Beryllium and compounds	7440-41-7	6.2E-12	9.0E-10	4.2E-04	2.1E-06	4.5E-11	0.011	4.1E-09	1.3E-09	5.0E-03	2.7E-07
Cadmium and Compounds	7440-43-9	6.2E-12	9.0E-10	5.6E-04	1.6E-06	4.5E-11	0.014	3.2E-09	1.3E-09	6.7E-03	2.0E-07
Chromium VI	18540-29-9	9.1E-10	1.3E-07	3.1E-05	4.2E-03	6.5E-09	5.2E-04	1.3E-05	1.9E-07	1.0E-03	1.9E-04
Cobalt and Compounds	7440-48-4	2.1E-10	3.0E-08	--	[4]	1.5E-09	--	[4]	4.5E-08	--	[4]
Copper and Compounds	7440-50-8	1.4E-09	2.0E-07	--	[4]	1.0E-08	--	[4]	3.0E-07	--	[4]
Lead and Compounds	7439-92-1	2.4E-11	3.4E-09	--	[4]	1.7E-10	--	[4]	5.1E-09	--	[4]
Manganese and Compounds	7439-96-5	4.5E-07	6.5E-05	--	[4]	3.3E-06	--	[4]	9.6E-05	--	[4]
Mercury	7439-97-6	2.5E-12	3.6E-10	--	[4]	1.8E-11	--	[4]	5.4E-10	--	[4]
Nickel and Compounds	7440-02-0	2.3E-09	3.2E-07	3.8E-03	8.6E-05	1.6E-08	0.10	1.6E-07	4.8E-07	0.046	1.0E-05
Selenium and Compounds	7782-49-2	3.1E-11	4.5E-09	--	[4]	2.3E-10	--	[4]	6.7E-09	--	[4]
Vanadium (fume or dust)	7440-62-2	3.3E-10	4.8E-08	--	[4]	2.4E-09	--	[4]	7.1E-08	--	[4]

Notes

g = gram; m^3 = cubic meter; RBC = risk-based concentration; s = second; TEU = toxic emission unit; TAC = toxic air contaminant; ug = micrograms.

[a] Calculated concentration (ug/m^3) = (dispersion factor [{ug/m^3}/{g/s}]) x (TAC emission rate per TEU [g/s])

[b] Risk (chances-in-1,000,000) = (calculated concentration [ug/m^3]) / (risk-based concentration [ug/m^3])

References

[1] See Table 3-1, Annual TAC Emission Rates—Significant TEUs.

[2] Oregon Administrative Rule 340-245-8010, Table 2.

[3] See Table 6-1, Maximum Predicted Risk Exposure Location Per TEU.

[4] TAC does not have an established RBC for this exposure category per Oregon Administrative Rule 340-245-8010 Table 2.

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
EP2_2															
Cumulative TEU Hazard Index				**--**	**--**	**0.013**	**--**	**--**	**6.8E-04**	**--**	**--**	**3.2E-03**	**--**	**--**	**7.5E-03**
Dispersion Factor (ug/m^3/[g/s])				**22.1**			**5.45**			**25.4**			**158**		
Silicon dioxide (amorphous)	7631-86-9	1.2E-03	1.7E-03	0.027	3.00	8.9E-03	6.6E-03	13.0	5.1E-04	0.031	13.0	2.4E-03	0.27	--	[5]
Aluminum and Compounds	7429-90-5	5.1E-05	7.1E-05	1.1E-03	5.00	2.2E-04	2.8E-04	22.0	1.3E-05	1.3E-03	22.0	5.9E-05	0.011	--	[5]
Antimony and Compounds	7440-36-0	1.2E-08	1.7E-08	2.8E-07	0.30	9.2E-07	6.8E-08	1.30	5.2E-08	3.2E-07	1.30	2.4E-07	2.8E-06	1.00	2.8E-06
Arsenic and Compounds	7440-38-2	8.1E-09	1.1E-08	1.8E-07	1.7E-04	1.1E-03	4.4E-08	2.4E-03	1.8E-05	2.1E-07	2.4E-03	8.6E-05	1.8E-06	0.20	9.0E-06
Beryllium and compounds	7440-41-7	8.7E-10	1.2E-09	1.9E-08	7.0E-03	2.8E-06	4.8E-09	0.031	1.5E-07	2.2E-08	0.031	7.2E-07	1.9E-07	0.020	9.7E-06
Cadmium and Compounds	7440-43-9	4.7E-09	6.7E-09	1.1E-07	5.0E-03	2.1E-05	2.6E-08	0.037	7.0E-07	1.2E-07	0.037	3.3E-06	1.1E-06	0.030	3.5E-05
Chromium VI	18540-29-9	4.5E-08	6.4E-08	1.0E-06	0.083	1.2E-05	2.5E-07	0.88	2.8E-07	1.2E-06	0.88	1.3E-06	1.0E-05	0.30	3.4E-05
Cobalt and Compounds	7440-48-4	1.2E-08	1.7E-08	2.7E-07	0.10	2.7E-06	6.6E-08	0.44	1.5E-07	3.1E-07	0.44	7.0E-07	2.7E-06	--	[5]
Copper and Compounds	7440-50-8	1.0E-06	1.4E-06	2.3E-05	--	[5]	5.6E-06	--	[5]	2.6E-05	--	[5]	2.3E-04	100	2.3E-06
Lead and Compounds	7439-92-1	3.8E-07	5.3E-07	8.4E-06	0.15	5.6E-05	2.1E-06	0.66	3.1E-06	9.7E-06	0.66	1.5E-05	8.4E-05	0.15	5.6E-04
Manganese and Compounds	7439-96-5	8.9E-06	1.3E-05	2.0E-04	0.090	2.2E-03	4.9E-05	0.40	1.2E-04	2.3E-04	0.40	5.7E-04	2.0E-03	0.30	6.6E-03
Nickel and Compounds	7440-02-0	1.9E-07	2.7E-07	4.3E-06	0.014	3.0E-04	1.0E-06	0.062	1.7E-05	4.9E-06	0.062	7.9E-05	4.3E-05	0.20	2.1E-04
Selenium and Compounds	7782-49-2	7.7E-09	1.1E-08	1.7E-07	--	[5]	4.2E-08	--	[5]	2.0E-07	--	[5]	1.7E-06	2.00	8.6E-07
Vanadium (fume or dust)	7440-62-2	4.8E-08	6.8E-08	1.1E-06	0.10	1.1E-05	2.6E-07	0.44	6.0E-07	1.2E-06	0.44	2.8E-06	1.1E-05	0.80	1.3E-05
EP2_3															
Cumulative TEU Hazard Index				**--**	**--**	**0.16**	**--**	**--**	**8.6E-03**	**--**	**--**	**0.012**	**--**	**--**	**0.19**
Dispersion Factor (ug/m^3/[g/s])				**11.4**			**4.62**			**6.59**			**55.7**		
Isopropanol	67-63-0	0.13	0.19	1.47	200	7.3E-03	0.59	880	6.7E-04	0.84	880	9.6E-04	10.8	3,200	3.4E-03
Silicon dioxide (amorphous)	7631-86-9	5.9E-03	8.9E-03	0.068	3.00	0.023	0.027	13.0	2.1E-03	0.039	13.0	3.0E-03	0.49	--	[5]
Aluminum and Compounds	7429-90-5	6.4E-03	9.7E-03	0.074	5.00	0.015	0.030	22.0	1.4E-03	0.042	22.0	1.9E-03	0.54	--	[5]
Antimony and Compounds	7440-36-0	1.8E-06	2.6E-06	2.0E-05	0.30	6.7E-05	8.2E-06	1.30	6.3E-06	1.2E-05	1.30	8.9E-06	1.5E-04	1.00	1.5E-04
Arsenic and Compounds	7440-38-2	1.4E-06	9.8E-06	1.6E-05	1.7E-04	0.094	6.5E-06	2.4E-03	2.7E-03	9.2E-06	2.4E-03	3.8E-03	5.5E-04	0.20	2.7E-03
Beryllium and compounds	7440-41-7	9.7E-10	1.4E-09	1.1E-08	7.0E-03	1.6E-06	4.5E-09	0.031	1.4E-07	6.4E-09	0.031	2.1E-07	7.6E-08	0.020	3.8E-06
Cadmium and Compounds	7440-43-9	5.3E-07	1.3E-06	6.1E-06	5.0E-03	1.2E-03	2.4E-06	0.037	6.6E-05	3.5E-06	0.037	9.4E-05	7.1E-05	0.030	2.4E-03
Chromium VI	18540-29-9	7.3E-08	6.3E-07	8.4E-07	0.083	1.0E-05	3.4E-07	0.88	3.8E-07	4.8E-07	0.88	5.5E-07	3.5E-05	0.30	1.2E-04
Cobalt and Compounds	7440-48-4	3.0E-07	4.1E-07	3.4E-06	0.10	3.4E-05	1.4E-06	0.44	3.1E-06	2.0E-06	0.44	4.4E-06	2.3E-05	--	[5]
Copper and Compounds	7440-50-8	1.2E-05	1.5E-05	1.4E-04	--	[5]	5.5E-05	--	[5]	7.8E-05	--	[5]	8.1E-04	100	8.1E-06
Lead and Compounds	7439-92-1	5.5E-06	5.9E-07	6.3E-05	0.15	4.2E-04	2.5E-05	0.66	3.9E-05	3.6E-05	0.66	5.5E-05	3.3E-05	0.15	2.2E-04
Manganese and Compounds	7439-96-5	5.3E-05	2.1E-05	6.1E-04	0.090	6.8E-03	2.5E-04	0.40	6.2E-04	3.5E-04	0.40	8.8E-04	1.1E-03	0.30	3.8E-03
Mercury	7439-97-6	2.8E-07	6.8E-07	3.2E-06	0.077	4.2E-05	1.3E-06	0.63	2.1E-06	1.9E-06	0.63	2.9E-06	3.8E-05	0.60	6.3E-05
Nickel and Compounds	7440-02-0	1.4E-05	6.4E-04	1.6E-04	0.014	0.012	6.6E-05	0.062	1.1E-03	9.4E-05	0.062	1.5E-03	0.036	0.20	0.18
Selenium and Compounds	7782-49-2	8.6E-09	1.2E-08	9.8E-08	--	[5]	4.0E-08	--	[5]	5.6E-08	--	[5]	6.7E-07	2.00	3.3E-07
Vanadium (fume or dust)	7440-62-2	5.4E-08	7.6E-08	6.2E-07	0.10	6.2E-06	2.5E-07	0.44	5.6E-07	3.5E-07	0.44	8.1E-07	4.2E-06	0.80	5.3E-06

