TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit ADP 25-3693
Air Discharge Permit Application CL-3291

Issued: March 26, 2025

Fabrication Products, Inc.

SWCAA ID - 1329

Prepared By: Wess Safford
Air Quality Engineer
Southwest Clean Air Agency

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ABBREVIATIONS

List of Acronyms

ADP	Air Discharge Permit
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA
ASIL	Acceptable Source Impact Level
BACT	Best available control technology
CAS#	Chemical Abstracts Service registry number
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
EU	Emission Unit
MACT	Maximum Achievable Control Technologies
mfr	Manufacturer
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOV	Notice of Violation/
NSPS	New Source Performance Standard
PSD	Prevention of Significant Deterioration
RCW	Revised Code of Washington
SCC	Source Classification Code
SDS	Safety Data Sheet
SQER	Small Quantity Emission Rate listed in WAC 173-460
Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
SWCAA	Southwest Clean Air Agency
T-BACT	Best Available Control Technology for toxic air pollutants
WAC	Washington Administrative Code

List of Units and Measures

µg/m³	Micrograms per cubic meter
µm	Micrometer (10^{-6} meter)
acfm	Actual cubic foot per minute
dscfm	Dry Standard cubic foot per minute
gr/dscf	Grain per dry standard cubic foot
MMBtu	Million British thermal unit
ppm	Parts per million
ppmv	Parts per million by volume
ppmvd	Parts per million by volume, dry
ppmw	Parts per million by weight
scfm	Standard cubic foot per minute
tpy	Tons per year

List of Chemical Symbols, Formulas, and Pollutants

CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
HAP	Pollutant listed pursuant to Section 112 of the Federal Clean Air Act
NO_x	Nitrogen oxides
O_2	Oxygen
O_3	Ozone
PM	Particulate Matter with an aerodynamic diameter 100 µm or less
PM_{10}	PM with an aerodynamic diameter 10 µm or less
$PM_{2.5}$	PM with an aerodynamic diameter 2.5 µm or less
SO_2	Sulfur dioxide
TAP	Pollutant listed pursuant to Chapter 173-460 WAC
VOC	Volatile organic compound

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name:	Fabrication Products, Inc.
Applicant Address:	4201 NE Minnehaha Street, Vancouver, WA 98661
Facility Name:	Fabrication Products, Inc.
Facility Address:	4201 NE Minnehaha Street, Vancouver, WA 98661 4220 NE Minnehaha Street, Vancouver, WA 98661
SWCAA Identification:	1329
Contact Person:	Gregory Sword, Vice President
Primary Process:	Fabrication of large metal parts
SIC/NAICS Code:	3441 / Fabricated Structural Metal 332312 / Fabricated Structural Metal Manufacturing
Facility Latitude and Longitude	45° 40' 01.23" N 122° 37' 39.70" W
Facility Classification:	Natural Minor

2. FACILITY DESCRIPTION

Fabrication Products, Inc. (FPI) operates a metal parts fabrication facility. The facility performs welding, cutting, shot blasting, abrasive blasting, and painting of metal parts.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number CL-3291 (ADP Application CL-3291) dated January 30, 2025. FPI submitted ADP Application CL-3291 requesting approval of the following:

- Installation of a new blast booth (Titan Abrasive Systems – ENCG-202050) in the process building at 4220 NE Minnehaha Street; and
- Relocation of an existing dust collector (EnTech - Cyclone 20DC) from the process building at 4201 NE Minnehaha Street to the process building at 4220 NE Minnehaha Street.

The current permitting action provides approval for new and relocated equipment as proposed in ADP Application CL-3291. ADP 25-3693 will supersede ADP 20-3391 in its entirety.

4. PROCESS DESCRIPTION

4.a. Metal Parts Fabrication (*existing*). Raw metal stock is fabricated into finished products using metal cutting, welding, blasting, and painting equipment. All fabrication activities are conducted inside building enclosures. Emissions from painting, blasting, and plasma cutting operations are exhausted through dedicated emission control systems.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a. Welding (*existing*). Welding and metal fabrication activities are performed inside a building enclosure. Welding fumes are exhausted uncontrolled through multiple atmospheric roof vents.

Location: 45°40'01.49"N 122°37'39.86"W

5.b. Spray Painting (*existing*). Spray painting is performed inside a building enclosure using high transfer efficiency guns (~65% or better).

