



**TECHNICAL SUPPORT DOCUMENT**

**SIMONDS INTERNATIONAL, LLC**

**SWCAA ID: 2686**

**Air Discharge Permit SWCAA 21-3448**

**ADP Application CL-3121**

**Issued: January 21, 2021**

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## **Abbreviations**

ADP	Air Discharge Permit
AP-42	<u>Compilation of Emission Factors, AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources – published by the US Environmental Protection Agency</u>
ASIL	Acceptable Source Impact Level from WAC 173-460
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
Btu	British thermal unit
CAM	Compliance assurance monitoring (40 CFR 64)
CAS #	Chemical Abstract Service number
cfm	Cubic feet per minute
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO <sub>2e</sub>	Carbon dioxide equivalent
EPA	U.S. Environmental Protection Agency
gr/dscf	Grains per dry standard cubic foot (68 °F, 1 atmosphere)
GWP	Global warming potential
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
HEPA	High Efficiency Particulate Air (at least 99.97% removal of 0.3 µm particles)
LAER	Lowest achievable emission rate
lb/yr	Pounds per year
lbs	Pounds
MMBtu	Millions of British thermal units
NO <sub>x</sub>	Nitrogen oxides
PM	Total particulate matter (includes both filterable particulate matter measured by EPA Method 5 and condensable particulate matter measured by EPA Method 202)
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
SDS	Safety data sheet
scfm	Standard (68°F, 1 atmosphere) cubic feet per minute
SQER	Small Quantity Emission Rate listed in WAC 173-460
SO <sub>2</sub>	Sulfur dioxide
SWCAA	Southwest Clean Air Agency
TAP	Toxic Air Pollutant pursuant to Chapter 173-460 WAC
T-BACT	Best Available Control Technology for toxic air pollutants
tpy	Tons per year
VOC	Volatile Organic Compound
WAC	Washington Administrative Code

## 1. FACILITY IDENTIFICATION

Applicant Name: Simonds International, LLC  
Applicant Address: 2700 SE Tacoma Street, Portland, OR 97202-8941

Facility Name: Simonds International, LLC  
Facility Address: 5504 South 11<sup>th</sup> Street, Ridgefield, WA 98642  
SWCAA Identification: 2686  
Contact Person: Mr. Roy Erdwins – Plant Manager

Primary Process: Fabrication of saw blades and handsaws  
SIC / NAICS: 3425 / 332216  
Facility Classifications: BACT / natural minor

## 2. FACILITY DESCRIPTION

Simonds International will be a relocated metal fabrication facility that will produce bandsaw blades, machine knives, circular saw blades, and handsaws. The facility performs cleaning, laser cutting, welding, milling and grinding, abrasive blasting, and painting of various metal parts. Previously, this company has conducted this same activity at 2700 SE Tacoma Street, Portland, Oregon. Welding emissions will be fugitive in nature. A small amount of abrasive blasting is conducted in an enclosed "glove box" unit exhausted within the building. Emissions from laser cutting and grinding will be controlled with cartridge-style dust collectors discharging within the building. The paint booth exhaust will be filtered and vented to ambient air.

## 3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CL-3121 (ADP Application CL-3121) received March 20, 2020. ADP application CL-3121 requests approval to build a new facility for the fabrication of saw blades and handsaws.

## 4. PROCESS DESCRIPTION

Steel coils will be received, cleaned of any oil with wipes using an alcohol product, and cut to shape by lasers vented to a cartridge-style dust collector equipped with secondary HEPA filters that discharges within the building. Blades will be further processed with milling and grinding, followed by "strawing" in electric ovens. Strawing is a process of gentle heating that slightly modifies the surface color. Milling produces negligible dust and is the preferred process for most work that could be conducted by milling or grinding. When grinding is conducted, the dust will be controlled by a cartridge-style filter system equipped with secondary HEPA filters that discharges within the building. Band saw blades will be butt-welded together to form a looped blade. A light amount of oil may be applied to the finished blades for corrosion control. Wooden frames will be constructed for shipping saw blades. Paint will be applied to machine parts in an open-faced booth.

