



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment A – LRAPA Forms



FORM AQ101

ADMINISTRATIVE INFORMATION

ANSWER SHEET

FOR LRAPA USE ONLY	
Permit Number:	Type of Application:
Application No:	RNW ☐ MOD ☐ NEW ☐ EXT ☐
Date Received :	
Check No.	Amount \$

1. Company	2. Facility Location
Legal Name: Seneca Sawmill Company	Name: Seneca Sawmill Company
Mailing Address: P.O. Box 851	Street Address: 90201 Highway 99 N
City, State, Zip Code: Eugene, OR, 97440	City, County, Zip Code: Eugene, Lane, 97402
Number of employees (corporate):	Number of employees (facility):
3. Facility Contact Person	4. Industrial Classification Code(s)
Name: Courtney Griesel	Primary SIC and NAICS: 2421, 321113
Title: Oregon Community Relations Manager	Secondary SIC and NAICS: None
Telephone number: 541-762-3009	5. Other LRAPA Permits
Fax number:	
e-mail address: cgriesel@spi-ind.com	
6. Permit Action*:	
☐ New Simple ACDP ☐ New Construction ACDP ☐ New Standard ACDP ☐ New Standard ACDP (PSD/NSR) ☐ Renewal of an existing permit without changes (include form AQ403 for Standard ACDPs) ☐ Renewal of an existing permit with changes (include form AQ403 for Standard ACDPs) ☒ Modification of existing permit	

7. Signature

I hereby apply for permission to discharge air contaminants in Lane County, Oregon, as stated or described in this application, and certify that the information contained in this application and the schedules and exhibits appended hereto, are true and correct to the best of my knowledge and belief.

Bill Powell**Oregon Area Manager**

Name of official (Printed or Typed)

Title of official and phone number

Signature of official

Date

*Applicable fees will be assessed after LRAPA receives the application. Please contact LRAPA for fee questions.

8. Contact List:

Company Information:

Legal Name: Seneca Sawmill Company	Other company name (if different than legal name):
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Site Contact Person: *(A person who deals with LRAPA staff about equipment related problems or issues.)*

Name: Brandon Mainard	Telephone number: 541-689-1011
Title: Environmental Coordinator	E-mail address: BMainard@spi-ind.com

Facility Contact Person: *(A person involved with all environmental issues at the facility although they may be housed at a different site.)*

Name: Brandon Mainard	Telephone number: 541-689-1011
Title: Environmental Coordinator	E-mail address: BMainard@spi-ind.com

Mailing Contact Person: *(A person for which the company would like all agency communications directed.)*

Name: Bill Powell	Telephone number: 541-461-6238
Title: Oregon Area Manager	E-mail address: BPowell@spi-ind.com

Invoice Contact Person: *(If other than the site contact person, a valid contact information to which invoices and communications related to resolving invoice questions can be directed.)*

Name: Brandon Mainard	Telephone number: 541-689-1011
Title: Environmental Coordinator	E-mail address: BMainard@spi-ind.com

SUBMIT TWO COPIES OF THE COMPLETED APPLICATION TO:

Lane Regional Air Protection Agency
1010 Main Street
Springfield, OR 97477
(541) 736-1056

FACILITY DESCRIPTION**FORM AQ102
ANSWER SHEET**Facility Name: Seneca Sawmill Company Permit Number: 207459

1. Description of facility and processes:

Seneca receives either hemlock or douglas fir logs and stores them on-site until they are fed into the sawmill. In the mill they are debarked, rough cut and then dried in steam-heated dry kilns. After drying, the lumber is finished to its desired size, then packaged for shipment.

This sawmill substantial upgrade and site modification project will modernize the sawmill operation by adding sawmill equipment and re-purposing existing material handling and emissions controls. The project will change the currently approved five (5) Dimensional Kilns to four (4) and replace the currently approved five (5) Stud Kilns with eight (8) new Stud Kilns.

The project will also involve relocation and re-purposing of existing baghouses, replacement of one baghouse, other baghouse name and throughput changes, as well as removal of equipment and the addition of a mill grinding cyclone and baghouse.

The newly constructed Fab and Truck shop will include welding activities, a plasma table with accessory oxy-acetylene torch for cutting mild steel, as well as a small paint booth for occasional painting using latex paints.

3. Attach plot plan. See Figure 1-1
4. Attach process flow diagram. See Figure 1-4
5. Attach a city map or drawing showing the facility location. See Figures 1-2 and 1-3



SENECA SAWMILL COMPANY

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Attachment B – Site Information

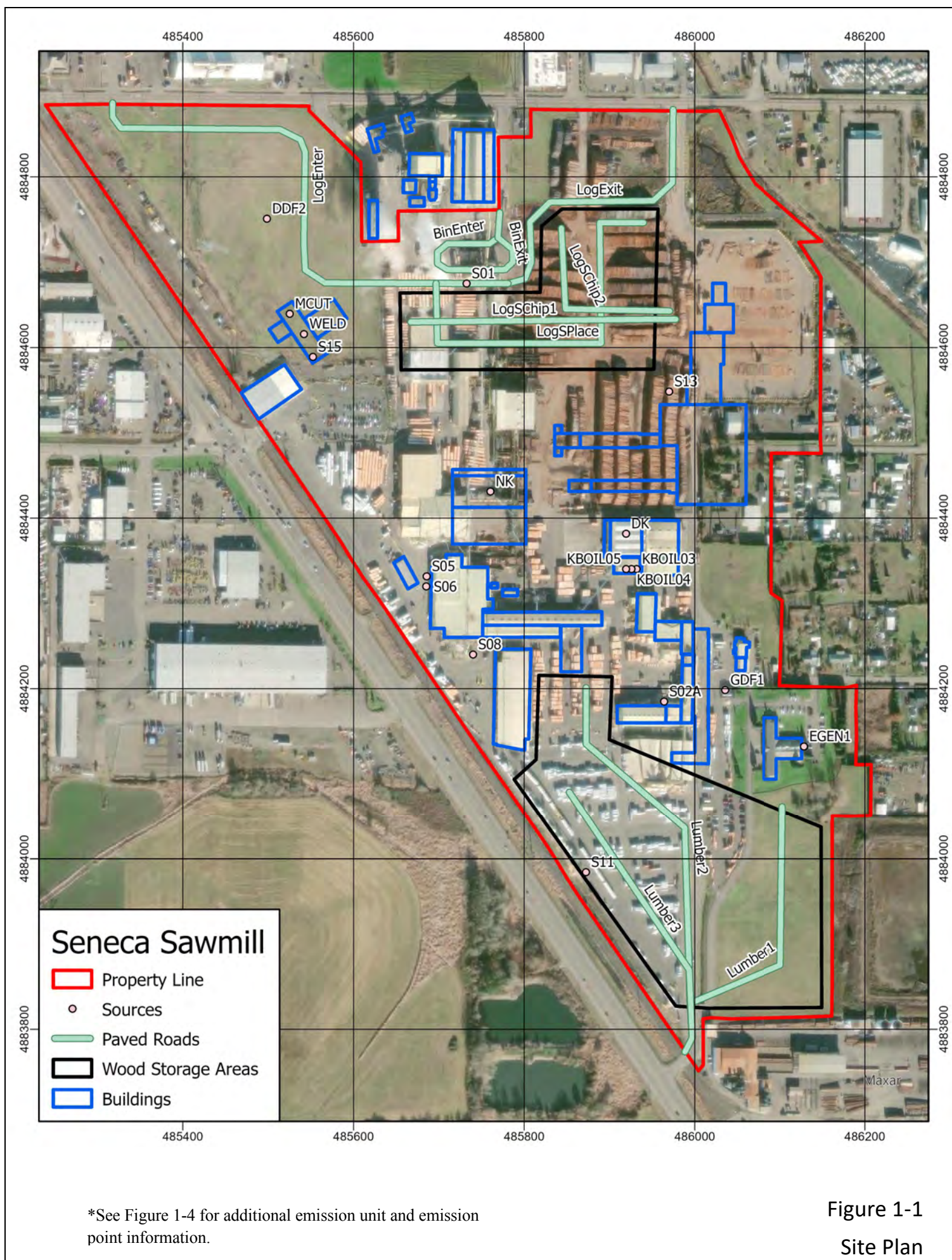




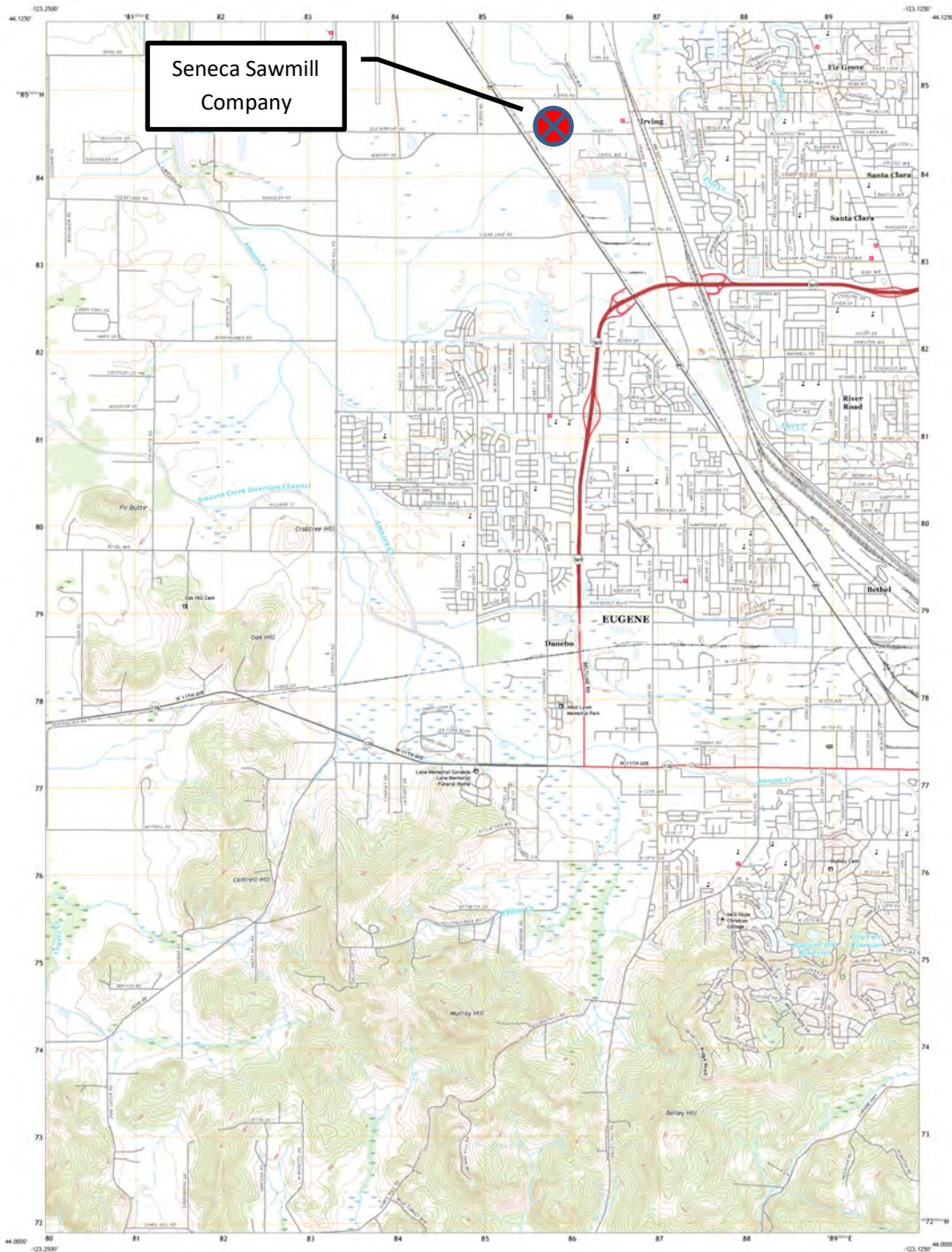
Figure 1-2
Vicinity Map
Seneca Sawmill Company



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

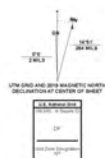


EUGENE WEST QUADRANGLE
OREGON - LAINE COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
Vertical Coordinate System of 1988 (GDA84). Projection and
1:500-meter geopotential Terman-Miller, Zone 10E
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
jurisdiction may not be shown. Obtain permission before
entering private lands.

Images: U.S. Census Bureau, 2000
Topography: National Photographic Interpretation Center, 1980
Contour: National Elevation Dataset, 1980
Boundaries: Multiple sources; see metadata file 2010-2013
Public Land Survey: Bureau of Land Management, 1970-1980
Metadata: FWS National Wetlands Inventory, 1970-1980



SCALE 1:24 000
1 0.5 0.5 1 2
KILOMETERS
METERS
1000 500 500 1000 2000
FEET
MILES
0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN DATUM OF 1983
This map was produced in conformance with the
National Geospatial Program on US Topo Product Standards, 2011.
A metadata file associated with this product is available online.



ROAD CLASSIFICATION
Expressway
Interstate Route
Main Road
Local Road
Ramp
US Route
State Route

Legend for road types: Expressway (thick red line), Main Road (red line), Local Road (thin red line), Ramp (red line with cross-ticks), US Route (red line with shield), State Route (red line with circle).

EUGENE WEST, OR
2020

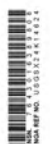
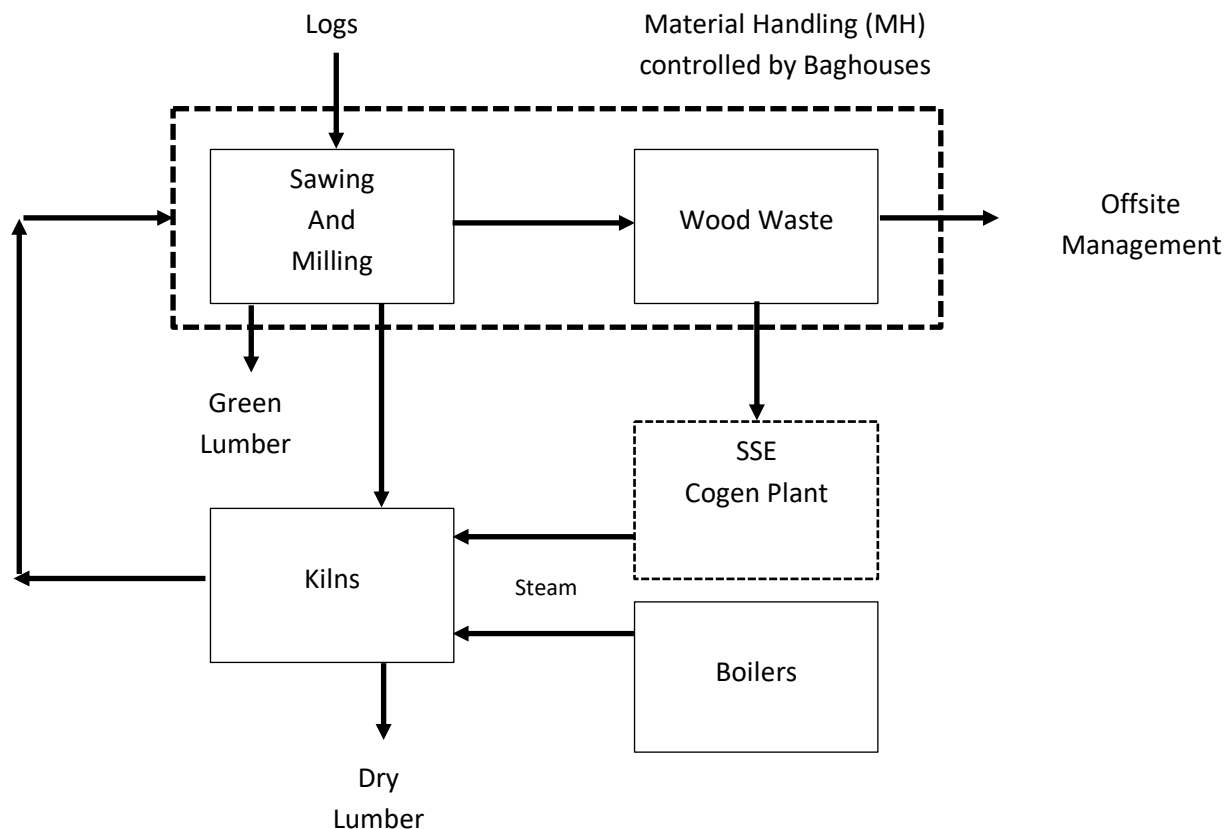


Figure 1-3
USGS Map



EU ID	Emission Unit Description	Emission Control Description	ID
MH	Sawmill/Planing Mill Activities	Main Baghouse Dimension Planer Baghouse No. 1 Stud Mill Planer Baghouse No. 2** Stud Mill Planer Baghouse No 1*** Stud Mill Planer Shavings Baghouse No 2* Planer Trim Saw Sawdust Baghouse* One (1) Target Box w/ filter	EP-01 EP-02A EP-02B EP-05 EP-06 EP-08 EP-11
Kilns	Twelve (12) Dry Kilns*	None	None
Boiler-3	One (1) 50 MMBtu/hr Natural Gas-Fired Boiler	None	None
Boiler-4	One (1) 50 MMBtu/hr Natural Gas-Fired Boiler**	None	None
Boiler-5	One (1) 50 MMBtu/hr Natural Gas-Fired Boiler**	None	None
GDF	Gasoline Dispensing Facility	None	None
Categorically Insignificant Activities including but not limited to:			
CIA-1	Diesel-Fired 150 kW Emergency Generator	None	None
CIA-2	On-Site Storage Tanks (Diesel and Gasoline)*	None	None
CIA-3	Paved Roads	None	None
AIA	Aggregate Insignificant Activities: Planer Knife Grinding Mill A Grinding Merchandiser Filing Grinding Mill Grinding Plasma Table with oxy-acetylene torch (semi-dry) Paint booth at Fab Shop Welding and Fabrication Miscellaneous Chemical Use	Planer Knife Grinding Cyclone Mill A Grinding Cyclone Merchandiser Filing Grinder Cyclone Mill Grinding Cyclone and Baghouse* None Overspray particulate filters None None	EP-04 EP-07 EP-12 EP-13 EP-14 None None None

* New or modified equipment

** Planned future units

*** Relocated, but otherwise unchanged

~~Strikethrough~~ is removed equipment

Figure 1-4
Process Flow Diagram and
Emissions Units



SENECA SAWMILL COMPANY

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Attachment C – Emissions Tables

Table 1 - Plant Site Emission Limits

Table 2 - Facility Potential Emissions Summary, Post-Project

Table 3 - Project Maximum Capacity Emission Summary

Table 4 - Boiler-3 Potential Emission Calculations

Table 5 - Boiler-4 Potential Emission Calculations

Table 6 - Boiler-5 Potential Emission Calculations

Table 7 – Boiler NG Combustion TAC Emissions

Table 8 - Drying Kilns Emissions

Table 9 - Sawmill/Planing Mill Activities and Baghouse Emissions

Table 10 - Gasoline Dispensing Facility Annual VOC Emissions

Table 11 - Gasoline Dispensing Facility TAC Emissions

Table 12 - Mill Grinding Baghouse TAC Emissions - AIA

Table 13 - Paint Booth Emissions - AIA

Table 14 - Electric Arc Welding Emissions - AIA

Table 15 - Metal Cutting Emissions (Plasma and Oxyfuel Torch) - AIA

Table 16 - Diesel Emergency Generator Emissions - CIA

Seneca Sawmill Company - 207459
Emission Detail Sheets
Table 1 - Plant Site Emission Limits

Pollutant	Revised Baseline (TPY)	Revised Netting Basis (TPY)	Current PSEL (TPY)	Proposed PSEL (TPY)	Unassigned Emissions (TPY)	PSEL Increase Over Netting Basis (TPY)	Post-Project PTE (TPY)	SER (TPY)
PM	25	25	24	24	7	0	18	25
PM ₁₀	21	21	24	24	4	0	17	15
PM _{2.5}	NA	13	22	22	0	0	17	10
CO	2	2	99	99	0	0	24	100
NO _x	9	9	39	39	0	0	24	40
SO ₂	14	14	39	39	13	0	1.1	40
VOC	10	10	249	249	0	0	249	40
GHG (CO2 eq.)	4,376	4,376	76,933	76,933	0	0	76,933	75,000

Note:

Revised Baseline and Revised Netting Basis from September 2022 permit and review report issuance.

No changes to PSELs requested, therefore the Proposed PSEL equals the current and the PSEL increase is zero for all pollutants.

Unassigned emissions are calculated by subtracting the Post-Project PTE from the Netting Basis.

Seneca Sawmill Company - 207459
Emission Calculations
Table 2 - Facility Potential Emissions Summary, Post-Project

Criteria Pollutants

		Pollutant (TPY)								Modification Changes
EU ID	Emission Unit Description	PM	PM ₁₀	PM _{2.5}	CO	NO _x	SO ₂	VOC	GHG	
Boiler-3	50 MMBtu/hr NG Boiler	0.53	0.53	0.53	8.10	7.88	0.36	249*	25,644	no change
Boiler-4	50 MMBtu/hr NG Boiler	0.53	0.53	0.53	8.10	7.88	0.36		25,644	no change
Boiler-5	50 MMBtu/hr NG Boiler	0.53	0.53	0.53	8.10	7.88	0.36		25,644	no change
Kilns	Twelve (12) Dry Kilns	13.50	13.50	13.50	NA	NA	NA		NA	holding capacity increase, but throughput and PTE unchanged
MH	Sawmill/Planing Mill Activities	1.4	1.2	0.9	NA	NA	NA		NA	increased capture with baghouse changes, reduced PM PTE
GDF	Gasoline Dispensing Facility	NA	NA	NA	NA	NA	NA		NA	no change
AIA	Mill Grinding	0.8	0.8	0.8	NA	NA	NA		NA	new baghouse replacing existing
AIA	Plasma table with torch	0.247	0.247	0.247	NA	NA	NA		NA	new installation
AIA	Paint booth	0.006	0.006	0.006	NA	NA	NA		NA	new installation
AIA	Welding and Fabrication	0.031	0.031	0.031	NA	NA	NA		NA	modified to occur in fab shop
Total =		18	17	17	24	24	1	249	76,933	

Note: Categorically Insignificant Activities not included in emissions summary.

* This is current VOC limit set to 249 tpy, federally enforceable.