Building Enclosure:	Site Built
Dimensions:	Interior dimensions - 75' long, 40' wide, 26' tall
Air Flow:	54,000 acfm provided by (3) JBI model EFC-188 exhaust chambers
Air Filters:	138 ft^2 of Brinks Manufacturing "Paint Pockets" in a single layer rated at 99.84 % arrestance
Stack Description:	Each of the (3) exhaust chambers utilizes a stack measuring approximately 4' wide by 16" deep, exhausting vertically at ~ 20' above ground level
Location:	45°40'00.41"N 122°37'36.79"W

5.c. Abrasive Blasting (*modified*). Abrasive blasting is performed inside a process enclosure, which is vented to a dedicated dust collector.

Booth Make/Model: Titan Abrasive Systems / ENCG-202050-NSB-BD-SP

Emission Control Equipment

Make / Model:	Entech / Cyclone 20 DC (s/n 201520142)
Rated Airflow:	20,000 acfm, 2.85:1 air:cloth ratio
Filter Description:	(27) top loading filter cartridges with a total of 7,020 ft^2 of total filter area. Standard Qx media by Nordic Air Filtration / TDC Filter. MERV 12 efficiency rating (99.8% at 0.5 µm particles).
Stack Description:	20" diameter stack, exhausting vertically at ~38' above ground level
Location:	45°40'08.68"N 122°37'35.69"W

ADP Application CL-3291. Abrasive blasting operations are currently performed at 4201 NE Minnehaha Street in the same building enclosure as spray painting operations. FBI proposes to move blasting operations to a process building across the street at 4220 NE Minnehaha Street. The dust collector used to control emissions from existing blasting operations will be relocated and used to control emissions from the new blast booth. The existing dust collector exhaust stack will be heightened to clear the adjacent roof line.

5.d. Wheelabrator-Frye Shot Blasting Plant (*existing*). Shot blasting of metal parts is performed using an enclosed blasting plant. Emissions from the plant are vented to a dedicated baghouse.

Make / Model:	Wheelabrator-Frye / 4-wheel plate and section steel shot blasting plant (11.25 KW)
Serial Number:	A-135493

Emission Control Equipment

Make / Model:	Wheelabrator-Frye / 49-10 (s/n unknown)
Rated Airflow:	4,200 acfm
Filter Description:	(49) bags of 16 ounce per square yard polyester felt with a total fabric area of 577 square feet. Particulate removal efficiency is estimated at 99.98% for particles with a diameter equal to or greater than one micron.
Stack Description:	10" x 12" stack, exhausting ~ 45° from horizontal at ~15' above ground level (estimated based on October 2009 visit)
Location:	45°40'00.46"N 122°37'39.39"W

5.e. SteelPro 700 Cutting Table (*existing*). Plasma torch cutting is performed over a downdraft table that vents to a cartridge-style filter system. Plasma cutting is conducted with air as a carrier gas in air (not in or above water). The downdraft table utilizes louvers that are closed except under the area where the torch is cutting. The frame on which the plasma torch is mounted mechanically opens the louvers as it moves. Specific equipment information is listed below.

Cutting Table Make / Model:	Inovatech Engineering Corp. / SteelPro 700
Torch Make / Model:	ALTRA / HPR-260 Hi

Emission Control Equipment

Make / Model:	Donaldson Torit / DFO3-24 (s/n 2261565-1)
Rated Airflow:	19,150 cfm
Filter Description:	(24) Ultra-web flame retardant cartridges with 190 square feet of filtration per cartridge, rated at MERV 13 as per ASHRAE Method 52.2.
Stack Description:	16" x 24" stack, exhausting vertically at ~11' above grade.
Location:	45°40'01.64"N 122°37'37.88"W

5.f. SteelPro 600 Beam Line (*existing*). Plasma cutting of carbon steel (carbon steels include "mild steel") is performed inside an enclosure using an articulated robotic torch. No stainless steel or aluminum material is cut with this unit. Fume and particulate matter generated by plasma cutting are vented to a dedicated cartridge-style dust collector.