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
EP2_4															
Cumulative TEU Hazard Index				**--**	**--**	**0.35**	**--**	**--**	**0.011**	**--**	**--**	**0.013**	**--**	**--**	**0.053**
Dispersion Factor (ug/m^3/[g/s])				**10.9**			**4.52**			**5.38**			**48.5**		
Aluminum and Compounds	7429-90-5	1.9E-04	2.4E-04	2.1E-03	5.00	4.2E-04	8.7E-04	22.0	4.0E-05	1.0E-03	22.0	4.7E-05	0.011	--	[5]
Antimony and Compounds	7440-36-0	1.3E-06	2.4E-06	1.4E-05	0.30	4.8E-05	6.0E-06	1.30	4.6E-06	7.1E-06	1.30	5.5E-06	1.2E-04	1.00	1.2E-04
Arsenic and Compounds	7440-38-2	5.4E-06	8.8E-06	5.8E-05	1.7E-04	0.34	2.4E-05	2.4E-03	0.010	2.9E-05	2.4E-03	0.012	4.3E-04	0.20	2.1E-03
Barium and Compounds	7440-39-3	4.5E-06	7.7E-06	4.9E-05	--	[5]	2.1E-05	--	[5]	2.4E-05	--	[5]	3.8E-04	--	[5]
Cadmium and Compounds	7440-43-9	7.3E-08	5.1E-07	7.9E-07	5.0E-03	1.6E-04	3.3E-07	0.037	8.9E-06	3.9E-07	0.037	1.1E-05	2.5E-05	0.030	8.3E-04
Chromium VI	18540-29-9	3.6E-08	7.9E-07	3.9E-07	0.083	4.7E-06	1.6E-07	0.88	1.8E-07	1.9E-07	0.88	2.2E-07	3.8E-05	0.30	1.3E-04
Cobalt and Compounds	7440-48-4	2.3E-07	3.2E-07	2.5E-06	0.10	2.5E-05	1.1E-06	0.44	2.4E-06	1.3E-06	0.44	2.9E-06	1.6E-05	--	[5]
Copper and Compounds	7440-50-8	9.0E-06	1.2E-05	9.8E-05	--	[5]	4.1E-05	--	[5]	4.9E-05	--	[5]	5.9E-04	100	5.9E-06
Lead and Compounds	7439-92-1	5.0E-06	6.0E-06	5.4E-05	0.15	3.6E-04	2.2E-05	0.66	3.4E-05	2.7E-05	0.66	4.0E-05	2.9E-04	0.15	1.9E-03
Manganese and Compounds	7439-96-5	1.6E-05	3.6E-06	1.8E-04	0.090	2.0E-03	7.4E-05	0.40	1.8E-04	8.8E-05	0.40	2.2E-04	1.7E-04	0.30	5.8E-04
Mercury	7439-97-6	2.1E-07	4.8E-07	2.3E-06	0.077	2.9E-05	9.4E-07	0.63	1.5E-06	1.1E-06	0.63	1.8E-06	2.3E-05	0.60	3.8E-05
Nickel and Compounds	7440-02-0	7.5E-06	1.9E-04	8.1E-05	0.014	5.8E-03	3.4E-05	0.062	5.5E-04	4.0E-05	0.062	6.5E-04	9.4E-03	0.20	0.047
WELD1															
Cumulative TEU Hazard Index				**--**	**--**	**2.2E-03**	**--**	**--**	**2.1E-04**	**--**	**--**	**2.7E-03**	**--**	**--**	**0.19**
Dispersion Factor (ug/m^3/[g/s])				**11.2**			**5.29**			**67.5**			**419**		
Aluminum and Compounds	7429-90-5	3.7E-08	--	4.2E-07	5.00	8.4E-08	2.0E-07	22.0	9.0E-09	2.5E-06	22.0	1.1E-07	--	--	[5]
Arsenic and Compounds	7440-38-2	9.0E-10	--	1.0E-08	1.7E-04	5.9E-05	4.7E-09	2.4E-03	2.0E-06	6.1E-08	2.4E-03	2.5E-05	--	0.20	[5]
Chromium VI	18540-29-9	1.6E-06	3.5E-06	1.8E-05	0.083	2.1E-04	8.3E-06	0.88	9.4E-06	1.1E-04	0.88	1.2E-04	1.5E-03	0.30	4.9E-03
Cobalt and Compounds	7440-48-4	3.5E-08	--	3.9E-07	0.10	3.9E-06	1.9E-07	0.44	4.2E-07	2.4E-06	0.44	5.4E-06	--	--	[5]
Copper and Compounds	7440-50-8	3.6E-05	8.1E-06	4.0E-04	--	[5]	1.9E-04	--	[5]	2.4E-03	--	[5]	3.4E-03	100	3.4E-05
Manganese and Compounds	7439-96-5	5.3E-06	2.2E-05	5.9E-05	0.090	6.6E-04	2.8E-05	0.40	7.0E-05	3.6E-04	0.40	8.9E-04	9.3E-03	0.30	0.031
Nickel and Compounds	7440-02-0	1.6E-06	7.3E-05	1.7E-05	0.014	1.2E-03	8.2E-06	0.062	1.3E-04	1.1E-04	0.062	1.7E-03	0.030	0.20	0.15
Vanadium (fume or dust)	7440-62-2	9.0E-10	--	1.0E-08	0.10	1.0E-07	4.7E-09	0.44	1.1E-08	6.1E-08	0.44	1.4E-07	--	0.80	[5]

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
WELD2															
Cumulative TEU Hazard Index				**--**	**--**	**2.0E-03**	**--**	**--**	**2.1E-04**	**--**	**--**	**2.6E-03**	**--**	**--**	**0.19**
Dispersion Factor (ug/m^3/[g/s])				**10.2**			**5.15**			**64.7**			**411**		
Aluminum and Compounds	7429-90-5	3.7E-08	--	3.8E-07	5.00	7.6E-08	1.9E-07	22.0	8.8E-09	2.4E-06	22.0	1.1E-07	--	--	[5]
Arsenic and Compounds	7440-38-2	9.0E-10	--	9.1E-09	1.7E-04	5.4E-05	4.6E-09	2.4E-03	1.9E-06	5.8E-08	2.4E-03	2.4E-05	--	0.20	[5]
Chromium VI	18540-29-9	1.6E-06	3.5E-06	1.6E-05	0.083	1.9E-04	8.1E-06	0.88	9.2E-06	1.0E-04	0.88	1.2E-04	1.5E-03	0.30	4.9E-03
Cobalt and Compounds	7440-48-4	3.5E-08	--	3.6E-07	0.10	3.6E-06	1.8E-07	0.44	4.1E-07	2.3E-06	0.44	5.2E-06	--	--	[5]
Copper and Compounds	7440-50-8	3.6E-05	8.1E-06	3.7E-04	--	[5]	1.9E-04	--	[5]	2.3E-03	--	[5]	3.3E-03	100	3.3E-05
Manganese and Compounds	7439-96-5	5.3E-06	2.2E-05	5.4E-05	0.090	6.0E-04	2.7E-05	0.40	6.8E-05	3.4E-04	0.40	8.5E-04	9.2E-03	0.30	0.031
Nickel and Compounds	7440-02-0	1.6E-06	7.3E-05	1.6E-05	0.014	1.1E-03	8.0E-06	0.062	1.3E-04	1.0E-04	0.062	1.6E-03	0.030	0.20	0.15
Vanadium (fume or dust)	7440-62-2	9.0E-10	--	9.1E-09	0.10	9.1E-08	4.6E-09	0.44	1.0E-08	5.8E-08	0.44	1.3E-07	--	0.80	[5]
WELD3															
Cumulative TEU Hazard Index				**--**	**--**	**2.1E-03**	**--**	**--**	**2.1E-04**	**--**	**--**	**3.0E-03**	**--**	**--**	**0.21**
Dispersion Factor (ug/m^3/[g/s])				**10.6**			**5.21**			**73.9**			**476**		
Aluminum and Compounds	7429-90-5	3.7E-08	--	4.0E-07	5.00	8.0E-08	2.0E-07	22.0	8.9E-09	2.8E-06	22.0	1.3E-07	--	--	[5]
Arsenic and Compounds	7440-38-2	9.0E-10	--	9.5E-09	1.7E-04	5.6E-05	4.7E-09	2.4E-03	1.9E-06	6.6E-08	2.4E-03	2.8E-05	--	0.20	[5]
Chromium VI	18540-29-9	1.6E-06	3.5E-06	1.7E-05	0.083	2.0E-04	8.2E-06	0.88	9.3E-06	1.2E-04	0.88	1.3E-04	1.7E-03	0.30	5.6E-03
Cobalt and Compounds	7440-48-4	3.5E-08	--	3.7E-07	0.10	3.7E-06	1.8E-07	0.44	4.2E-07	2.6E-06	0.44	5.9E-06	--	--	[5]
Copper and Compounds	7440-50-8	3.6E-05	8.1E-06	3.8E-04	--	[5]	1.9E-04	--	[5]	2.7E-03	--	[5]	3.9E-03	100	3.9E-05
Manganese and Compounds	7439-96-5	5.3E-06	2.2E-05	5.6E-05	0.090	6.2E-04	2.7E-05	0.40	6.9E-05	3.9E-04	0.40	9.7E-04	0.011	0.30	0.035
Nickel and Compounds	7440-02-0	1.6E-06	7.3E-05	1.7E-05	0.014	1.2E-03	8.1E-06	0.062	1.3E-04	1.2E-04	0.062	1.9E-03	0.035	0.20	0.17
Vanadium (fume or dust)	7440-62-2	9.0E-10	--	9.5E-09	0.10	9.5E-08	4.7E-09	0.44	1.1E-08	6.6E-08	0.44	1.5E-07	--	0.80	[5]