CAS Number	Pollutant	TPY	Federal HAP	CAO Toxic
Organics				
75-07-0	Acetaldehyde	30.5	Yes	Yes
107-02-8	Acrolein	0.49	Yes	Yes
71-43-2	Benzene	4.4E-02	Yes	Yes
100-41-4	Ethyl Benzene	4.1E-02	Yes	Yes
50-00-0	Formaldehyde	0.71	Yes	Yes
110-54-3	Hexane	8.8E-02	Yes	Yes
67-56-1	Methanol	29.6	Yes	Yes
91-20-3	Naphthalene	7.7E-04	Yes	Yes
NA	POM (inc. PAHs)	1.0E-03	Yes	Yes
123-38-6	Propionaldehyde	0.32	Yes	Yes
115-07-1	Propylene	1.35	No	Yes
108-88-3	Toluene	0.22	Yes	Yes
540-84-1	2,2,4-Trimethylpentane	3.2E-02	Yes	Yes
1330-20-7	Xylenes	1.4E-01	Yes	Yes
Inorganic Gases				
7664-41-7	Ammonia	45.95	No	Yes
Metals				
7440-36-0	Antimony	6.9E-06	Yes	Yes
7440-38-2	Arsenic	7.3E-03	Yes	Yes
7440-39-3	Barium	1.4E-02	No	Yes
7440-41-7	Beryllium	2.0E-04	Yes	Yes
7440-43-9	Cadmium	2.8E-03	Yes	Yes
7440-47-3	Chromium, Hexavalent	3.7E-03	Yes	Yes
7440-48-4	Cobalt	4.2E-03	Yes	Yes
7440-50-8	Copper	7.4E-04	No	Yes
7439-96-5	Manganese	2.5E-03	Yes	Yes
7439-97-6	Mercury	6.6E-04	Yes	Yes
1313-27-5	Molybdenum trioxide	1.1E-03	No	Yes
7440-02-0	Nickel	6.7E-03	Yes	Yes
7723-14-0	Phosphorus	1.1E-04	Yes	Yes
7782-49-2	Selenium	6.2E-05	Yes	Yes
7440-62-2	Vanadium	1.5E-03	No	Yes
7440-66-6	Zinc	1.9E-02	No	Yes
Total =		109.5	62.2	109.5

Note: HAPs Table only includes sawmill

		Pollutant (TPY)							
EU ID	Emission Unit Description	PM	PM ₁₀	PM _{2.5}	CO	NO _x	SO ₂	VOC	GHG
Kilns	Eight (8) Dry Kilns	9.64	9.64	9.64	NA	NA	NA	368.63	NA
MH*	Sawmill/Planing Mill Activities	0.03	0.03	0.03	NA	NA	NA	NA	NA
AIA	Mill Grinding	0.8	0.8	0.8	NA	NA	NA	NA	NA
AIA	Plasma table with torch	0.247	0.247	0.247	NA	NA	NA	NA	NA
AIA	Paint booth	0.006	0.006	0.006	NA	NA	NA	3.37	NA
AIA	Welding and Fabrication	0.031	0.031	0.031	NA	NA	NA	NA	NA
Total Project Emissions		10.8	10.8	10.8	0.0	0.0	0.0	372.0	0.0
Significant Emission Rate		25	15	10	100	40	40	40	75,000
PM2.5 and VOC emissions, at capacity, are greater than their respective SER, so the project is a Type 3 change. No increase or change is being requested to the PSEL, so Federal or State NSR is not required.									

Seneca Sawmill Company - 207459

Emission Detail Sheets

Table 4 - Boiler-3 Potential Emission Calculations

Boiler Specifications

Max Heat Input	50	MMBtu/hr
Heat Value - Natural Gas	1026	MMBtu/MMCF
Max Hrs Operation	8760	hr/yr

Criteria Pollutants

ID	Pollutant	NG Emission Factor (lb/MMCF)	NG Emission Factor Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	NG Emission Factor Conversion	NG Emission Factor Units
PM25	PM/PM ₁₀ /PM _{2.5}	2.5	lbs/MMCF	0.12	2.92	0.53		
CO	Carbon Monoxide	0.037	lbs/MMBtu	1.85	44.40	8.10	38	lbs/MMCF
NOX	Nitrogen Oxides	0.036	lbs/MMBtu	1.80	43.20	7.88	37	lbs/MMCF
SO2	Sulfur Dioxide	1.7	lbs/MMCF	0.08	1.99	0.36		
VOC	VOCs	5.5	lbs/MMCF	0.27	6.43	1.17		
	GHGs (CO ₂ equiv.)	117	lbs/MMBtu	5,855	140,518	25,644		

HAP Emissions

CAS	Pollutant	NG Emission Factor (lb/MMCF)	Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	Federal HAP	CAO Air Toxic
Organics								
75-07-0	Acetaldehyde	0.0031	lb/MMcf	1.5E-04	3.6E-03	6.6E-04	Yes	Yes
107-02-8	Acrolein	0.0027	lb/MMcf	1.3E-04	3.2E-03	5.8E-04	Yes	Yes
71-43-2	Benzene	0.0058	lb/MMcf	2.8E-04	6.8E-03	1.2E-03	Yes	Yes
100-41-4	Ethyl Benzene	0.0069	lb/MMcf	3.4E-04	8.1E-03	1.5E-03	Yes	Yes
50-00-0	Formaldehyde	0.0123	lb/MMcf	6.0E-04	1.4E-02	2.6E-03	Yes	Yes
110-54-3	Hexane	0.0046	lb/MMcf	2.2E-04	5.4E-03	9.8E-04	Yes	Yes
91-20-3	Naphthalene	0.0003	lb/MMcf	1.5E-05	3.5E-04	6.4E-05	Yes	Yes
#N/A	POM (inc. PAHs)	0.0004	lb/MMcf	1.9E-05	4.7E-04	8.5E-05	Yes	Yes
115-07-1	Propylene	0.5300	lb/MMcf	2.6E-02	6.2E-01	1.1E-01	No	Yes
108-88-3	Toluene	0.0265	lb/MMcf	1.3E-03	3.1E-02	5.7E-03	Yes	Yes
1330-20-7	Xylenes	0.0197	lb/MMcf	9.6E-04	2.3E-02	4.2E-03	Yes	Yes
Inorganic Gases								
7664-41-7	Ammonia	18.0000	lb/MMcf	8.8E-01	2.1E+01	3.8E+00	No	Yes
Metals								
7440-38-2	Arsenic	2.0E-04	lb/MMcf	9.7E-06	2.3E-04	4.3E-05	Yes	Yes
7440-41-7	Beryllium	1.2E-05	lb/MMcf	5.8E-07	1.4E-05	2.6E-06	Yes	Yes
7440-43-9	Cadmium	1.1E-03	lb/MMcf	5.4E-05	1.3E-03	2.3E-04	Yes	Yes
7440-47-3	Chromium, Hexavalent	1.4E-03	lb/MMcf	6.8E-05	1.6E-03	3.0E-04	Yes	Yes
7440-48-4	Cobalt	8.4E-05	lb/MMcf	4.1E-06	9.8E-05	1.8E-05	Yes	Yes
7439-92-1	Lead	5.0E-04	lb/MMcf	2.4E-05	5.8E-04	1.1E-04	Yes	Yes
7439-96-5	Manganese	3.8E-04	lb/MMcf	1.9E-05	4.4E-04	8.1E-05	Yes	Yes
7439-97-6	Mercury	2.6E-04	lb/MMcf	1.3E-05	3.0E-04	5.5E-05	Yes	Yes
7440-02-0	Nickel	2.1E-03	lb/MMcf	1.0E-04	2.5E-03	4.5E-04	Yes	Yes
7782-49-2	Selenium	2.4E-05	lb/MMcf	1.2E-06	2.8E-05	5.1E-06	Yes	Yes
Total =		18.62				3.97	0.02	3.97

GHG-Related Emission Factors

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

Notes:

NOx and CO emission factors are based on manufacturer guarantees

PM/PM₁₀/PM_{2.5}, SO₂, and VOC 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

Toxics emission factors, except for metals and ammonia, are based on Ventura County APCD "AB 2588 Combustion Emission Factors"

Toxics emission factors for metals are based on US EPA AP-42 Section 1.4 - Natural Gas Combustion (07/1998)

Ammonia emission factor is based on Oregon DEQ 2020 ATEI Combustion EF Tool

Chromium assumed to be hexavalent

Seneca Sawmill Company - 207459
Emission Detail Sheets
Table 5 - Boiler-4 Potential Emission Calculations

Boiler Specifications		
Max Heat Input	50	MMBtu/hr
Heat Value - Natural Gas	1026	MMBtu/MMCF
Max Hrs Operation	8760	hr/yr

Criteria Pollutants								
ID	Pollutant	NG Emission Factor (lb/MMCF)	NG Emission Factor Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	NG Emission Factor Conversion	NG Emission Factor Units
PM25	PM/PM ₁₀ /PM _{2.5}	2.5	lbs/MMCF	0.12	2.92	0.53		
CO	Carbon Monoxide	0.037	lbs/MMBtu	1.85	44.40	8.10	38	lbs/MMCF
NOX	Nitrogen Oxides	0.036	lbs/MMBtu	1.80	43.20	7.88	37	lbs/MMCF
SO2	Sulfur Dioxide	1.7	lbs/MMCF	0.08	1.99	0.36		
VOC	VOCs	5.5	lbs/MMCF	0.27	6.43	1.17		
	GHGs (CO ₂ equiv.)	117	lbs/MMBtu	5,855	140,518	25,644		

HAP Emissions								
CAS	Pollutant	NG Emission Factor (lb/MMCF)	Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	Federal HAP	CAO Air Toxic
Organics								
75-07-0	Acetaldehyde	0.0031	lb/MMcf	1.5E-04	3.6E-03	6.6E-04	Yes	Yes
107-02-8	Acrolein	0.0027	lb/MMcf	1.3E-04	3.2E-03	5.8E-04	Yes	Yes
71-43-2	Benzene	0.0058	lb/MMcf	2.8E-04	6.8E-03	1.2E-03	Yes	Yes
100-41-4	Ethyl Benzene	0.0069	lb/MMcf	3.4E-04	8.1E-03	1.5E-03	Yes	Yes
50-00-0	Formaldehyde	0.0123	lb/MMcf	6.0E-04	1.4E-02	2.6E-03	Yes	Yes
110-54-3	Hexane	0.0046	lb/MMcf	2.2E-04	5.4E-03	9.8E-04	Yes	Yes
91-20-3	Naphthalene	0.0003	lb/MMcf	1.5E-05	3.5E-04	6.4E-05	Yes	Yes
#N/A	POM (inc. PAHs)	0.0004	lb/MMcf	1.9E-05	4.7E-04	8.5E-05	Yes	Yes
115-07-1	Propylene	0.5300	lb/MMcf	2.6E-02	6.2E-01	1.1E-01	No	Yes
108-88-3	Toluene	0.0265	lb/MMcf	1.3E-03	3.1E-02	5.7E-03	Yes	Yes
1330-20-7	Xylenes	0.0197	lb/MMcf	9.6E-04	2.3E-02	4.2E-03	Yes	Yes
Inorganic Gases								
7664-41-7	Ammonia	18.0000	lb/MMcf	8.8E-01	2.1E+01	3.8E+00	No	Yes
Metals								
7440-38-2	Arsenic	2.0E-04	lb/MMcf	9.7E-06	2.3E-04	4.3E-05	Yes	Yes
7440-41-7	Beryllium	1.2E-05	lb/MMcf	5.8E-07	1.4E-05	2.6E-06	Yes	Yes
7440-43-9	Cadmium	1.1E-03	lb/MMcf	5.4E-05	1.3E-03	2.3E-04	Yes	Yes
7440-47-3	Chromium, Hexavalent	1.4E-03	lb/MMcf	6.8E-05	1.6E-03	3.0E-04	Yes	Yes
7440-48-4	Cobalt	8.4E-05	lb/MMcf	4.1E-06	9.8E-05	1.8E-05	Yes	Yes
7439-92-1	Lead	5.0E-04	lb/MMcf	2.4E-05	5.8E-04	1.1E-04	Yes	Yes
7439-96-5	Manganese	3.8E-04	lb/MMcf	1.9E-05	4.4E-04	8.1E-05	Yes	Yes
7439-97-6	Mercury	2.6E-04	lb/MMcf	1.3E-05	3.0E-04	5.5E-05	Yes	Yes
7440-02-0	Nickel	2.1E-03	lb/MMcf	1.0E-04	2.5E-03	4.5E-04	Yes	Yes
7782-49-2	Selenium	2.4E-05	lb/MMcf	1.2E-06	2.8E-05	5.1E-06	Yes	Yes
Total =		18.62				3.97	0.02	3.97

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

Notes:
NOx and CO emission factors are based on manufacturer guarantees
PM/PM₁₀/PM_{2.5}, SO₂, and VOC 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
Toxics emission factors, except for metals and ammonia, are based on Ventura County APCD "AB 2588 Combustion Emission Factors"
Toxics emission factors for metals are based on US EPA AP-42 Section 1.4 - Natural Gas Combustion (07/1998)
Ammonia emission factor is based on Oregon DEQ 2020 ATEI Combustion EF Tool
Chromium assumed to be hexavalent

Seneca Sawmill Company - 207459

Emission Detail Sheets

Table 6 - Boiler-5 Potential Emission Calculations

Boiler Specifications

Max Heat Input	50	MMBtu/hr
Heat Value - Natural Gas	1026	MMBtu/MMCF
Max Hrs Operation	8760	hr/yr

Criteria Pollutants

ID	Pollutant	NG Emission Factor (lb/MMCF)	NG Emission Factor Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	NG Emission Factor Conversion	NG Emission Factor Units
PM25	PM/PM ₁₀ /PM _{2.5}	2.5	lbs/MMCF	0.12	2.92	0.53		
CO	Carbon Monoxide	0.037	lbs/MMBtu	1.85	44.40	8.10	38	lbs/MMCF
NOX	Nitrogen Oxides	0.036	lbs/MMBtu	1.80	43.20	7.88	37	lbs/MMCF
SO2	Sulfur Dioxide	1.7	lbs/MMCF	0.08	1.99	0.36		
VOC	VOCs	5.5	lbs/MMCF	0.27	6.43	1.17		
	GHGs (CO ₂ equiv.)	117	lbs/MMBtu	5,855	140,518	25,644		

HAP Emissions

CAS	Pollutant	NG Emission Factor (lb/MMCF)	Units	Potential Hourly Emissions (lbs/hr)	Potential Daily Emissions (lbs/day)	Potential Annual Emissions (TPY)	Federal HAP	CAO Air Toxic
Organics								
75-07-0	Acetaldehyde	0.0031	lb/MMcf	1.5E-04	3.6E-03	6.6E-04	Yes	Yes
107-02-8	Acrolein	0.0027	lb/MMcf	1.3E-04	3.2E-03	5.8E-04	Yes	Yes
71-43-2	Benzene	0.0058	lb/MMcf	2.8E-04	6.8E-03	1.2E-03	Yes	Yes
100-41-4	Ethyl Benzene	0.0069	lb/MMcf	3.4E-04	8.1E-03	1.5E-03	Yes	Yes
50-00-0	Formaldehyde	0.0123	lb/MMcf	6.0E-04	1.4E-02	2.6E-03	Yes	Yes
110-54-3	Hexane	0.0046	lb/MMcf	2.2E-04	5.4E-03	9.8E-04	Yes	Yes
91-20-3	Naphthalene	0.0003	lb/MMcf	1.5E-05	3.5E-04	6.4E-05	Yes	Yes
#N/A	POM (inc. PAHs)	0.0004	lb/MMcf	1.9E-05	4.7E-04	8.5E-05	Yes	Yes
115-07-1	Propylene	0.5300	lb/MMcf	2.6E-02	6.2E-01	1.1E-01	No	Yes
108-88-3	Toluene	0.0265	lb/MMcf	1.3E-03	3.1E-02	5.7E-03	Yes	Yes
1330-20-7	Xylenes	0.0197	lb/MMcf	9.6E-04	2.3E-02	4.2E-03	Yes	Yes
Inorganic Gases								
7664-41-7	Ammonia	18.0000	lb/MMcf	8.8E-01	2.1E+01	3.8E+00	No	Yes
Metals								
7440-38-2	Arsenic	2.0E-04	lb/MMcf	9.7E-06	2.3E-04	4.3E-05	Yes	Yes
7440-41-7	Beryllium	1.2E-05	lb/MMcf	5.8E-07	1.4E-05	2.6E-06	Yes	Yes
7440-43-9	Cadmium	1.1E-03	lb/MMcf	5.4E-05	1.3E-03	2.3E-04	Yes	Yes
7440-47-3	Chromium, Hexavalent	1.4E-03	lb/MMcf	6.8E-05	1.6E-03	3.0E-04	Yes	Yes
7440-48-4	Cobalt	8.4E-05	lb/MMcf	4.1E-06	9.8E-05	1.8E-05	Yes	Yes
7439-92-1	Lead	5.0E-04	lb/MMcf	2.4E-05	5.8E-04	1.1E-04	Yes	Yes
7439-96-5	Manganese	3.8E-04	lb/MMcf	1.9E-05	4.4E-04	8.1E-05	Yes	Yes
7439-97-6	Mercury	2.6E-04	lb/MMcf	1.3E-05	3.0E-04	5.5E-05	Yes	Yes
7440-02-0	Nickel	2.1E-03	lb/MMcf	1.0E-04	2.5E-03	4.5E-04	Yes	Yes
7782-49-2	Selenium	2.4E-05	lb/MMcf	1.2E-06	2.8E-05	5.1E-06	Yes	Yes
Total =		18.62				3.97	0.02	3.97

GHG-Related Emission Factors

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

Notes:

NOx and CO emission factors are based on manufacturer guarantees

PM/PM₁₀/PM_{2.5}, SO₂, and VOC 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

Toxics emission factors, except for metals and ammonia, are based on Ventura County APCD "AB 2588 Combustion Emission Factors"

Toxics emission factors for metals are based on US EPA AP-42 Section 1.4 - Natural Gas Combustion (07/1998)

Ammonia emission factor is based on Oregon DEQ 2020 ATEI Combustion EF Tool

Chromium assumed to be hexavalent

Seneca Sawmill Company - 207459
Emission Calculations
Table 7 - Boiler NG Combustion TAC Emissions

Toxics Emission Unit ID: Boiler-3
Boiler-4
Boiler-5
Emission Point: KBOIL03
KBOIL04
KBOIL05
Description: Stack natural gas combustion byproduct TAC emissions

Operating Parameters & Input Assumptions for Each of Three Identical Boilers:

Boiler Rating	50 MMBTU/hr
HHV Natural Gas	1026 BTU/CF
Max. Daily Operating Hours	24 hrs/day
Max. Annual Operating Hours	8760 hrs/yr
Annual Gas Usage	426.9 MMCF/yr
Daily Gas Usage	1.17 MMCF/day

Emissions

Each of Three Identical Boilers

CAS or DEQ ID	TAC	EF (lb/MMSCF)	Emission Rate (lb/yr)	Emission Rate (lb/day)	Combined (lb/yr)	Combined (lb/day)
71-43-2	Benzene	0.0058	2.48E+00	6.78E-03	7.43E+00	2.04E-02
50-00-0	Formaldehyde	0.0123	5.25E+00	1.44E-02	1.58E+01	4.32E-02
401	Polycyclic aromatic hydrocarbons (PAHs)	0.0001	4.27E-02	1.17E-04	1.28E-01	3.51E-04
50-32-8	Benzo[a]pyrene	0.0000012	5.12E-04	1.40E-06	1.54E-03	4.21E-06
91-20-3	Naphthalene	0.0003	1.28E-01	3.51E-04	3.84E-01	1.05E-03
75-07-0	Acetaldehyde	0.0031	1.32E+00	3.63E-03	3.97E+00	1.09E-02
107-02-8	Acrolein	0.0027	1.15E+00	3.16E-03	3.46E+00	9.47E-03
7664-41-7	Ammonia	3.2	1.37E+03	3.74E+00	4.10E+03	1.12E+01
7440-38-2	Arsenic and compounds	0.0002	8.54E-02	2.34E-04	2.56E-01	7.02E-04
7440-39-3	Barium and compounds	0.0044	1.88E+00	5.15E-03	5.64E+00	1.54E-02
7440-41-7	Beryllium and compounds	0.000012	5.12E-03	1.40E-05	1.54E-02	4.21E-05
7440-43-9	Cadmium and compounds	0.0011	4.70E-01	1.29E-03	1.41E+00	3.86E-03
18540-29-9	Chromium VI, chromate and dichromate particulate	0.0014	5.98E-01	1.64E-03	1.79E+00	4.91E-03
7440-48-4	Cobalt and compounds	0.000084	3.59E-02	9.82E-05	1.08E-01	2.95E-04
7440-50-8	Copper and compounds	0.00085	3.63E-01	9.94E-04	1.09E+00	2.98E-03
100-41-4	Ethyl benzene	0.0069	2.95E+00	8.07E-03	8.84E+00	2.42E-02
110-54-3	Hexane	0.0046	1.96E+00	5.38E-03	5.89E+00	1.61E-02
7439-92-1	Lead and compounds	0.0005	2.13E-01	5.85E-04	6.40E-01	1.75E-03
7439-96-5	Manganese and compounds	0.00038	1.62E-01	4.44E-04	4.87E-01	1.33E-03
7439-97-6	Mercury and compounds	0.00026	1.11E-01	3.04E-04	3.33E-01	9.12E-04
1313-27-5	Molybdenum trioxide	0.00165	7.04E-01	1.93E-03	2.11E+00	5.79E-03
365	Nickel compounds, insoluble	0.0021	8.96E-01	2.46E-03	2.69E+00	7.37E-03
7782-49-2	Selenium and compounds	0.000024	1.02E-02	2.81E-05	3.07E-02	8.42E-05
108-88-3	Toluene	0.0265	1.13E+01	3.10E-02	3.39E+01	9.30E-02
7440-62-2	Vanadium (fume or dust)	0.0023	9.82E-01	2.69E-03	2.95E+00	8.07E-03
1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	0.0197	8.41E+00	2.30E-02	2.52E+01	6.91E-02
7440-66-6	Zinc and compounds	0.029	1.24E+01	3.39E-02	3.71E+01	1.02E-01

Notes:

- Emission factors from Oregon DEQ 2020 ATEI Combustion EF Tool

Seneca Sawmill Company - 207459

Emission Calculations

Table 8 - Drying Kilns Emissions

This table includes three separate emissions: (1) project emissions at maximum capacity for determination of the type of change, (2) requested maximum production criteria pollutant and HAP emissions at 540,000 MBF/yr, and (3) Cleaner Air Oregon TAC emissions at 540,000 MBF/yr.