Beam Line Make / Model:	Inovatech Engineering Corp. / SteelPro 600
Torch Make / Model:	Hypertherm / XPR300

Emission Control Equipment

Make / Model:	Inovatech Engineering Corp. / 12 cartridge dust collector (s/n TBD)
Rated Airflow:	4,000 cfm at 12" w.c. (Cincinnati Fan model HDAF-180 60% width fan at 3,530 rpm)
Cleaning Method:	Pulse Jet
Filter Description:	(12) Nonwoven flame retardant cartridges manufactured by Fab-Tex Filtration with a total of 4,840 ft^2 filter area, rated at MERV 15 as per ASHRAE Method 52.2. Manufactured from 4.3 oz/yd^2 80% cellulose, 20% polyester material.
Stack Description:	14" diameter stack, exhausting vertically at ~37' above ground level ~3' above the roof peak of adjacent building
Location:	45°40'02.08"N 122°37'40.31"W

5.g. SteelPro 900 Beam Line (*existing*). Plasma cutting of carbon steel (carbon steels include "mild steel") is performed inside an enclosure using an articulated robotic torch. No stainless steel or aluminum material is cut with this unit. Fume and particulate matter generated by plasma cutting are vented to a dedicated cartridge-style dust collector.

Beam Line Make / Model:	Inovatech Engineering Corp. / SteelPro 900
Torch Make / Model:	Hypertherm / XPR400HD

Emission Control Equipment

Make / Model:	Eurovac / CPA-150-5753E263 (s/n 47541)
Rated Airflow:	4,000 cfm at 12" w.c. (Cincinnati Fan model HDAF-180)
Cleaning Method:	Pulse Jet
Filter Description:	(12) Nanofiber media cartridges manufactured by Clean Air Technologies, rated at MERV 15 @ 900 cfm per cartridge as per ASHRAE Method 52.2.
Stack Description:	14" diameter stack, exhausting vertically at ~24' above ground level ~3' above the roof peak of adjacent building.
Location:	45°40'01.43"N, 122°37'41.27"W

Insignificant Emission Units. The following pieces of facility equipment are not registered as emission units:

5.h. Shop Heater (*existing*). This unit provides hot air to the shop for comfort heating. Specific equipment information is listed below:

Make / Model:	Tu Go, ICE, model OHV 500LP/NG
Heat Input Capacity:	0.45 MMBtu/hr
Fuel:	propane
Year of Manufacture:	~2005
Year of Installation:	~2005
Stack Description:	6" diameter stack, exhausting horizontally at ~5' above grade

5.i. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Welding	Building Enclosure
2	Spray Painting	Process Enclosure, Fabric Filtration
3	Abrasive Blasting	Process Enclosure, High Efficiency Filtration
4	Wheelabrator-Frye Shot Blasting Plant	Process Enclosure, High Efficiency Filtration
5	SteelPro 700 Cutting Table	Process Enclosure, High Efficiency Filtration
6	SteelPro 600 Beam Line	Process Enclosure, High Efficiency Filtration
7	SteelPro 900 Beam Line	Process Enclosure, High Efficiency Filtration

6. EMISSIONS DETERMINATION

Emissions to the ambient atmosphere from facility operations proposed in ADP Application CL-3291 consist of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), sulfur dioxide (SO_2), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

(a) Continuous emissions monitoring system (CEMS) data;
(b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
(c) Source emissions test data (other test method); and
(d) Emission factors or methodology provided in this TSD.

6.a. Welding / Metal Fabrication (*existing*). Emissions from metal fabrication activities (drilling, grinding, etc.) are not expected to be significant. Potential emissions from welding are calculated by doubling the reported weld wire/rod usage from 2008 and applying emission factors from AP-42 Section 12.19 (1/95). Annual emissions will be calculated from actual weld wire/rod usage using the same methodology.

