



**Lane Regional Air Protection Agency  
Simple Air Contaminant Discharge Permit**

**Review Report**

**King Retail Solutions, Inc.**  
3850 West 1<sup>st</sup> Avenue  
Eugene, Oregon 97402  
Website: <https://www.kingrs.com>

**Permit No. 204412**

**Source Information:**

Primary SIC	3993 – Signs and Advertising Specialties
Secondary SIC	--
Primary NAICS	339950 – Sign Manufacturing
Secondary NAICS	--
Source Categories (LRAPA title 37, Table 1)	B.69: Surface Coating Operations: coating operations whose actual or

	expected usage of coating materials is greater than 250 gallons per month, excluding sources that exclusively use non-VOC and non-HAP containing coatings
Public Notice Category	III

**Compliance and Emissions Monitoring Requirements:**

Unassigned Emissions	N
Emission Credits	N
Special Conditions	N
Compliance Schedule	N

Source Test [date(s)]	N
COMS	N
CEMS	N
Ambient monitoring	N

**Reporting Requirements**

Annual Report (due date)	February 15
SACC (due date)	N
GHG Report (due date)	N
Quarterly Report (due date)	N

Monthly Report (due dates)	N
Excess Emissions Report	Y
Other Reports (due date)	N

**Air Programs**

NSPS (list subparts)	N
NESHAP (list subparts)	N
CAM	N
Regional Haze (RH)	N
Synthetic Minor (SM)	N
SM-80	N
Title V	N
Part 68 Risk Management	N
ACDP (SIP)	N
Major FHAP Source	N
Federal Major Source	N
NA New Source Review (NSR)	N
Prevention of Significant Deterioration (PSD)	N
Acid Rain	N
Clean Air Mercury Rule (CAMR)	N

TACT	N
>20 Megawatts	N

Permittee Identification

1. King Retail Solutions ('the facility' or 'KRS') operates a retail display production facility at 3850 West 1<sup>st</sup> Avenue in Eugene, Oregon.

General Background

2. The significant emission units at the facility include woodworking activities controlled by one (1) baghouse, welding operations, a fiber laser controlled by one (1) baghouse, four (4) spray paint booths. Categorically insignificant activities include a natural gas-fired makeup air unit rated at 0.5 MMBtu per hour and digital printing. Digital printing was previously listed as a significant emission unit. The facility typically operates 2,080 hours per year (one shift). The facility began operations at the current location in 2000. As part of this renewal, the facility changed their SIC code to 3993 – Signs and Advertising Specialties to reflect their expanded production capabilities. In previous permits they have operated under SIC codes 2499 – Wood Products, NEC or 2541 – Wood Office and Store Fixtures, Partitions, Shelving, and Lockers.

Reasons for Permit Action and Fee Basis

3. This permit action is a renewal for an existing Simple Air Contaminant Discharge Permit (Simple ACDP) which was issued on June 15, 2018 and is scheduled to expire on June 15, 2023. As the facility submitted a timely renewal application on February 13, 2023, the expired permit will remain in effect until final action has been taken on the renewal application. Because the actual emissions from calendar year 2022 were less than 10 tons/year for each criteria pollutant, the permit action is considered a Simple "low" ACDP renewal under LRAPA 37-0064(2)(a).

Attainment Status

4. The facility is located in an area that has been designated as attainment or unclassified for all criteria pollutants. The facility is inside the Eugene-Springfield UGB as defined in LRAPA 29-0010 which designates the Eugene-Springfield carbon monoxide and PM<sub>10</sub> maintenance areas. The facility is also located inside the Eugene-Springfield UGB as described in the current Eugene-Springfield Metropolitan Area General Plan, as amended.