## 5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a Laser Cutting. Six laser cutters will be used to cut the steel coil to the correct shapes. The cutting areas will be fully enclosed and vented to the Laser Cutting Dust Collector. Three of the lasers were manufactured by Amada and three of the lasers were manufactured by Mazak.

Laser Cutting Filter System. All laser cutting will be conducted in enclosures vented to the filter system. Specific equipment information is listed below:

Make / Model: Torit / DFT3-24

Serial Number: IG625261-001  
Rated Airflow: 5,000 cfm  
Cleaning Method: Pulsed Jet  
Filter Description: (24) Nanofiber media cartridges manufactured by Clean Air Technologies, rated at MERV 15 @ 900 cfm per cartridge as per ASHRAE Method 52.2, followed by a HEPA polishing filter.  
Stack Description: The filter unit will be located outside the NE corner of the building, and will discharge inside through the NE wall of the building above a roll-up door that will normally be closed.

- 5.b Grinding. Welding bead grinding and back grinding may be conducted at approximately 9 stations. Each of these stations contains a ventilation pickup vented to the grinding filter system.

Make / Model: Torit / DF2-8  
Serial Number: 10303171-1  
Rated Airflow: 2,500 cfm  
Cleaning Method: Pulsed Jet  
Filter Description: (24) Nanofiber media cartridges manufactured by Clean Air Technologies, rated at MERV 15 @ 900 cfm per cartridge as per ASHRAE Method 52.2. A HEPA polishing filter will be installed at the filtration system exhaust.  
Stack Description: The filter unit will be located outside the NE corner of the building, and will discharge inside through the NE wall of the building above a roll-up door that will normally be closed.

- 5.c Welding, Metal Fabrication. Welding and metal fabrication activities will not be controlled. Welding will be performed within the building. There will be no dedicated exhaust system for welding fume. Any fume generated will be exhausted through the general building ventilation.

- 5.d Painting. Solvent may be used to clean oil from incoming metal coils. Evaporative emissions from this activity will be fugitive in nature. Painting will be conducted in a 3-sided enclosure (three walls, floor and ceiling) fitted with filters on the back wall. Paint will be applied with a high-transfer efficiency gun.

Booth Make / Model: DeVilbiss / model unknown  
Dimensions: 3-sided enclosure, 12' 6" deep, filter wall is 14' 10" wide, 9' tall  
Air Flow: 8,000 acfm with 5.7 hp blower  
Air Filters: Flat filters on back wall. Required to achieve 98% arrestance.  
Stack Description: Located near the southwest corner of the building. 34" diameter exhausting 38' above grade, 5' above the building roof, 8,000 acfm.

#### Other Equipment

- 5.e Space Heaters. Natural gas fired space heaters will be used for comfort heating. Specific equipment information is listed below:

Make / Model	Heat Input Capacity (MMBtu/hr)
Modine / PDP400PV	0.400
Modine / PDP250PV	0.250
Modine / PDP250PV	0.250
Modine / PDP400PV	0.400

- 5.f Milling. Approximately eight custom milling machines are used in place of grinding on blades. This equipment "peels" the metal, and therefore does not generate significant dust.
- 5.g Abrasive Blasting. Small amounts of abrasive blasting may be conducted in a fully enclosed "glove box" vented within the building.
- 5.h Electronics Assembly. No significant emissions are expected from electronics assembly.
- 5.i Equipment/Activity Summary.

ID No.	Generating Equipment/Activity	# of Units	Control Equipment	# of Units
1	Laser Cutting	6	Cartridge-style dust collector with HEPA filters exhausted inside	1
2	Grinding	~9	Cartridge-style dust collector with HEPA filters exhausted inside	1
3	Welding	~3	None	N/A
4	Painting and Solvent Usage	1	Fabric filtration for spray painting	1

## 6. EMISSIONS DETERMINATION

- 6.a Laser Cutting. Emissions from laser cutting will be controlled by the laser cutting filter system and exhausted into the building away from any area with significant ventilation to the outdoors. Emissions to the ambient air are assumed to be negligible in this configuration. If the equipment is exhausted to the ambient air either directly or by discharging into a well ventilated space, potential emissions would be calculated as described below.