Welding Emissions

Wire/Rod Type	Amount lbs/yr	Emission Factors (lb/1,000 lb) Cr	Cr(VI)	Co	Mn	Ni	Pb	PM_{10}	$PM_{2.5}$
E70S	1,386	0.001	0	0.001	0.318	0.001	0	5.2	5.2
E70T*	8,306	0.004	0	0	0.891	0.005	0.001	15.1	15.1
E71T	57,690	0.002	0	0	0.662	0.004	0	12.2	12.2
E309LT	9,228	0.393	0.015	0.001	0.252	0.043	0	10.8	10.8
E316L (GMAW)	12,150	0.528	0.01	0	0.245	0.226	0	3.2	3.2

Type		Emissions (lbs/year) Cr	Cr(VI)	Co	Mn	Ni	Pb	PM_{10}	$PM_{2.5}$
E70S		0.0	0.0	0.0	0.4	0.0	0.0	7.2	7.2
E70T*		0.0	0.0	0.0	7.4	0.0	0.0	125.4	125.4
E71T		0.1	0.0	0.0	38.2	0.2	0.0	703.8	703.8
E309LT		3.6	0.1	0.0	2.3	0.4	0.0	99.7	99.7
E316L (GMAW)		6.4	0.1	0.0	3.0	2.7	0.0	38.9	38.9
	Totals =	10.19	0.26	0.01	51.33	3.42	0.01	975	975

6.b. Painting (*existing*). Emissions of VOC, TAPs and HAPs from painting operations are calculated using MSDS/SDS and/or technical data sheet information for individual coating products, and a basis of 177% of the material consumption reported for calendar year 2008 (resulting in 10.0 tpy VOC facility-wide). PM_{10} emissions are determined using the mass of coating sprayed, 30% solids content, an assumed 98% filter arrestance and 65% transfer efficiency. 78% of PM/PM_{10} emissions are $PM_{2.5}$. Annual emissions will be calculated from actual material purchases, material composition data, filter efficiencies, and spray coating transfer efficiency.

Pollutant	Emissions
VOC	19,961 lb/yr
PM/PM_{10}	68 lb/yr
$PM_{2.5}$	53 lb/yr

Pollutant	CAS #	TAP Emissions (lb/yr)	HAP Emissions (lb/yr)	SQER (lb/period)	Avg. Period	ASIL (µg/m³)
Acetone	67-64-1	1,584	---	43,748	yr	5,900
n-Butyl acetate	123-86-4	8	---	43,748	yr	2,400
Ethyl benzene	100-41-4	1,134	1,134	43,748	yr	1,000
2-Ethoxyethyl acetate	111-15-9	8	8	10,500	yr	90
Isopropyl alcohol	67-63-0	1,126	---	43,748	yr	3,300
Methyl alcohol	67-56-1	211	211	43,748	yr	870
Methyl ethyl ketone (MEK)	78-93-3	4,173	4,173	43,748	yr	1,000
Methyl isobutyl ketone (MIBK)	108-10-1	273	273	43,748	yr	680
Toluene	108-88-3	2,136	2,136	43,748	yr	400
Triethylamine	121-44-8	7	7	175	yr	7
Xylenes (m-,o-,p-isomers) (represents all xylenes 1330-20-7)	108-38-3	4,582	4,582	43,748	yr	1,500
	Totals =	15,242	12,525			

6.c. Abrasive Blasting (*existing*). Potential emissions from abrasive blasting are calculated based on a full rated exhaust rate of 20,000 cfm, 2,000 hr/yr of operation, and the permitted emission concentration limit of 0.005 gr/scf. Annual emissions will be calculated from actual hours of operation using the same methodology.

Abrasive Blasting						
	Exhaust		Hours of	$PM/PM_{10}/PM_{2.5}$		
Source	scfm	gr/dscf	Operation	lb/hr	lb/yr	tpy
Abrasive Blasting	20,000	0.005	2,000	0.86	1,714	0.86

ADP Application CL-3291. Subsequent to relocation, all abrasive blasting emissions will continue to be vented to the abrasive blasting dust collector. FPI is not proposing to modify the existing abrasive blasting dust collector so the project will not increase potential emissions from blasting operations.

6.d. Wheelabrator-Frye Shot Blasting Plant (*existing*). Potential emissions from shot blasting are calculated based on a full rated exhaust rate of 4,200 cfm, 8,760 hr/yr of operation, and an exhaust concentration of 0.005 gr/scf. Annual emissions will be calculated from actual hours of operation using the same methodology.

Shot Blasting						
	Exhaust		Hours of	$PM/PM_{10}/PM_{2.5}$		
Source	scfm	gr/dscf	Operation	lb/hr	lb/yr	tpy
Wheelabrator	4,200	0.005	8,760	0.18	1,577	0.79

6.e. SteelPro 700 Cutting Table (*existing*). Potential emissions from plasma torch cutting are calculated based on 8,760 hr/yr of operation and emission factors from "Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" Bromeen B. et al March 1994".