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
EP3_1															
Cumulative TEU Hazard Index				**--**	**--**	**0.047**	**--**	**--**	**8.8E-03**	**--**	**--**	**0.051**	**--**	**--**	**0.38**
Dispersion Factor (ug/m^3/[g/s])				**5.23**			**4.62**			**26.6**			**127**		
Aluminum and Compounds	7429-90-5	1.8E-05	2.7E-05	9.6E-05	5.00	1.9E-05	8.5E-05	22.0	3.9E-06	4.9E-04	22.0	2.2E-05	3.4E-03	--	[5]
Antimony and Compounds	7440-36-0	1.7E-08	5.6E-08	8.8E-08	0.30	2.9E-07	7.7E-08	1.30	5.9E-08	4.4E-07	1.30	3.4E-07	7.1E-06	1.00	7.1E-06
Arsenic and Compounds	7440-38-2	8.0E-08	2.1E-07	4.2E-07	1.7E-04	2.5E-03	3.7E-07	2.4E-03	1.5E-04	2.1E-06	2.4E-03	8.9E-04	2.7E-05	0.20	1.4E-04
Beryllium and compounds	7440-41-7	2.4E-09	5.5E-09	1.3E-08	7.0E-03	1.8E-06	1.1E-08	0.031	3.6E-07	6.4E-08	0.031	2.1E-06	7.0E-07	0.020	3.5E-05
Cadmium and Compounds	7440-43-9	1.6E-08	2.4E-08	8.3E-08	5.0E-03	1.7E-05	7.3E-08	0.037	2.0E-06	4.2E-07	0.037	1.1E-05	3.1E-06	0.030	1.0E-04
Chromium VI	18540-29-9	2.3E-05	6.3E-06	1.2E-04	0.083	1.5E-03	1.1E-04	0.88	1.2E-04	6.2E-04	0.88	7.0E-04	8.1E-04	0.30	2.7E-03
Cobalt and Compounds	7440-48-4	3.2E-07	5.9E-07	1.7E-06	0.10	1.7E-05	1.5E-06	0.44	3.3E-06	8.4E-06	0.44	1.9E-05	7.5E-05	--	[5]
Copper and Compounds	7440-50-8	3.0E-06	7.6E-06	1.6E-05	--	[5]	1.4E-05	--	[5]	8.0E-05	--	[5]	9.6E-04	100	9.6E-06
Lead and Compounds	7439-92-1	2.0E-08	4.5E-08	1.1E-07	0.15	7.1E-07	9.4E-08	0.66	1.4E-07	5.4E-07	0.66	8.2E-07	5.7E-06	0.15	3.8E-05
Manganese and Compounds	7439-96-5	7.0E-05	6.1E-04	3.7E-04	0.090	4.1E-03	3.2E-04	0.40	8.1E-04	1.9E-03	0.40	4.7E-03	0.078	0.30	0.26
Nickel and Compounds	7440-02-0	1.0E-04	1.8E-04	5.4E-04	0.014	0.039	4.8E-04	0.062	7.7E-03	2.8E-03	0.062	0.045	0.023	0.20	0.11
Selenium and Compounds	7782-49-2	1.0E-08	1.5E-08	5.3E-08	--	[5]	4.7E-08	--	[5]	2.7E-07	--	[5]	1.9E-06	2.00	9.6E-07
Vanadium (fume or dust)	7440-62-2	2.7E-07	5.6E-07	1.4E-06	0.10	1.4E-05	1.2E-06	0.44	2.8E-06	7.1E-06	0.44	1.6E-05	7.1E-05	0.80	8.9E-05
EP1_1															
Cumulative TEU Hazard Index				**--**	**--**	**0.11**	**--**	**--**	**4.5E-03**	**--**	**--**	**0.044**	**--**	**--**	**9.4E-03**
Dispersion Factor (ug/m^3/[g/s])				**36.9**			**6.74**			**67.1**			**261**		
Isopropanol	67-63-0	0.036	0.055	1.33	200	6.6E-03	0.24	880	2.8E-04	2.41	880	2.7E-03	14.3	3,200	4.5E-03
Phenol	108-95-2	1.8E-04	2.7E-04	6.6E-03	200	3.3E-05	1.2E-03	880	1.4E-06	0.012	880	1.4E-05	0.071	5,800	1.2E-05
Silicon dioxide (amorphous)	7631-86-9	4.6E-03	7.0E-03	0.17	3.00	0.057	0.031	13.0	2.4E-03	0.31	13.0	0.024	1.82	--	[5]
Aluminum and Compounds	7429-90-5	5.7E-03	8.6E-03	0.21	5.00	0.042	0.038	22.0	1.7E-03	0.38	22.0	0.017	2.25	--	[5]
Antimony and Compounds	7440-36-0	3.2E-09	4.4E-09	1.2E-07	0.30	3.9E-07	2.1E-08	1.30	1.6E-08	2.1E-07	1.30	1.6E-07	1.2E-06	1.00	1.2E-06
Arsenic and Compounds	7440-38-2	2.6E-09	3.6E-09	9.5E-08	1.7E-04	5.6E-04	1.7E-08	2.4E-03	7.3E-06	1.7E-07	2.4E-03	7.2E-05	9.5E-07	0.20	4.7E-06
Beryllium and compounds	7440-41-7	2.1E-10	3.0E-10	7.9E-09	7.0E-03	1.1E-06	1.4E-09	0.031	4.6E-08	1.4E-08	0.031	4.6E-07	7.8E-08	0.020	3.9E-06
Cadmium and Compounds	7440-43-9	4.9E-10	6.9E-10	1.8E-08	5.0E-03	3.6E-06	3.3E-09	0.037	9.0E-08	3.3E-08	0.037	8.9E-07	1.8E-07	0.030	6.0E-06
Chromium VI	18540-29-9	1.0E-08	1.2E-08	3.8E-07	0.083	4.6E-06	7.0E-08	0.88	7.9E-08	6.9E-07	0.88	7.9E-07	3.1E-06	0.30	1.0E-05
Cobalt and Compounds	7440-48-4	3.6E-09	5.0E-09	1.3E-07	0.10	1.3E-06	2.4E-08	0.44	5.5E-08	2.4E-07	0.44	5.5E-07	1.3E-06	--	[5]
Copper and Compounds	7440-50-8	5.7E-07	7.9E-07	2.1E-05	--	[5]	3.9E-06	--	[5]	3.9E-05	--	[5]	2.1E-04	100	2.1E-06
Lead and Compounds	7439-92-1	6.7E-08	9.4E-08	2.5E-06	0.15	1.7E-05	4.5E-07	0.66	6.9E-07	4.5E-06	0.66	6.9E-06	2.5E-05	0.15	1.6E-04
Manganese and Compounds	7439-96-5	2.2E-06	5.0E-06	8.3E-05	0.090	9.2E-04	1.5E-05	0.40	3.8E-05	1.5E-04	0.40	3.8E-04	1.3E-03	0.30	4.4E-03
Nickel and Compounds	7440-02-0	1.7E-07	2.8E-07	6.1E-06	0.014	4.4E-04	1.1E-06	0.062	1.8E-05	1.1E-05	0.062	1.8E-04	7.3E-05	0.20	3.6E-04
Selenium and Compounds	7782-49-2	1.1E-09	1.5E-09	3.9E-08	--	[5]	7.2E-09	--	[5]	7.2E-08	--	[5]	3.9E-07	2.00	2.0E-07
Vanadium (fume or dust)	7440-62-2	1.5E-08	2.0E-08	5.4E-07	0.10	5.4E-06	9.8E-08	0.44	2.2E-07	9.8E-07	0.44	2.2E-06	5.3E-06	0.80	6.6E-06