Potential emissions from laser cutting were calculated using the following assumptions:

1. All 6 laser cutters operate 8,760 hours per year.
2. 5% of the metal removed becomes fume (based on "Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" Bromeen B. et al March 1994).
3. The highest metal removal rate provided for any of the 6 laser cutters is achievable by any of the laser cutters.
4. The concentration of metal HAP in the fume (Ni, Mn, Cr) is directly proportional to the concentration of the metal HAP in the base metal.
5. PM<sub>10</sub>/PM<sub>2.5</sub> emissions are assumed equivalent to 0.002 gr/dscf (a practically quantifiable level) rather than calculated from the relatively uncertain, and in practical terms unmeasurable, fume generation rate. This also accounts for the possibility of particulate other than metal fume in the exhaust.

<b>Laser Cutting - Metal Removal Rate</b>				
Metal Density =		7 grams/cm <sup>3</sup>		Amount
Tool	Width (inches)	Depth (inches)	5" Cut Time (Seconds)	Removed (lbs/hr)
#115 / Mazak WB	0.018	0.078	33	0.19
#285 / Mazak SDS	0.018	0.109	30	0.30
#286 / Mazak SDS	0.017	0.109	33	0.26
#132 / Amada - A1 WB	0.015	0.078	55	0.10
#112 / Amada - A2 WB	0.018	0.078	55	0.12
#125 / Amada - A3 WB	0.019	0.078	36	0.19

<b>Laser Cutting</b>				
Combined Cutting Machine Hours	52,560	hours per year (8,760 hours per laser cutter)		
Metal Removed Per Machine =	0.30	pounds per hour		
# of Laser Cutting Machines =	6			
Total Metal Removed =	1.79	pounds per hour		
% of Metal Converted to Fume =	5%	Dry cutting of mild steel - Bromeen et. al paper		
Maximum Ni Content =	5%	From Safety Data Sheet		
Maximum Mn Content =	2.5%	From Safety Data Sheet		
Maximum Cr Content =	5%	From Safety Data Sheet		
% of Total Cr Emitted as Cr <sup>+6</sup> =	100%	Worst-case scenario		
Particulate Control Efficiency =	99.97%	Estimated combined capture and control efficiency		
	Uncontrolled Emission Factor (lb/hr/machine)	Max Controlled Emissions (lb/hr)	Max Annual Emissions (tpy)	Uncontrolled Emission Factor Source
NO <sub>x</sub>	0.0070	0.0419	0.18	0.81 mg/s - "Secondary Hazards of High Power Laser Beam Welding", K. Schulmeister et. Al
Metal fume	0.015	2.7E-05	1.2E-04	"Emissions of Fume, Nitrogen Oxides and Noise in
O <sub>3</sub>	0.0017	0.010	0.044	0.21 mg/s - "Secondary Hazards of High Power Laser
Ni as Ni	0.0007	1.3E-06	5.9E-06	Fume * % Ni
Mn as Mn	0.0004	6.7E-07	2.9E-06	Fume * % Mn
Cr as Cr	0.0007	1.3E-06	5.9E-06	Fume * % Cr
Cr <sup>+6</sup> as Cr	0.0007	1.3E-06	5.9E-06	Cr * % Converted to Cr <sup>+6</sup>

Source	Exhaust Flow (cfm)	Emission Concentration (gr/dscf)	Annual Operation (hours)	PM/PM <sub>10</sub> /PM <sub>2.5</sub>		tpy
				lb/hr	lb/yr	
Laser Cutting Dust Collector	5,000	0.002	8,760	0.086	751	0.38

- 6.b **Grinding.** Emissions from grinding will be controlled by the grinding filter system and exhausted into the building away from any area with significant ventilation to the outdoors. Emissions to the ambient air are assumed to be negligible in this configuration. If the equipment is exhausted to the ambient air either directly or by discharging into a well ventilated space, potential emissions would be calculated as described below.

Emissions from this activity consist of particulate matter collected and filtered by the Grinding Dust Collector. Potential annual emissions were calculated with the assumption that this activity is conducted with the exhaust system operating at full rated capacity for 8,760 hours per year and an exhaust concentration of 0.002 gr/dscf. If the filtration system is working properly the exhaust concentration will probably be much less than 0.002 gr/dscf, but this is a practically quantifiable value and would account for some amount of sneakeage and uncaptured dust.