Plasma Cutting	# of Hours Operated	Fume g/min	NO_X g/min	Uncontrolled Fume tpy	Uncontrolled NO_X tpy
Hours of mild steel cutting =	8,760	23	10.2	13.33	5.89
Hours of stainless steel (~8 mm) =	8,760	35	9.7	20.28	5.65
Hours of stainless steel (~35 mm) =	8,760	3	15.2	1.51	8.80

NO_X emissions are not controlled, but PM emissions are. Since potential fume generation is greater than estimated baghouse discharge, potential PM emissions are calculated based on a baghouse emission concentration of 0.005 gr/dscf, rated exhaust flow, and 8,760 hr/yr of operation. This will likely be conservative because fume may not be generated during all of the time that the baghouse will be on.

Plasma Cutting Table	Rated flow (cfm)	Hours of Op.	$PM_{10}/PM_{2.5}$ Emissions gr/dscf	lb/hr	tpy
Plama Cutting Filter System	19,150	8,760	0.005	0.82	3.59

Annual emissions will be calculated from actual hours of operation using the methodology identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.f. SteelPro 600 Beam Line (*existing*). Potential emissions from plasma torch cutting generates are calculated based on 8,760 hr/yr of operation and emission factors from "Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" Bromeen B. et al March 1994".

Plasma Cutting	# of Hours Operated	Fume g/min	NO_X g/min	Uncontrolled Fume tpy	Uncontrolled NO_X tpy
Hours of mild steel cutting =	8,760	23	10.2	13.33	5.89

NO_X emissions are not controlled, but PM emissions are. Since potential fume generation is greater than estimated baghouse discharge, potential PM emissions are calculated based on a baghouse emission concentration of 0.005 gr/dscf, rated exhaust flow, and 8,760 hr/yr of operation. This will likely be conservative because fume may not be generated during all of the time that the baghouse will be on.

Plasma Cutting	Rated flow (cfm)	Hours of Op.	($PM_{10}/PM_{2.5}$ Emissions) gr/dscf	lb/hr	tpy
SteelPro Beam Line Filter System	4,000	8,760	0.005	0.17	0.75

Mild steel contains less than 1% manganese, therefore SWCAA conservatively assumed that no more than 1% of the fume was manganese. This does not account for the fact that much of the fume will be in the form of metal oxides.

Annual emissions will be calculated from actual hours of operation using the methodology identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.g. SteelPro 900 Beam Line (*existing*). Potential emissions from plasma torch cutting generates are calculated based on 8,760 hr/yr of operation and emission factors from "Emissions of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Stainless and Mild Steel" Bromeen B. et al March 1994".

Plasma Cutting	# of Hours Operated	Fume g/min	NO_X g/min	Uncontrolled Fume tpy	Uncontrolled NO_X tpy
Hours of mild steel cutting =	8,760	23	10.2	13.33	5.89

NO_X emissions are not controlled, but PM emissions are. Since potential fume generation is greater than estimated baghouse discharge, potential PM emissions are calculated based on a baghouse emission concentration of 0.005 gr/dscf, rated exhaust flow, and 8,760 hr/yr of operation. This will likely be conservative because fume may not be generated during all of the time that the baghouse will be on.

Plasma Cutting	Rated flow (cfm)	Hours of Op.	(PM_{10}/$PM_{2.5}$ Emissions) gr/dscf	lb/hr	tpy
SteelPro Beam Line Filter System	4,000	8,760	0.005	0.17	0.75

Mild steel contains less than 1% manganese, therefore SWCAA conservatively assumed that no more than 1% of the fume was manganese. This does not account for the fact that much of the fume will be in the form of metal oxides.

Annual emissions will be calculated from actual hours of operation using the methodology identified above unless new emission factors are provided by the manufacturer or developed through source testing.

6.h. Shop Heater (*existing*). Potential annual emissions from the combustion of propane are calculated based on full rated capacity (0.45 MMBtu/hr) and 8,760 hr/yr of operation. Annual emissions will be calculated from actual fuel consumption using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing.