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
EP1_3															
Cumulative TEU Hazard Index				**--**	**--**	**0.080**	**--**	**--**	**4.6E-03**	**--**	**--**	**0.025**	**--**	**--**	**9.5E-03**
Dispersion Factor (ug/m^3/[g/s])				**22.8**			**5.75**			**30.6**			**140**		
Silicon dioxide (amorphous)	7631-86-9	9.7E-03	0.014	0.22	3.00	0.074	0.056	13.0	4.3E-03	0.30	13.0	0.023	1.91	--	[5]
Aluminum and Compounds	7429-90-5	1.4E-04	2.0E-04	3.3E-03	5.00	6.5E-04	8.2E-04	22.0	3.7E-05	4.4E-03	22.0	2.0E-04	0.027	--	[5]
Antimony and Compounds	7440-36-0	1.9E-08	2.6E-08	4.3E-07	0.30	1.4E-06	1.1E-07	1.30	8.3E-08	5.8E-07	1.30	4.4E-07	3.7E-06	1.00	3.7E-06
Arsenic and Compounds	7440-38-2	7.2E-09	1.0E-08	1.6E-07	1.7E-04	9.6E-04	4.1E-08	2.4E-03	1.7E-05	2.2E-07	2.4E-03	9.1E-05	1.4E-06	0.20	7.0E-06
Beryllium and compounds	7440-41-7	1.4E-09	2.0E-09	3.3E-08	7.0E-03	4.6E-06	8.2E-09	0.031	2.7E-07	4.4E-08	0.031	1.4E-06	2.8E-07	0.020	1.4E-05
Cadmium and Compounds	7440-43-9	1.4E-09	2.0E-09	3.3E-08	5.0E-03	6.5E-06	8.2E-09	0.037	2.2E-07	4.4E-08	0.037	1.2E-06	2.8E-07	0.030	9.4E-06
Chromium VI	18540-29-9	4.7E-08	6.6E-08	1.1E-06	0.083	1.3E-05	2.7E-07	0.88	3.1E-07	1.4E-06	0.88	1.6E-06	9.2E-06	0.30	3.1E-05
Cobalt and Compounds	7440-48-4	2.5E-08	3.5E-08	5.6E-07	0.10	5.6E-06	1.4E-07	0.44	3.2E-07	7.6E-07	0.44	1.7E-06	4.9E-06	--	[5]
Copper and Compounds	7440-50-8	4.7E-06	6.6E-06	1.1E-04	--	[5]	2.7E-05	--	[5]	1.4E-04	--	[5]	9.2E-04	100	9.2E-06
Lead and Compounds	7439-92-1	3.2E-07	4.5E-07	7.4E-06	0.15	4.9E-05	1.9E-06	0.66	2.8E-06	9.9E-06	0.66	1.5E-05	6.4E-05	0.15	4.2E-04
Manganese and Compounds	7439-96-5	1.3E-05	1.8E-05	2.8E-04	0.090	3.2E-03	7.2E-05	0.40	1.8E-04	3.8E-04	0.40	9.6E-04	2.5E-03	0.30	8.2E-03
Nickel and Compounds	7440-02-0	8.0E-07	1.1E-06	1.8E-05	0.014	1.3E-03	4.6E-06	0.062	7.4E-05	2.4E-05	0.062	4.0E-04	1.6E-04	0.20	7.9E-04
Selenium and Compounds	7782-49-2	7.2E-09	1.0E-08	1.6E-07	--	[5]	4.1E-08	--	[5]	2.2E-07	--	[5]	1.4E-06	2.00	7.0E-07
Vanadium (fume or dust)	7440-62-2	7.5E-08	1.1E-07	1.7E-06	0.10	1.7E-05	4.3E-07	0.44	9.8E-07	2.3E-06	0.44	5.2E-06	1.5E-05	0.80	1.8E-05
MESH															
Cumulative TEU Hazard Index				**--**	**--**	**1.7E-03**	**--**	**--**	**4.2E-05**	**--**	**--**	**5.4E-04**	**--**	**--**	**0.023**
Dispersion Factor (ug/m^3/[g/s])				**28.9**			**5.75**			**73.5**			**331**		
Aluminum and Compounds	7429-90-5	8.7E-08	1.6E-06	2.5E-06	5.00	5.1E-07	5.0E-07	22.0	2.3E-08	6.4E-06	22.0	2.9E-07	5.3E-04	--	[5]
Antimony and Compounds	7440-36-0	2.2E-09	4.0E-08	6.3E-08	0.30	2.1E-07	1.3E-08	1.30	9.7E-09	1.6E-07	1.30	1.2E-07	1.3E-05	1.00	1.3E-05
Arsenic and Compounds	7440-38-2	6.7E-09	1.2E-07	1.9E-07	1.7E-04	1.1E-03	3.8E-08	2.4E-03	1.6E-05	4.9E-07	2.4E-03	2.0E-04	4.1E-05	0.20	2.0E-04
Beryllium and compounds	7440-41-7	1.4E-10	2.6E-09	4.0E-09	7.0E-03	5.8E-07	8.0E-10	0.031	2.6E-08	1.0E-08	0.031	3.3E-07	8.6E-07	0.020	4.3E-05
Cadmium and Compounds	7440-43-9	1.4E-10	2.6E-09	4.0E-09	5.0E-03	8.1E-07	8.0E-10	0.037	2.2E-08	1.0E-08	0.037	2.8E-07	8.6E-07	0.030	2.9E-05
Chromium VI	18540-29-9	1.0E-08	1.8E-07	2.9E-07	0.083	3.5E-06	5.7E-08	0.88	6.5E-08	7.3E-07	0.88	8.3E-07	6.1E-05	0.30	2.0E-04
Cobalt and Compounds	7440-48-4	9.6E-09	1.8E-07	2.8E-07	0.10	2.8E-06	5.5E-08	0.44	1.3E-07	7.0E-07	0.44	1.6E-06	5.9E-05	--	[5]
Copper and Compounds	7440-50-8	3.6E-07	6.7E-06	1.0E-05	--	[5]	2.1E-06	--	[5]	2.7E-05	--	[5]	2.2E-03	100	2.2E-05
Lead and Compounds	7439-92-1	1.1E-09	2.0E-08	3.1E-08	0.15	2.1E-07	6.2E-09	0.66	9.3E-09	7.9E-08	0.66	1.2E-07	6.6E-06	0.15	4.4E-05
Manganese and Compounds	7439-96-5	8.9E-07	1.6E-05	2.6E-05	0.090	2.9E-04	5.1E-06	0.40	1.3E-05	6.5E-05	0.40	1.6E-04	5.4E-03	0.30	0.018
Nickel and Compounds	7440-02-0	1.4E-07	2.6E-06	4.0E-06	0.014	2.9E-04	8.0E-07	0.062	1.3E-05	1.0E-05	0.062	1.6E-04	8.5E-04	0.20	4.3E-03
Selenium and Compounds	7782-49-2	7.0E-11	1.3E-09	2.0E-09	--	[5]	4.0E-10	--	[5]	5.1E-09	--	[5]	4.3E-07	2.00	2.1E-07
Vanadium (fume or dust)	7440-62-2	1.2E-08	2.3E-07	3.6E-07	0.10	3.6E-06	7.1E-08	0.44	1.6E-07	9.1E-07	0.44	2.1E-06	7.6E-05	0.80	9.5E-05

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
EGEN															
Cumulative TEU Hazard Index				**--**	**--**	**9.4E-03**	**--**	**--**	**2.1E-04**	**--**	**--**	**1.2E-03**	**--**	**--**	**5.5E-03**
Dispersion Factor (ug/m^3/[g/s])				**52.0**			**8.21**			**45.2**			**336**		
Acetaldehyde	75-07-0	8.2E-06	6.0E-05	4.3E-04	140	3.1E-06	6.8E-05	620	1.1E-07	3.7E-04	620	6.0E-07	0.020	470	4.3E-05
Acrolein	107-02-8	3.6E-07	2.6E-06	1.8E-05	0.35	5.3E-05	2.9E-06	1.50	1.9E-06	1.6E-05	1.50	1.1E-05	8.7E-04	6.90	1.3E-04
Benzene	71-43-2	2.0E-06	1.4E-05	1.0E-04	3.00	3.4E-05	1.6E-05	13.0	1.2E-06	8.8E-05	13.0	6.8E-06	4.8E-03	29.0	1.7E-04
1,3-Butadiene	106-99-0	2.3E-06	1.7E-05	1.2E-04	2.00	5.9E-05	1.9E-05	8.80	2.1E-06	1.0E-04	8.80	1.2E-05	5.6E-03	660	8.5E-06
Ethylbenzene	100-41-4	1.1E-07	8.4E-07	5.9E-06	260	2.3E-08	9.4E-07	1,100	8.5E-10	5.2E-06	1,100	4.7E-09	2.8E-04	22,000	1.3E-08
Formaldehyde	50-00-0	1.8E-05	1.3E-04	9.4E-04	9.00	1.0E-04	1.5E-04	40.0	3.7E-06	8.2E-04	40.0	2.0E-05	0.045	49.0	9.1E-04
Hexane	110-54-3	2.8E-07	2.1E-06	1.5E-05	700	2.1E-08	2.3E-06	3,100	7.5E-10	1.3E-05	3,100	4.1E-09	6.9E-04	--	[5]
Toluene	108-88-3	1.1E-06	8.1E-06	5.8E-05	5,000	1.2E-08	9.1E-06	22,000	4.1E-10	5.0E-05	22,000	2.3E-09	2.7E-03	7,500	3.6E-07
Xylene (mixed)	1330-20-7	4.5E-07	3.2E-06	2.3E-05	220	1.1E-07	3.7E-06	970	3.8E-09	2.0E-05	970	2.1E-08	1.1E-03	8,700	1.3E-07
Ammonia	7664-41-7	8.4E-06	6.1E-05	4.4E-04	500	8.7E-07	6.9E-05	2,200	3.1E-08	3.8E-04	2,200	1.7E-07	0.021	1,200	1.7E-05
Hydrochloric Acid	7647-01-0	2.0E-06	1.4E-05	1.0E-04	20.0	5.1E-06	1.6E-05	88.0	1.8E-07	8.8E-05	88.0	1.0E-06	4.8E-03	2,100	2.3E-06
Benzo(a)pyrene	50-32-8	3.7E-10	2.7E-09	1.9E-08	2.0E-03	9.6E-06	3.0E-09	8.8E-03	3.5E-07	1.7E-08	8.8E-03	1.9E-06	9.1E-07	2.0E-03	4.5E-04
Naphthalene	91-20-3	2.1E-07	1.5E-06	1.1E-05	3.70	2.9E-06	1.7E-06	16.0	1.1E-07	9.4E-06	16.0	5.8E-07	5.1E-04	200	2.5E-06
PAHs (excluding Naphthalene	401	3.8E-07	2.8E-06	2.0E-05	--	[5]	3.1E-06	--	[5]	1.7E-05	--	[5]	9.3E-04	--	[5]
Arsenic and Compounds	7440-38-2	1.7E-08	1.2E-07	8.7E-07	1.7E-04	5.1E-03	1.4E-07	2.4E-03	5.8E-05	7.6E-07	2.4E-03	3.2E-04	4.1E-05	0.20	2.1E-04
Cadmium and Compounds	7440-43-9	1.6E-08	1.1E-07	8.2E-07	5.0E-03	1.6E-04	1.3E-07	0.037	3.5E-06	7.1E-07	0.037	1.9E-05	3.9E-05	0.030	1.3E-03
Chromium VI	18540-29-9	1.0E-09	7.7E-09	5.5E-08	0.083	6.6E-07	8.6E-09	0.88	9.8E-09	4.7E-08	0.88	5.4E-08	2.6E-06	0.30	8.6E-06
Copper and Compounds	7440-50-8	4.3E-08	3.1E-07	2.2E-06	--	[5]	3.5E-07	--	[5]	1.9E-06	--	[5]	1.1E-04	100	1.1E-06
Lead and Compounds	7439-92-1	8.7E-08	6.4E-07	4.5E-06	0.15	3.0E-05	7.2E-07	0.66	1.1E-06	3.9E-06	0.66	6.0E-06	2.1E-04	0.15	1.4E-03
Manganese and Compounds	7439-96-5	3.3E-08	2.4E-07	1.7E-06	0.090	1.9E-05	2.7E-07	0.40	6.7E-07	1.5E-06	0.40	3.7E-06	8.0E-05	0.30	2.7E-04
Mercury	7439-97-6	2.1E-08	1.5E-07	1.1E-06	0.077	1.4E-05	1.7E-07	0.63	2.7E-07	9.5E-07	0.63	1.5E-06	5.2E-05	0.60	8.6E-05
Nickel and Compounds	7440-02-0	4.1E-08	3.0E-07	2.1E-06	0.014	1.5E-04	3.4E-07	0.062	5.4E-06	1.9E-06	0.062	3.0E-05	1.0E-04	0.20	5.0E-04
Selenium and Compounds	7782-49-2	2.3E-08	1.7E-07	1.2E-06	--	[5]	1.9E-07	--	[5]	1.0E-06	--	[5]	5.7E-05	2.00	2.8E-05
DPM	200	3.5E-04	2.6E-03	0.018	5.00	3.7E-03	2.9E-03	22.0	1.3E-04	0.016	22.0	7.2E-04	0.86	--	[5]
PTRN															
Cumulative TEU Hazard Index				**--**	**--**	**4.8E-04**	**--**	**--**	**1.3E-05**	**--**	**--**	**1.0E-04**	**--**	**--**	**1.2E-04**
Dispersion Factor (ug/m^3/[g/s])				**54.0**			**6.62**			**51.1**			**629**		
Isopropanol	67-63-0	3.9E-05	5.9E-05	2.1E-03	200	1.0E-05	2.6E-04	880	2.9E-07	2.0E-03	880	2.2E-06	0.037	3,200	1.2E-05
Methyl Ethyl Ketone	78-93-3	1.4E-04	2.1E-04	7.3E-03	5,000	1.5E-06	8.9E-04	22,000	4.1E-08	6.9E-03	22,000	3.1E-07	0.13	5,000	2.6E-05
Toluene	108-88-3	6.4E-04	9.8E-04	0.035	5,000	7.0E-06	4.3E-03	22,000	1.9E-07	0.033	22,000	1.5E-06	0.62	7,500	8.2E-05
1,2,4-Trimethylbenzene	95-63-6	5.1E-04	7.7E-04	0.027	60.0	4.6E-04	3.4E-03	260	1.3E-05	0.026	260	1.0E-04	0.49	--	[5]