Source	Exhaust Flow (cfm)	Emission Concentration (gr/dscf)	Annual Operation (hours)	PM/PM <sub>10</sub> /PM <sub>2.5</sub>		tpy
				lb/hr	lb/yr	
Grinding Dust Collector	2,500	0.002	8,760	0.043	375	0.19



- 6.c Welding / Metal Fabrication. Emissions from metal fabrication activities (drilling, grinding, etc.) in the shop are not expected to be significant. Potential emissions from welding were calculated by doubling the reported weld/rod usage from 2019 and applying emission factors from AP-42 Section 12.19 (1/95).

<b>Welding Emissions</b>									
Type	Amount	Emission Factors (lb/1,000 lb)							
	lbs/yr	Cr	Cr(VI)	Co	Mn	Ni	Pb	PM <sub>10</sub>	PM <sub>2.5</sub>
E70S	3,000	0.001	0	0.001	0.318	0.001	0	5.2	5.2
<b>Emissions (lbs/year)</b>									
Type		Cr	Cr(VI)	Co	Mn	Ni	Pb	PM <sub>10</sub>	PM <sub>2.5</sub>
E70S		0.0	0.0	0.0	0.95	0.0030	0.0	15.6	15.6
Totals =		0.0	0.0	0.0	0.95	0.0030	0.0	15.6	15.6

- 6.d Painting and Solvent Usage. Emissions of VOC, TAPs and HAPs from painting and solvent usage activities were calculated using MSDS/SDS and/or technical data sheet information for individual coating products, and a basis of 200% of the material consumption rate provided for calendar year 2019. PM<sub>10</sub> emissions were determined using the mass of coating sprayed, the solids content of the coating, an assumed 98% filter arrestance, and 65% transfer efficiency.

Pollutant	CAS #	TAP	HAP	SQER	Avg. Period	ASIL (µg/m³)
		Emissions (lb/yr)	Emissions (lb/yr)			
Acetone	67-64-1	123	---	43,748	24-hour	5,900
Barium, soluble compounds Ba	7440-39-3	0.1	---	175	24-hour	1.7
Butane	106-97-8	49	---	43,748	24-hour	6,300
Carbon black	1333-86-4	0.007	---	1,750	24-hour	12
Cobalt as Co metal Dust and furr	7440-48-4	0.012	0.012	175	24-hour	0.17
Ethyl alcohol	64-17-5	725	---	43,748	24-hour	6,300
Ethyl benzene	100-41-4	18	18	43,748	24-hour	1,000
Isobutyl acetate	110-19-0	2	---	43,748	24-hour	2,400
Isopropyl alcohol	67-63-0	45	---	43,748	24-hour	3,300
Nonane	111-84-2	64	---	43,748	24-hour	3,500
Toluene	108-88-3	1.1	1.1	43,748	24-hour	400
Vinyl toluene	25013-15-4	19.4	---	43,748	24-hour	800
VM & P Naphtha	64742-89-8	5	---	43,748	24-hour	4,600
Xylenes (m-,o-,p-isomers)	108-38-3	2,257	2,257	43,748	24-hour	1,500
Totals =		3,308	2,276			

PM/PM<sub>10</sub> Emissions = 5 lb/yr

PM<sub>2.5</sub> Emissions = 4 lb/yr (SWCAA assumed that 78% of the PM/PM<sub>10</sub> emissions are PM<sub>2.5</sub>)

VOC Emissions = 6,300 lb/yr

Actual annual emissions must be calculated using annual material purchases, material composition data, filter efficiencies and transfer efficiency for spray applied coatings

- 6.e Space Heaters. Potential annual emissions from the combustion of natural gas were calculated with the assumption that the equipment will operate at full combined rated capacity (1.30 MMBtu/hr heat input) for 8,760 hours per year.