Permitting History

5. LRAPA has reviewed and issued the following permitting actions to this facility:

Date(s) Approved/Valid	Permit Action Type	Description
10/14/1996 – 10/13/2001	Synthetic Minor ACDP	Initial air permit
July 26, 2000	Synthetic Minor ACDP	Move production from 4275 W. 5 <sup>th</sup> Street to 3850 West 1 <sup>st</sup> Ave. Add a paint booth and a makeup air unit (MAU).
10/14/2001 – 10/13/2006	Synthetic Minor ACDP	Renewal
01/29/2004	Addendum 1	Name change
04/19/2012 – 04/19/2017	Simple ACDP	Renewal
04/24/2018	NC-204412-A18	Install welding activities and a fiber laser with baghouse.
06/15/2018 – 06/15/2023	Simple ACDP	Renewal
Upon Issuance	Simple ACDP	Renewal

Compliance History

6. This facility is regularly inspected by LRAPA. The following table indicates the inspection history of this facility.

Agency	Type of Inspection	Date	Results
LRAPA	Full Compliance Evaluation	02/04/1998	In compliance

Agency	Type of Inspection	Date	Results
LRAPA	Full Compliance Evaluation	01/26/1999	Not In compliance
LRAPA	Full Compliance Evaluation	03/29/2001	In compliance
LRAPA	Full Compliance Evaluation	11/27/2001	In compliance
LRAPA	Full Compliance Evaluation	02/07/2006	In compliance
LRAPA	Full Compliance Evaluation	09/29/2008	In compliance

7. LRAPA has issued the following violation notices and/or taken the following enforcement actions against this facility:
- 7a. On November 23, 1998, LRAPA issued a Notice of Non-Compliance (NON #1742) to the facility for exceeding the permitted usage of paint primer.

Source Testing

8. The facility is not required to conduct source testing at this time. LRAPA is not aware of any historical source testing conducted at this facility.

Emission Unit Description

9. The emission units regulated by this permit are the following:

Emission Unit ID	Description	Pollution Control Device (PCD ID)	Installed / Last Modified
WW	Woodworking	Baghouse (BH-1)	2000
WO	Welding Operations	None	2018
FL	Fiber Laser	Baghouse (BH-2)	2018
PB-1	Paint Booth #1	Dry filters	2000
PB-2	Paint Booth #2	Dry filters	2000
PB-3	Paint Booth #3	Dry filters	2000
PB-4	Paint Booth #4	Dry filters	2000
<b>Categorically Insignificant Activities</b>			
CIA-MAU	Make Up Air Unit – 0.5 MMBtu/hr	None	2000
CIA-DP	Digital Printing	None	2012

Emission Limitations

10. The facility is subject to the visible emission limitations under LRAPA 32-010(3). For sources, other than wood-fired boilers, no person may emit or allow to be emitted any visible emissions that equal or exceed an average of 20 percent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. Compliance will be demonstrated through implementation of an Operation & Maintenance Plan for the baghouses and dry filters.
11. The non-fuel burning equipment at this source that emit particulate matter are subject to the following particulate matter emission limitations under LRAPA 32-015(2):
- 11a. For sources installed, constructed, or modified on or after June 1, 1970 but prior to April 16, 2015 for which there are no representative compliance source test results, the particulate matter emission limit is 0.14 grains per dry standard cubic foot; and
- 11b. For sources installed, constructed, or modified after April 16, 2015, the particulate matter emission limit is 0.10 grains per dry standard cubic foot.
- Compliance will be demonstrated through implementation of an Operation & Maintenance Plan for the baghouses and dry filters.

12. Each emission unit at the facility is subject to the process weight rate emission limitations under LRAPA 32-045(1). No person may cause, suffer, allow, or permit the emissions of particulate matter in any one (1) hour from any process in excess of the amount shown in LRAPA 32-8010, for the process weight rate allocated to such process. Process weight is the total weight of all materials introduced into a piece of process equipment. Liquid and gaseous fuels and combustion air are not included in the total weight of all materials. Compliance will be demonstrated through implementation of an Operation & Maintenance Plan for the baghouses and dry filters.
13. The control equipment and spray booth operations at the facility must be operated and maintained at the highest and best practicable treatment and control of air contaminant emissions so as to maintain overall air quality at the highest possible levels, and to maintain contaminant concentrations, visibility reduction, odors, soiling, and other deleterious factors at the lowest possible levels under LRAPA 32-005(1). Compliance for the control equipment at the facility will be demonstrated through implementation of an Operation & Maintenance Plan. For the spray booth operations at the facility, the permittee will be required to (a) use dry filters achieving at least 98% captures of overspray particulate matter emissions, (b) use high transfer efficiency spray guns, (c) clean spray guns in an approved manner, (d) only allow trained personnel to spray apply coatings, and (e) keep VOC-containing materials closed when not in use.
14. Under LRAPA 49-020, the permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by LRAPA personnel. Compliance will be demonstrated by the permittee maintaining a log of each nuisance complaint received during the operation of the facility. A plant representative must immediately investigate the condition following the receipt of the nuisance complaint and provide a response to the complainant within 24 hours, if possible