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
FIN_FUG1															
Cumulative TEU Hazard Index				**--**	**--**	**0.020**	**--**	**--**	**7.0E-04**	**--**	**--**	**0.019**	**--**	**--**	**0.18**
Dispersion Factor (ug/m^3/[g/s])				**46.1**			**7.42**			**204**			**1,277**		
Aluminum and Compounds	7429-90-5	9.1E-07	1.3E-06	4.2E-05	5.00	8.4E-06	6.7E-06	22.0	3.1E-07	1.9E-04	22.0	8.4E-06	1.6E-03	--	[5]
Antimony and Compounds	7440-36-0	4.9E-10	6.9E-10	2.3E-08	0.30	7.6E-08	3.7E-09	1.30	2.8E-09	1.0E-07	1.30	7.8E-08	8.8E-07	1.00	8.8E-07
Arsenic and Compounds	7440-38-2	3.0E-09	4.2E-09	1.4E-07	1.7E-04	8.1E-04	2.2E-08	2.4E-03	9.2E-06	6.1E-07	2.4E-03	2.5E-04	5.3E-06	0.20	2.7E-05
Beryllium and compounds	7440-41-7	9.9E-11	1.4E-10	4.5E-09	7.0E-03	6.5E-07	7.3E-10	0.031	2.4E-08	2.0E-08	0.031	6.5E-07	1.8E-07	0.020	8.8E-06
Cadmium and Compounds	7440-43-9	7.7E-10	1.1E-09	3.5E-08	5.0E-03	7.1E-06	5.7E-09	0.037	1.5E-07	1.6E-07	0.037	4.2E-06	1.4E-06	0.030	4.6E-05
Chromium VI	18540-29-9	1.2E-06	3.1E-07	5.4E-05	0.083	6.5E-04	8.7E-06	0.88	9.9E-06	2.4E-04	0.88	2.7E-04	3.9E-04	0.30	1.3E-03
Cobalt and Compounds	7440-48-4	1.4E-08	2.0E-08	6.6E-07	0.10	6.6E-06	1.1E-07	0.44	2.4E-07	2.9E-06	0.44	6.7E-06	2.6E-05	--	[5]
Copper and Compounds	7440-50-8	9.4E-08	2.6E-08	4.3E-06	--	[5]	7.0E-07	--	[5]	1.9E-05	--	[5]	3.4E-05	100.0	3.4E-07
Lead and Compounds	7439-92-1	8.6E-10	1.2E-09	3.9E-08	0.15	2.6E-07	6.4E-09	0.66	9.6E-09	1.7E-07	0.66	2.6E-07	1.5E-06	0.15	1.0E-05
Manganese and Compounds	7439-96-5	3.4E-06	3.0E-05	1.6E-04	0.090	1.7E-03	2.5E-05	0.40	6.3E-05	6.9E-04	0.40	1.7E-03	0.038	0.30	0.13
Nickel and Compounds	7440-02-0	5.2E-06	8.8E-06	2.4E-04	0.014	0.017	3.9E-05	0.062	6.2E-04	1.1E-03	0.062	0.017	0.011	0.20	0.056
Selenium and Compounds	7782-49-2	4.9E-10	6.9E-10	2.3E-08	--	[5]	3.7E-09	--	[5]	1.0E-07	--	[5]	8.8E-07	2.00	4.4E-07
Vanadium (fume or dust)	7440-62-2	1.1E-08	1.6E-08	5.3E-07	0.10	5.3E-06	8.5E-08	0.44	1.9E-07	2.3E-06	0.44	5.3E-06	2.0E-05	0.80	2.6E-05
FIN_FUG2															
Cumulative TEU Hazard Index				**--**	**--**	**0.030**	**--**	**--**	**6.6E-04**	**--**	**--**	**0.023**	**--**	**--**	**0.48**
Dispersion Factor (ug/m^3/[g/s])				**67.2**			**6.94**			**245**			**3,308**		
Aluminum and Compounds	7429-90-5	9.1E-07	1.3E-06	6.1E-05	5.00	1.2E-05	6.3E-06	22.0	2.9E-07	2.2E-04	22.0	1.0E-05	4.2E-03	--	[5]
Antimony and Compounds	7440-36-0	4.9E-10	6.9E-10	3.3E-08	0.30	1.1E-07	3.4E-09	1.30	2.6E-09	1.2E-07	1.30	9.3E-08	2.3E-06	1.00	2.3E-06
Arsenic and Compounds	7440-38-2	3.0E-09	4.2E-09	2.0E-07	1.7E-04	1.2E-03	2.1E-08	2.4E-03	8.6E-06	7.3E-07	2.4E-03	3.0E-04	1.4E-05	0.20	6.9E-05
Beryllium and compounds	7440-41-7	9.9E-11	1.4E-10	6.6E-09	7.0E-03	9.5E-07	6.8E-10	0.031	2.2E-08	2.4E-08	0.031	7.8E-07	4.6E-07	0.020	2.3E-05
Cadmium and Compounds	7440-43-9	7.7E-10	1.1E-09	5.2E-08	5.0E-03	1.0E-05	5.3E-09	0.037	1.4E-07	1.9E-07	0.037	5.1E-06	3.6E-06	0.030	1.2E-04
Chromium VI	18540-29-9	1.2E-06	3.1E-07	7.8E-05	0.083	9.5E-04	8.1E-06	0.88	9.2E-06	2.9E-04	0.88	3.3E-04	1.0E-03	0.30	3.4E-03
Cobalt and Compounds	7440-48-4	1.4E-08	2.0E-08	9.7E-07	0.10	9.7E-06	1.0E-07	0.44	2.3E-07	3.5E-06	0.44	8.0E-06	6.7E-05	--	[5]
Copper and Compounds	7440-50-8	9.4E-08	2.6E-08	6.3E-06	--	[5]	6.5E-07	--	[5]	2.3E-05	--	[5]	8.7E-05	100.0	8.7E-07
Lead and Compounds	7439-92-1	8.6E-10	1.2E-09	5.7E-08	0.15	3.8E-07	5.9E-09	0.66	9.0E-09	2.1E-07	0.66	3.2E-07	4.0E-06	0.15	2.6E-05
Manganese and Compounds	7439-96-5	3.4E-06	3.0E-05	2.3E-04	0.090	2.5E-03	2.3E-05	0.40	5.9E-05	8.3E-04	0.40	2.1E-03	0.099	0.30	0.33
Nickel and Compounds	7440-02-0	5.2E-06	8.8E-06	3.5E-04	0.014	0.025	3.6E-05	0.062	5.8E-04	1.3E-03	0.062	0.021	0.029	0.20	0.15
Selenium and Compounds	7782-49-2	4.9E-10	6.9E-10	3.3E-08	--	[5]	3.4E-09	--	[5]	1.2E-07	--	[5]	2.3E-06	2.00	1.1E-06
Vanadium (fume or dust)	7440-62-2	1.1E-08	1.6E-08	7.7E-07	0.10	7.7E-06	7.9E-08	0.44	1.8E-07	2.8E-06	0.44	6.4E-06	5.3E-05	0.80	6.6E-05