	Avg cycle (hr)	Cycles per yr	Max Capacity (12)
DF	35	250.3	991,131 MBF DF/yr
Hemlock	60	146.0	578,160 MBF Hem/yr

Future Configuration			
Dim Kilns	Capacity	Stud Kilns	Capacity
K1	330,000	K5	330,000
K2	330,000	K6	330,000
K3	330,000	K7	330,000
K4	330,000	K8	330,000
		K9	330,000
		K10	330,000
		K11	330,000
		K12	330,000
Max loading of all 12 kilns (bf/cycle)			3,960,000

(1) Project Emissions at Max Capacity

8 New Stud Kilns at Max Capacity (removed Burnt wood EFs)

Max Capacity Kiln Production	660,754	MBF DF/yr	385,440	MBF Hem/yr
Max Drying Temp	200	°F		
Max Kiln VOC PTE	249	TPY		

Criteria Pollutants

Criteria Pollutants	Pollutant	100% Douglas Fir		100% Hemlock Fir		Kiln Max Capacity Emissions (TPY)	Kiln PSEL Annual Emissions (TPY)	Kiln Max Daily Emissions (TPY)	Kiln Max Hourly Emissions (TPY)	Significant Emission Rate (TPY)
		Green Emission Factor (lb/MBF)	Capacity Emissions (TPY)	Green Emission Factor (lb/MBF)	Capacity Emissions (TPY)					
VOC	VOC	1.116	369	0.396	76.4	369	249	1.05	0.044	40
PM25	PM/PM ₁₀ /PM _{2.5}	0.020	6.61	0.050	9.6	9.6	9.6	0.03	0.001	25 / 15 / 10

(2) Requested Max Production Emissions

540,000	MBF/yr
3,960	MBF/cycle
350	days/yr
24	hrs/day
200	°F
Max Drying Temp	
Max Kiln VOC PTE	249 TPY

Criteria Pollutants

Criteria Pollutants	Pollutant	Green Emission Factor (lb/MBF)	100% Douglas Fir Burnt Emission Factor (lb/MBF)	Capacity Emissions (TPY)	Green Emission Factor (lb/MBF)	100% Hemlock Fir Burnt Emission Factor (lb/MBF)	Capacity Emissions (TPY)	Kiln Max Capacity Emissions (TPY)	Kiln PSEL Annual Emissions (TPY)	Kiln Max Daily Emissions (lb/day)
VOC	VOC	1.116	0.669	301	0.396	0.238	107.0	301	249	1721.52
PM25	PM/PM ₁₀ /PM _{2.5}	0.020	0.020	5.40	0.050	0.050	13.5	13.5	13.5	77.14

FHAPs

CAS	Pollutant	Green Emission Factor (lb/MBF)	100% Douglas Fir Burnt Emission Factor (lb/MBF)	Douglas Fir Capacity Emissions (TPY)	Green Emission Factor (lb/MBF)	100% Hemlock Fir Burnt Emission Factor (lb/MBF)	Hemlock Capacity Emissions (TPY)	Kiln Max Capacity Emissions (TPY)	Requested Kiln Emissions (TPY)	Federal HAP	CAO Air Toxic
75-07-0	Acetaldehyde	0.0430	0.0258	11.61	0.1128	0.0677	30.5	30.5	30.5	Yes	Yes
107-02-8	Acrolein	0.0008	0.0005	0.22	0.0018	0.0011	0.49	0.49	0.49	Yes	Yes
50-00-0	Formaldehyde	0.0025	0.0015	0.68	0.0021	0.0012	0.56	0.68	0.56	Yes	Yes
67-56-1	Methanol	0.0754	0.0452	20.36	0.1097	0.0658	29.6	29.6	29.6	Yes	Yes
123-38-6	Propionaldehyde	0.0009	0.0005	0.24	0.0012	0.0007	0.32	0.32	0.32	Yes	Yes
Total =		0.1226	0.0736		0.2276	0.1366					

Notes:

VOC and HAP emission factors are from DEQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln temperature of 200°F
PM/PM₁₀/PM_{2.5} emission factors are from DEQ Emission Factors Wood Products, AQ-EF02 (08/01/2011)
Burnt emission factors are based on the assumption in the application for NC-207459-A20 that burnt wood organic compound emissions are 60% of green wood

(3) Kiln Cleaner Air Oregon Toxic Air Contaminant Emissions

Requested Max of 540,000 MBF/yr

CAS	Pollutant	Douglas Fir Green Emission Factor (lb/MBF)	Hemlock Green Emission Factor (lb/MBF)	Annual Max of DF or Hemlock			Daily Max			Long-Term Emissions (lb/year)
				Annual Emission Factor (lb/MBF)	Requested Kiln Emissions (TPY)	Per Kiln Annual Emissions (TPY)	Short-term Emission Factor (lb/MBF)	Short-term Emissions (lb/day)	Per Kiln Daily Emissions (lb/day)	
75-07-0	Acetaldehyde	0.0430	0.1128	0.1128	30.5	2.54	0.1128	174.0	14.5	60912.0
107-02-8	Acrolein	0.0008	0.0018	0.0018	0.5	0.04	0.0018	2.8	0.2	972.0
50-00-0	Formaldehyde	0.0025	0.0021	0.0025	0.7	0.06	0.0025	3.9	0.3	1350.0
67-56-1	Methanol	0.0754	0.1097	0.1097	29.6	2.47	0.1097	169.3	14.1	59248.8
123-38-6	Propionaldehyde	0.0009	0.0012	0.0012	0.3	0.03	0.0012	1.9	0.2	648.0

Seneca Sawmill Company - 207459
Emission Calculations
Table 9 - Sawmill/Planing Mill Activities and Baghouse Emissions

Emission Point	Emission Point Description	Pollutant	Max Annual Throughput (BDT/year)	Max Daily Throughput (BDT/day)	Emission Factor (lbs/BDT)	Annual			Daily			Comments
						PM Annual Emissions (TPY)	PM10 Annual Emissions (TPY)	PM2.5 Annual Emissions (TPY)	PM Daily Emissions (lb/day)	PM10 Daily Emissions (lb/day)	PM2.5 Daily Emissions (lb/day)	
EP-01	Main Baghouse No. 1	PM/PM10/PM2.5	292,500	1,170	0.001	0.15	0.15	0.15	1.17	1.17	1.17	
EP-02	Dimension Planer Baghouse	PM/PM10/PM2.5	350,000	1,400	0.001	0.18	0.18	0.18	1.40	1.40	1.40	
EP-05	Stud Mill Planer Baghouse No. 1	PM/PM10/PM2.5	62,780	251	0.001	0.03	0.03	0.03	0.25	0.25	0.25	decreased from 160,000 BDT/yr
EP-06	Stud Mill Planer Baghouse No. 2	PM/PM10/PM2.5	62,780	251	0.001	0.03	0.03	0.03	0.25	0.25	0.25	decreased from 160,000 BDT/yr
EP-08	Planer Trim Sawdust Baghouse	PM/PM10/PM2.5	6,250	25	0.001	0.003	0.003	0.003	0.03	0.03	0.03	decreased from 130,000 BDT/yr
EP-11	Rail Chip Bin Target Box	PM	81,000	324	0.025	1.01	—	—	8.10	—	—	decreased throughput from 300,000 BDT/yr
EP-11	Rail Chip Bin Target Box	PM10	81,000	324	0.02125	—	0.86	—	—	6.89	—	decreased throughput from 300,000 BDT/yr
EP-11	Rail Chip Bin Target Box	PM2.5	81,000	324	0.0125	—	—	0.51	—	—	4.05	decreased throughput from 300,000 BDT/yr
					Total	1.4	1.2	0.9	11.2	10.0	7.1	
AIA												
EP-13	Mill Grinding Cyclone and Baghouse*	PM/PM10/PM2.5	5600	cfm	0.005 gr/dscf	0.84	0.84	0.84	5.76	5.76	5.76	change to S013

Notes:
PM/PM₁₀/PM_{2.5} emissions based on based on emission factors from Table 13.2 of the DEQ General ACDP for sawmills, planing mills, millwork, plywood manufacturing, and/or veneer drying (AQGP-010 expiring 10/01/2027)
* EP-13 control emissions from intermittent metal grinding - estimated at outlet concentration of 0.005 gr/dscf and 20 hrs/day
For the Rail Chip Bin Target Box the DEQ AQGP-010 emission factors are based on a medium efficiency cyclone loading sanderdust. At SSC, railcars receive wood chips with a significant portion of the air stream carrying finer particulate being filtered. As such, the DEQ AQGP-010 emissions factors for PM and PM₁₀ are reduced by a factor of 75% and PM_{2.5} emissions are assumed to be the same as PM₁₀ emissions.

3 BDT per MBF is based on Table 20 of:
USDA TIMBER PRODUCTS MONITORING: Unit of Measure Conversion Factors for Roundwood Receiving Facilities
https://www.srs.fs.usda.gov/pubs/gtr/gtr_srs251.pdf

Throughput Notes:				
EP-05 and EP-06	70% - 2x4s (actually 1.625" x 3.65") reduced down to 1.5" x 3.5" along entire length of stud, so 0.68 sq inches removed out of 5.93 sq inch profile, or 11.5%	0.68125	11.5%	
	30% - 2x6s (actually 1.625" x 5.625") reduced down to 1.5" x 5.5" along entire length of stud, so 0.89 sq inches removed out of 9.1 sq inch profile, or 9.7%	0.890625	9.7%	
EP-08	Two one-quarter inch kerf for every nine feet, so equates to 0.46%			

Seneca Sawmill Company - 207459

Emission Calculations

Table 10 - Gasoline Dispensing Facility Annual VOC Emissions

Vehicles Equipped with ORVR in Lane County = 65 percent

GDF Activity - VOC Emissions (Submerged Fill Only)

Tank Filling =	7.70	lbs/Mgals
Breathing =	1.00	lbs/Mgals
Refueling - No ORVR =	10.36	lbs/Mgals
Refueling - ORVR =	0.21	lbs/Mgals
Spillage =	0.61	lbs/Mgals
Hose Permeation =	0.062	lbs/Mgals
Total =	13.13	lbs/Mgals

Max GDF Throughput = gal/mo 45,000 gal/yr 540,000

Pollutant	Potential Annual Emissions (TPY)
VOC	3.55

GDF Activity - HAP Emissions

CAS	Pollutant	% by wt.	Potential	Emissions TPY	Federal HAP	CAO Air Toxic
			lbs/Mgals			
71-43-2	Benzene	0.82	0.11	0.029	Yes	Yes
100-41-4	Ethyl Benzene	0.66	0.09	0.023	Yes	Yes
110-54-3	Hexane	2.14	0.28	0.076	Yes	Yes
108-88-3	Toluene	4.36	0.57	0.155	Yes	Yes
540-84-1	2,2,4-Trimethylp	0.89	0.12	0.032	Yes	Yes
1330-20-7	Xylenes, Total	2.39	0.31	0.085	Yes	Yes
Total =				0.40	0.40	0.40

Notes:

ORVR = Onboard Refueling Vapor Recovery

Tank filling emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table IV-I.

Breathing emission factor from US EPA AP-42, Table 5.2-7.

Refueling emission factor with no ORVR based on DEQ 2018 GDF VOC Estimates.

Refueling emission factor with ORVR based on DEQ 2018 GDF VOC Estimates.

Spillage emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VI-I.

Hose permeation emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VII-I.

FHAP weight percentages based on EPA Speciate v. 4.5.

Seneca Sawmill Company - 207459
Emission Calculations
Table 11 - Gasoline Dispensing Facility TAC Emissions

Toxics Emission Unit ID: GDF
Emission Points: GDF_1
Description: Gasoline Dispensing Facility (6,000 gallon and 2,000 gallon tanks and dispensing area)

General Description of Calculation Methodology:

- Calculate daily VOC emissions based on TCEQ Guidance (Estimating Short Term Emission Rates from Fixed Roof Tanks, TCEQ - APDG 6250v3, revised 02/20) for filling the tank and EPA AP-42, Table 5.2-7 for vehicle filling losses (hose permeation, spillage and vapor displacement).
- Calculate annual VOC emissions from tank filling, breathing and emptying calculated on GDF annual tab.
- Calculate TAC emissions based on TAC Speciation for Gasoline (California Air Resources Board Speciation Profiles, highest weight fraction for each TAC from from Profile 691 ("Headspace vapors

Operating Parameters & Input Assumptions:

Max. Excluding Tank Fill	11.03 lbs/Mgals
Daily Gasoline Vehicle Refilling Rate	1500 gal/day (estimate)
Total Tank Capacity	8000 gallons
Maximum Tank Filling Rate, FR _M	8000 gal/day
Tank Contents	Motor gasoline RVP 13 (assumed worst case highest vapor pressure gasoline for AP-42 calculations)
Vapor Molecular Weight, M _v	62 lb/lb-mole (AP-42 Table 7.1-2)
Vapor Pressure Constant, A	11.644 dimensionless (AP-42 Table 7.1-2)
Vapor Pressure Constant, B	5043.6 °R (AP-42 Table 7.1-2)
Ideal Gas Constant, R	80.273 ((psia × gal)/(lbmol × oR)) (TCEQ)
Worst Case Liquid Temperature, T _{LA}	554.67 °R (TCEQ, 95F)

Daily VOC Emissions

Calculate true vapor pressure based on AP-42, Chapter 7, Eqn. 1-25.

$$P_{VA} = \exp \left[A - \left(\frac{B}{T_{LA}} \right) \right] \tag{1-25}$$

True Vapor Pressure, P_{VA} 12.82 psia

Equation 1

Calculate daily VOC emission from filling tank based on TCEQ Equation 1

$$L_{MAX} = \frac{M_v \times P_{VA}}{R \times T} \times FR_M$$

Maximum Daily Tank Emission Rate, L_{MAX} 142.8 lb/day

Calculate daily VOC emissions from vehicle refueling based on AP-42, Table 5.2-7

Maximum Daily Veh. Refuel Emission Rate, F_{MAX} 16.5 lb/day

Total Max. Daily VOC Emissions 159.4 lb/day

Annual VOC Emissions (from annual tab)**Total Annual VOC Emissions****7,092.6 lb/yr****Annual & Daily TAC Emissions**

CAS or DEQ ID	TAC	TAC Speciation Factor (lb/lb-VOC)	Emissions (lb/yr)	Emissions (lb/day)
526-73-8	1,2,3-Trimethylbenzene	0.00007058	0.50	0.01
95-63-6	1,2,4-Trimethylbenzene	0.00039799	2.82	0.06
108-67-8	1,3,5-Trimethylbenzene	0.00015565	1.10	0.02
540-84-1	2,2,4-Trimethylpentane	0.01543471	109.47	2.46
91-57-6	2-Methyl naphthalene	0.00000183	0.01	0.00
71-43-2	Benzene	0.00549442	38.97	0.88
110-82-7	Cyclohexane	0.00452826	32.12	0.72
100-41-4	Ethyl benzene	0.00141423	10.03	0.23
110-54-3	Hexane	0.02169322	153.86	3.46
78-79-5	Isoprene, except from vegetative emission	0.00026761	1.90	0.04
98-82-8	Isopropylbenzene (cumene)	0.00004279	0.30	0.01
108-38-3	m-Xylene	0.00267533	18.98	0.43
91-20-3	Naphthalene	0.00000597	0.04	0.00
95-47-6	o-Xylene	0.00125055	8.87	0.20
106-42-3	p-Xylene	0.00116709	8.28	0.19
108-88-3	Toluene	0.013467	95.52	2.15
1330-20-7	Xylene (mixture), including m-xylene, p-xylene, and o-xylene	0.00509297	36.12	0.81

Notes and References:

ORVR = Onboard Refueling Vapor Recovery

Tank filling emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table IV-I (uncontrolled emission factor, UEF, i.e., no vapor recovery system).

Breathing emission factor from US EPA AP-42, Table 5.2-7.

Refueling emission factor with no ORVR based on DEQ 2018 GDF VOC Estimates.

Refueling emission factor with ORVR based on DEQ 2018 GDF VOC Estimates.

Spillage emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VI-I.

Hose permeation emission factor from CARB "Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities (2013) - Table VII-I.

Calculate TAC emissions based on TAC Speciation for Gasoline (California Air Resources Board Speciation Profiles, highest weight fraction for each TAC from Profile 691 ("Headspace vapors E10 summer gasoline fuel") and Profile 695 ("Headspace vapors E10 winter gasoline fuel").

Seneca Sawmill Company - 207459

Emission Calculations

Table 12 - Mill Grinding Baghouse TAC Emissions - AIA

Toxics Emission Unit ID: Mill Grinding
Emission Point(s): EP13

Mill Grinding Cyclone and Baghouse

General Description of Calculation Methodology:

Estimated PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted from the grinding process is typically the grinding wheel itself which in turn is normally comprised of aluminum oxide. The toxic air contaminant and hazardous air pollutant speciation is based on

Operating Parameters & Input Assumptions:

Total PM Emission Estimate

Airflow (cfm)	5600 ft3/min
Baghouse exhaust loading	0.005 gr/dscf
Mass Emitted (PM)	1680.0 lb/yr
Operating Days	350 days/yr
Operating Hours/Day for Annual EF	20 hr/day
Mass Emitted	5.8 lb/day
Max Daily Operation	24 hr/day
Cr (VI) %	5%

Speciated TAC Emissions - Mill A Grinding basis

CAS or DEQ ID	TAC	Mass Fraction (mg/kg)	Emissions (lb/yr)	Emissions (lb/day)	lb/lb PM	HAP?
7429-90-5	Aluminum and Compounds	3080	5.174	0.017741	0.0031	N
7440-36-0	Antimony and Compounds	8.17	0.014	0.000047	0.0000	Y
7440-38-2	Arsenic and Compounds	14.3	0.024	0.000082	0.0000	Y
7440-39-3	Barium and compounds	22.5	0.038	0.000130	0.0000	N
7440-41-7	Beryllium and Compounds	0.387	0.001	0.000002	0.0000	Y
7440-43-9	Cadmium and Compounds	1.7	0.003	0.000010	0.0000	Y
18540-29-9	Chromium VI, chromate and dichromate particulate	145.5	0.244	0.000838	0.0001	Y
7440-48-4	Cobalt and Compounds	4710	7.913	0.027130	0.0047	Y
7440-50-8	Copper and Compounds	232	0.390	0.001336	0.0002	N
7439-92-1	Lead and Compounds	4.71	0.008	0.000027	0.0000	Y
7439-96-5	Manganese and Compounds	1880	3.158	0.010829	0.0019	Y
7439-97-6	Mercury and Compounds	0.844	0.001	0.000005 at RL	0.0000	Y
365	Nickel compounds, insoluble	1580	2.654	0.009101	0.0016	Y
7782-49-2	Selenium and Compounds	1.05	0.002	0.000006 at RL	0.0000	Y
7440-22-4	Silver and compounds	0.498	0.001	0.000003	0.0000	N
7440-28-0	Thallium and compounds	0.211	0.0004	0.000001 at RL	0.0000	N
504	Phosphorus and Compounds	132	0.222	0.000760	0.0001	Y
7440-62-2	Vanadium (fume or dust)	134	0.225	0.000772	0.0001	N
7440-66-6	Zinc and Compounds	59.6	0.100	0.000343	0.0001	N

Notes and References:

Refer to analytical report for Mill A Grinding.

Chromium content is estimated to be 5% hexavalent chromium, based on EPA's NEI Augmentation Profile Factors for NAICS 332212 Hand and Edge Tool Manufacturing. This is appropriate because grinding steel at the sawmill is similar to metal grinding/sharpening in edge tool manufacturing. (https://gaftp.epa.gov/air/nei/2020/doc/supporting_data/Chromium_speciation_NAICS_28jan2023.zip) Additionally, EPA's NEI includes secondary steel foundries, which includes steel casting finishing and grinding operations, with the default hexavalant chromium content being only 3%.

Seneca Sawmill Company - 207459
Emission Calculations
Table 13 - Paint Booth Emissions - AIA

Toxics Emission Unit ID: Paint Booth
Emission Point(s): EP15

General Description of Calculation Methodology:

Seneca expects only limited painting in the new paint booth. Particulate emissions are estimated based on a 35% overspray (65% transfer efficiency) and then a 98% filter efficiency for overspray filtration. VOCs are assumed to entirely emitted in the booth. The PTE is based on the maximum projected painting and is very conservative considering the booth will be for non-production related activities.

Max Projected Emissions
ROYAL EXTERIOR ACRYLIC LATEX PAINT & PRIMER SATIN, NEUTRAL TINT BASE

VOC Emissions	gal/week	gal/yr	VOC (lb/gal)	VOC (lbs/day)	VOC (lbs/yr)
Color Paint	5	250	0.367	1.84	91.8
Primer	5	250	0.367	1.84	91.8
				3.67	183.64

PM Emissions	Solids (lb/gal)	PM overspray	PM control eff	PM (lbs/day)	PM (lbs/yr)
Color Paint	3.619	35%	98%	0.127	6.3
Primer				0.127	6.3
S15 Total				0.25	12.67

VOC Density 44 g/L
9.55 lb/gal

CAS No.	Chemical	Wt %	Federal HAP	CAO Air Toxic	Emissions (lb/day)	Emissions (lb/yr)
37244-96-5	Nepheline syenite	12.5	No	No		
1314-13-2	Zinc oxide	3	No	Yes	0.0004	0.02
25265-77-4	Propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol	3	No	No		
68439-57-6	Sodium C14-C16 olefin sulfonate	0.3	No	No		

Concentrations from SDS, Zn oxide listed as 1-5%.

0.100275

VOC PTE	
Max Pump flow at 0.025 tip size	0.6 gal/min
Max tip size of SG3 gun is only 0.0125	0.3 gal/min
Max hours/day	4
Max days/week	5
Max weeks/year	51
Max hours/year	1020 hrs/yr
Gallons per year	18360 gallon/yr
VOCs	6743.24 lb/yr
VOCs	3.37 tpy

Seneca Sawmill Company - 207459
Emission Calculations
Table 14 - Electric Arc Welding Emissions - AIA

Toxics Emission Unit ID: Welding
Emission Points: Weld Truck and Fab Shop Welding
Description: Metal TAC emissions from electric arc welding at truck and fab shop

Fab & Truck Shop Welding

Electrode Type FCAW E71T
Maximum Annual Usage, lb/yr 5140
Maximum Daily Usage, lb/day 15

CAS or DEQ ID	TAC	EF (lbs/1000 lbs)
Criteria Pollutant	PM / PM10 / PM2.5	12.2
18540-29-9	Chromium VI, chromate and dichromate particulate	0.002
7440-48-4	Cobalt and Compounds	0.001
7439-96-5	Manganese and Compounds	0.662
365	Nickel compounds, insoluble	0.004

Emissions (lb/yr)	Emissions (lb/day)
62.708	0.183
1.03E-02	3.00E-05
5.14E-03	1.50E-05
3.40E+00	9.93E-03
2.06E-02	6.00E-05

CAS or DEQ ID	TAC	PM10 EF (lb/1000 lb)	Fume Correction Factor	Wt% per SDS	SDAPCD Calculated EF (lbs/1000 lbs)	Emissions (lb/yr)	Emissions (lb/day)
7429-90-5	Aluminum and Compounds	12.2	1	8%	0.98	5.02E+00	1.46E-02
1309-64-4	Antimony trioxide	12.2	1	1%	0.12	6.27E-01	1.83E-03
7440-39-3	Barium and compounds	12.2	1	11%	1.39	7.15E+00	2.09E-02
239	Fluorides	12.2	1	10%	1.16	5.98E+00	1.75E-02
7440-50-8	Copper and compounds	12.2	1	2%	0.24	1.25E+00	3.66E-03
7631-86-9	Silica, crystalline (respirable)	12.2	1	2%	0.244	1.25E+00	3.66E-03
1313-27-5	Molybdenum Trioxide	12.2	1	3.0003%	0.37	1.88E+00	5.49E-03

Notes:

Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Welding Emission Factor Search Tool. For TACs not in tool, use the San Diego Air Pollution Control District's Welding Operations methodology to develop emissions estimates for all Toxic Air Contaminants (TACs) present in welding products.