Typically Achievable Control Technology (TACT)

15. LRAPA 32-008(1) requires an existing unit at a facility to meet TACT if the emission unit meets the following criteria: The emission unit is not already subject to emission standards for the regulated pollutant under LRAPA title 30, title 32, title 33, title 38, title 39 or title 46 at the time TACT is required; the source is required to have a permit; the emission unit has emissions of criteria pollutants equal to or greater than five (5) tons per year of particulate or ten (10) tons per year of any gaseous pollutant; and LRAPA determines that air pollution control devices and emission reduction processes in use for the emissions do not represent TACT and that further emission control is necessary to address documented nuisance conditions, address an increase in emissions, ensure that the source is in compliance with other applicable requirements, or to protect public health or welfare, or the environment,
  - 15a. For the woodworking activities (EU: WW) the facility uses a baghouse to control particulate matter emissions such that potential particulate matter emissions do not exceed five (5) tons per year. TACT is not applicable to this emission unit.
  - 15b. For welding operations (EU: WO) the facility does not have potential particulate matter emissions that exceed five (5) tons per year. TACT is not applicable to this emission unit.
  - 15c. For the fiber laser (EU: FL) the facility uses a baghouse to control particulate matter emissions such that potential particulate matter emissions do not exceed five (5) tons per year. TACT is not applicable to this emission unit.
  - 15d. For the paint booths (EU: PB-1 through PB-4) the facility uses dry filters to control particulate matter emissions such that potential particulate matter emissions do not exceed five (5) tons per year from any individual spray booth. TACT is not applicable to particulate matter from any individual spray booth. In addition, the potential VOC emissions are less than ten (10) tons per year from any individual spray booth. TACT is not applicable to VOCs from any individual spray booth.

Plant Site Emission Limits (PSELS)

16. Provided below is a summary of the baseline emissions rate, netting basis, and PSELS for this facility.

Pollutant	Baseline Emission Rate (TPY)	Netting Basis		Plant Site Emission Limit (PSEL)		PSEL Increase Over Netting Basis (TPY)	Significant Emission Rate (TPY)
		Previous (TPY)	Proposed (TPY)	Previous PSEL (TPY)	Proposed PSEL (TPY)		
PM	NA	0	0	NA	NA	NA	25
PM <sub>10</sub>	NA	0	0	NA	NA	NA	15
PM <sub>2.5</sub>	NA	0	0	NA	NA	NA	10
CO	NA	0	0	NA	NA	NA	100
NO <sub>x</sub>	NA	0	0	NA	NA	NA	40
SO <sub>2</sub>	NA	0	0	NA	NA	NA	40
VOC	NA	0	0	39	6.6	6.6	40
GHG	NA	0	0	NA	NA	NA	75,000
Individual HAP	NA	NA	NA	9	NA	NA	NA
Aggregate HAPs	NA	NA	NA	24	NA	NA	NA