Shop Heater

Heat Input Rating =	0.45	MMBtu/hr
Propane Heat Content =	91.5	MMBtu/1,000 gal (for AP-42 Emission Factors)
Propane Heat Content =	92.0	MMBtu/1,000 gal (for 40 CFR 98 Emission Factors)
Operating Hours =	8,760	hours per year
Propane Consumption =	4.92	gal/hr
Propane Consumption =	43,082	gal/yr
Propane Sulfur Content =	185	ppmw
Propane Weight =	4.24	lbs/gallon

Pollutant	propane lb/1,000 gal	Emissions lb/hr	Emissions lb/yr	Emissions tpy	Emission Factor Source
NOx	13.0	0.064	560	0.28	AP-42 Section 1.5 (07/08)
CO	7.5	0.037	323	0.16	AP-42 Section 1.5 (07/08)
VOC	0.8	0.004	34	0.02	AP-42 Section 1.5 (07/08)
SO_X as SO_2	1.57	0.008	68	0.03	Mass Balance
PM	0.7	0.003	30	0.02	AP-42 Section 1.5 (07/08)
PM_{10}	0.7	0.003	30	0.02	AP-42 Section 1.5 (07/08)
$PM_{2.5}$	0.7	0.003	30	0.02	AP-42 Section 1.5 (07/08)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/gallon	CO_2e tpy	Emission Factor Source
CO_2	61.71	1	12.52	270	40 CFR 98
CH_4	0.003	25	0.02	0.3	40 CFR 98
N_2O	0.0006	298	0.04	0.8	40 CFR 98
Total GHG - CO_2e	61.7136		12.568	271	

6.i. Emissions Summary/Facility-wide Potential to Emit. Facility-wide potential to emit as calculated in the sections above is summarized below.

Pollutant	Potential Emissions (tpy)	Project Increase (tpy)
NO_X	20.85	0.0
CO	0.16	0.0
VOC	10.00	0.0
SO_2	0.034	0.0
Lead	0.0	0.0
PM	7.28	0.0
PM_{10}	7.28	0.0
$PM_{2.5}$	7.27	0.0
TAP	7.65	0.0
HAP	6.29	0.0
CO_2e	271	0.0

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 Part 63 (40 CFR 63) 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 is subject to 40 CFR 63 Subpart XXXXXX so Subpart HHHHHH does not apply.

7.b. 40 CFR 63 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 a variety of custom structural steel projects (NAICS code 332312) and is subject to this regulation. Existing 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. Because SWCAA is not administering this regulation, the requirements related to this regulation have not been included in the Air Discharge Permit.

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 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 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" 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_{10}, $PM_{2.5}$, 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 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person shall cause or permit the emission of particulate matter from any combustion or incineration unit in excess of 0.23 grams per dry cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas at standard conditions.

7.i. SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.

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 SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.

7.l. SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source shall 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) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
(3) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
(4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
(5) 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.

7.m. SWCAA 490-205 "Surface Coating of Miscellaneous Metal Parts and Products" requires specified sources of VOCs located within designated ozone nonattainment or maintenance areas to comply with the emission standards of that regulation if potential VOC emissions are greater than 10 tons per year. This facility is located within an ozone maintenance, but potential facility-wide VOC emissions are not greater than 10 tons per year so this regulation is not applicable.

7.n. SWCAA 493-300 "Architectural Coatings" establishes VOC content limits for all architectural coatings manufactured, distributed, sold, or commercially applied within the boundaries of the Vancouver Air Quality Maintenance Area. This facility is located within the Vancouver Air Quality Maintenance Area and some of the applied coatings qualify as architectural coatings so this regulation ius applicable.

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

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determinations

8.a. BACT Determination – Abrasive Blasting. The proposed use of process enclosure and high efficiency filtration has been determined to meet the requirements of BACT for abrasive blasting operations at this facility.

Previous BACT Determinations

8.b. BACT Determination – SteelPro 900 Beam Line (*ADP 20-3391*). The proposed use of cartridge-style filters would be the top choice in a "top-down" BACT analysis. The level of filtration proposed (MERV 15 cartridge-style filters) meets the requirements of BACT for the size and type of particulate matter generated from the plasma cutting activities. No cost-effective means of minimizing NO_X emissions have been identified and the quantity of NO_X emissions are highly uncertain, therefore SWCAA had determined that no additional controls are appropriate to address potential NO_X emissions. If the equipment were to be used for stainless steel, higher efficiency filters may be necessary to address emissions of toxic air pollutants.