The weight percent of molybdenum is reported as molybdenum trioxide. The percentages for for Aluminum Oxide and Aluminum from the SDS were added together and reported as "Aluminum and Compounds".

Inorganic chemicals designated with "and compounds" and Fluorides are reported as the sum of all forms of the chemical, expressed as the inorganic element and this adjustment is made in the "Wt% per SDS" column.

San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2022. Available at: <https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions->

Seneca Sawmill Company - 207459
Emission Calculations
Table 15 - Metal Cutting Emissions (Plasma and Oxyfuel Torch) - AIA

Emission Unit ID: MCUT
Emission Point: MCUT
Description: Plasma and oxy-acetylene torch cutting of metal in the fabrication shop.

General Description of Calculation Methodology

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). Only mild steel is cut and mild steel fume is 67-73% iron, 2-10% manganese, and ND-1.4% copper. We are conservatively using the upper end of range. The fume generation rate was selected to be 0.5% for semi-dry because the water reservoir is directly below the plate being cut.

Daily and Annual maximum emissions are based on the worse-case settings. The worse-case consists of the maximum row of plasma cutting added to the

Plasma Torch Operating Hours 5 hrs/day max
500 hrs/yr max
Oxy-Acetylene Torch Operating Hours 1 hrs/day max
50 hrs/yr max

PM/PM₁₀/PM_{2.5} Emissions

Unit Identification	Cutting Technique	Metal Type	Metal Thickness (Inches)	Kerf (Inches)	Metal Cutting Speed (IPM)	Density (g/cm ³)	Density Conversion (lb/in ³)	Fume Generated (% of Material Removed)	PM/PM _{2.5} /PM ₁₀ Emission Factor (lb/inch)	Metal Feed Rate (IPH)	PM Emissions (lb/hr)	Daily Cutting Hours	Annual Cutting Hours	PM Emissions (lb/day)	PM Emissions (lb/yr)	
Plasma	Semidry	Mild steel	0.0359	0.01	200	7.84	0.28	0.5	0.000001	12000	0.01	5	500	0.03	3.05	Plasma
Plasma	Semidry	Mild steel	0.125	0.06	148	7.84	0.28	0.5	0.000011	8880	0.09	5	500	0.47	47.16	Plasma
Plasma	Semidry	Mild steel	0.25	0.075	110	7.84	0.28	0.5	0.000027	6600	0.18	5	500	0.88	87.63	Plasma
Plasma	Semidry	Mild steel	0.375	0.099	110	7.84	0.28	0.5	0.000053	6600	0.35	4	500	1.39	173.50	Plasma
Plasma	Semidry	Mild steel	0.75	0.127	75	7.84	0.28	0.5	0.000135	4500	0.61	3	500	1.82	303.50	Plasma
Plasma	Semidry	Mild steel	1	0.175	65	7.84	0.28	0.5	0.000248	3900	0.97	2	500	1.93	483.27	Plasma
Plasma	Semidry	Mild steel	1.75	0.081	11.22	7.84	0.28	0.5	0.000201	673.2	0.14	2	500	0.27	67.57	Plasma
Oxy-acetylene	Semidry	Mild steel	2	0.081	10.63	7.84	0.28	0.5	0.000229	637.8	0.15	1	50	0.15	7.32	Oxy-acetylene
Oxy-acetylene	Semidry	Mild steel	2.75	0.091	9.055	7.84	0.28	0.5	0.000354	543.3	0.19	1	50	0.19	9.63	Oxy-acetylene
Oxy-acetylene	Semidry	Mild steel	4	0.091	7.055	7.84	0.28	0.5	0.000515	423.3	0.22	1	50	0.22	10.91	Oxy-acetylene
												0.97		2.15	494.18	
												max hour		max day	max of settings	
														(plasma + torch)		

HAP / TAC Emissions

Using mild steel factors			using max day		
CAS No.	Pollutant	Fume Percent	lb/lb PM	TAC Emissions (lb/day)	TAC Emissions (lb/yr)
7439-96-5	Manganese and compounds	10.0%	0.100	0.215	49.42
7440-50-8	Copper and compounds	1.4%	0.014	0.030	6.92
				0.245	56.34

Seneca Sawmill Company - 207459
Attachment B - Emission Calculations
Table 16 - Diesel Emergency Generator Emissions - CIA

Toxics Emission Unit ID: CIA-1
Emission Points: Egen_1
Description: Office Diesel Emergency Generator

Operating Parameters & Input Assumptions:

Fuel Usage Rate	11.7 gal/hr		
Max. Daily Operating Hours	4 hrs/day	0.0468	Mgal/day
Max Annual Operating Hours	100 hrs/yr	1.17	Mgal/yr

CAS or DEQ ID	TAC	EF (lbs/M gal)	Emissions (lb/yr)	Emissions (lb/day)
106-99-0	1,3-Butadiene	2.17E-01	2.54E-01	1.02E-02
91-57-6	2-Methyl naphthalene	1.23E-02	1.44E-02	5.76E-04
83-32-9	Acenaphthene	7.35E-04	8.59E-04	3.44E-05
208-96-8	Acenaphthylene	8.10E-04	9.47E-04	3.79E-05
75-07-0	Acetaldehyde	7.83E-01	9.16E-01	3.67E-02
107-02-8	Acrolein	3.39E-02	3.97E-02	1.59E-03
7664-41-7	Ammonia	2.90E+00	3.39E+00	1.36E-01
120-12-7	Anthracene	4.52E-04	5.29E-04	2.12E-05
7440-36-0	Antimony and compounds	3.18E-04	3.72E-04	1.49E-05
7440-38-2	Arsenic and compounds	2.77E-04	3.24E-04	1.30E-05
7440-39-3	Barium and compounds	3.74E-04	4.37E-04	1.75E-05
56-55-3	Benz[a]anthracene	4.85E-05	5.68E-05	2.27E-06
71-43-2	Benzene	1.86E-01	2.18E-01	8.72E-03
50-32-8	Benzo[a]pyrene	1.44E-05	1.68E-05	6.73E-07
205-99-2	Benzo[b]fluoranthene	4.44E-05	5.19E-05	2.08E-06
192-97-2	Benzo[e]pyrene	3.29E-05	3.85E-05	1.54E-06
191-24-2	Benzo[g,h,i]perylene	2.19E-05	2.56E-05	1.02E-06
207-08-9	Benzo[k]fluoranthene	1.31E-05	1.53E-05	6.11E-07
7440-41-7	Beryllium and compounds	4.77E-06	5.58E-06	2.23E-07
7440-43-9	Cadmium and compounds	8.08E-05	9.45E-05	3.78E-06
18540-29-9	Chromium VI, chromate and dichromate particulate	3.51E-04	4.10E-04	1.64E-05
218-01-9	Chrysene	6.70E-05	7.84E-05	3.14E-06
7440-48-4	Cobalt and compounds	1.58E-05	1.84E-05	7.37E-07
7440-50-8	Copper and compounds	5.02E-04	5.87E-04	2.35E-05
53-70-3	Dibenz[a,h]anthracene	1.04E-06	1.21E-06	4.85E-08
200	Diesel particulate matter	1.70E+01	1.99E+01	7.94E-01
100-41-4	Ethyl benzene	1.09E-02	1.28E-02	5.10E-04
206-44-0	Fluoranthene	3.70E-04	4.33E-04	1.73E-05
86-73-7	Fluorene	2.18E-03	2.56E-03	1.02E-04
50-00-0	Formaldehyde	2.71E+00	3.17E+00	1.27E-01
110-54-3	Hexane	2.69E-02	3.15E-02	1.26E-03
7647-01-0	Hydrochloric acid	1.86E-01	2.18E-01	8.72E-03
193-39-5	Indeno[1,2,3-cd]pyrene	1.07E-05	1.25E-05	5.01E-07
7439-92-1	Lead and compounds	3.64E-04	4.25E-04	1.70E-05
7439-96-5	Manganese and compounds	4.20E-04	4.91E-04	1.97E-05
7439-97-6	Mercury and compounds	1.51E-05	1.77E-05	7.07E-07
91-20-3	Naphthalene	2.64E-02	3.08E-02	1.23E-03
365	Nickel compounds, insoluble	1.82E-04	2.13E-04	8.53E-06
198-55-0	Perylene	1.18E-06	1.38E-06	5.51E-08
85-01-8	Phenanthrene	4.54E-03	5.31E-03	2.13E-04
504	Phosphorus and compounds	8.40E-03	9.83E-03	3.93E-04
7782-49-2	Selenium and compounds	3.76E-04	4.40E-04	1.76E-05
7440-22-4	Silver and compounds	4.80E-05	5.62E-05	2.25E-06
7440-28-0	Thallium and compounds	2.40E-04	2.81E-04	1.12E-05
108-88-3	Toluene	1.05E-01	1.23E-01	4.93E-03
1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	4.24E-02	4.96E-02	1.98E-03
7440-66-6	Zinc and compounds	5.23E-03	6.11E-03	2.45E-04

Notes:

Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search Tool, based on SCAQMD AB2588 - Default
Emission Factors for Fuel Combustion, Table B-2 Internal; DEQ Approved Data Center EF Analysis May 2022.



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment D – Kiln Information



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #1 (K5)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #2 (K6)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



State of Oregon
Department of
Environmental
Quality

Device\Process Form
Lumber Dry Kilns

FORM DV203
Answer Sheet

Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #3 (K7)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #4 (K8)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #5 (K9)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #6 (K10)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #7 (K11)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA



Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Device name and ID number or label	Stud Kiln #8 (K12)
2.	Date installation/construction commenced	Future 2024
3.	Date installed	Future 2024-25
4.	Special control requirements? [if yes, describe]	No
5.	Manufacturer	American Wood Dryer
6.	Heat source (if fuel is burned to heat the kiln, complete item 8)	NA

7. Species of wood dried: [for EACH species, enter]:

Species	Average cycle time (hours)	Maximum design capacity (board feet/cycle)
Douglas Fir	35	330,000
Hemlock	60	330,000

8. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
NA - steam heated kiln	NA

Section 1

1.1 Technical Data per kiln

Kiln Size:

Width.....	36'
Length	115'
Height.....	30'

Approximate Holding Capacity:

Dimension lumber on 3/4" stickers at 95% efficiency,	295,000 bf
--	------------

Doors: (2 per end)

Width.....	12'-8 1/2"
Height.....	20'-8"

Man Hatches (5 per kiln)

	Overhead	Kiln corners
Width.....	2'-6"	2' 6"
Height.....	5'-6"	7' 0"

Fans & Motors:

Number	16
Diameter.....	72"
Horsepower, each motor	20
Air Flow through lumber load	900 to 1000 fpm average

<u>Heating Capacity:</u> (at 190°F)	35.4 mm Btu/hr
--	----------------

<u>Operating Temperature:</u> (125psig, 353°F steam)	210° F. maximum operating
---	---------------------------

Vents:

Number	28
Size.....	21" x 21"

1.2 Lumber Specifications & Kiln Loading

Species	Douglas fir and Hemlock
Kiln Loading:	
Package Width:	52"
Package Height:	51' (22 layers)
Package Length:	8' to 28'
Packages Wide:	4 (2 per track)
Packages High:	4
Packages Long:	112' Nominal (115' clear inside)
Tracks/Kiln:	2



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment E – Stud Mill Planer Baghouse Information (EP-06)



Pollution Control Device Form
Baghouse

FORM CD303
Answer Sheet

Facility name: Seneca Sawmill Company Permit Number: 207459

1.	Name	Stud Mill Planer	Baghouse No. 1		
2.	ID number or label	EP-06			
3.	Date installed	Planned 2024			
4.	Manufacturer	Clarke			
5.	Model number	100-20			
6.	Rated efficiency (%)	~99%			
7.	Cleaning mechanism	Reverse Air			
8.	Cleaning frequency	based on DP			
9.	Design inlet gas flow rate (acfm)	37,794			
10.	Design air-to-cloth ratio	5.85:1			
11.	Number of bags	100			
12.	Design pressure drop (inches of water column)	2-6 (est.)			

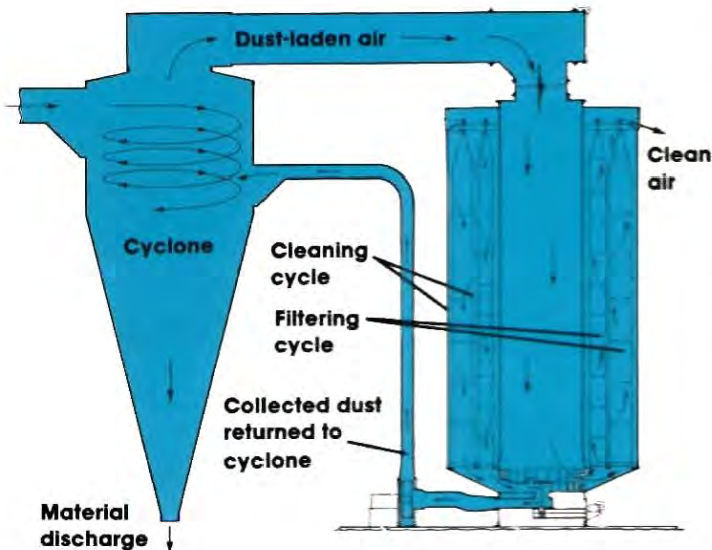
 *Clarke's*

PNEU-AIRE[®] FILTER



How Pneu-Aire® Filters Work

Dust laden air from the cyclone enters the top of the **Pneu-Aire**. It continues down the center tube and out into the Pneu-Aire's radial compartments and then up into the Clar-Tex® bags. As the air passes through the fabric, the dust is collected on the inside of the bags. The filtered air exhausts to atmosphere or back into the plant.



Collected particles are then removed from the bags by low pressure, reverse air flow; a continuous operation utilizing a rotating manifold at floor level of the central chamber. The manifold completes a revolution of the chamber every three minutes, so that only 5% of the filter bags are being cleaned at any one time. A scavenger system on the bottom side of the rotating manifold continuously vacuums the floor of the chamber to prevent heavy particle accumulation.



Filtering

Cleaning

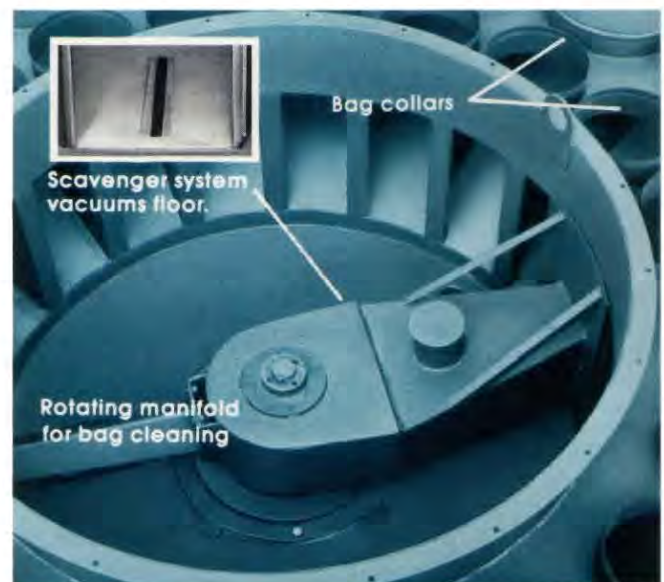
Filter bags are made of high-tensile Clar-Tex fabric. Support rings prevent bag collapse as cleaning is accomplished by low-pressure reverse air flow (right). Bags are isolated from the system during the cleaning cycle.

The **Pneu-Aire** is designed for low maintenance and easy servicing. A single moving part, the rotating manifold, is powered by a ¼ HP gearhead motor and roller chain drive. Access doors provide for easy inspection and maintenance.

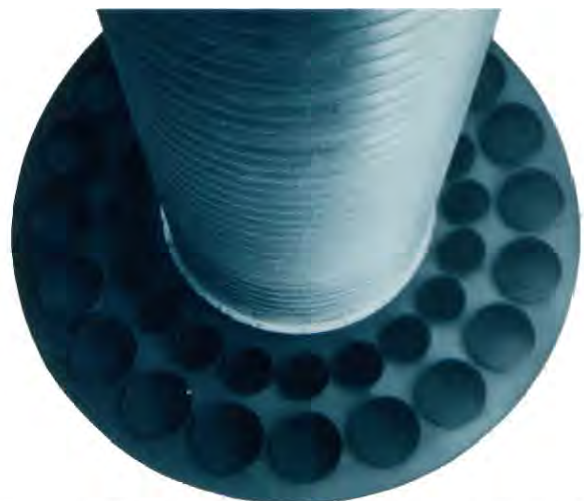
Used in conjunction with your present equipment, **Pneu-Aire** is the simplest, most economical solution to dust collection and control problems.

If your requirements are for a new installation, the inclusion of Pneu-Aire will give you the most efficient energy saving filter system available today.

Pneu-Aire combines advantages of simple design, ease of installation, minimum maintenance and cost-saving operation to meet tight budgets.



Rotating manifold fits closely to each radial compartment as it moves. It completes a revolution every 3 minutes, so that 5% of the filter bags are being cleaned at all times.



Pneu-Aire core features rugged, lightweight center tube assembly with round mounting base.

Pneu-Aire® Features and Benefits

Minimum number of mechanical parts. The **Pneu-Aire** filter is designed with only one moving part, the rotating purge manifold. This manifold is driven by a ¼ HP gearhead motor. A small pitch chain drive transmits power to the manifold. The results are less maintenance and less power to operate.

No dust build-up, bridging or plug-ups. Air and dust always move in the same direction, even during the cleaning cycle. Collected dust does not have to fall through a high velocity air stream. This **Pneu-Aire** feature means a trouble-free filter system.

Compact construction with high filtering capacity. The unique **Pneu-Aire** filter is designed for maximum filtering capacity and minimum size. For you this means easy installation, less space required and lower cost per CFM.

Low pressure drop. Because there is such a low resistance to air flow through the **Pneu-Aire**, static pressure requirements are lower. System static pressure requirements can be directly equated to horsepower requirements. The results are less connected horsepower and more savings.

Continuous low pressure reverse air purging action. **Pneu-Aire** filters require no complicated sequencing controls, compressed air piping, or special mechanical linkage; your assurance of longer bag life and low maintenance. And because the bags are cleaned by low pressure reverse air flow, bridging or material evacuation is no problem with **Pneu-Aire**.

Isolation damper and abort gate allow for continuous production. This optional **Pneu-Aire** feature also minimizes fire or explosion damage because the main air stream can be diverted to the atmosphere. (Below)

All drive components are standard industrial power transmission items. This means fast, easy, inexpensive parts availability.

Clar-Tex® cageless bags. No cages mean no bag abrasion and longer bag life.

Structurally superior but lightweight. The **Pneu-Aire** requires no special heavy support structure. On the ground it mounts on its own base. The excellent combination of design strength and light weight make the **Pneu-Aire** ideal for roof mounting.

Closed loop system. All material ends up at its original destination; the cyclone. Even the light dust collected in the bags is gently air washed from bag surfaces and returned to the cyclone.

Pneumatic scavenging orifice. The effluent air from the cyclone slows as it enters the large center tube of the filter. As this happens the heavier abrasive particles fall from the air stream and do not enter the bags. Negative air flow through the scavenging orifice returns these particles to the cyclone.

Optional Gemini® Filter bag system The Gemini Bag is a bag within a bag, designed to increase cloth area, raising the single unit filter capacity. This higher capacity means lower cost per CFM.

Exclusive Pocket Ring Cover® Because filter bag life can be extended by periodic laundering, Clarke's developed the exclusive Pocket Ring Cover (Patent Pending). By removing the bag support rings, the bags clean better and the rings are not subjected to machine damage. (Below)



Clarke's® Sheet Metal Inc.
660 Conger Street • P.O. Box 2428
Eugene, Oregon USA 97402-0139
(541)343-3395 • Telex: 36-4440
Fax: (541)345-1447



Clarke's® International Inc.
660 Conger Street • P.O. Box 2428
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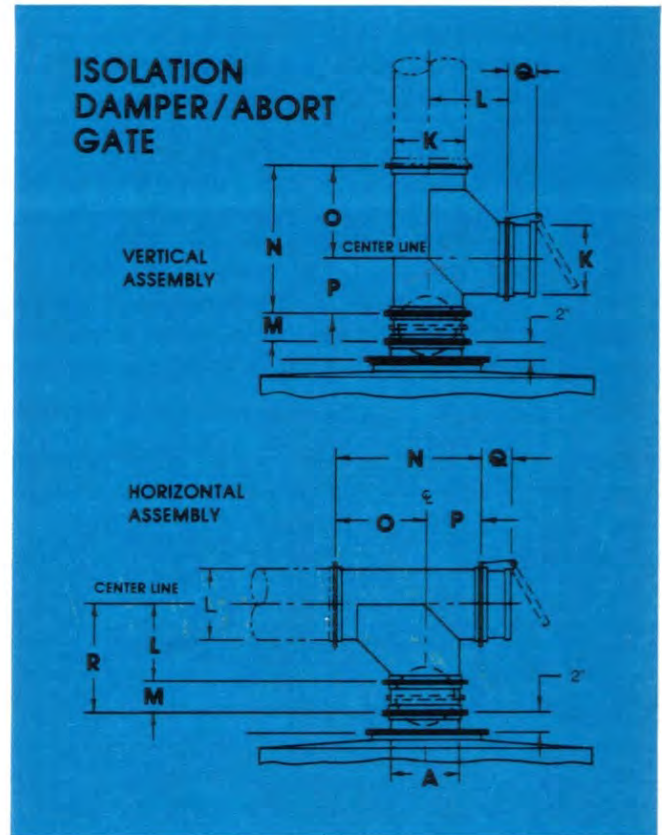
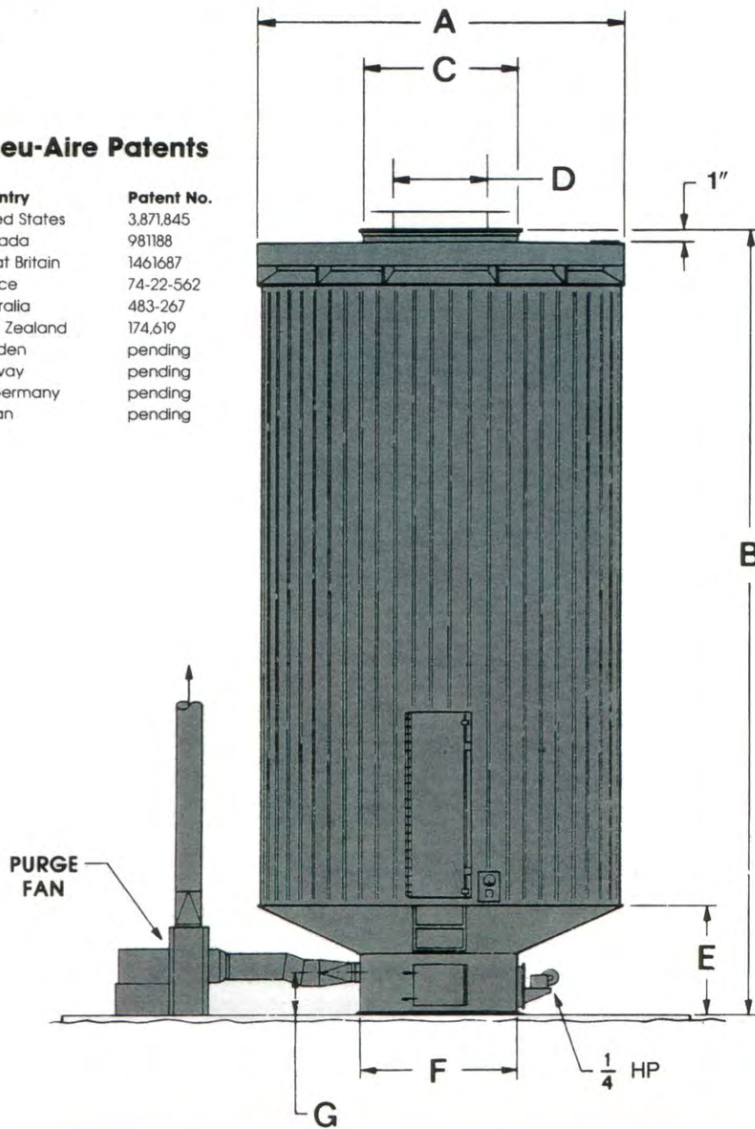