- 16a. The facility does not have a baseline emission rate for pollutants other than PM<sub>2.5</sub> and GHGs because the facility was not in operation during either the 1977 or 1978 baseline year. A baseline emission rate is not established for PM<sub>2.5</sub> in accordance with LRAPA 42-0048(3). The facility has no baseline for GHGs because the facility did not request a baseline for this pollutant.
- 16b. The netting basis for all pollutants is 0 (zero) in accordance with LRAPA 42-0046(4) and 42-0040(2)&(3).
- 16c. In accordance with OAR 340-222-0041(2), the PSEL for VOC is set equal to the sources potential-to-emit (PTE) which is calculated to be 6.6 TPY. The previous VOC PSEL for this facility was set at the Generic PSEL of 39 TPY. No PSELS are set for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub> and GHGs in accordance with LRAPA 42-0020(3)(a) because these pollutants are emitted below the de minimis as defined in LRAPA title 12.
- 16d. The baseline year, netting basis, and SER are not applicable for limiting federal HAPs. The PSELS for individual federal HAPs and aggregate federal HAPs of 9 TPY and 24 TPY, respectively, have been removed from the permit. The facility does not have a potential-to-emit for federal HAPs that will exceed the major source thresholds for individual federal HAPs and aggregate federal HAPs of 10 TPY and 25 TPY, respectively.

Federal Hazardous Air Pollutants/Toxic Air Contaminants

- 17. The facility currently has PSELS for federal HAPs that limit emissions to no more than nine (9) tons per year for an individual federal HAP and 24 tons per year for the aggregate of all federal HAPs. The potential emissions of federal HAPs from the facility are below these thresholds. Therefore, the facility is considered a natural minor or area source of federal HAPs.
- 18. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by LRAPA and is, therefore, not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in the rule. All federal HAPs are on the list of approximately

600 toxic air contaminants. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

19. Provided below is a summary of the federal HAP and CAO TAC actual emission estimates based on the actual emissions as calculated for the 2020 Air Toxics Emission Inventory report adjusted by the production factor of 4.3 shown in the emission detail sheets. The highest potential emission for an individual HAP is xylenes at 0.11 TPY. The potential emissions in aggregate of all federal HAPs is 0.37 TPY.

Pollutant	CAS Number	Potential Emissions (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>				
Ethylbenzene	100-41-4	1.3E-02	Yes	Yes
Methyl isobutyl ketone	108-10-1	5.2E-03	Yes	Yes
Propylene glycol ethyl ether acetate	108-65-6	0.10	Yes	Yes
Toluene	108-88-3	0.10	Yes	Yes
Ethylene glycol butyl ether	111-76-2	4.3E-02	No	Yes
Xylenes	1330-20-7	0.11	Yes	Yes
Methanol	67-56-1	4.3E-02	Yes	Yes
Isopropyl alcohol	67-63-0	1.2E-04	No	Yes
n-Butyl alcohol	71-36-3	1.4E-02	No	Yes
Methyl ethyl ketone	78-93-3	0.14	No	Yes
<b>Metals</b>				
Aluminum	7429-90-5	5.1E-05	No	Yes
Lead	7439-92-1	3.4E-08	Yes	Yes
Copper	7440-50-8	3.4E-06	No	Yes
Manganese	7439-96-5	6.7E-08	Yes	Yes
Nickel	7440-02-0	3.4E-06	Yes	Yes
Zinc oxide	1314-13-2	0.47	No	Yes

Toxics Release Inventory

20. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which LRAPA has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI program. In general, chemicals covered by the TRI program are those that cause:
- Cancer or other chronic human health effects;
  - Significant adverse acute human health effects; or
  - Significant adverse environmental effects.

There are currently over 650 chemicals covered by the TRI program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI program is a federal program over which LRAPA has no regulatory authority. LRAPA does not guarantee the accuracy of any information copied from EPA's TRI website.

In 2021, this facility did not report any emissions to the TRI program. In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals in excess of the applicable reporting threshold for the chemical. This facility has not reported any emissions to the TRI program because they apparently do not manufacture, process, or otherwise use chemicals in excess of the applicable reporting thresholds.