<b>Comfort Space Heating</b>						
Combined Heat Input Rating =		1.300 MMBtu/hr				
Natural Gas Heat Content =		1,020 Btu/scf				
Natural Gas Firing Rate =		1,275 scfh				
Natural Gas Consumption =		11.16 MMscf/yr				
Pollutant	Emissions lb/MMscf	Emissions lb/MMBtu	Emissions lb/hr	Emissions tpy	Emission Factor Source	
NO <sub>x</sub>	100	0.098	0.127	0.56	AP-42 Section 1.4 (07/98)	
CO	84	0.082	0.107	0.47	AP-42 Section 1.4 (07/98)	
VOC	5.5	0.0054	0.0070	0.031	AP-42 Section 1.4 (07/98)	
SO <sub>x</sub> as SO <sub>2</sub>	0.6	0.0006	0.0008	0.0033	AP-42 Section 1.4 (07/98)	
PM	7.6	0.0075	0.0097	0.042	AP-42 Section 1.4 (07/98)	
PM <sub>10</sub>	7.6	0.0075	0.0097	0.042	AP-42 Section 1.4 (07/98)	
PM <sub>2.5</sub>	7.6	0.0075	0.0097	0.042	AP-42 Section 1.4 (07/98)	
Benzene	0.0021	2.1E-06	2.7E-06	1.2E-05	AP-42 Section 1.4 (07/98)	
Formaldehyde	0.075	7.4E-05	9.6E-05	4.2E-04	AP-42 Section 1.4 (07/98)	
Greenhouse Gases	kg/MMBtu	GWP	CO <sub>2</sub> e lb/MMBtu	CO <sub>2</sub> e lb/MMscf	CO <sub>2</sub> e tpy	Emission Factor Source
CO <sub>2</sub>	53.06	1	116.977	119,317	666.069	40 CFR 98
CH <sub>4</sub>	0.001	25	0.055	56	0.3	40 CFR 98
N <sub>2</sub> O	0.0001	298	0.066	67	0.4	40 CFR 98
Total GHG - CO <sub>2</sub> e			117.098	119,440	666.757	

In the future, emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

- 6.f Facility-wide Potential Emissions Summary.

Pollutant	Potential Annual Emissions (tpy)
Nitrogen oxides	0.56
Carbon monoxide	0.47
Volatile organic compounds	3.18
Sulfur oxides as sulfur dioxide	0.0033
Particulate matter	0.053
PM <sub>10</sub>	0.053
PM <sub>2.5</sub>	0.053
Toxic Air Pollutants	1.65
Hazardous Air Pollutants	1.14
CO <sub>2</sub> e	667

## 7. REGULATIONS AND EMISSION STANDARDS

Regulations that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the regulations, codes, or requirements listed below.

- 7.a Title 40 Code of Federal Regulations (40 CFR) 63.11514 et seq. (Subpart XXXXXX) "National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories" establishes standards and work practices for nine metal fabrication and finishing sources engaged in operations that use materials that contain or have the potential to emit chromium, lead, manganese, nickel, or cadmium. The source categories listed in the Subpart include: electrical and electronic equipment finishing operations, fabricated metal products, fabricated plate work (boiler shops), fabricated structural metal manufacturing, heating equipment, except electric, industrial machinery and equipment finishing operations, iron and steel forging, primary metal products manufacturing, and valves and pipe fittings. The Permittee's facility is an existing area source that manufactures saw blades and hand saws (NAICS code 332216) and is not in one of the categories subject to this regulation. In addition, although this facility is "new" for NSR purposes, the definition of "construction" in 40 CFR 63.2 explains: "Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location." This describes the situation for this facility as it moves from Portland, OR to Ridgefield, WA. Existing applicable facilities must provide an Initial Notification to the Administrator and be in compliance with the applicable provisions of the subpart no later than July 25, 2011.
- 7.b 40 CFR 63.11169 et seq. (Subpart HHHHHH) "National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources" establishes standards and work practices for all area sources engaged in paint stripping operations using methylene chloride, autobody refinishing operations, or spray coating of metal or plastic parts with coatings that contain chromium, lead, manganese, nickel, or cadmium (target HAPs). This rule does not apply to surface coating or paint stripping activities covered under another area sources NESHAP. This facility does not apply coatings containing the target HAPs and therefore is not subject to this rule.
- 7.c Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act [RCW 70A.15] and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.
- 7.d RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an Order of Approval (Air Discharge Permit) for installation and establishment of an air contaminant source.
- 7.e Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" (as in effect August 21, 1998) requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.
- 7.f WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM<sub>10</sub>, PM<sub>2.5</sub>, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.
- 7.g SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology

(RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust.