Clarke's® Sheet Metal Inc.
E-Mail: quality@clarkes-ind.com
quality@pyroguard.com

Pneu-Aire® Filter Specifications

Pneu-Aire Patents

Country	Patent No.
United States	3,871,845
Canada	981188
Great Britain	1461687
France	74-22-562
Australia	483-267
New Zealand	174,619
Sweden	pending
Norway	pending
W. Germany	pending
Japan	pending



K	L	M	N	O	P	Q	R
24"0	26"	10"	48"	30"	18"	10"	36"
36"0	31½"	10"	60"	36"	24"	10"	41½"
48"0	50"	10"	84"	54"	30"	12"	60"

*Also available in 60" diameter. (Consult factory)

MODEL	Effect. Cloth. Area Sq. Ft.	Shipping Weight	No. of Bags	Length of Bags	DIMENSIONS						
					A	B	C	D	E	F	G
10-10	358	4,000 lbs.	10	10'	7'- 4"	14'- 2¼"	36" ID	24" OD	32½"	36" ID	12"
10-15	528	4,200 lbs.	10	15'	7'- 4"	18'- 8¼"	36" ID	24" OD	32½"	36" ID	12"
15-15	822	4,600 lbs.	15	15'	9'- 4½"	19'- 5¾"	60" ID	24" OD	42"	60" ID	13"
15-20	1144	5,000 lbs.	20'	20'	9'-4½"	24'-11¾"	60" ID	24" OD	42"	60" ID	13"
15-20G1	1658	5,300 lbs.	15	20'	9'-4½"	24'-11¾"	60" ID	36" OD	42"	60" ID	13"
40-15	1915	6,300 lbs.	40	15'	11'- 8"	19'- 5¾"	60" ID	36" OD	42"	60" ID	13"
40-20	2668	7,000 lbs.	40	20'	11'- 8"	24'- 11¾"	60" ID	36" OD	42"	60" ID	13"
40-20G1	3374	7,500 lbs.	40	20'	11'- 8"	24'- 11¾"	60" ID	48" OD	42"	60" ID	13"
40-20G2	3815	7,650 lbs.	40	20'	11'- 8"	24'- 11¾"	60" ID	48" OD	42"	60" ID	13"
60-15	3447	8,700 lbs.	60	15'	15'- 9"	21'- 1¾"	60" ID	48" OD	56"	60" ID	14¾"
60-20	4801	10,000 lbs.	60	20'	15'- 9"	26'- 7¾"	60" ID	48" OD	56"	60" ID	14¾"
60-20G1	6040	10,200 lbs.	60	20'	15'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
60-20G2	6750	10,350 lbs.	60	20'	15'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
60-20G3	7187	10,600 lbs.	60	20'	15'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-15	4630	9,600 lbs.	100	15'	16'- 9"	21'- 1¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20	6451	11,000 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20G1	7157	11,200 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20G2	7864	11,300 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20G3	8304	11,500 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20G4	8745	11,700 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"
100-20G5	9187	11,900 lbs.	100	20'	16'- 9"	26'- 7¾"	60" ID	60" OD	56"	60" ID	14¾"

Note: G * indicates "Gemini" series filter SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment F – Mill Grinding Baghouse Information



Pollution Control Device Form
Baghouse

FORM CD303
Answer Sheet

Facility name: **Seneca Sawmill Company** Permit Number: **207459**

1.	Name	Mill Grinding	Cyclone and	Baghouse	
2.	ID number or label	EP-13			
3.	Date installed	Planned 2024			
4.	Manufacturer	Donaldson			
5.	Model number	DFE 3-12			
6.	Rated efficiency (%)	~99%			
7.	Cleaning mechanism	Jet-Pulse			
8.	Cleaning frequency	based on DP			
9.	Design inlet gas flow rate (acfm)	5600			
10.	Design air-to-cloth ratio	1.83:1			
11.	Number of bags	12			
12.	Design pressure drop (inches of water column)	2-6 (est.)			

Donaldson®
Torit®

DOWNFLO® EVOLUTION DUST COLLECTORS

UP TO **40%**
FEWER FILTERS
& SMALLER FOOTPRINT



EVOLUTIONARY DESIGN

THE ORIGINATORS OF THE CARTRIDGE COLLECTOR

The breakthrough performance of the Downflo® Evolution (DFE) family of cartridge dust collectors is the result of Donaldson Torit's relentless drive to improve its products and exceed customer expectations. Donaldson Torit put decades of industry experience to work to produce a new, best-in-class dust collector capable of reducing equipment size and number of required filters by up to 40% compared to a typical cartridge collector. A smaller collector helps lower the initial purchase price, reduces filter replacement costs, and opens up valuable manufacturing floor space.

This state of the art collector, coupled with Donaldson's industry-leading Ultra-Web® nanofiber filtration technology, is truly an intelligent design.

Revolutionary Airflow Management

Directs incoming air to an intelligent dropout zone for reduced filter loading

Breakthrough Filter Cleaning

MaxPulse™ Cleaning System delivers 27% more cleaning energy to filtration media

Industry-Leading Filtration Design

Positions more filtration media in beneficial locations and ensures easy, leak-free installation with Ultra-Web MERV15 media as standard

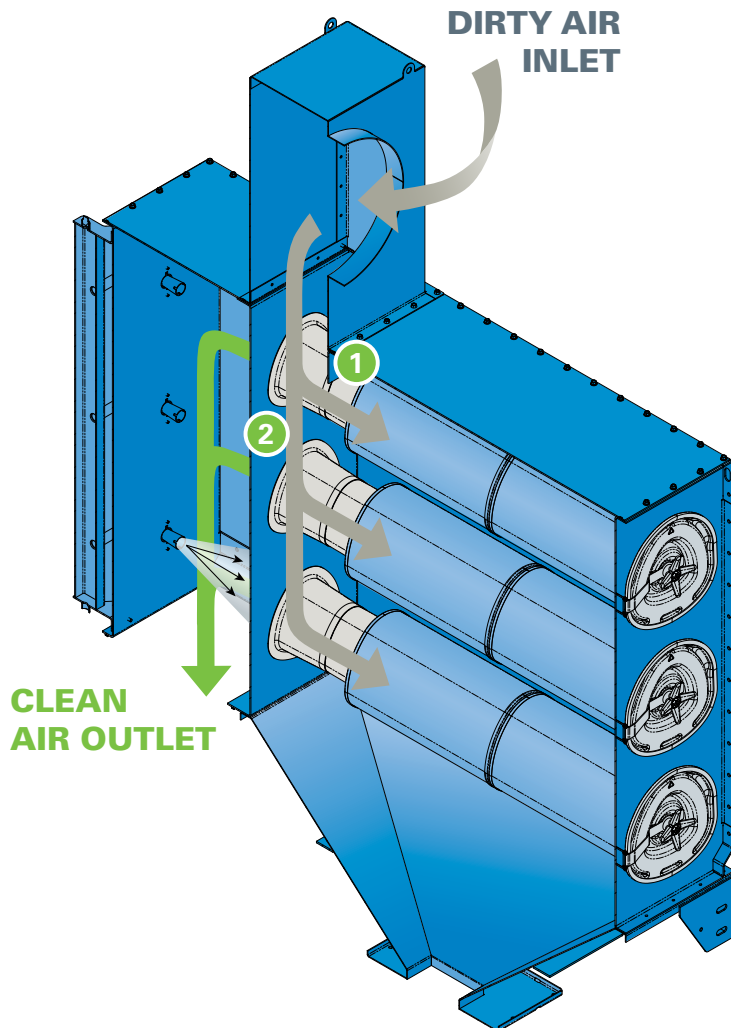
RESULTS

A smaller cartridge collector with fewer filters and the lowest cost of ownership



ENGINEERED AIRFLOW MANAGEMENT

The DFE's game-changing dust collection performance is achieved through a combination of design features that result in significant customer benefits.



INTELLIGENT DROPOUT ZONE

- 1 Metal venturis
- 2 Dropout zone ensures
 - Pre-separation of heavy dust particles
 - Lower pressure loss than baffle design used by competitors
 - Minimal filter element abrasion

DOWNFLO EVOLUTION INTELLIGENT DESIGN

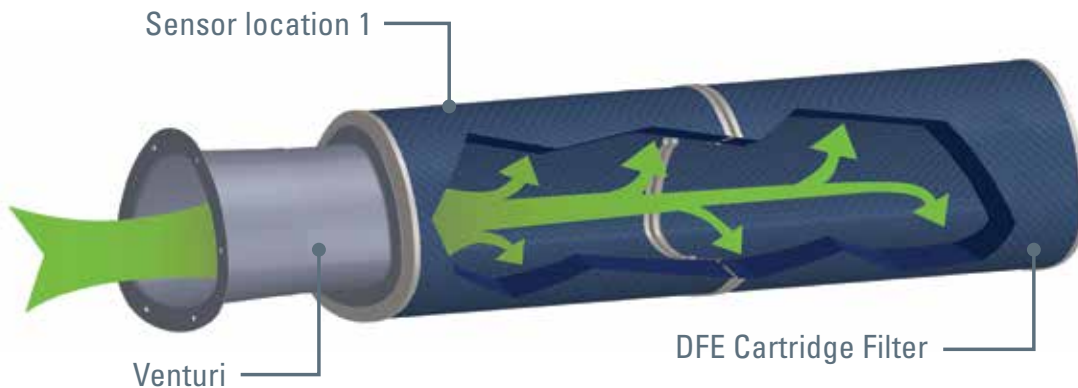
MAXPULSE™ CLEANING SYSTEM

SUPERIOR CLEANING PERFORMANCE

The DFE provides breakthrough cleaning performance resulting in improved filtration capacity without sacrificing filter life or taxing compressed air consumption. Typical pulse-jet cleaned dust collectors deliver only a fraction of the compressed air energy to clean the filtration media. The DFE's proprietary, MaxPulse Cleaning System minimizes energy losses by focusing on the cleaning air's exact path and delivers uniform cleaning energy to all effective filtration media.

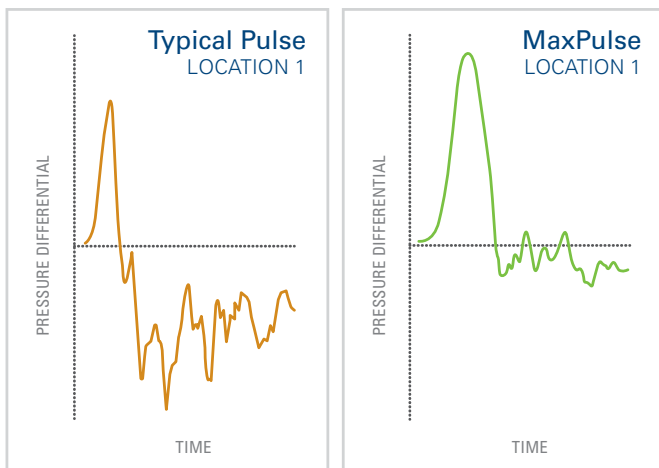
The cleaning action starts with the release of compressed air from the diaphragm valve through a unique, double-diverging pulse nozzle. The nozzle precisely controls the initial pulse expansion to minimize energy losses associated with uncontrolled compressed air expansion. Donaldson Torit's proprietary, pulse-shaping design distributes the cleaning energy evenly to match the unique shape of the filter.

After exiting the pulse nozzle, the cleaning air flows through smooth, easy transitions into the filter interior ensuring the compressed air expands naturally without abrupt, energy-wasting restrictions, sharp edges, or volume changes. More effective filtration media results in increased airflow capacities through Donaldson Torit dust collection equipment.



PROVEN IN PULSE TEST BENCH ANALYSIS

Significantly higher pulse pressures are recorded and sustained at critical locations along the filtration media profile. More uniform cleaning results in more effective filtration media over the life of the filter.

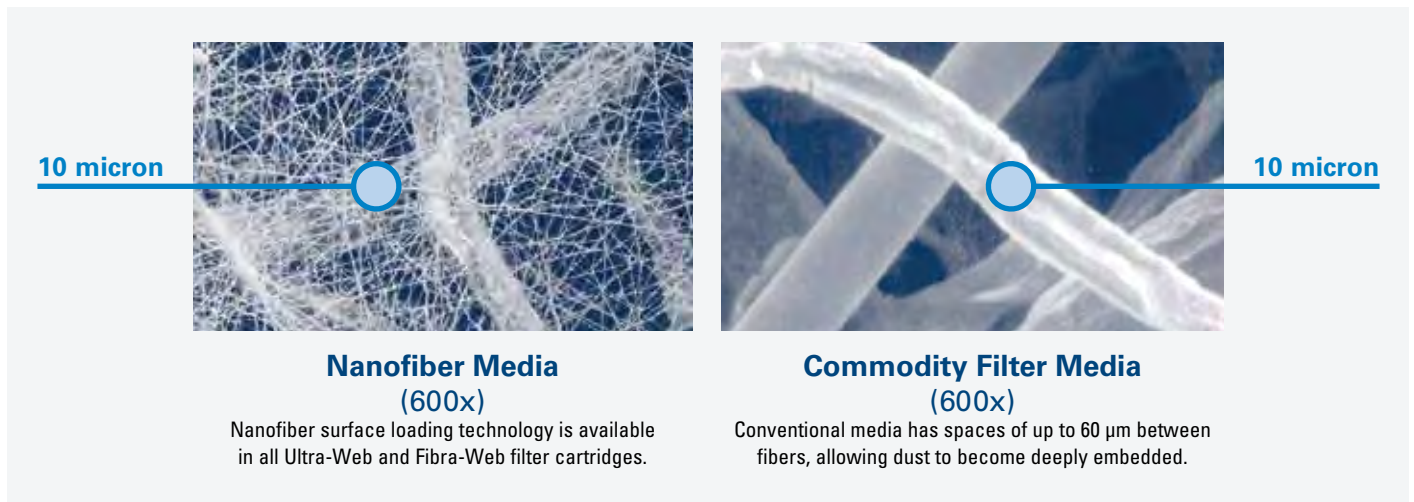


27%
HIGHER
IMPULSE CLEANING
ENERGY DELIVERED

CARTRIDGE FILTER TECHNOLOGY

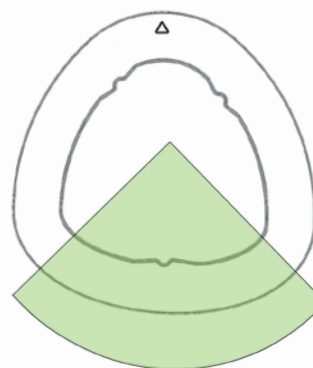
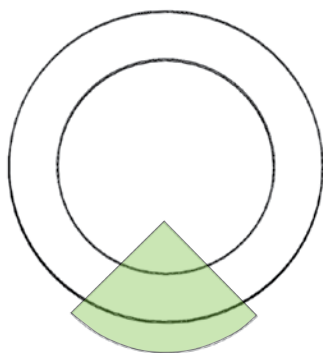
HIGH PERFORMANCE FILTERS

The DFE filter design is another indication of Donaldson Torit's commitment to technical research and development. The distinguishing factor in our filters is Ultra-Web filtration technology. Ultra-Web nanofiber media uses a layer of fibers 0.2 to 0.3 microns in diameter to capture contaminants on the surface of the media less than one micron in size. The resulting dust cake is easily cleaned off during the automated collector cleaning cycles providing cleaner air longer, with a minimum MERV* 15 efficiency rating based on ASHRAE 52.2 - 2007 test standards.



TRIANGULAR FILTER SHAPE

The ultimate goal of any pulse-cleaned dust collector is to remove the contaminant from the airstream and get the contaminant into a containment vessel under the equipment's hopper. The DFE's unique shape positions more filter media at the bottom of the cartridge element so pulse-cleaning energy directs the ejected dust toward its ultimate destination – the containment vessel!



The DFE triangular filter features more filter media at the bottom of the cartridge element than any other cartridge on the market.

QUICK FILTER CHANGEOUT

The interior of the metal filter element endcaps features a specific profile that engages with the collection equipment's support yoke. The asymmetrical yoke design ensures proper filter installation, seal, and cleaning alignment.



1 Loosen cover with 4-lobe knob. Knob has center lug enabling power tool operation.

2 Open hinged filter access cover.

3 Filter supported by asymmetrical suspension yoke ensure proper installation for worry-free operation.

* No special tools are required, and you never have to enter a confined space or dirty air plenum to do the job.

COMBUSTIBLE DUST MANAGEMENT DEFLAGRATION ISOLATION

Donaldson Torit's DFE assists operators' combustible dust management. A DFE collector was tested to determine if the collector could isolate a deflagration and stop flames or sparks from passing into the clean air plenum. When applied in conjunction with effective explosion protection strategies including inlet isolation and explosion venting, the performance results support conformance to Chapter 5 Performance-Based Design Option requirements of both NFPA 654 - to prevent the "extension of the flame front outside the compartment or equipment of origin except where intentionally vented to a safe location" [5.2.5 (2)] and NFPA 69 - to "limit the risk of flame spread from vessel to vessel via interconnecting ducts." [5.5.3.4]

TEST RESULTS¹

- In all tests, the filters successfully isolated the deflagration and allowed no flame or sparks to pass into the clean air plenum.
- The filter media and support frames were found to be free from any plastic deformation due to deflagration loads at dirty air plenum pressures up to and including 8.3 psig.

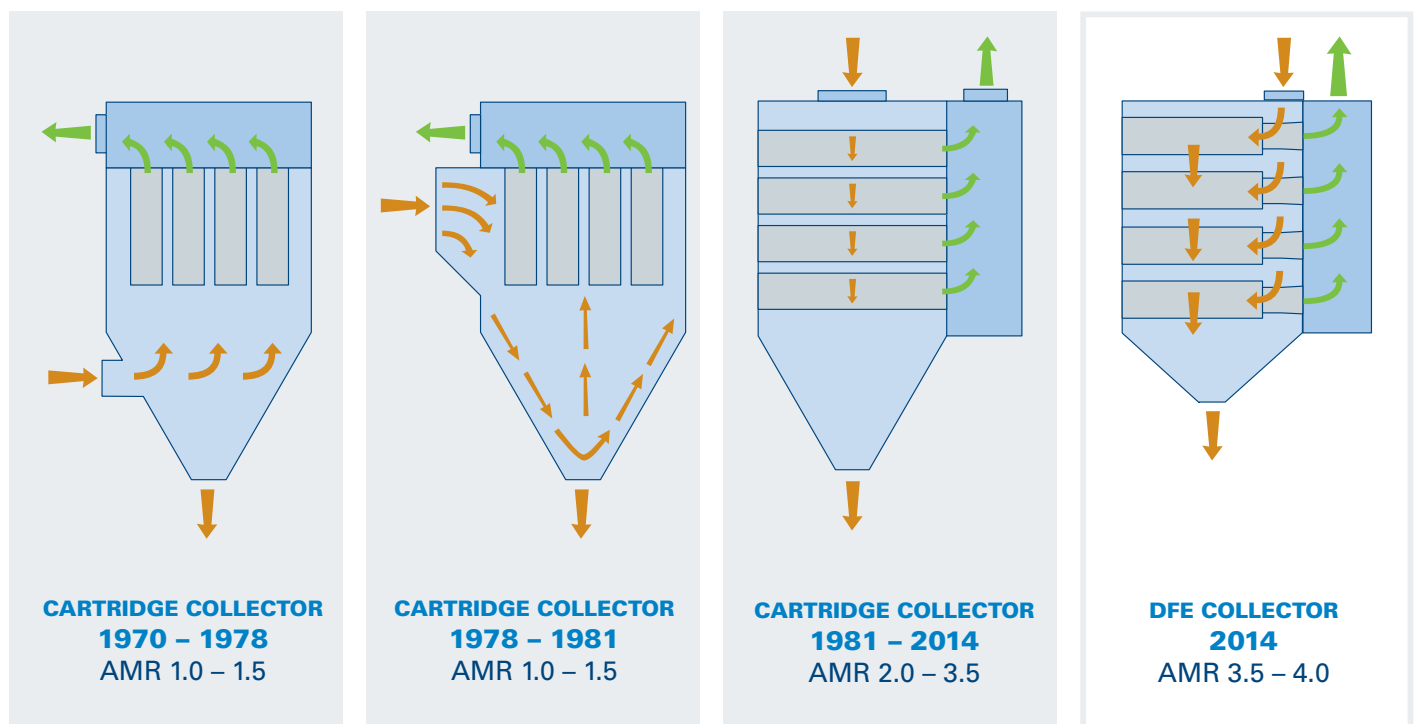


¹ Tests conducted on a Downflo Evolution (DFE) cartridge collector with standard FR Cartridge filter elements, top-mounted explosion vents, and without secondary filtration. Tests performed with airflow through the collector at typical air volumes. Tests repeated with no airflow through the unit. Tests used clean filters and were repeated with 'dirty' filters loaded with enough dust (cornstarch) to generate a 4-inch differential pressure across the filters and tubesheet. (Cornstarch dried to less than 2% moisture by weight was used as the dust / fuel for all tests.) Optical detectors sensitive in the IR band were mounted in multiple locations within the clean air plenum to determine flame transmission through the filter media.

THE CONTINUING EVOLUTION OF CARTRIDGE COLLECTION

Donaldson Torit has been at the forefront of cartridge collection for over 40 years, and has developed game-changing solutions others can only attempt to imitate. Now, the game is changing again! With the DFE's airflow design, MaxPulse cleaning system, triangular filter shape, and industry-leading Ultra-Web filtration media, customers benefit from a smaller collector containing fewer filters.