New Source Performance Standards (NSPSs)

21. There are no emission units at this facility for which NSPS have been promulgated or are applicable.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

22. LRAPA reviewed the following NESHAPs to determine their applicability to this facility:
- 22a. 40 CFR Part 63 subpart JJ – National Emission Standards for Wood Furniture Manufacturing Operations is not applicable because the facility is not a major source of federal HAPs.
  - 22b. 40 CFR Part 63 subpart MMMM - National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products is not applicable because the facility is not a major source of federal HAPs.
  - 22c. 40 CFR Part 63 subpart HHHHHH - National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources is not applicable because the facility does not use methylene chloride for paint stripping, it is not an autobody refinishing operation, and the surface coatings used at the facility do not contain the target federal HAPs. In addition, the facility does not spray apply coatings to metal or plastic substrates – only wood substrates.

Recordkeeping Requirements

23. The facility is required to keep and maintain a record of the following information for a period of at least five (5) years.
- 23a. VOC-containing materials include, but are not limited to, coatings, lacquers, thinners, stains, topcoats, solvents, adhesives, cleaning, and wash-off materials.
  - 23b. The density and VOC content information must be supplied from CPDS or SDS provided by the manufacturer/supplier of the VOC containing material.

Activity	Parameter	Units	Minimum Recording Frequency
<b>Emission Unit Recordkeeping</b>			
VOC-containing material CPDS or SDS	Each coating and solvent	NA	Maintain documentation
VOC-containing material Usage	Material name and usage	Gallons	Monthly
VOC-containing material Usage	Density of material	Pounds per gallon	Each coating and solvent
VOC-containing material usage	VOC content	% by weight	Each coating and solvent
Spray booth filter particulate matter control efficiency	Control efficiency	%	Maintain documentation from

Activity	Parameter	Units	Minimum Recording Frequency
			each filter manufacturer
Spray booth filter replacement	Occurrence	NA	Upon Replacement
Spray booth training	Training logs / certifications	NA	Maintain documentation of training
Baghouse maintenance	Occurrence	NA	As specified in O&M Plan
<b>General Recordkeeping</b>			
Complaints from the public	Log each complaint and the resolution	NA	Upon receipt
Upset log of all planned and unplanned excess emissions	See Condition G15 of the permit	NA	Per occurrence

Reporting Requirements

24. The facility must submit to LRAPA the following reports by no later than the dates indicated in the table below:

Report	Reporting Period	Due Date
PSEL pollutant emissions as calculated according to Conditions 5 and 6 of the permit, including the supporting process information.	Annual	February 15
A summary of maintenance and repairs performed on any pollution control devices at the facility.	Annual	February 15
A summary of complaints from the public and the resolution, as applicable.	Annual	February 15
The upset log information required by Condition G13 of the permit, if required by Condition G13.	Annual	February 15

25. The permittee is not subject to greenhouse gas reporting under OAR 340 Division 215 because actual greenhouse gas emissions are less than 2,500 metric tons (2,756 short tons) of CO<sub>2</sub> equivalents per year. If the source ever emits more than this amount, they will be required to report greenhouse gas emissions.

Public Notice

26. Pursuant to OAR 340-216-0064(5)(a), which became effective on March 1, 2023, issuance of a renewed Simple Air Contaminant Discharge Permit requires public notice in accordance with OAR 340-209-0030(3)(c) [aka LRAPA 31-0030(3)(c)], which requires LRAPA to provide notice of the proposed permit action and a minimum of 35 days for interested persons to submit written comments.

The draft permit was on public notice April 18, 2023 to May 22, 2023. No comments were submitted during the 35-day comment period.



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After the comment period and hearing (if requested), LRAPA will respond to comments received and then take final action to issue or deny the permit within 45 days of the close of the public comment period or hearing period.