8.c. BACT Determination – Abrasive Blasting (*ADP 17-3231*). The proposed use of cartridge-style filters would be the top choice in a "top-down" BACT analysis. The level of filtration proposed (MERV 12) meets the requirements of BACT for the size and type of particulate matter generated from the abrasive blasting activities.

8.d. BACT Determination – SteelPro 600 Beam Line (*ADP 17-3231*). The proposed use of cartridge-style filters would be the top choice in a "top-down" BACT analysis. The level of filtration proposed (MERV 15 cartridge-style filters) meets the requirements of BACT for the size and type of particulate matter generated from the plasma cutting activities. No cost-effective means of minimizing NO_X emissions have been identified and the quantity of NO_X emissions are highly uncertain. Therefore, SWCAA had determined that no additional controls are appropriate to address potential NO_X emissions.

8.e. BACT Determination – Plasma Torch Cutting (*ADP 09-2900*). Plasma torch cutting is primarily a source of particulate phase fume. The Permittee's cartridge-style filtration system would be the top choice in a top-down BACT analysis. Therefore, no other control options were evaluated.

8.f. BACT Determination – Increased Painting Activity (*ADP 09-2900*). The Permittee requested that the VOC emission limit be increased significantly from 6.0 tons per year to account for anticipated business growth. The VOC emission limit was raised to 10.0 tons per year, almost all from painting. VOC emissions from painting (some of which are also TAPs and HAPs) are captured and vented vertically at a rate of approximately 54,000 cfm. Potential control measures include the use of a regenerative thermal oxidizer and carbon adsorption. Neither option would be cost-effective at the emission rates proposed. Therefore, SWCAA accepts the use of adequate vertical dispersion as BACT at this facility.

BACT for the control of particulate matter from paint overspray requires at least 98% capture consistent with 40 CFR 63 Subpart XXXXXX.

Other Determinations

8.g. Prevention of Significant Deterioration (PSD) Applicability Determination. The potential to emit of this facility is less than applicable PSD applicability thresholds. Likewise, this permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.

8.h. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

9.a. Toxic Air Pollutant Review. The new equipment and modifications proposed in ADP Application CL-3291 will not affect the type or quantity of TAP emissions from approved operations.

Conclusions

9.b. Installation of a blast booth, as proposed in ADP Application CL-3291, will not cause the ambient air quality requirements of Title 40 Code of Federal Regulations (CFR) Part 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.

9.c. Installation of a blast booth, as proposed in ADP Application CL-3291, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.

9.d. Installation of a blast booth, as proposed in ADP Application CL-3291, will not cause a violation of emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 25-3693 in response to ADP Application CL-3291. ADP 25-3693 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a. Supersession of Previous Permits. ADP 25-3693 supersedes ADP 20-3391 in its entirety.

10.b. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP Application CL-3291. Permit requirements established by this action are intended to implement BACT, minimize emissions, and assure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the maximum potential emissions calculated in Section 6 of this Technical Support Document.

10.c. Monitoring and Recordkeeping Requirements. ADP 25-3693 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements. Specific monitoring requirements are established for coating and solvent consumption, weld rod consumption, hours of operation, and fuel consumption.

10.d. Reporting Requirements. ADP 25-3693 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for coating and solvent consumption, weld rod consumption, hours of operation, and fuel consumption. Reports are to be submitted on an annual basis.

10.e. Emission Limits. This permitting action will not modify emission limits for the facility. Existing emission limits will be carried forward in ADP 25-3693.

ADP 09-2900. The annual facility-wide VOC emission limit was increased to 10.0 tons per year at the request of the permittee to accommodate increased production. The annual emission limit for the Wheelabrator-Frye Shot Blasting baghouse was reduced from 0.9 tons per year to 0.79 tons per year consistent with estimated maximum potential emissions as identified in Section 6 of this Technical Support Document. PM emissions from both plasma torch cutting exhausts were limited to 0.005 gr/dscf consistent with BACT. 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.