- 7.h SWCAA 400-040(1) "Visible Emissions" requires that no emission of an air contaminant from any emissions unit shall exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point.
- 7.i SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum.
- 7.j SWCAA 400-109 "Air Discharge Permit Applications" requires that an air discharge permit application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source." Sources wishing to modify existing permit terms may submit an Air Discharge Permit application to request such changes. An air discharge permit must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits.
- 7.k SWCAA 400-110 "New Source Review" requires that an Air Discharge Permit be issued by SWCAA prior to establishment of the new source, emission unit, or modification.
- 7.l SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
  - (2) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
  - (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
  - (4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

## 8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems have been evaluated to determine if they meet the requirements of Best Available Control Technology (BACT) and Best Available Control Technology for toxics (T-BACT) for the types and amounts of air contaminants emitted by the processes and equipment as described below:

### New BACT Determinations

- 8.a BACT Determination Laser Cutting. The proposed use of MERV 15 cartridge-style filters with HEPA polishing filters would be the top choice in a "top-down" BACT analysis for laser cutting. Venting the exhaust indoors further reduces the potential for significant emissions to the ambient air.

No cost-effective means of minimizing NO<sub>x</sub> or ozone emissions have been identified and the quantity of emissions are relatively small and highly uncertain, therefore SWCAA had determined that no additional controls are appropriate to address potential NO<sub>x</sub> or ozone emissions.

- 8.b BACT Determination Grinding. The proposed use of MERV 15 cartridge-style filters with HEPA polishing filters exhausted within the building would be the top choice in a "top-down" BACT analysis for grinding and therefore meets the requirements of BACT.

- 8.c Welding. A limited amount of welding is conducted within the building, without ventilation controls, and with an electrode that is not expected to generate hexavalent chromium. The amount of hexavalent chromium generated from welding onto the higher-chromium saw blades is expected to be minimal; therefore no additional controls are necessary to meet the requirements of BACT.
- 8.d BACT Determination – Painting and Solvent Usage. For painting, the use of high transfer efficiency spray equipment, performing all painting within a paint booth equipped with filters that achieve at least 98% capture of paint overspray (consistent with 40 CFR 63 Subpart XXXXXX), and vertical dispersion of exhaust above the building roof meets the requirements of BACT for this activity at this facility. Based on the amount and types of solvents used at this facility, no additional controls beyond compliance with the VOC limit and maintaining TAP emissions below the relevant Small Quantity Emission Rates is necessary to meet the requirements of BACT.
- 8.e Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential emissions increase equal to or greater than the applicable PSD thresholds. Therefore, requirements of the PSD program are not applicable to this action.
- 8.f Compliance Assurance Monitoring (CAM). CAM is not applicable to any emission unit at this facility because this facility is not a major source required to obtain a Part 70 or 71 permit.

## 9. AMBIENT IMPACT ANALYSIS

Emissions of criteria air pollutants or precursors (nitrogen oxides, carbon monoxide, sulfur oxides, particulate matter, and volatile organic compounds) are all at or below 3.2 tons per year each. At these emission rates, no significant adverse ambient air quality impact is anticipated. Incremental increases in toxic air pollutant emissions will not exceed the applicable Small Quantity Emission Rates (SQER) listed in WAC 173-460 (as in effect August 21, 1998); therefore, toxic impacts from these pollutants are presumed to be below regulatory significance.

## Conclusions

- 9.a Operation of the metal fabricating facility as proposed in ADP Application CL-3121 will not cause the ambient air quality standards established by Title 40 Code of Federal Regulations Part 50 (40 CFR 50), "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.b The metal fabricating facility proposed in ADP Application CL-3121, if properly installed and maintained, can be operated without causing a violation of the applicable emission standards, which include the limits established under SWCAA 400-040 "General Standards for Maximum Emissions."
- 9.c Operation of the metal fabricating facility as proposed in ADP Application CL-3121 will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants," (in effect August 21, 1998) or WAC 173-476 "Ambient Air Quality Standards" to be violated.