JJW/rr  
06/02/2023

Emission Details

**King Retail - 204412**  
**Emission Detail Sheets**  
**Facility Potential Emissions Summary**

**Criteria Pollutant Emissions**

<b>Emission Unit</b>	<b>PM (TPY)</b>	<b>PM<sub>10</sub> (TPY)</b>	<b>PM<sub>2.5</sub> (TPY)</b>	<b>SO<sub>2</sub> (TPY)</b>	<b>NO<sub>x</sub> (TPY)</b>	<b>CO (TPY)</b>	<b>VOC (TPY)</b>	<b>GHGs (TPY)</b>
Spray Booths (4)	0.16	0.16	0.16	0	0	0	6.6	0
Woodworking	5.0E-04	5.0E-04	5.0E-04	0	0	0	0	0
Welding	2.3E-03	2.3E-03	2.3E-03	0	0	0	0	0
Fiber Laser	8.2E-04	8.2E-04	8.2E-04	0	0	0	0	0
	0	0	0	0	0	0	6.6	0

**Note:**  
 PSEL analysis only for units that are not categorically insignificant activities.

King Retail - 204412  
 Emission Detail Sheets  
 Spray Booth Emissions

65% = Minimum Coating Transfer Efficiency  
 98.00% = Minimum Filter PM Removal Efficiency  
 4.3 = Production Factor

Part No.	Product Name	Gallons Used	Coating (lb/gal)	Pounds Used	VOC (lb/gal)	VOC (% wt.)	Solids (lb/gal)	Solids (% wt)	HAP (lb/gal)	HAP (% wt.)	VOC Emissions (lbs/yr)	HAPs Emissions (lbs/yr)	Solids Emissions (lbs/yr)
10322	PRIMER,WATERBORN	191.11			0.187				0		36	0	
10950	LACQUER THINNER	119.94			6.85				5.2		822	624	
11486	LACQUER,WATERBORNE RUDD NUWAVE	1.44			2.3				0		3	0	
29821	LACQUER, TOPCOAT, SATIN	217.75			5.67				1.185		1,235	258	
29976	PAINT,BASE,ULTRA SPEC EXT SATIN	1233.42	10.3		0.41			55.00%	0		506	0	48.91
30347	PRIMER, URETHANE SEALER & ACTIVATOR	1.3			4.39				1.21		6	2	
31872	PRIMER, ETCH & ACTIVATOR	17.54			6.75				1.48		118	26	
33542	ADHESION PROMOTER/TIE BOND	11.53			6.43				2.35		74	27	
33735	PAINT,BASE,BM #620-20, SILVER	67.38			2.92				0		197	0	
35544	TOPCOAT,URETHANE,SATIN,KIT	18.02			5.09				0.72		92	13	
Total Usage (gal) =		1,879							Total Emissions (lb/yr) =		3,088	949	
									Adjusted Emissions (TPY) =		6.6	2.0	0.16

**Note:**

Production based on 2022 Annual Report  
 Solids emissions based on Ultra Spec adjusted by production factor and total 2022 usage.  
 Transfer efficiency based on use of high efficiency transfer spray guns  
 Actual dry filter particulate removal efficiency is 99.84%  
 Productio factor provided by facility on 3/17/2023  
 HAP/TAC emissions not calculated because the facility PSEL is below 10 TPY

**King Retail - 204412**

**Emission Detail Sheets**

**Woodworking Emissions**

**PM/PM<sub>10</sub>/PM<sub>2.5</sub> Emissions**

Max Throughput (BDT/yr)	Emission Factor (lbs/BDT)	Emissions (TPY)
25	0.04	5.0E-04

**Notes:**

Maximum production based on a facility estimate submitted on 3/17/2023.

Emissions are based on DEQ Wood Products Emission Factors AQ-EF02 for baghouse control on cyclone-sanderdust

Emission Detail Sheets  
 Fiber Laser

PM/PM<sub>10</sub>/PM<sub>2.5</sub> Emissions

Unit Identification	Cutting Technique	Metal Type	Metal Thickness (Inches)	Kerf (Inches)	Metal Cutting Speed (IPM)	Control Device Type	% Control Efficiency	Specific Gravity	Density Conversion (lb/in <sup>3</sup> )	Fume Generated (% of Particulate Generated)	PM/PM <sub>2.5</sub> /PM <sub>10</sub> Emission Factor (lb/inch)	Metal Feed Rate (IPH)	Uncontrolled Emissions (lb/hr)	Potential Emissions (lb/hr)	Uncontrolled Emissions (TPY)	Potential Emissions (TPY)
Fiber Laser	Dry	Mild Steel	0.25	0.008	110	Baghouse	99.9	7.83	0.28	5	2.8E-05	6600	0.19	1.9E-04	0.82	8.2E-04
Total =													0.19	1.9E-04	0.82	8.2E-04