10.f. Operating Limits and Requirements. Exhaust streams from painting, abrasive blasting, and plasma torch cutting operations are required to be exhausted vertically to minimize the impact of emissions on ambient air quality. 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 filtration media is required to assist in evaluating whether the associated dust collectors are operating properly. Large changes in differential pressure can indicate operational problems.

Consistent with the requirements of 40 CFR 63 Subpart XXXXXX and BACT, exhaust filters in the paint enclosure must be capable of capturing at least 98% of the particulate matter from paint overspray.

10.g. Emission Testing Requirements. Periodic emission testing of the abrasive blasting dust collector is required as appropriate for a unit of such capacity. Previous permitting actions have not required emission testing for either of the SteelPro beam lines because inlet particulate matter concentration is expected to be relatively low, the cartridge-style filter design is expected to provide a reliable level of emission control, and total exhaust rate is relative low (4,000 cfm each).

10.h. Requirements for Unmodified Emission Units. Permit requirements for existing emission units not affected by ADP Application CL-3291 are carried forward unchanged from ADP 20-3391.

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

11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up 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 start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

The applicant did not identify any start-up and shutdown periods during which affected equipment is not capable of achieving continuous compliance with applicable technology determinations or approval conditions. To SWCAA's knowledge, this facility can comply with all applicable standards during startup and shutdown.

11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the permit requirements.

11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate from those measures required under BACT considerations. Therefore, none were included in the permit requirements.

12. EMISSION MONITORING AND TESTING

12.a. Emission Testing – Abrasive Blasting Dust Collector. Emission testing of the Abrasive Blasting dust collector is required on a continuing 10-year cycle. All emission testing must be conducted in accordance with ADP 25-3693, Appendix A. A ten-year testing frequency is considered appropriate based on the size of the equipment (up to 20,000 cfm), the cartridge-style design, the type of service (ambient temperature dust), and the limited emissions potential (2,000 hr/yr operation, PM - 0.86 tpy).

13. FACILITY HISTORY

13.a. Previous Permitting Actions. SWCAA has previously issued the following Permits for this facility:

Permit Number	Application Number	Date	Purpose
20-3391	CL-3119	3/16/2020	Installation of a SteelPRO 900 Robotic plasma beam line table and Hypertherm HPR400XD plasma cutter. Emissions controlled with a DCC 12-00 EuroVac Dust collector.
17-3231	CL-3008	6/7/2017	Installation of a cartridge-style filter system to control emissions from abrasive blasting in place of using the painting filtration system. Correct the basis for abrasive blasting from 200 hours per year to 2,000 hours per year. Installation of a new SteelPro 600 robotic plasma beam line. Superseded by ADP 20-3391.
09-2900	CL-2097	11/10/2009	Approval for cartridge-style fabric filter to control emissions from plasma cutting, increase in VOC emission limits to 10 tpy. Superseded by ADP 17-3231.
01-2398	CL-1539	11/29/2001	Relocation of existing facility from 6131 NE 63rd Street, Vancouver, WA to new location at 4201 NE Minnehaha Street, Vancouver, WA. Installation of a custom designed painting and abrasive blasting building at new location. Superseded by ADP 09-2900.

95-1730	CL-948	3/23/1995	Installation of Wheelabrator-Frye steel shot blasting plant and paint spray booth. Superseded by ADP 01-2398.
90-1211	CL-778	5/18/1990	Installation of metal fabrication facility. Permit was issued after SWCAA found the facility operating without a permit. Superseded by ADP 01-2398.

13.b. Compliance History. A search of source records on file at SWCAA identified the following compliance issues at the facility during the past five (5) years.

Date	NOV Number	Violation
8/2/2023	10924	Nickel emissions in excess of Small Quantity Emission Rate.

14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a. Public Notice for ADP Application CL-3291. Public notice for ADP Application CL-3291 was published on the SWCAA internet website for a minimum of (15) days beginning on February 27, 2025.

14.b. Public/Applicant Comment for ADP Application CL-3291. SWCAA did not receive specific comments, a comment period request or any other inquiry from the public regarding this ADP application. Therefore, no public comment period was provided for this permitting action.

14.c. State Environmental Policy Act. A complete SEPA checklist was submitted by Fabrication Products, Inc. in conjunction with ADP Application CL-3291. After reviewing the checklist, SWCAA has made a Determination of Nonsignificance (DNS 25-014) concurrent with issuance of ADP 25-3693.