AIR-TO-MEDIA (AMR) RATIO EVOLUTION – WELD FUME

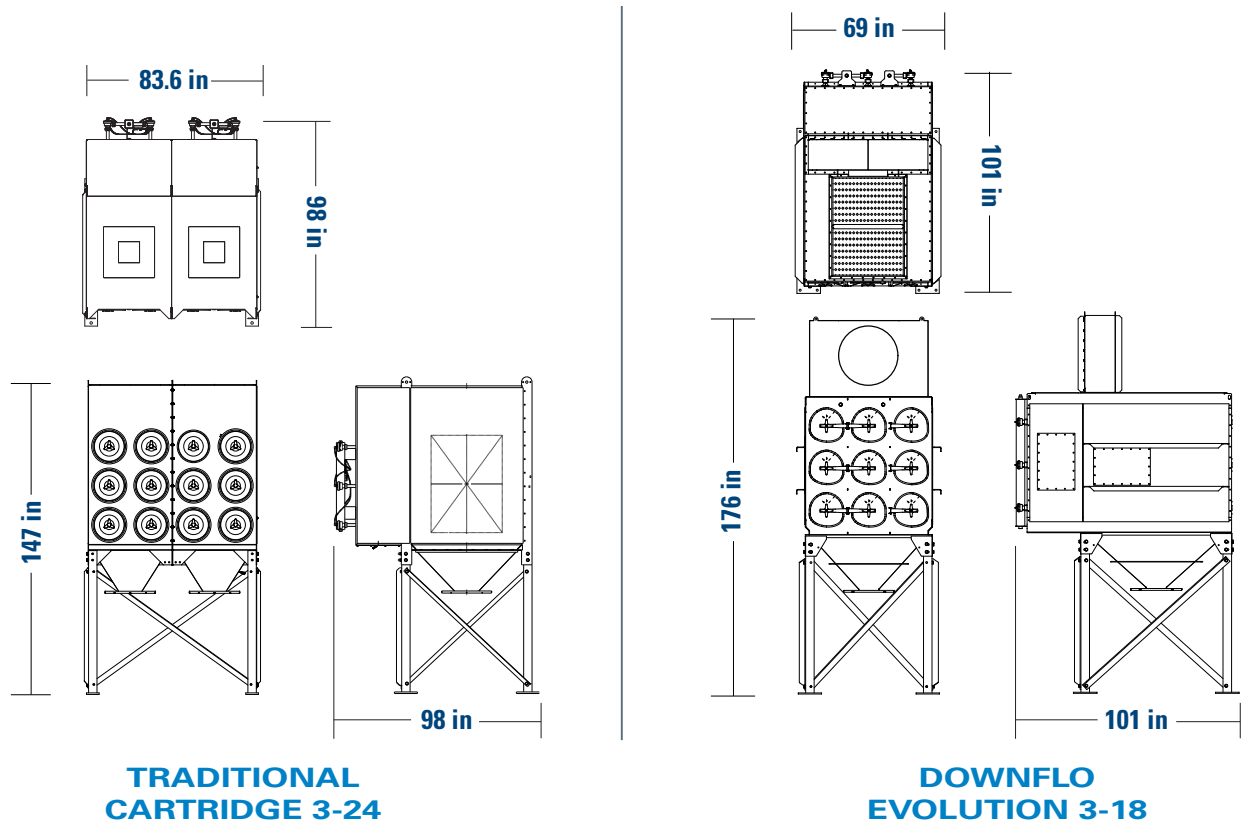


The graphic above shows an example of the Air-to-Media ratios for a typical weld fume application. The DFE features higher AMRs, smaller footprint, fewer filters, superior performance, and lowest cost of ownership!

UP TO 40%
FEWER FILTERS
& SMALLER FOOTPRINT

EQUIPMENT COMPARISON

The DFE dust collector has increased filtration capacity compared to traditional cartridge collectors. This advantage reduces required collector footprint, with fewer filters, and lowers the total cost of ownership.

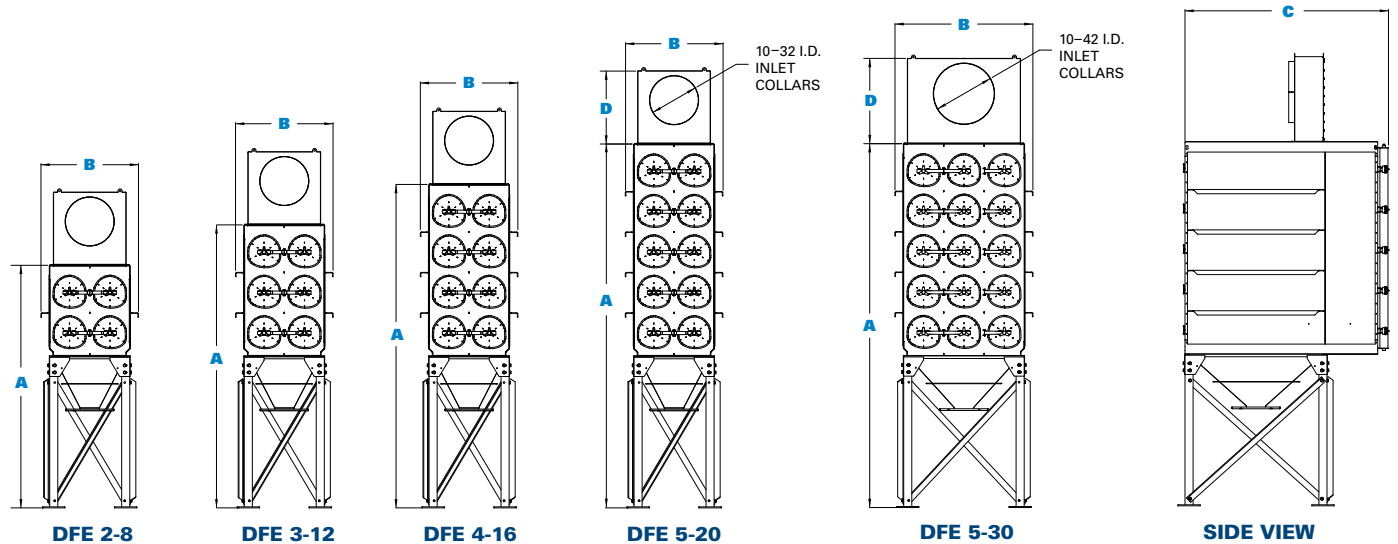


Automatic Shot Blast	Application	Automatic Shot Blast
10,500 cfm	Airflow	10,500 cfm
56.9 ft²	Footprint	50.3 ft²
147 in	Height	176 in
24	Filter Count	18
2	Hopper Outlets	1
13 scfm	Compressed Air	10 scfm

OPERATING CONDITIONS FOR DFE COLLECTORS

Seismic Spectral Acceleration	$S_s = 1.5\text{ g}$ $S_1 = 0.6\text{ g}$ per IBC 2009 FIG 1613.5
Basic Wind Speed and Exposure (mph/kph)	90/145 Exposure C per IBC 2009
Housing Rating (inches of H ₂ O/millimeters of H ₂ O)	-25 – +10 / -635 – +254
Compressed Air Required (psi/bar)	90-100/6.2-6.9
Operating Temperature	150°F/66°C
Housing Construction	3/16" (4.8mm) - 10-gauge steel
Control Voltage	120 VAC -or- 24 VDC

DIMENSIONS & SPECIFICATIONS



DFE Model*	No. of Filters	Ultra-Web Filter Area		No. of Valves	Approx. Shipping Weight *		Dimensions					
		ft²	m²		lb	kg	A		B		C	
							in	mm	in	mm	in	mm
DFE 2-4	4	1,016	94.4	4	1,890	857	110	2,794	48	1,219	75	1,905
DFE 3-6	6	1,524	141.6	6	2,300	1,043	130	3,302	48	1,219	75	1,905
DFE 2-8	8	2,032	188.8	4	2,300	1,043	120	3,048	48	1,219	101	2,565
DFE 2-12	12	3,048	283.2	6	2,900	1,316	120	3,048	68	1,727	101	2,565
DFE 3-12	12	3,048	283.2	6	2,800	1,043	140	3,556	48	1,219	101	2,565
DFE 4-16	16	4,064	377.6	8	3,300	1,497	160	4,064	48	1,219	101	2,565
DFE 3-18	18	4,572	424.8	9	3,500	1,588	140	3,556	68	1,727	101	2,565
DFE 5-20	20	5,080	471.9	10	3,850	1,746	180	4,572	48	1,219	101	2,565
DFE 3-24	24	6,096	566.3	12	4,500	2,041	140	3,556	48	1,219	101	2,565
DFE 4-24	24	6,096	566.3	12	4,090	1,855	160	4,064	68	1,727	101	2,565
DFE 5-30	30	7,620	707.9	15	4,800	2,177	180	4,572	68	1,727	101	2,565
DFE 4-32	32	8,128	755.1	16	5,200	2,359	160	4,064	88	2,235	101	2,565
DFE 3-36	36	9,144	849.5	18	5,700	2,585	140	3,556	128	3,251	101	2,565
DFE 5-40	40	10,160	943.9	20	6,200	2,812	180	4,572	88	2,235	101	2,565
DFE 3-48	48	12,192	1,132.7	24	8,200	3,719	140	3,556	128	3,251	101	2,565
DFE 4-48	48	12,192	1,132.7	24	6,700	3,039	160	4,064	168	4,267	101	2,565
DFE 3-60	60	15,240	1,415.8	30	9,900	4,490	140	3,556	208	5,283	101	2,565
DFE 5-60	60	15,240	1,415.8	30	7,700	3,493	180	4,572	128	3,251	101	2,565
DFE 4-64	64	16,256	1,510.2	32	9,500	4,309	160	4,064	188	4,775	101	2,565
DFE 3-72	72	18,288	1,699.0	36	11,600	5,262	140	3,556	248	6,299	101	2,565
DFE 4-80	80	20,320	1,887.8	40	11,500	5,216	160	4,064	208	5,283	101	2,565
DFE 5-80	80	20,320	1,887.8	40	11,000	4,990	180	4,572	168	4,267	101	2,565

Inlet Size	D	
	in	mm
10 – 16	24.0	610
17 – 24	36.0	915
26, 28, 30, 32	42.0	1,067
34, 36, 38, 40, 42	48.0	1,219

* Without accessories or optional equipment.

DFE SERIES APPLICATIONS



Metal Grinding
Plasma Cutting
Dry Bulk
Pharmaceutical

Thermal Spray
Welding
Metal Manufacturing
Glass
Food Processing

STANDARD FEATURES & AVAILABLE OPTIONS

DFE 2-4 to 5-80

Collector Design	Std	Opt
Mild Steel Construction	X	
MaxPulse™ Filter Cleaning System	X	
Quick-Removal Access Covers	X	
Inlets	X	
Ledge-Free Hopper	X	
Sprinkler Taps	X	
Stainless Steel Construction		X
High Temperature Construction		X
Explosion Protected Models		X
Direct Drive Fans		X
Chamber and Exhaust Silencers		X
High-Flow Inlet		X
Air Management Modules		X
Extended Dirty Air Plenum		X
Steep-Sided Hopper		X
2-Mod Hopper		X
Sprinkler Heads		X
Service Platform (OSHA compliant)		X
Damper Pack		X
Drum Sentry™ Drum-Full Indicator		X
Lined Clean Air Plenum		X
Bag-Out Kit (Filter & Discharge)		X
Bag-In/Bag-Out Kit (Filter & Discharge)		X
Cartridge Filters		
Ultra-Web® (MERV* 15)	X	
Ultra-Web® FR (MERV* 15); Ultra-Web® SB (MERV* 15); Ultra-Web® AS (MERV* 15); Fibra-Web® (MERV 14); Thermo-Web™ (MERV 14); Torit-Tex™ (MERV 16); High Temp (MERV 13)		X
HEPA/ASHRAE Afterfilters		X

Paint System		
Prime Coated Interior	X	
Textured Multi-Coat Paint Finish with 2,000-Hour Salt Spray Performance	X	
Custom Color		X
Premium Duty Finish		X
Epoxy Coating		X
Hopper Discharge		
Drum Cover and Hose		X
Slide Gates		X
Rotary Valves and Transitions		X
Screw Conveyors		X
Electrical Controls, Gauges & Enclosures		
Control Box w/Timer in NEMA 4 Enclosure	X	
Magnehelic®*** Gauge Controls	X	
Delta P Control, Delta P Plus Control		X
Dustronix™ Control Assembly		X
Custom Panels		X
Photohelic®*** Gauge Standard and Weatherproof		X
Basic Cold Climate Kit		X
Heavy-Duty Cold Climate Kit		X
Solenoid Enclosure (NEMA 7 & 9)		X
Warranty		
10-Year Warranty	X	

Global Support

- Facilities in 37 countries
- 40 manufacturing plants and 14 distribution centers

Leading Technology

- Over 1,000 engineers and scientists worldwide
- Broad range of innovative collectors and filters
- 100s of filter media formulations

Experience and Service

- Technical expertise and support
- Ready-to-ship filters and parts within 24 hours

Call Donaldson® Torit® to get cleaner air today:

800-365-1331

DonaldsonTorit.com



Donaldson
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donaldsontorit@donaldson.com
donaldsontorit.com

Donaldson Company, Inc.
Torit
P.O. Box 1299
Minneapolis, MN
55440-1299 U.S.A.

EXACTLY WHAT YOU NEED.™

Downflo Evolution Dust Collectors (09/14)

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Ultra-Web® SB Cartridge

A Genuine Torit-Built® Filter Engineered for Dust Collection

Get Cleaner Air

- Advanced media captures submicron particles with patented nanofiber technology and pre-HEPA MERV 15 efficiency.

Longer Filter Life

- Tough spunbond polyester substrate provides high durability.
- Wide pleat spacing allows thorough pulse cleaning of fine, fibrous, and agglomerative dust.
- Excellent moisture resistance.
- Excellent chemical resistance.
- Washable.

Greater Cost Savings

- Lower pressure drop saves energy.
- Longer filter life reduces replacement and maintenance costs.
- Less production downtime.



Obtenga aire más limpio

- El medio de filtración de avanzada captura partículas submicrónicas con la tecnología de nanofibras patentada, con 15 de Valor mínimo de eficiencia informado (MERV), próximo al de los filtros de alta eficiencia para partículas en suspensión (HEPA).

Vida del filtro más prolongada

- El sustrato resistente de poliéster formado por centrifugación proporciona alta duración.
- El amplio espaciamiento de los pliegues permite una limpieza por pulsos minuciosa de polvo fino, fibroso y aglomerante.

- Excelente resistencia a la humedad.
- Excelente resistencia a las sustancias químicas.
- Lavable.

Mayor ahorro de costos

- La menor caída de presión ahorra energía.
- La vida del filtro más prolongada reduce los costos en repuestos y mantenimiento.
- Menos tiempo fuera de servicio.

Ultra-Web® SB Cartridge

The Ultra-Web SB advantage is cleaner air.

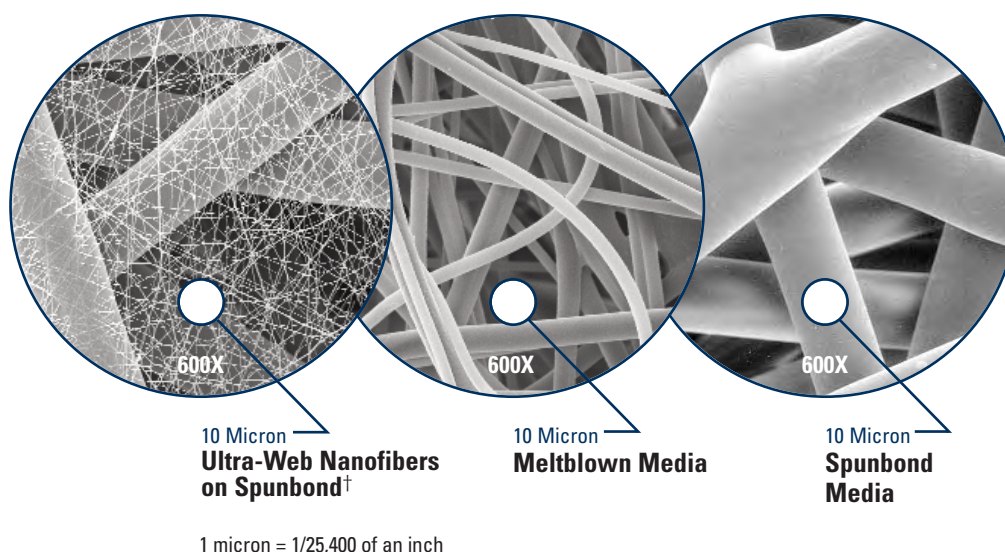
Ultra-Web® is patented and made with an electrospinning process that produces a very fine, continuous, resilient fiber of 0.2-0.3 micron in diameter to form a permanent web-like net. This nanofiber "web" with its very fine interfiber spaces is constructed onto tough spunbond substrate media, resulting in:

- A more robust media that captures even submicron dust on the surface.
- Better pulse cleaning and lower pressure drop.
- Cleaner air, longer filter life, and greater cost savings.

La ventaja de Ultra-Web SB es aire más limpio.

Las nanofibras Ultra-Web son patentadas y están hechas con un proceso de centrifugado eléctrico que produce una fibra continua, muy fina, de 0,2 a 0,3 micrones de diámetro para formar una red permanente tipo malla. Esta "malla" de nanofibras, con su muy fino espacio entre fibras, está construida sobre un medio de filtración con un sustrato resistente formado por centrifugación, lo que da por resultado:

- Un medio de filtración más robusto que captura hasta polvo submicrónico en su superficie.
- Mejor limpieza por pulsos y menor caída de presión.
- Aire más limpio, vida útil del filtro más prolongada y mayor ahorro de costos.



Media Compatibility Data • Datos de compatibilidad del medio

Temperature Resistance Resistencia a la temperatura	Moisture Absorption* Absorción de humedad*	Chemical Tolerance* Tolerancia Química*	Abrasion Resistance Resistencia a la abrasión
200°F	0.2- 0.5% @ 70°F (21°C) and 65% RH	Acids→Good Oxidants→Good Bases→Good Solvents→Good	Excellent per TAPPI 476 (Taber Method)
93°C	0.2-0.5% a 70°F (21°C) y 65% de HR	Ácidos→Buena Oxidantes→Buena Bases→Buena Solventes→Buena	Excelente según TAPPI 476 (Método Taber)

† Scanning Electron Microscope • Microscopio escaneador por electrones

* Refer to Technical Information on page 4. • Consulte la información técnica en la página 4.

Ultra-Web® SB Cartridge

Specifications

Media Composition

Nanofiber Technology:	Patented synthetic nanofibers
	Mean fiber diameter of 0.2 µm
Substrate:	Spunbond polyester

Media Efficiency

U.S. Efficiency Rating	MERV* 15 per ASHRAE 52.2-1999
EU Efficiency Rating	BIA L and M EN 779-F9

Cartridge Construction

Standard Construction	Galvanized end caps/liners
	Urethane gasket
	Wide-pleat spacing

Especificaciones

Composición del medio de filtración

Tecnología de nanofibras:	Nanofibras sintéticas patentadas
	Diámetro medio de la fibra 0,2 µm
Sustrato:	Poliéster formado por centrifugación

Eficiencia del medio de filtración

Calificación de eficiencia en los EE.UU.	MERV* 15 según la norma ASHRAE 52.2-1999
Calificación de eficiencia en la UE	BIA L y M Norma EN 779-F9

Construcción del cartucho

Construcción estándar	Capuchones terminales y forros galvanizados
	Junta de uretano
	Amplio espaciado de los pliegues

Configurations • Configuraciones

Collector Models	Filtration Area		Cartridge Dimensions	
	ft²	m²	inches	mm
AerTable	106	9.8	12.74 x 26	323.6 x 660.4
Bin Vent	106	9.8	12.74 x 26	323.6 x 660.4
CF Series	106	9.8	12.74 x 26	323.6 x 660.4
CX Series	120	11.2	13.84 x 26	351.5 x 660.4
Downdraft Bench	120	11.2	13.84 x 26	350 x 660
Downflo®	106	9.8	12.75 x 26	324 x 660.4
Downflo® Containment System	90	8.4	11.4 x 14.4 x 26	290 x 356 x 660.4
Downflo II	120	11.2	13.84 x 26	351.5 x 660.4
Downflo Oval	90	8.4	11.4 x 14.4 x 26	290 x 356 x 660.4
Downflo WorkStation	90	8.4	11.4 x 14.4 x 26	290 x 356 x 660.4
Downflo SDF	55	5.1	9.20 x 22.3	234 x 566
ECB	106	9.8	12.74 x 26	323.6 x 660.4
MTD	106	9.8	12.74 x 26	323.6 x 660.4
ProBooth™	106	9.8	12.74 x 26	323.6 x 660.4
TD Large	106	9.8	12.74 x 26	323.6 x 660.4
TD Small	39	3.6	7.90 x 16	220 x 406
WeldAir	83	7.7	13.84 x 18	351.5 x 457.2

* Refer to Technical Information on page 4. • Consulte la información técnica en la página 4.

Ultra-Web® SB Cartridge

Minimum Efficiency Reporting Value • Valor de eficiencia mínima informado (MERV)

The Minimum Efficiency Reporting Value (MERV) of this filter cartridge has been determined through independent laboratory testing using ASHRAE 52.2 (1999) test standards. The MERV rating was determined at a face velocity of 118 feet per minute and loading up to four inches water gauge. Actual efficiency of any filter cartridge will vary according to the specific application parameters. Dust concentration, airflow, particle characteristics, and pulse cleaning methods all affect filtration efficiency.

El Valor de eficiencia mínima informado (MERV) de este cartucho para filtro fue determinado a través de pruebas de laboratorio independiente utilizando las normas de prueba ASHRAE 52.2 (1999). La calificación MERV fue determinada con una velocidad de pasaje de 36 m/min. y una carga de hasta 11 cm de columna de agua. La eficiencia real de todo cartucho para filtro varía según los parámetros específicos de la aplicación. La concentración de polvo, el caudal de aire, el tamaño de las partículas y los métodos de limpieza por pulsos son todos factores que afectan la eficiencia de filtración.

Moisture Absorption/Washing • Absorción de humedad/Lavado

Ultra-Web SB is relatively unaffected by environmental conditions involving combinations of high temperature, corrosive material, and moisture. This tolerance to moist conditions allows Ultra-Web SB to be washed without structural degradations.

Ultra-Web SB no es afectado relativamente por condiciones ambientales que incluyen combinaciones de alta temperatura, material corrosivo y humedad. Esta tolerancia a las condiciones de humedad permite lavar Ultra-Web SB sin degradaciones estructurales.

Cartridge Cleaning and Disposal • Limpieza y desecho del cartucho

For environmental compliance, it is highly recommended to consult federal, state, and local environmental protection guidelines to determine the impact of washing or disposing of dirty cartridges. Many industry dusts are hazardous to our environment and are regulated by air quality standards and by national and local water standards during disposal.

Para cumplir con los requisitos ambientales, se recomienda firmemente consultar las pautas de protección ambiental federales, estatales o y locales para determinar el impacto del lavado o desecho de los cartuchos sucios. Muchos polvos industriales son peligrosos para nuestro ambiente y están reglamentados por normas de calidad del aire y por normas nacionales y locales referentes al agua durante el desecho.