HAP/TAC Emissions

Unit Identification	Pollutant	CAS No.	Fume Percent	Uncontrolled Emissions (lb/hr)	Potential Emissions (lb/hr)	Uncontrolled Emissions (TPY)	Potential Emissions (TPY)
Fiber Laser	Copper	7440-50-8	1.4%	2.6E-03	2.6E-06	1.1E-02	1.1E-05
	Manganese	7439-96-5	10%	1.9E-02	1.9E-05	8.2E-02	8.2E-05
				0.0E+00	0.0E+00	0.0E+00	0.0E+00
				0.0E+00	0.0E+00	0.0E+00	0.0E+00

Fume Generation Rate/Specific Gravity Table

Metal	Dry	Semidry	Wet	Specific Gravity
Mild Steel, 8mm	5	0.5	0.05	7.83
Stainless Steel, 8mm	7	0.7	0.07	7.7
Stainless Steel, 35mm	1	0.1	0.01	7.7

Notes:

Emissions are based on "Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" by Bromsen B. et al. (1994).  
 Fiber lasers are assumed not to generate any significant nitrogen oxide emissions.  
 Mild steel fume is 67-73% iron, 2-10% manganese, and ND-1.4% copper.  
 310 stainless steel fume is 25.4% iron, 4.4% manganese, 10.3% nickel, and 20.2% chromium(VI).  
 Potential emissions assume 8760 hours per year of operation.  
 Metal and cutting parameters based on the most common type and thickness of metal cut at the facility.

**King Retail - 204412**  
**Emission Detail Sheets**  
**Welding Operations**

2022 Actual GMAW Welding Wire/Rod Usage = 0.208 1000 lbs  
 Scale Up Factor = 4.3

**Criteria Pollutants**

Pollutant	Cas No.	Potential Emissions (lb/hr)	Potential Emissions (TPY)
Total Particulate	--	2.6E-07	2.3E-03
PM <sub>10</sub>	--	2.6E-07	2.3E-03
PM <sub>2.5</sub>	--	2.6E-07	2.3E-03

**2022 Welding Wire/Rod Usage By Type**

Process	Type	Emission Factors (lb/10 <sup>3</sup> lb)						
		Fume	Chromium	Chromium (VI)	Cobalt	Manganese	Nickel	Lead
GMAW/MIG	E70S	5.2	0.01	ND	0.01	3.18	0.01	ND

**HAP/TAC Emissions**

Pollutant	Cas No.	Potential Emissions (lb/hr)	Potential Emissions (TPY)
Chromium (Total)	7440-47-3	5.1E-10	4.5E-06
Chromium (VI)	18540-29-9	5.1E-10	4.5E-06
Cobalt	7440-48-4	5.1E-10	4.5E-06
Manganese	7439-96-5	1.6E-07	1.4E-03
Nickel	7440-02-0	5.1E-10	4.5E-06
Lead	7439-92-1	0.0E+00	0.0E+00

**Notes:**

- Based on 2022 annual usage.
- Facility also used E4043 wire in 2022 which is not in US EPA AP-42. All usage assumed to be E70S.
- ND (No Detect) is represented as zero.
- < the detection limit values represented as the detection limit.
- Lead is assumed to be from lead compounds.
- The NOx and CO emissions from welding are assumed to be negligible.
- Hourly emissions are based on annual usage divided by 8760.