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				**--**	**--**	**0.9**	**--**	**--**	**<0.1**	**--**	**--**	**0.2**	**--**	**--**	**2.2**
FIN_FUG3															
Cumulative TEU Hazard Index				**--**	**--**	**0.038**	**--**	**--**	**6.3E-04**	**--**	**--**	**0.019**	**--**	**--**	**0.24**
Dispersion Factor (ug/m^3/[g/s])				**86.1**			**6.67**			**201**			**1,647**		
Aluminum and Compounds	7429-90-5	9.1E-07	1.3E-06	7.8E-05	5.00	1.6E-05	6.0E-06	22.0	2.7E-07	1.8E-04	22.0	8.3E-06	2.1E-03	--	[5]
Antimony and Compounds	7440-36-0	4.9E-10	6.9E-10	4.3E-08	0.30	1.4E-07	3.3E-09	1.30	2.5E-09	9.9E-08	1.30	7.6E-08	1.1E-06	1.00	1.1E-06
Arsenic and Compounds	7440-38-2	3.0E-09	4.2E-09	2.6E-07	1.7E-04	1.5E-03	2.0E-08	2.4E-03	8.3E-06	6.0E-07	2.4E-03	2.5E-04	6.9E-06	0.20	3.4E-05
Beryllium and compounds	7440-41-7	9.9E-11	1.4E-10	8.5E-09	7.0E-03	1.2E-06	6.6E-10	0.031	2.1E-08	2.0E-08	0.031	6.4E-07	2.3E-07	0.020	1.1E-05
Cadmium and Compounds	7440-43-9	7.7E-10	1.1E-09	6.6E-08	5.0E-03	1.3E-05	5.1E-09	0.037	1.4E-07	1.5E-07	0.037	4.2E-06	1.8E-06	0.030	5.9E-05
Chromium VI	18540-29-9	1.2E-06	3.1E-07	1.0E-04	0.083	1.2E-03	7.8E-06	0.88	8.9E-06	2.3E-04	0.88	2.7E-04	5.1E-04	0.30	1.7E-03
Cobalt and Compounds	7440-48-4	1.4E-08	2.0E-08	1.2E-06	0.10	1.2E-05	9.6E-08	0.44	2.2E-07	2.9E-06	0.44	6.6E-06	3.3E-05	--	[5]
Copper and Compounds	7440-50-8	9.4E-08	2.6E-08	8.1E-06	--	[5]	6.2E-07	--	[5]	1.9E-05	--	[5]	4.3E-05	100.0	4.3E-07
Lead and Compounds	7439-92-1	8.6E-10	1.2E-09	7.4E-08	0.15	4.9E-07	5.7E-09	0.66	8.6E-09	1.7E-07	0.66	2.6E-07	2.0E-06	0.15	1.3E-05
Manganese and Compounds	7439-96-5	3.4E-06	3.0E-05	2.9E-04	0.090	3.2E-03	2.3E-05	0.40	5.6E-05	6.8E-04	0.40	1.7E-03	0.049	0.30	0.16
Nickel and Compounds	7440-02-0	5.2E-06	8.8E-06	4.5E-04	0.014	0.032	3.5E-05	0.062	5.6E-04	1.0E-03	0.062	0.017	0.015	0.20	0.073
Selenium and Compounds	7782-49-2	4.9E-10	6.9E-10	4.3E-08	--	[5]	3.3E-09	--	[5]	9.9E-08	--	[5]	1.1E-06	2.00	5.7E-07
Vanadium (fume or dust)	7440-62-2	1.1E-08	1.6E-08	9.8E-07	0.10	9.8E-06	7.6E-08	0.44	1.7E-07	2.3E-06	0.44	5.2E-06	2.6E-05	0.80	3.3E-05

Table 6-3
Level 3 Risk Assessment Results for Significant TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**8,433**			**1,598**			**1,129**			**1,129**		
Cumulative Facility-wide Hazard Index				--	--	**0.9**	--	--	**<0.1**	--	--	**0.2**	--	--	**2.2**
SLAG															
Cumulative TEU Hazard Index				--	--	**7.2E-04**	--	--	**8.6E-06**	--	--	**2.5E-04**	--	--	**5.4E-03**
Dispersion Factor (ug/m^3/[g/s])				**132**			**7.22**			**214**			**2,420**		
Aluminum and Compounds	7429-90-5	2.7E-07	4.0E-07	3.5E-05	5.00	7.1E-06	1.9E-06	22.0	8.8E-08	5.7E-05	22.0	2.6E-06	9.6E-04	--	[5]
Antimony and Compounds	7440-36-0	3.1E-11	4.6E-11	4.1E-09	0.30	1.4E-08	2.3E-10	1.30	1.7E-10	6.7E-09	1.30	5.1E-09	1.1E-07	1.00	1.1E-07
Arsenic and Compounds	7440-38-2	3.1E-11	4.6E-11	4.1E-09	1.7E-04	2.4E-05	2.3E-10	2.4E-03	9.4E-08	6.7E-09	2.4E-03	2.8E-06	1.1E-07	0.20	5.6E-07
Beryllium and compounds	7440-41-7	6.2E-12	9.3E-12	8.3E-10	7.0E-03	1.2E-07	4.5E-11	0.031	1.5E-09	1.3E-09	0.031	4.3E-08	2.2E-08	0.020	1.1E-06
Cadmium and Compounds	7440-43-9	6.2E-12	9.3E-12	8.3E-10	5.0E-03	1.7E-07	4.5E-11	0.037	1.2E-09	1.3E-09	0.037	3.6E-08	2.2E-08	0.030	7.5E-07
Chromium VI	18540-29-9	9.1E-10	1.3E-09	1.2E-07	0.083	1.4E-06	6.5E-09	0.88	7.4E-09	1.9E-07	0.88	2.2E-07	3.2E-06	0.30	1.1E-05
Cobalt and Compounds	7440-48-4	2.1E-10	3.1E-10	2.8E-08	0.10	2.8E-07	1.5E-09	0.44	3.4E-09	4.5E-08	0.44	1.0E-07	7.5E-07	--	[5]
Copper and Compounds	7440-50-8	1.4E-09	2.1E-09	1.9E-07	--	[5]	1.0E-08	--	[5]	3.0E-07	--	[5]	5.1E-06	100.0	5.1E-08
Lead and Compounds	7439-92-1	2.4E-11	3.5E-11	3.1E-09	0.15	2.1E-08	1.7E-10	0.66	2.6E-10	5.1E-09	0.66	7.7E-09	8.5E-08	0.15	5.7E-07
Manganese and Compounds	7439-96-5	4.5E-07	6.7E-07	6.0E-05	0.090	6.6E-04	3.3E-06	0.40	8.1E-06	9.6E-05	0.40	2.4E-04	1.6E-03	0.30	5.4E-03
Mercury	7439-97-6	2.5E-12	3.7E-12	3.3E-10	0.077	4.3E-09	1.8E-11	0.63	2.9E-11	5.4E-10	0.63	8.5E-10	9.0E-09	0.60	1.5E-08
Nickel and Compounds	7440-02-0	2.3E-09	3.3E-09	3.0E-07	0.014	2.1E-05	1.6E-08	0.062	2.6E-07	4.8E-07	0.062	7.8E-06	8.1E-06	0.20	4.0E-05
Selenium and Compounds	7782-49-2	3.1E-11	4.6E-11	4.1E-09	--	[5]	2.3E-10	--	[5]	6.7E-09	--	[5]	1.1E-07	2.00	5.6E-08
Vanadium (fume or dust)	7440-62-2	3.3E-10	4.9E-10	4.4E-08	0.10	4.4E-07	2.4E-09	0.44	5.4E-09	7.1E-08	0.44	1.6E-07	1.2E-06	0.80	1.5E-06

Notes

g = gram; m^3 = cubic meter; RBC = risk-based concentration; s = second; TEU = toxic emission unit; TAC - toxic air contaminant; ug = micrograms.

[a] Calculated concentration (ug/m^3) = (dispersion factor [{ug/m^3}/{g/s}]) x (TAC emission rate per TEU [g/s])

[b] Hazard index = (calculated concentration [ug/m^3]) / (risk-based concentration [ug/m^3])

References

[1] See Table 3-1, Annual TAC Emission Rates—Significant TEUs.

[2] See Table 3-2, Daily TAC Emission Rates—Significant TEUs.

[3] Oregon Administrative Rule 340-245-8010, Table 2.

[4] See Table 6-1, Maximum Predicted Risk Exposure Location Per TEU.

[5] TAC does not have an established RBC for this exposure category per Oregon Administrative Rule 340-245-8010 Table 2.