## 10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue Air Discharge Permit 21-3448 in response to ADP Application CL-3121. Air Discharge Permit 21-3448 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a General Basis. Approval conditions for equipment affected by this permitting action incorporate the operating schemes proposed by the permittee in the Air Discharge Permit application.
- 10.b Emission Limits. A zero percent opacity limit was established for all equipment at the facility because any visible emissions from any of these emission units would indicate that the unit or control equipment was malfunctioning

and producing excess emissions. Emissions of particulate matter from welding, and VOCs from painting and solvent usage, were established at the levels expected to represent the maximum operating scenario for this facility.

- 10.c Operating Limits and Requirements. To minimize the impact of emissions on ambient air quality, the paint booth exhaust stack was required to be exhausted vertically. Any device that obstructs or prevents vertical discharge is prohibited. This is good engineering practice and is required by SWCAA 400-200(1) for all new equipment.

Installation of differential pressure gages to monitor pressure drops across the paint booth fabric filtration system was required to assist in evaluating whether the filter system is operating properly. Large changes in differential pressure can indicate operational problems.

HEPA level filtration was required to be installed on the Laser Cutting Dust Collector because this level of filtration is necessary to address potential hexavalent chromium emissions. In addition, the Laser Cutting Dust Collector is prohibited from exhausting to the ambient air and maintenance on the unit must be tracked. The combination of these requirements provides adequate assurance that the ambient impact of toxic air pollutants from this activity will be below regulatory concern.

Grinding will not be a significant potential source of toxic air pollutants so the only restriction included in the permit was the prohibition from discharging to ambient air. If the unit is discharged to ambient air, additional monitoring and recordkeeping would apply.

Consistent with the requirements of 40 CFR 63 Subpart XXXXXX (a regulation applicable to similar facilities) and BACT, the paint enclosure filters must be capable of capturing at least 98% of the particulate matter from paint overspray.

- 10.d Monitoring and Recordkeeping. Sufficient monitoring and recordkeeping was established to document compliance with the annual emission limits and provide for general requirements (e.g. excess emission reporting, annual emission inventory submission). Logging of differential pressure reading across the paint booth filtration system was required weekly to monitor for operational problems.

- 10.e Emission Monitoring and Testing Requirements. See Section 12.

- 10.f Reporting. The permit requires reporting of the annual air emissions inventory, and reporting of the data necessary to develop the inventory. Excess emissions must be reported as soon as possible in order to qualify for relief from monetary penalty in accordance with SWCAA 400-107. In addition, deviations from permit conditions must be reported within 30 days of discovery in accordance with the SWCAA 400-107 requirement for excess emissions.

## **11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION**

- 11.a Startup and Shutdown Provisions. Pursuant to SWCAA 400-081 "Startup and Shutdown," technology based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during startup or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during startup or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during startup or shutdown.

The permittee did not identify any startup and shutdown periods during which the proposed equipment is not capable of achieving continuous compliance with any applicable emission standard or approval condition. Therefore, specific startup and shutdown provisions were not included in the permit.

- 11.b Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The applicant did not propose or identify any applicable alternate operating scenarios. Therefore, none were accommodated by the approval conditions.
- 11.c Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures other than the control measures identified in the permit were identified by either the permittee or SWCAA. Therefore, no additional measures were included in the approval conditions.

## **12. EMISSION MONITORING AND TESTING**

In the proposed configuration, none of the activities or equipment at this facility are a threat to any ambient air quality standard and the existing monitoring regime provides a reasonable assurance of ongoing compliance therefore no emission testing was required.

## **13. FACILITY HISTORY**

This facility is being relocated from Portland, Oregon but will be new to SWCAA's jurisdiction.

## **14. PUBLIC INVOLVEMENT**

- 14.a Public Notice for Air Discharge Permit Application CL-3121. Public notice for Air Discharge Permit Application CL-3121 was published on the SWCAA internet website for a minimum of 15 days beginning on March 20, 2020.
- 14.b Public/Applicant Comment for Air Discharge Permit Application CL-3121. SWCAA did not receive formal comments, a comment period request, or any other inquiry from the public or the applicant regarding this Air Discharge Permit application. Therefore, no public comment period was provided for this permitting action.
- 14.c State Environmental Policy Act (SEPA). SWCAA issued Determination of Non-Significance 21-001 on January 20, 2021 for this project.