**King Retail - 204412**  
**Emission Detail Sheets**  
**CIA - Makeup Air Unit**

**Specifications**

Max Heat Input	0.5	MMBtu/hr
Heat Value - Natural Gas	1026	MMBtu/MMCF
Max Hrs Operation	8760	hr/yr

**Criteria Pollutants**

Pollutant	NG Emission Factor (lb/MMCF)	NG Emission Factor Units	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (TPY)
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	2.5	lbs/MMCF	0.00	0.01
Carbon Monoxide	84	lbs/MMCF	0.04	0.18
Nitrogen Oxides	100	lbs/MMCF	0.05	0.21
Sulfur Dioxide	1.7	lbs/MMCF	0.00	0.00
VOCs	5.5	lbs/MMCF	0.00	0.01
GHGs (CO <sub>2</sub> equiv.)	117	lbs/MMBtu	59	256

**HAP Emissions**

Pollutant	NG Emission Factor (lb/MMCF)	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (TPY)	Federal HAP	CAO Air Toxic
<b>Organics</b>					
Acetaldehyde	4.30E-03	2.1E-06	9.2E-06	Yes	Yes
Acrolein	2.70E-03	1.3E-06	5.8E-06	Yes	Yes
Benzene	8.00E-03	3.9E-06	1.7E-05	Yes	Yes
Ethyl Benzene	9.50E-03	4.6E-06	2.0E-05	Yes	Yes
Formaldehyde	1.70E-02	8.3E-06	3.6E-05	Yes	Yes
Hexane	6.30E-03	3.1E-06	1.3E-05	Yes	Yes
Naphthalene	3.00E-04	1.5E-07	6.4E-07	Yes	Yes
Total PAHs (exc. Nap.)	1.00E-04	4.9E-08	2.1E-07	Yes	Yes
Toluene	3.66E-02	1.8E-05	7.8E-05	Yes	Yes
Xylenes	2.72E-02	1.3E-05	5.8E-05	Yes	Yes
<b>Inorganic Gases</b>					
Ammonia	3.2	1.6E-03	6.8E-03	No	Yes
<b>Metals</b>					
Arsenic	2.0E-04	9.7E-08	4.3E-07	Yes	Yes
Barium	4.4E-03	2.1E-06	9.4E-06	No	Yes
Beryllium	1.2E-05	5.8E-09	2.6E-08	Yes	Yes
Cadmium	1.1E-03	5.4E-07	2.3E-06	Yes	Yes
Chromium, Hexavalent	1.4E-03	6.8E-07	3.0E-06	Yes	Yes
Cobalt	8.4E-05	4.1E-08	1.8E-07	Yes	Yes
Copper	8.5E-04	4.1E-07	1.8E-06	No	Yes
Manganese	3.8E-04	1.9E-07	8.1E-07	Yes	Yes
Mercury	2.6E-04	1.3E-07	5.5E-07	Yes	Yes
Molybdenum Trioxide	1.7E-03	8.0E-07	3.5E-06	No	Yes
Nickel	2.1E-03	1.0E-06	4.5E-06	Yes	Yes
Selenium	2.4E-05	1.2E-08	5.1E-08	Yes	Yes
Vanadium	2.3E-03	1.1E-06	4.9E-06	No	Yes
Zinc	2.9E-02	1.4E-05	6.2E-05	No	Yes
<b>Total =</b>	<b>3.36</b>		<b>0.01</b>	<b>0.00</b>	<b>0.01</b>

**GHG-Related Emission Factors**

Pollutant	Natural Gas (kg/MMBtu)	GWP
Carbon Dioxide (CO <sub>2</sub> )	53.06	1
Methane (CH <sub>4</sub> )	1.0E-03	25
Nitrous Oxide (N <sub>2</sub> O)	1.0E-04	298

**Notes:**

One MAU with a maximum heat input rating of 0.5 MMBtu/hr  
 Criteria pollutant emissions factors are based on DEQ Emission Factors Gas Fired Boilers, AQ-EF05 (08/01/2011)  
 GHG emission factors are from 40 CFR 98, Tables C-1 and C-2  
 Non-metal toxic emission factors are based on SCAQMD AB 2588 - Default Emission Factors for Fuel Combustion, Table I  
 Metal toxic emission factors are based on US EPA WebFIRE/AP-42 Section 1.4  
 Chromium assumed to be hexavalent form  
 Molybdenum assumed to be present as a trioxide compound