Table 6-4
Level 3 Risk Assessment Results for Gas Combustion TEUs—Cancer Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	TAC Emission Rate [1] (g/s)	Cancer								
			Residential			Nonresidential Child			Nonresidential Worker		
			Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)	Calculated Conc. [a] (ug/m^3)	RBC [2] (ug/m^3)	Risk [b] (chances-in-10^6)
Exposure Location [3]			**1,580**			**1,598**			**1,126**		
Cumulative Facility-wide Risk			--	--	<0.1	--	--	<0.1	--	--	<0.1
HT_1											
Cumulative TEU Risk			--	--	**1.3E-03**	--	--	**1.4E-05**	--	--	**4.7E-05**
Dispersion Factor ($\mu g/m^3$/[g/s])			**6.90**			**2.61**			**12.4**		
Acetaldehyde	75-07-0	2.9E-07	2.0E-06	0.45	4.5E-06	7.7E-07	12.0	6.4E-08	3.7E-06	5.50	6.6E-07
Acrolein	107-02-8	1.9E-07	1.3E-06	--	[4]	4.8E-07	--	[4]	2.3E-06	--	[4]
Benzene	71-43-2	5.5E-07	3.8E-06	0.13	2.9E-05	1.4E-06	3.30	4.3E-07	6.8E-06	1.50	4.6E-06
Ethylbenzene	100-41-4	6.5E-07	4.5E-06	0.40	1.1E-05	1.7E-06	10.0	1.7E-07	8.1E-06	4.80	1.7E-06
Formaldehyde	50-00-0	1.2E-06	8.1E-06	0.17	4.7E-05	3.1E-06	4.30	7.1E-07	1.5E-05	2.00	7.3E-06
Hexane	110-54-3	4.3E-07	3.0E-06	--	[4]	1.1E-06	--	[4]	5.4E-06	--	[4]
Toluene	108-88-3	2.5E-06	1.7E-05	--	[4]	6.6E-06	--	[4]	3.1E-05	--	[4]
Xylene (mixed)	1330-20-7	1.9E-06	1.3E-05	--	[4]	4.9E-06	--	[4]	2.3E-05	--	[4]
Ammonia	7664-41-7	2.3E-04	1.6E-03	--	[4]	6.1E-04	--	[4]	2.9E-03	--	[4]
Naphthalene	91-20-3	2.3E-08	1.6E-07	0.029	5.5E-06	6.1E-08	0.76	8.0E-08	2.9E-07	0.35	8.2E-07
PAHs (excluding Naphthalene)	401	7.8E-09	5.3E-08	4.3E-05	1.2E-03	2.0E-08	1.6E-03	1.3E-05	9.6E-08	3.0E-03	3.2E-05
HT_2											
Cumulative TEU Risk			--	--	**1.4E-03**	--	--	**1.4E-05**	--	--	**3.9E-05**
Dispersion Factor ($\mu g/m^3$/[g/s])			**7.00**			**2.57**			**10.3**		
Acetaldehyde	75-07-0	2.9E-07	2.1E-06	0.45	4.6E-06	7.6E-07	12.0	6.3E-08	3.0E-06	5.50	5.5E-07
Acrolein	107-02-8	1.9E-07	1.3E-06	--	[4]	4.8E-07	--	[4]	1.9E-06	--	[4]
Benzene	71-43-2	5.5E-07	3.9E-06	0.13	3.0E-05	1.4E-06	3.30	4.3E-07	5.7E-06	1.50	3.8E-06
Ethylbenzene	100-41-4	6.5E-07	4.6E-06	0.40	1.1E-05	1.7E-06	10.0	1.7E-07	6.7E-06	4.80	1.4E-06
Formaldehyde	50-00-0	1.2E-06	8.2E-06	0.17	4.8E-05	3.0E-06	4.30	7.0E-07	1.2E-05	2.00	6.0E-06
Hexane	110-54-3	4.3E-07	3.0E-06	--	[4]	1.1E-06	--	[4]	4.5E-06	--	[4]
Toluene	108-88-3	2.5E-06	1.8E-05	--	[4]	6.5E-06	--	[4]	2.6E-05	--	[4]
Xylene (mixed)	1330-20-7	1.9E-06	1.3E-05	--	[4]	4.8E-06	--	[4]	1.9E-05	--	[4]
Ammonia	7664-41-7	2.3E-04	1.6E-03	--	[4]	6.0E-04	--	[4]	2.4E-03	--	[4]
Naphthalene	91-20-3	2.3E-08	1.6E-07	0.029	5.6E-06	6.0E-08	0.76	7.9E-08	2.4E-07	0.35	6.8E-07
PAHs (excluding Naphthalene)	401	7.8E-09	5.4E-08	4.3E-05	1.3E-03	2.0E-08	1.6E-03	1.2E-05	8.0E-08	3.0E-03	2.7E-05
HT_3											
Cumulative TEU Risk			--	--	**1.4E-03**	--	--	**1.4E-05**	--	--	**4.3E-05**
Dispersion Factor ($\mu g/m^3$/[g/s])			**7.03**			**2.55**			**11.4**		
Acetaldehyde	75-07-0	2.9E-07	2.1E-06	0.45	4.6E-06	7.5E-07	12.0	6.3E-08	3.4E-06	5.50	6.1E-07
Acrolein	107-02-8	1.9E-07	1.3E-06	--	[4]	4.7E-07	--	[4]	2.1E-06	--	[4]
Benzene	71-43-2	5.5E-07	3.9E-06	0.13	3.0E-05	1.4E-06	3.30	4.3E-07	6.3E-06	1.50	4.2E-06
Ethylbenzene	100-41-4	6.5E-07	4.6E-06	0.40	1.1E-05	1.7E-06	10.0	1.7E-07	7.5E-06	4.80	1.6E-06
Formaldehyde	50-00-0	1.2E-06	8.2E-06	0.17	4.8E-05	3.0E-06	4.30	6.9E-07	1.3E-05	2.00	6.7E-06
Hexane	110-54-3	4.3E-07	3.1E-06	--	[4]	1.1E-06	--	[4]	5.0E-06	--	[4]
Toluene	108-88-3	2.5E-06	1.8E-05	--	[4]	6.4E-06	--	[4]	2.9E-05	--	[4]
Xylene (mixed)	1330-20-7	1.9E-06	1.3E-05	--	[4]	4.8E-06	--	[4]	2.1E-05	--	[4]
Ammonia	7664-41-7	2.3E-04	1.6E-03	--	[4]	5.9E-04	--	[4]	2.7E-03	--	[4]
Naphthalene	91-20-3	2.3E-08	1.6E-07	0.029	5.6E-06	5.9E-08	0.76	7.8E-08	2.7E-07	0.35	7.6E-07
PAHs (excluding Naphthalene)	401	7.8E-09	5.4E-08	4.3E-05	1.3E-03	2.0E-08	1.6E-03	1.2E-05	8.9E-08	3.0E-03	3.0E-05
HT_4											
Cumulative TEU Risk			--	--	**1.4E-03**	--	--	**1.4E-05**	--	--	**3.5E-05**
Dispersion Factor ($\mu g/m^3$/[g/s])			**7.06**			**2.52**			**9.18**		
Acetaldehyde	75-07-0	2.9E-07	2.1E-06	0.45	4.6E-06	7.4E-07	12.0	6.2E-08	2.7E-06	5.50	4.9E-07
Acrolein	107-02-8	1.9E-07	1.3E-06	--	[4]	4.7E-07	--	[4]	1.7E-06	--	[4]
Benzene	71-43-2	5.5E-07	3.9E-06	0.13	3.0E-05	1.4E-06	3.30	4.2E-07	5.1E-06	1.50	3.4E-06
Ethylbenzene	100-41-4	6.5E-07	4.6E-06	0.40	1.2E-05	1.6E-06	10.0	1.6E-07	6.0E-06	4.80	1.2E-06
Formaldehyde	50-00-0	1.2E-06	8.3E-06	0.17	4.9E-05	3.0E-06	4.30	6.9E-07	1.1E-05	2.00	5.4E-06
Hexane	110-54-3	4.3E-07	3.1E-06	--	[4]	1.1E-06	--	[4]	4.0E-06	--	[4]
Toluene	108-88-3	2.5E-06	1.8E-05	--	[4]	6.4E-06	--	[4]	2.3E-05	--	[4]
Xylene (mixed)	1330-20-7	1.9E-06	1.3E-05	--	[4]	4.7E-06	--	[4]	1.7E-05	--	[4]
Ammonia	7664-41-7	2.3E-04	1.6E-03	--	[4]	5.9E-04	--	[4]	2.1E-03	--	[4]
Naphthalene	91-20-3	2.3E-08	1.6E-07	0.029	5.7E-06	5.9E-08	0.76	7.7E-08	2.1E-07	0.35	6.1E-07
PAHs (excluding Naphthalene)	401	7.8E-09	5.5E-08	4.3E-05	1.3E-03	2.0E-08	1.6E-03	1.2E-05	7.1E-08	3.0E-03	2.4E-05

Notes

g = gram; m^3 = cubic meter; RBC = risk-based concentration; s = second; TEU = toxic emission unit; TAC - toxic air contaminant; ug = micrograms.

[a] Calculated concentration ($\mu g/m^3$) = (dispersion factor [{$\mu g/m^3$}/{g/s}]) x (TAC emission rate per TEU [g/s])

[b] Predicted risk (chances-in-1,000,000) = (calculated concentration [$\mu g/m^3$]) / (risk-based concentration [$\mu g/m^3$])

References

[1] See Table 3-3, Annual TAC Emission Rates—Gas Combustion TEUs.

[2] Oregon Administrative Rule 340-245-8010, Table 2.

[3] See Table 6-1, Maximum Predicted Risk Exposure Location Per TEU.

[4] TAC does not have an established RBC for this exposure category per Oregon Administrative Rule 340-245-8010 Table 2.

Table 6-5
Level 3 Risk Assessment Results for Gas Combustion TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**1,580**			**1,598**			**1,126**			**1,128**		
Cumulative Facility-wide Hazard Index				--	--	**<0.1**	--	--	**<0.1**	--	--	**<0.1**	--	--	**<0.1**
HT_1															
Cumulative TEU Hazard Index				--	--	**9.2E-06**	--	--	**8.0E-07**	--	--	**3.8E-06**	--	--	**4.1E-05**
Dispersion Factor ($\mu g/m^3/[g/s]$)				**6.90**			**2.61**			**12.4**			**101**		
Acetaldehyde	75-07-0	2.9E-07	4.5E-07	2.0E-06	140	1.5E-08	7.7E-07	620	1.2E-09	3.7E-06	620	5.9E-09	4.5E-05	470	9.6E-08
Acrolein	107-02-8	1.9E-07	2.8E-07	1.3E-06	0.35	3.7E-06	4.8E-07	1.50	3.2E-07	2.3E-06	1.50	1.5E-06	2.8E-05	6.90	4.1E-06
Benzene	71-43-2	5.5E-07	8.4E-07	3.8E-06	3.00	1.3E-06	1.4E-06	13.0	1.1E-07	6.8E-06	13.0	5.3E-07	8.4E-05	29.0	2.9E-06
Ethylbenzene	100-41-4	6.5E-07	9.9E-07	4.5E-06	260	1.7E-08	1.7E-06	1,100	1.5E-09	8.1E-06	1,100	7.3E-09	1.0E-04	22,000	4.5E-09
Formaldehyde	50-00-0	1.2E-06	1.8E-06	8.1E-06	9.00	9.0E-07	3.1E-06	40.0	7.6E-08	1.5E-05	40.0	3.6E-07	1.8E-04	49.0	3.7E-06
Hexane	110-54-3	4.3E-07	6.6E-07	3.0E-06	700	4.3E-09	1.1E-06	3,100	3.7E-10	5.4E-06	3,100	1.7E-09	6.6E-05	--	[5]
Toluene	108-88-3	2.5E-06	3.8E-06	1.7E-05	5,000	3.5E-09	6.6E-06	22,000	3.0E-10	3.1E-05	22,000	1.4E-09	3.9E-04	7,500	5.1E-08
Xylene (mixed)	1330-20-7	1.9E-06	2.8E-06	1.3E-05	220	5.9E-08	4.9E-06	970	5.0E-09	2.3E-05	970	2.4E-08	2.9E-04	8,700	3.3E-08
Ammonia	7664-41-7	2.3E-04	3.5E-04	1.6E-03	500	3.2E-06	6.1E-04	2,200	2.8E-07	2.9E-03	2,200	1.3E-06	0.036	1,200	3.0E-05
Naphthalene	91-20-3	2.3E-08	3.5E-08	1.6E-07	3.70	4.3E-08	6.1E-08	16.0	3.8E-09	2.9E-07	16.0	1.8E-08	3.6E-06	200	1.8E-08
PAHs (excluding Naphthalene)	401	7.8E-09	1.2E-08	5.3E-08	--	[5]	2.0E-08	--	[5]	9.6E-08	--	[5]	1.2E-06	--	[5]
HT_2															
Cumulative TEU Hazard Index				--	--	**9.3E-06**	--	--	**7.9E-07**	--	--	**3.2E-06**	--	--	**4.9E-05**
Dispersion Factor ($\mu g/m^3/[g/s]$)				**7.00**			**2.57**			**10.3**			**121**		
Acetaldehyde	75-07-0	2.9E-07	4.5E-07	2.1E-06	140	1.5E-08	7.6E-07	620	1.2E-09	3.0E-06	620	4.9E-09	5.4E-05	470	1.1E-07
Acrolein	107-02-8	1.9E-07	2.8E-07	1.3E-06	0.35	3.7E-06	4.8E-07	1.50	3.2E-07	1.9E-06	1.50	1.3E-06	3.4E-05	6.90	4.9E-06
Benzene	71-43-2	5.5E-07	8.4E-07	3.9E-06	3.00	1.3E-06	1.4E-06	13.0	1.1E-07	5.7E-06	13.0	4.4E-07	1.0E-04	29.0	3.5E-06
Ethylbenzene	100-41-4	6.5E-07	9.9E-07	4.6E-06	260	1.8E-08	1.7E-06	1,100	1.5E-09	6.7E-06	1,100	6.1E-09	1.2E-04	22,000	5.4E-09
Formaldehyde	50-00-0	1.2E-06	1.8E-06	8.2E-06	9.00	9.1E-07	3.0E-06	40.0	7.5E-08	1.2E-05	40.0	3.0E-07	2.1E-04	49.0	4.4E-06
Hexane	110-54-3	4.3E-07	6.6E-07	3.0E-06	700	4.3E-09	1.1E-06	3,100	3.6E-10	4.5E-06	3,100	1.4E-09	8.0E-05	--	[5]
Toluene	108-88-3	2.5E-06	3.8E-06	1.8E-05	5,000	3.5E-09	6.5E-06	22,000	2.9E-10	2.6E-05	22,000	1.2E-09	4.6E-04	7,500	6.2E-08
Xylene (mixed)	1330-20-7	1.9E-06	2.8E-06	1.3E-05	220	5.9E-08	4.8E-06	970	4.9E-09	1.9E-05	970	2.0E-08	3.4E-04	8,700	3.9E-08
Ammonia	7664-41-7	2.3E-04	3.5E-04	1.6E-03	500	3.3E-06	6.0E-04	2,200	2.7E-07	2.4E-03	2,200	1.1E-06	0.043	1,200	3.6E-05
Naphthalene	91-20-3	2.3E-08	3.5E-08	1.6E-07	3.70	4.4E-08	6.0E-08	16.0	3.7E-09	2.4E-07	16.0	1.5E-08	4.3E-06	200	2.1E-08
PAHs (excluding Naphthalene)	401	7.8E-09	1.2E-08	5.4E-08	--	[5]	2.0E-08	--	[5]	8.0E-08	--	[5]	1.4E-06	--	[5]