Chemical Tolerance • Tolerancia química

A combination of chemicals may alter fiber resistance to the specified performance level. Chemical attack may compromise cartridge integrity and performance.

Una combinación de químicos podría alterar la resistencia de la fibra al nivel de desempeño especificado. El ataque químico puede perjudicar la integridad y rendimiento del cartucho.



Donaldson
Filtration Solutions

Donaldson Company, Inc.
Industrial Air Filtration
P.O. Box 1299
Minneapolis, MN 55440
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Tel 800-343-3639 (within Mexico)
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www.donaldsontorit.com

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Data Sheet Ultra-Web SB (11/08)

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REVISIONS		
REV	DESCRIPTION	DWN/DATE
1	REVISED MULTIPLE NOTES, REVISED MULTIPLE DIMENSIONS	JKF 2014A02120

SPECIFICATIONS MODEL DFE 3-12

NO. OF FILTERS _____ 12
FILTER DIMENSIONS _____ 13.74 x 13.74 ASYM X 26.00 LG.
[349 X 349 X 660 LG]
NO. OF VALVES _____ 6
COMPRESSED AIR REQUIRED _____ 9 scfm @ 90-100 psig
[15 m³/hr @ 6-7 bar]
HOUSING RATING _____ -25" wg [-635 mmwg]
P-RED _____ .40 BAR
OPERATING TEMP. _____ (FILTER ELEMENTS MAY VARY)
180 ° F [82 ° C] MAX
STANDARD FINISH _____ BLUE
APPROX. WT. _____ 2800 lbs [1270 kg]

IBC 2009 SPECIFICATIONS:

OCCUPANCY CATEGORY 2
BASIC WIND SPEED & EXPOSURE : 90 MPH, [145 km/hr]
EXPOSURE C, 3 SEC GUST
SEISMIC SPECTRAL ACCELERATION, S_s=1.5 & S_i=0.6, SITE CLASS D
GROUND SNOW LOAD, P_g: 40 PSF [195 kg/m²]
ROOF LIVE LOAD, L_r: 20 PSF [98 kg/m²]
COLLECTOR BASE AT GRADE

EXPLOSION VENT (OPTIONAL)

DONALDSON MEMBREX™

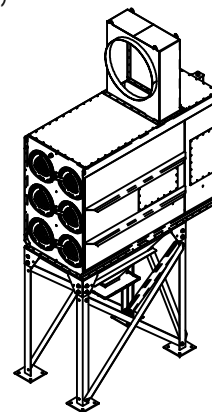
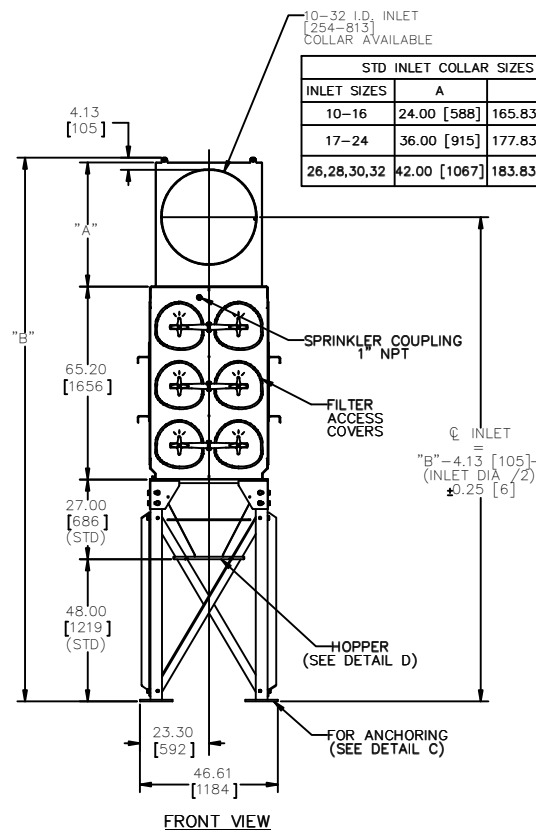
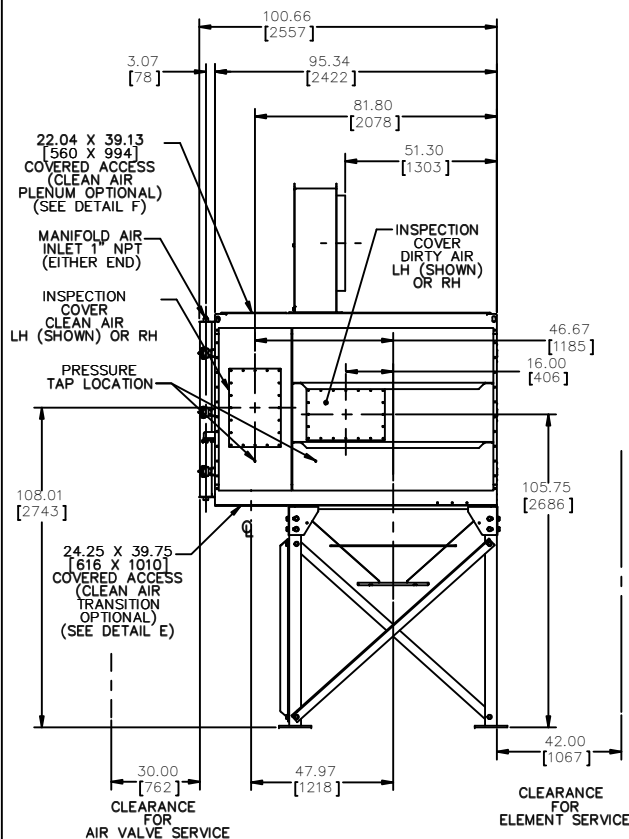
NOMINAL SIZE: 34 X 46 [864 x 1168]
RELIEF AREA: 8.52 FT² [0.79 m²]
NOMINAL BURST PRESSURE: 1.45 psig [0.1 bar]

NOTES:

- DO NOT INSTALL OR OPERATE THIS EQUIPMENT UNTIL HAVING READ AND UNDERSTOOD THE INSTRUCTIONS AND WARNINGS IN THE INSTALLATION AND OPERATION MANUAL. FOR A REPLACEMENT MANUAL CONTACT DONALDSON COMPANY, INC. (800) 365-1331.
- NFPA 68-2013
EXPLOSION VENT DUCTING LONGER THAN ONE HYDRAULIC DIAMETER OR WITH BENDS, ELBOWS OR OBSTRUCTIONS ENTAILS SIGNIFICANT DERATING OF THE EXPLOSION VENT. ALL PROPOSALS INCLUDING EXPLOSION VENT DUCTS OTHER THAN SHORT, STRAIGHT OPEN DUCTS SHOULD ALSO BE REFERRED TO DCI ENGINEERING FOR VENT PERFORMANCE CALCULATION AND DERATING, OR CUSTOM VENT SOLUTION. ANY EXPLOSION VENT DUCTING TO BE DESIGNED AND SUPPLIED BY OTHERS.
- ACTUAL COMPRESSED AIR CONSUMPTION MAY VARY DUE TO FEED PIPING DESIGN, PROXIMITY TO ACCUMULATION TANKS, UPSTREAM FLOW DEMAND AND OTHER COMPRESSED AIR SYSTEM EFFECTS.
- DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

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MATERIAL	RELEASE NO. 2014A01487	TITLE DFE 3-12 WITH HOPPER		
	DATE 8/29/2014			
REFERENCE	EXP. DATE	NUMBER		REVISION
	DWN E ORNELAS	DFE AG8249601		
APPROX. WT: LBS	DATE 8/29/2014	SCALE NONE	SHEET 1 OF 6	1
	APVD T RAETHER	C/C	SW/CADD	
PREVIOUS DRAWING NO.	DATE 8/29/2014	SECTIONAL SIZE	OUTLINE SIZE	VERSION A
DO NOT SCALE	TOLERANCES UNLESS OTHERWISE SPECIFIED	DESIGN CONTROL AG04 DMC LOCATION A101		COPYRIGHT © DONALDSON COMPANY, INC.
	2 FL ± 3 FL ± ANGLES ± °			

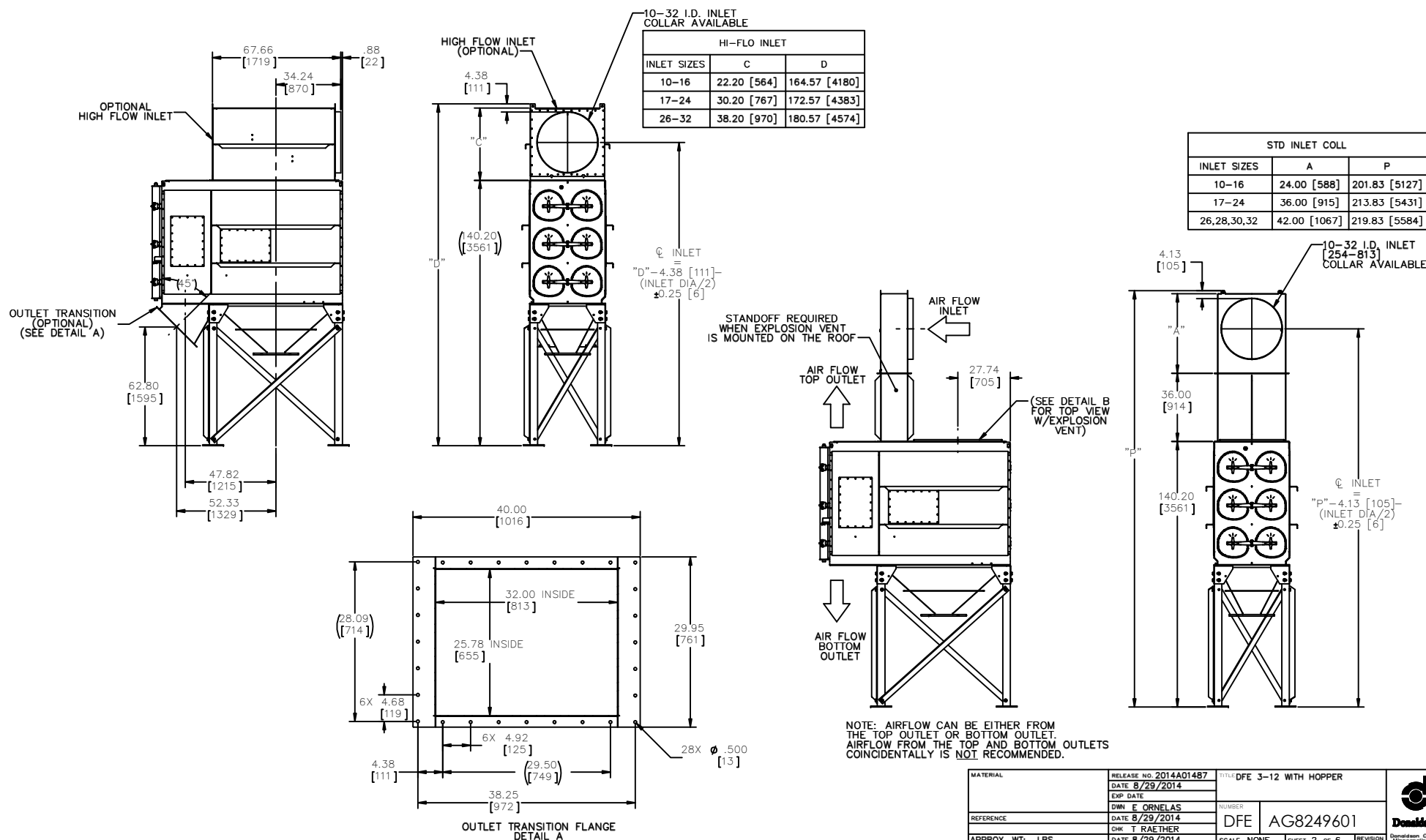


TORIT® DOWNFLO® EVOLUTION

TORIT® DOWNFLO® EVOLUTION

HI-FLO INLET		
INLET SIZES	C	D
10-16	22.20 [564]	164.57 [4180]
17-24	30.20 [767]	172.57 [4383]
26-32	38.20 [970]	180.57 [4574]

STD INLET COLL		
INLET SIZES	A	P
10-16	24.00 [588]	201.83 [5127]
17-24	36.00 [915]	213.83 [5431]
26,28,30,32	42.00 [1067]	219.83 [5584]

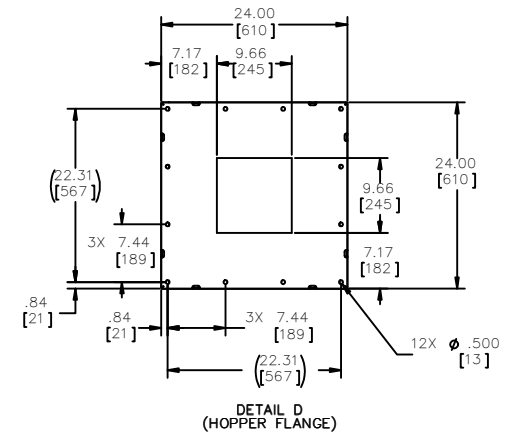
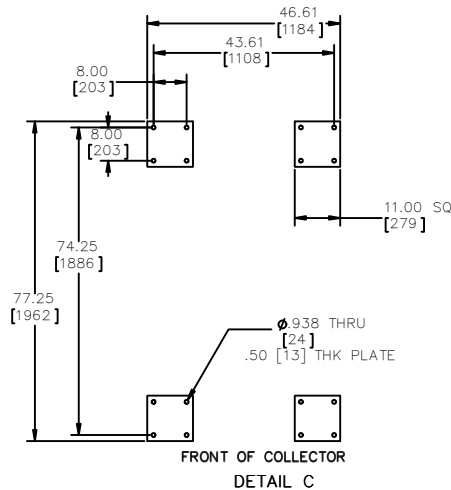
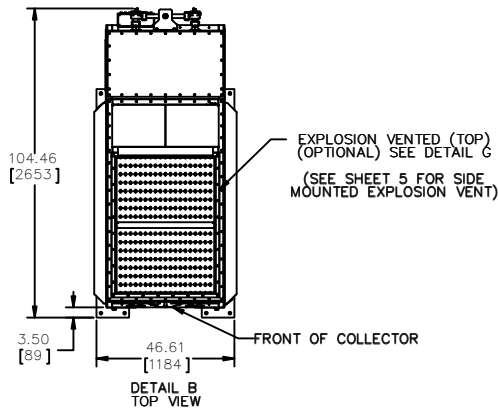


NOTE: AIRFLOW CAN BE EITHER FROM THE TOP OUTLET OR BOTTOM OUTLET. AIRFLOW FROM THE TOP AND BOTTOM OUTLETS COINCIDENTALLY IS NOT RECOMMENDED.

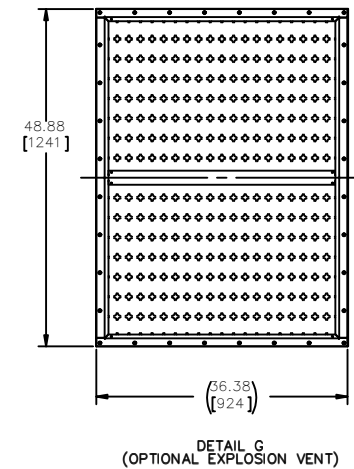
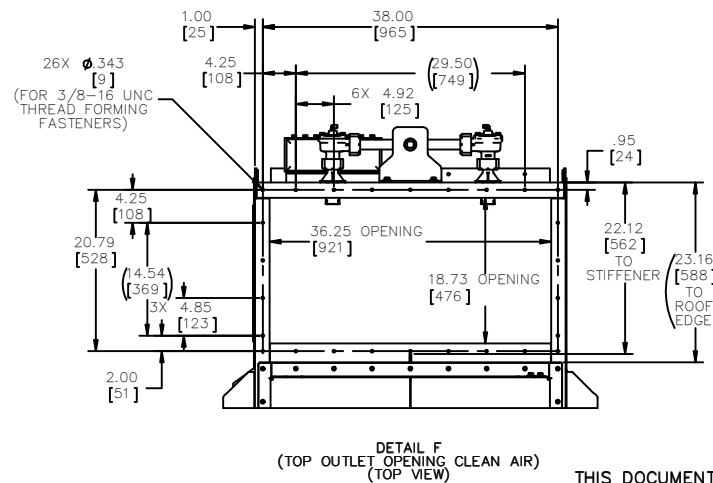
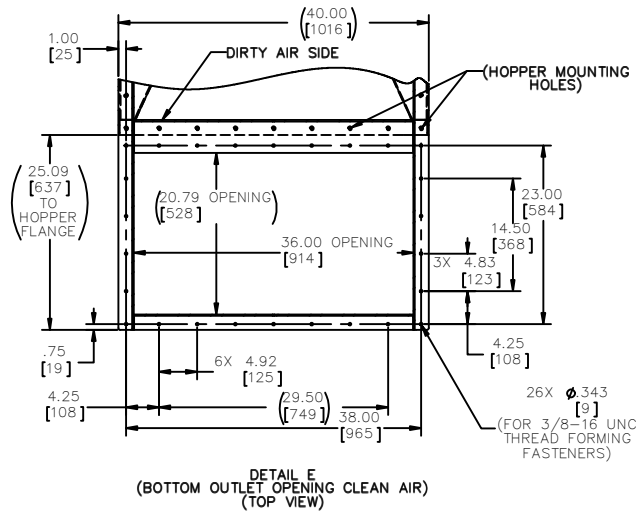
MATERIAL	RELEASE NO. 2014A01487	TITLE DFE 3-12 WITH HOPPER		 Donaldson Corporation Co. Minneapolis, MN
	DATE 8/29/2014	REVISION		
	EXP DATE	REVISION		
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REFERENCE	DATE 8/29/2014	DFE	AG8249601	
	CHK T RAE THER	SCALE NONE SHEET 2 OF 6 REVISION		
APPROX. WT: LBS	DATE 8/29/2014	C/C	SW/CADD	1
PREVIOUS DRAWING NO.	APVD I RAE THER	REGISTRATION 929	OUTLINE SIZE	
DO NOT SCALE	DATE 8/29/2014	DESIGN CONTROL A004 DWG LOCATION A101		VERSION A
TOLERANCES UNLESS OTHERWISE SPECIFIED	DATE 8/29/2014	COPYRIGHT © DONALDSON COMPANY, INC., L.A.		
2 PL ± 3 PL ± ANGLES ±°	THIS PRODUCTION			



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	DATE 8/29/2014			
REFERENCE	EXP. DATE	NUMBER	DFE AG8249601	
	DWN E ORNELAS			
APPROX. WT: LBS	DATE 8/29/2014	SCALE NONE		REVISION
	APVD T RAETHER	C/C SW/CADD		1
PREVIOUS DRAWING NO.	DATE 8/29/2014	SECTIONAL SIZE	OUTLINE SIZE	VERSION A
DO NOT SCALE	TOLERANCES UNLESS OTHERWISE SPECIFIED	2 FL ±	3 FL ±	ANGLES ±°
THIRD ANGLE PROJECTION		DESIGN CONTROL A004 DWG LOCATION A101		
		COPYRIGHT © DONALDSON COMPANY, INC.		

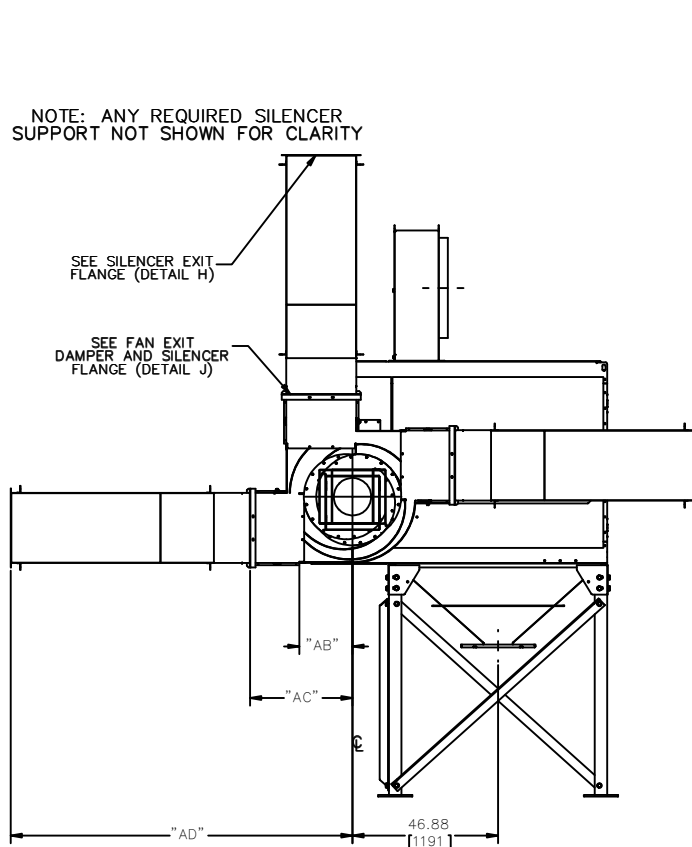
TORIT® DOWNFLO® EVOLUTION

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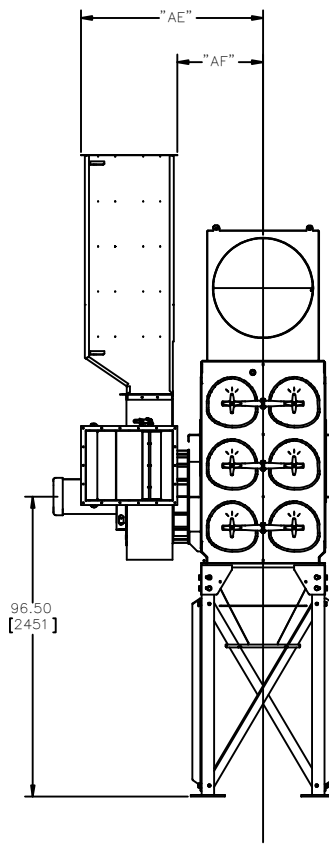
NOTE: ANY REQUIRED SILENCER SUPPORT NOT SHOWN FOR CLARITY

SEE SILENCER EXIT FLANGE (DETAIL H)

SEE FAN EXIT DAMPER AND SILENCER FLANGE (DETAIL J)



SIDE VIEW



FRONT VIEW

OPTIONAL SIDE MOUNT
FAN/DAMPER/
HIGH PERFORMANCE SILENCER
(LEFT SIDE MOUNT SHOWN)

TORIT[®] DOWNFLO[®] EVOLUTION

FAN & ACCESSORY DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
AB	11.71	11.71	11.71	11.71	13.81	17.09	17.09	17.09
AC	21.56	21.56	22.93	24.25	26.85	31.81	33.00	33.00
AD	87.56	87.56	88.93	90.25	103.85	108.81	110.00	110.00
AE	42.32	42.32	42.32	42.32	52.72	56.59	58.59	58.59
AF	23.72	23.72	23.72	23.72	23.72	27.59	27.59	27.59