Table 6-5
Level 3 Risk Assessment Results for Gas Combustion TEUs—Chronic and Acute Assessment
Eagle Foundry Company

Toxic Air Contaminant	CAS	Annual TAC Emission Rate [1] (g/s)	Daily TAC Emission Rate [2] (g/s)	Chronic Noncancer									Acute Noncancer		
				Residential			Nonresidential Child			Nonresidential Worker					
				Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]	Calculated Conc. [a] (ug/m^3)	RBC [3] (ug/m^3)	Hazard Index [b]
Exposure Location [4]				**1,580**			**1,598**			**1,126**			**1,128**		
Cumulative Facility-wide Hazard Index				--	--	**<0.1**	--	--	**<0.1**	--	--	**<0.1**	--	--	**<0.1**
HT_3															
Cumulative TEU Hazard Index				--	--	**9.4E-06**	--	--	**7.8E-07**	--	--	**3.5E-06**	--	--	**4.9E-05**
Dispersion Factor ($\mu g/m^3/[g/s]$)				**7.03**			**2.55**			**11.4**			**121**		
Acetaldehyde	75-07-0	2.9E-07	4.5E-07	2.1E-06	140	1.5E-08	7.5E-07	620	1.2E-09	3.4E-06	620	5.4E-09	5.4E-05	470	1.2E-07
Acrolein	107-02-8	1.9E-07	2.8E-07	1.3E-06	0.35	3.7E-06	4.7E-07	1.50	3.2E-07	2.1E-06	1.50	1.4E-06	3.4E-05	6.90	5.0E-06
Benzene	71-43-2	5.5E-07	8.4E-07	3.9E-06	3.00	1.3E-06	1.4E-06	13.0	1.1E-07	6.3E-06	13.0	4.8E-07	1.0E-04	29.0	3.5E-06
Ethylbenzene	100-41-4	6.5E-07	9.9E-07	4.6E-06	260	1.8E-08	1.7E-06	1,100	1.5E-09	7.5E-06	1,100	6.8E-09	1.2E-04	22,000	5.4E-09
Formaldehyde	50-00-0	1.2E-06	1.8E-06	8.2E-06	9.00	9.1E-07	3.0E-06	40.0	7.5E-08	1.3E-05	40.0	3.4E-07	2.2E-04	49.0	4.4E-06
Hexane	110-54-3	4.3E-07	6.6E-07	3.1E-06	700	4.4E-09	1.1E-06	3,100	3.6E-10	5.0E-06	3,100	1.6E-09	8.0E-05	--	[5]
Toluene	108-88-3	2.5E-06	3.8E-06	1.8E-05	5,000	3.5E-09	6.4E-06	22,000	2.9E-10	2.9E-05	22,000	1.3E-09	4.6E-04	7,500	6.2E-08
Xylene (mixed)	1330-20-7	1.9E-06	2.8E-06	1.3E-05	220	6.0E-08	4.8E-06	970	4.9E-09	2.1E-05	970	2.2E-08	3.4E-04	8,700	3.9E-08
Ammonia	7664-41-7	2.3E-04	3.5E-04	1.6E-03	500	3.3E-06	5.9E-04	2,200	2.7E-07	2.7E-03	2,200	1.2E-06	0.043	1,200	3.6E-05
Naphthalene	91-20-3	2.3E-08	3.5E-08	1.6E-07	3.70	4.4E-08	5.9E-08	16.0	3.7E-09	2.7E-07	16.0	1.7E-08	4.3E-06	200	2.1E-08
PAHs (excluding Naphthalene)	401	7.8E-09	1.2E-08	5.4E-08	--	[5]	2.0E-08	--	[5]	8.9E-08	--	[5]	1.4E-06	--	[5]
HT_4															
Cumulative TEU Hazard Index				--	--	**9.4E-06**	--	--	**7.7E-07**	--	--	**2.8E-06**	--	--	**4.3E-05**
Dispersion Factor ($\mu g/m^3/[g/s]$)				**7.06**			**2.52**			**9.18**			**106**		
Acetaldehyde	75-07-0	2.9E-07	4.5E-07	2.1E-06	140	1.5E-08	7.4E-07	620	1.2E-09	2.7E-06	620	4.4E-09	4.7E-05	470	1.0E-07
Acrolein	107-02-8	1.9E-07	2.8E-07	1.3E-06	0.35	3.8E-06	4.7E-07	1.50	3.1E-07	1.7E-06	1.50	1.1E-06	3.0E-05	6.90	4.3E-06
Benzene	71-43-2	5.5E-07	8.4E-07	3.9E-06	3.00	1.3E-06	1.4E-06	13.0	1.1E-07	5.1E-06	13.0	3.9E-07	8.9E-05	29.0	3.1E-06
Ethylbenzene	100-41-4	6.5E-07	9.9E-07	4.6E-06	260	1.8E-08	1.6E-06	1,100	1.5E-09	6.0E-06	1,100	5.4E-09	1.0E-04	22,000	4.8E-09
Formaldehyde	50-00-0	1.2E-06	1.8E-06	8.3E-06	9.00	9.2E-07	3.0E-06	40.0	7.4E-08	1.1E-05	40.0	2.7E-07	1.9E-04	49.0	3.8E-06
Hexane	110-54-3	4.3E-07	6.6E-07	3.1E-06	700	4.4E-09	1.1E-06	3,100	3.5E-10	4.0E-06	3,100	1.3E-09	7.0E-05	--	[5]
Toluene	108-88-3	2.5E-06	3.8E-06	1.8E-05	5,000	3.6E-09	6.4E-06	22,000	2.9E-10	2.3E-05	22,000	1.1E-09	4.1E-04	7,500	5.4E-08
Xylene (mixed)	1330-20-7	1.9E-06	2.8E-06	1.3E-05	220	6.0E-08	4.7E-06	970	4.9E-09	1.7E-05	970	1.8E-08	3.0E-04	8,700	3.5E-08
Ammonia	7664-41-7	2.3E-04	3.5E-04	1.6E-03	500	3.3E-06	5.9E-04	2,200	2.7E-07	2.1E-03	2,200	9.7E-07	0.037	1,200	3.1E-05
Naphthalene	91-20-3	2.3E-08	3.5E-08	1.6E-07	3.70	4.4E-08	5.9E-08	16.0	3.7E-09	2.1E-07	16.0	1.3E-08	3.7E-06	200	1.9E-08
PAHs (excluding Naphthalene)	401	7.8E-09	1.2E-08	5.5E-08	--	[5]	2.0E-08	--	[5]	7.1E-08	--	[5]	1.2E-06	--	[5]

Notes

g = gram; m^3 = cubic meter; RBC = risk-based concentration; s = second; TEU = toxic emission unit; TAC - toxic air contaminant; ug = micrograms.

[a] Calculated concentration ($\mu g/m^3$) = (dispersion factor [{$\mu g/m^3$}/{g/s}]) x (TAC emission rate per TEU [g/s])

[b] Hazard index = (calculated concentration [$\mu g/m^3$]) / (risk-based concentration [$\mu g/m^3$])

References

[1] See Table 3-3, Annual TAC Emission Rates—Gas Combustion TEUs.

[2] See Table 3-4, Daily TAC Emission Rates—Gas Combustion TEUs.

[3] Oregon Administrative Rule 340-245-8010, Table 2.

[4] See Table 6-1, Maximum Predicted Risk Exposure Location Per TEU.

[5] TAC does not have an established RBC for this exposure category per Oregon Administrative Rule 340-245-8010 Table 2.