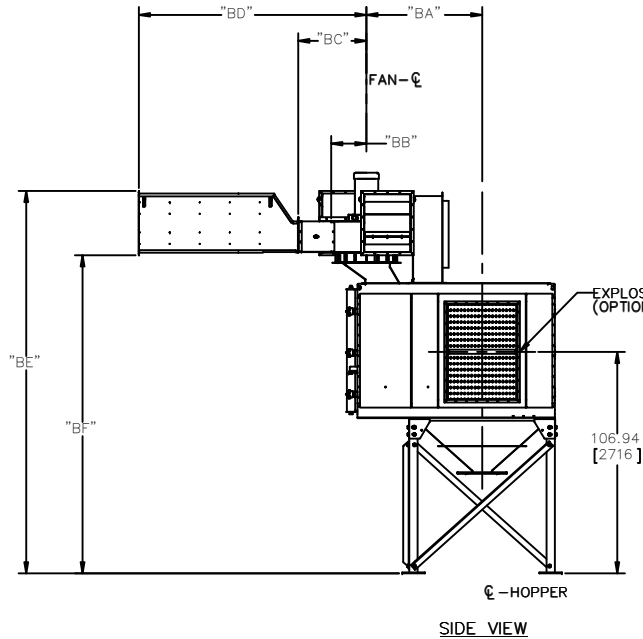
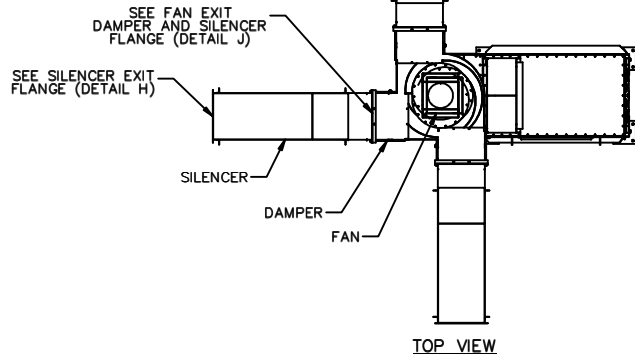
FAN & ACCESSORY METRIC DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
AB	297	297	297	297	351	434	434	434
AC	548	548	582	616	682	808	838	838
AD	2224	2224	2259	2292	2638	2764	2794	2794
AE	1075	1075	1075	1075	1339	1437	1488	1488
AF	603	603	603	603	603	701	701	701

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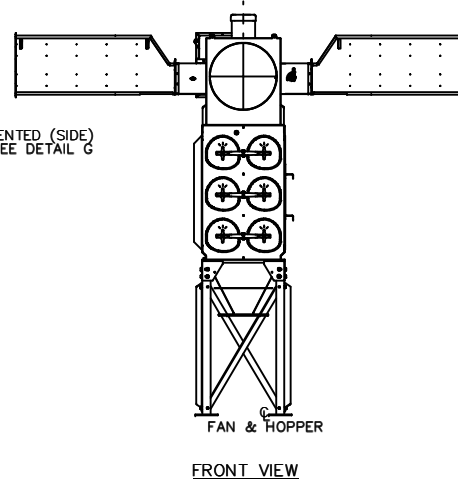
MATERIAL	RELEASE NO. 2014A01487	TITLE DFE 3-12 WITH HOPPER		
	DATE 8/29/2014	NUMBER		
REFERENCE	EXP. DATE	DFE AG8249601		REVISION
	DWN E ORNELAS	SCALE NONE SHEET 4 OF 6		
APPROX. WT: LBS	DATE 8/29/2014	C/C SW/CADD		1
	CHK T RAE THER	SECTIONAL SIZE OUTLINE SIZE		
PREVIOUS DRAWING NO.	DATE 8/29/2014	DESIGN CONTROL A004 DWG LOCATION A101		VERSION A
	APVD T RAE THER	COPYRIGHT © DONALDSON COMPANY, INC.		
DO NOT SCALE	TOLERANCES UNLESS OTHERWISE SPECIFIED	2 FL ±	3 FL ±	
	ANGLES ± °	THIRD ANGLE PROJECTION		

R:\Production Parts\DFE\2014\02120 24\ AG8249601

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NOTE: ANY REQUIRED SILENCER SUPPORT NOT SHOWN FOR CLARITY



OPTIONAL TOP MOUNT FAN/DAMPER/HIGH PERFORMANCE SILENCER

FAN & ACCESSORY DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
BA	56.70	56.70	56.70	56.70	56.70	60.00	60.00	60.00
BB	11.71	11.71	11.71	11.71	13.81	17.09	17.09	17.09
BC	21.56	21.56	22.93	24.25	26.85	31.81	33.00	33.00
BD	87.56	87.56	88.93	90.25	103.85	108.81	110.00	110.00
BE	169.68	169.68	169.68	169.68	180.08	182.09	186.09	186.09
BF	151.17	151.08	151.08	151.08	151.08	155.09	155.09	155.09

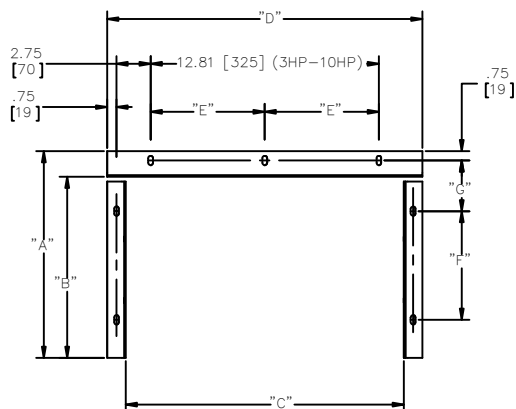
FAN & ACCESSORY METRIC DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
BA	1440	1440	1440	1440	1440	1524	1524	1524
BB	297	297	297	297	351	434	434	434
BC	548	548	582	616	682	808	838	838
BD	2224	2224	2259	2292	2638	2764	2794	2794
BE	4310	4310	4310	4310	4574	4625	4727	4727
BF	3840	3837	3837	3837	3837	3939	3939	3939

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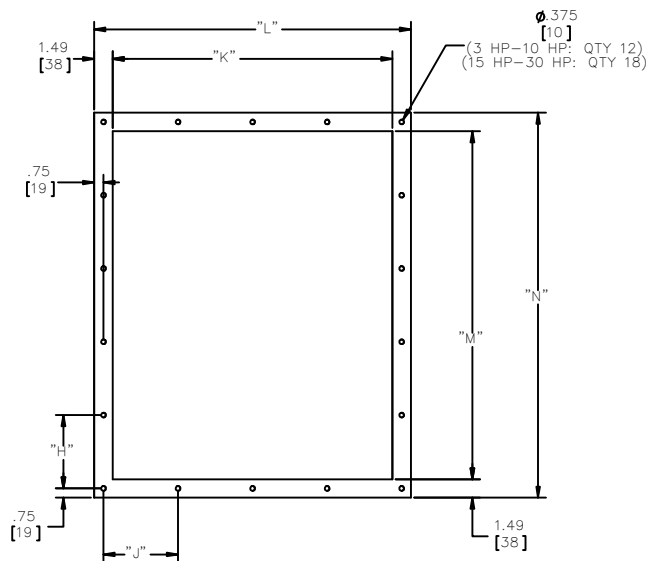
MATERIAL		RELEASE NO. 2014A01487		TITLE DFE 3-12 WITH HOPPER		 Donaldson Co., Inc. Minneapolis, U.S.A.
		DATE 8/29/2014		NUMBER		
		EXP. DATE		DATE 8/29/2014		
		DWN E ORNELAS		C/C		
REFERENCE		DATE 8/29/2014		DFE AG8294601		
		CHK. T. RAEHTER				
APPROX. WT: LBS		DATE 8/29/2014		SCALE NONE		REVISION
PREVIOUS DRAWING NO.		APVD. T. RAEHTER		SHEET 5 OF 6		1
		DATE 8/29/2014		C/C SW/CADD		IAF
DO NOT SCALE		TOLERANCES UNLESS OTHERWISE SPECIFIED		SECTIONAL SIZE		OUTLINE SIZE
2 PL $\pm$		3 PL $\pm$		DESIGN CONTROL A004		DWG LOCATION A101
ANGLES $\pm$		THIRD ANGLE PROJECTION		COPYRIGHT © DONALDSON COMPANY, INC.		VERSION A

TORIT[®] DOWNFLO[®] EVOLUTION

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DETAIL J
FAN EXIT, DAMPER AND
SILENCER INLET FLANGE



DETAIL H
SILENCER EXIT FLANGE

ACCESSORY DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
A	9.44	10.19	11.56	12.88	13.38	15.06	16.25	16.25
B	7.94	8.69	10.06	10.56	11.88	13.56	14.75	14.75
C	16.81	16.81	16.81	16.81	20.38	20.38	22.38	22.38
D	19.81	19.81	19.81	19.81	23.38	23.38	25.38	25.38
E	—	—	—	—	8.19	8.19	9.19	9.19
F	3.94	4.69	6.06	7.38	7.88	8.56	8.75	8.75
G	2.75	2.75	2.75	2.75	2.75	3.25	3.75	3.75
H	5.70	5.70	5.70	5.70	5.50	5.50	5.90	5.90
J	6.15	6.15	6.15	6.15	5.50	5.50	6.00	6.00
K	16.94	16.94	16.94	16.94	20.50	20.50	22.50	22.50
L	19.94	19.94	19.94	19.94	23.50	23.50	25.50	25.50
M	15.60	15.60	15.60	15.60	26.00	26.00	28.00	28.00
N	18.60	18.60	18.60	18.60	29.00	29.00	31.00	31.00

ACCESSORY METRIC DIMENSION TABLE								
DIMENSION	60 HZ TBI FAN							
	3 HP	5 HP	7.5 HP	10 HP	15 HP	20 HP	25 HP	30 HP
A	240	259	294	327	340	383	413	413
B	202	221	256	268	302	344	375	375
C	427	427	427	427	518	518	568	568
D	503	503	503	503	594	594	645	645
E	—	—	—	—	208	208	233	233
F	100	119	154	187	200	217	222	222
G	70	70	70	70	70	83	95	95
H	145	145	145	145	140	140	150	150
J	156	156	156	156	140	140	152	152
K	430	430	430	430	521	521	572	572
L	506	506	506	506	597	597	648	648
M	396	396	396	396	660	660	711	711
N	472	472	472	472	737	737	787	787

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MATERIAL	RELEASE NO. 2014A01487 DATE 8/29/2014 EXP. DATE	TITLE DFE 3-12 WITH HOPPER	 Donaldson Co., Inc. Minneapolis, MN
REFERENCE	DWN E ORNELAS DATE 8/29/2014 CHK T RAETHER	NUMBER DFE AG8249601	
APPROX. WT: LBS	DATE 8/29/2014	SCALE NONE SHEET 6 OF 6 REVISION	
PREVIOUS DRAWING NO.	APVD T RAETHER	C/C SW/CADD 1	
DO NOT SCALE	TOLERANCES UNLESS OTHERWISE SPECIFIED 2 FL ± 3 FL ± ANGLES ± .5°	DATE 8/29/2014 THIRD ANGLE PROJECTION	SECTIONAL SIZE OUTLINE SIZE DESIGN CONTROL A004 DWG LOCATION A101 VERSION A
COPYRIGHT © DONALDSON COMPANY, INC.			1 D

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Monday, January 30, 2023

John Browning
Bridgewater Group
7100 SW Hampton St. Suite 235
Tigard, OR 97223

RE: A3A0454 - SPI-Eugene - [none]

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3A0454, which was received by the laboratory on 1/13/2023 at 11:01:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler 2.2 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Bridgewater Group

7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: SPI-Eugene

Project Number: [none]

Project Manager: John Browning

Report ID:

A3A0454 - 01 30 23 1627

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Mill A Grinding Cyclone	A3A0454-01	Solid	01/06/23 09:40	01/13/23 11:01
Mill A Grinding	A3A0454-02	Solid	01/06/23 09:45	01/13/23 11:01
Hew Saw Cyclone	A3A0454-03	Solid	01/06/23 10:10	01/13/23 11:01

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Bridgewater Group7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:****A3A0454 - 01 30 23 1627**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Mill A Grinding Cyclone (A3A0454-01)				Matrix: Solid				
Batch: 23A0735								
Aluminum	307	---	53.0	mg/kg	10	01/23/23 16:13	EPA 6020B	Q-42
Antimony	1.81	---	1.06	mg/kg	10	01/23/23 16:13	EPA 6020B	
Arsenic	2.56	---	1.06	mg/kg	10	01/23/23 16:13	EPA 6020B	
Barium	5.73	---	1.06	mg/kg	10	01/23/23 16:13	EPA 6020B	
Cadmium	ND	---	0.212	mg/kg	10	01/23/23 16:13	EPA 6020B	
Copper	29.9	---	2.12	mg/kg	10	01/23/23 16:13	EPA 6020B	R-01
Lead	0.532	---	0.212	mg/kg	10	01/23/23 16:13	EPA 6020B	
Manganese	385	---	1.06	mg/kg	10	01/23/23 16:13	EPA 6020B	
Mercury	ND	---	0.847	mg/kg	10	01/23/23 16:13	EPA 6020B	
Nickel	309	---	2.12	mg/kg	10	01/23/23 16:13	EPA 6020B	
Selenium	ND	---	1.06	mg/kg	10	01/23/23 16:13	EPA 6020B	Q-42
Silver	ND	---	0.212	mg/kg	10	01/23/23 16:13	EPA 6020B	
Titanium	45.0	---	4.24	mg/kg	10	01/23/23 16:13	EPA 6020B	
Phosphorus	136	---	106	mg/kg	10	01/24/23 17:54	EPA 6020B	
Vanadium	4.59	---	2.12	mg/kg	10	01/23/23 16:13	EPA 6020B	
Zinc	56.9	---	4.24	mg/kg	10	01/23/23 16:13	EPA 6020B	
Mill A Grinding Cyclone (A3A0454-01RE1)				Matrix: Solid				
Batch: 23A0735								
Chromium	846	---	10.6	mg/kg	100	01/23/23 17:15	EPA 6020B	
Cobalt	1780	---	10.6	mg/kg	100	01/23/23 17:15	EPA 6020B	
Iron	58200	---	530	mg/kg	100	01/23/23 17:15	EPA 6020B	
Mill A Grinding Cyclone (A3A0454-01RE2)				Matrix: Solid				
Batch: 23A0735								
Beryllium	ND	---	0.212	mg/kg	10	01/24/23 12:34	EPA 6020B	
Mill A Grinding (A3A0454-02)				Matrix: Solid				
Batch: 23A0735								
Aluminum	3080	---	52.7	mg/kg	10	01/23/23 16:28	EPA 6020B	
Antimony	8.17	---	1.05	mg/kg	10	01/23/23 16:28	EPA 6020B	
Arsenic	14.3	---	1.05	mg/kg	10	01/23/23 16:28	EPA 6020B	
Barium	22.5	---	1.05	mg/kg	10	01/23/23 16:28	EPA 6020B	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Bridgewater Group7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:****A3A0454 - 01 30 23 1627**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Mill A Grinding (A3A0454-02)		Matrix: Solid						
Cadmium	1.70	---	0.211	mg/kg	10	01/23/23 16:28	EPA 6020B	
Copper	232	---	2.11	mg/kg	10	01/23/23 16:28	EPA 6020B	
Lead	4.71	---	0.211	mg/kg	10	01/23/23 16:28	EPA 6020B	
Manganese	1880	---	1.05	mg/kg	10	01/23/23 16:28	EPA 6020B	
Selenium	ND	---	1.05	mg/kg	10	01/23/23 16:28	EPA 6020B	
Silver	0.498	---	0.211	mg/kg	10	01/23/23 16:28	EPA 6020B	
Titanium	438	---	4.22	mg/kg	10	01/23/23 16:28	EPA 6020B	
Phosphorus	132	---	105	mg/kg	10	01/24/23 18:12	EPA 6020B	
Vanadium	134	---	2.11	mg/kg	10	01/23/23 16:28	EPA 6020B	
Zinc	59.6	---	4.22	mg/kg	10	01/23/23 16:28	EPA 6020B	
Mill A Grinding (A3A0454-02RE1)		Matrix: Solid						
Batch: 23A0735								
Chromium	2910	---	10.5	mg/kg	100	01/23/23 17:25	EPA 6020B	
Cobalt	4710	---	10.5	mg/kg	100	01/23/23 17:25	EPA 6020B	
Iron	362000	---	527	mg/kg	100	01/23/23 17:25	EPA 6020B	
Mercury	ND	---	0.844	mg/kg	100	01/23/23 17:25	EPA 6020B	R-04
Nickel	1580	---	21.1	mg/kg	100	01/23/23 17:25	EPA 6020B	
Mill A Grinding (A3A0454-02RE2)		Matrix: Solid						
Batch: 23A0735								
Beryllium	0.387	---	0.211	mg/kg	10	01/24/23 12:48	EPA 6020B	
Hew Saw Cyclone (A3A0454-03)		Matrix: Solid						
Batch: 23A0735								
Aluminum	216	---	51.5	mg/kg	10	01/23/23 16:32	EPA 6020B	
Antimony	11.3	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Arsenic	ND	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Barium	55.5	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Cadmium	1.45	---	0.206	mg/kg	10	01/23/23 16:32	EPA 6020B	
Chromium	69.1	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Cobalt	218	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Copper	297	---	2.06	mg/kg	10	01/23/23 16:32	EPA 6020B	
Iron	10400	---	51.5	mg/kg	10	01/23/23 16:32	EPA 6020B	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Bridgewater Group7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:**

A3A0454 - 01 30 23 1627

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Hew Saw Cyclone (A3A0454-03)			Matrix: Solid					
Manganese	66.4	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Nickel	85.3	---	2.06	mg/kg	10	01/23/23 16:32	EPA 6020B	
Selenium	ND	---	1.03	mg/kg	10	01/23/23 16:32	EPA 6020B	
Titanium	41.2	---	4.12	mg/kg	10	01/23/23 16:32	EPA 6020B	
Phosphorus	ND	---	103	mg/kg	10	01/24/23 18:17	EPA 6020B	
Vanadium	9.79	---	2.06	mg/kg	10	01/23/23 16:32	EPA 6020B	
Zinc	411	---	4.12	mg/kg	10	01/23/23 16:32	EPA 6020B	
Hew Saw Cyclone (A3A0454-03RE1)			Matrix: Solid					
Batch: 23A0735								
Mercury	ND	---	0.825	mg/kg	100	01/23/23 17:30	EPA 6020B	R-04
Silver	193	---	2.06	mg/kg	100	01/23/23 17:30	EPA 6020B	A-04
Hew Saw Cyclone (A3A0454-03RE2)			Matrix: Solid					
Batch: 23A0735								
Lead	0.870	---	0.206	mg/kg	10	01/24/23 12:58	EPA 6020B	
Hew Saw Cyclone (A3A0454-03RE3)			Matrix: Solid					
Batch: 23A0735								
Beryllium	ND	---	0.206	mg/kg	10	01/24/23 16:49	EPA 6020B	

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323

ORELAP ID: OR100062

Bridgewater Group7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:**

A3A0454 - 01 30 23 1627

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0735 - EPA 3051A						Solid						
Blank (23A0735-BLK1)			Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:03									
EPA 6020B												
Aluminum	ND	---	50.0	mg/kg	10	---	---	---	---	---	---	
Antimony	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Cobalt	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Copper	ND	---	2.00	mg/kg	10	---	---	---	---	---	---	
Iron	ND	---	50.0	mg/kg	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg	10	---	---	---	---	---	---	
Nickel	ND	---	2.00	mg/kg	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	
Titanium	ND	---	4.00	mg/kg	10	---	---	---	---	---	---	
Vanadium	ND	---	2.00	mg/kg	10	---	---	---	---	---	---	
Zinc	ND	---	4.00	mg/kg	10	---	---	---	---	---	---	
Blank (23A0735-BLK2)												
Prepared: 01/23/23 06:54 Analyzed: 01/24/23 12:24												
EPA 6020B												
Beryllium	ND	---	0.200	mg/kg	10	---	---	---	---	---	---	Q-16
Blank (23A0735-BLK3)												
Prepared: 01/23/23 06:54 Analyzed: 01/24/23 17:42												
EPA 6020B												
Phosphorus	ND	---	100	mg/kg	10	---	---	---	---	---	---	
LCS (23A0735-BS1)												
Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:08												
EPA 6020B												
Aluminum	2510	---	50.0	mg/kg	10	2500	---	100	80-120%	---	---	
Antimony	22.9	---	1.00	mg/kg	10	25.0	---	92	80-120%	---	---	
Arsenic	46.7	---	1.00	mg/kg	10	50.0	---	93	80-120%	---	---	
Barium	48.4	---	1.00	mg/kg	10	50.0	---	97	80-120%	---	---	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Bridgewater Group**7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:**

A3A0454 - 01 30 23 1627

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0735 - EPA 3051A						Solid						
LCS (23A0735-BS1)						Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:08						
Cadmium	47.0	---	0.200	mg/kg	10	50.0	---	94	80-120%	---	---	
Chromium	49.0	---	1.00	mg/kg	10	50.0	---	98	80-120%	---	---	
Cobalt	48.6	---	1.00	mg/kg	10	50.0	---	97	80-120%	---	---	
Copper	50.4	---	2.00	mg/kg	10	50.0	---	101	80-120%	---	---	
Iron	2430	---	50.0	mg/kg	10	2500	---	97	80-120%	---	---	
Lead	47.8	---	0.200	mg/kg	10	50.0	---	96	80-120%	---	---	
Manganese	47.8	---	1.00	mg/kg	10	50.0	---	96	80-120%	---	---	
Mercury	0.945	---	0.0800	mg/kg	10	1.00	---	95	80-120%	---	---	
Nickel	49.2	---	2.00	mg/kg	10	50.0	---	98	80-120%	---	---	
Selenium	22.9	---	1.00	mg/kg	10	25.0	---	92	80-120%	---	---	
Silver	25.1	---	0.200	mg/kg	10	25.0	---	101	80-120%	---	---	
Titanium	46.0	---	4.00	mg/kg	10	50.0	---	92	80-120%	---	---	
Vanadium	49.8	---	2.00	mg/kg	10	50.0	---	100	80-120%	---	---	
Zinc	47.0	---	4.00	mg/kg	10	50.0	---	94	80-120%	---	---	
LCS (23A0735-BS2)						Prepared: 01/23/23 06:54 Analyzed: 01/24/23 12:29						
EPA 6020B												
Beryllium	23.5	---	0.200	mg/kg	10	25.0	---	94	80-120%	---	---	Q-16
LCS (23A0735-BS3)						Prepared: 01/23/23 06:54 Analyzed: 01/24/23 17:48						
EPA 6020B												
Phosphorus	2390	---	100	mg/kg	10	2500	---	96	80-120%	---	---	
Duplicate (23A0735-DUP1)						Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:18						
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
EPA 6020B												
Aluminum	324	---	52.7	mg/kg	10	---	307	---	---	5	20%	
Antimony	1.90	---	1.05	mg/kg	10	---	1.81	---	---	5	20%	
Arsenic	2.44	---	1.05	mg/kg	10	---	2.56	---	---	5	20%	
Barium	4.53	---	1.05	mg/kg	10	---	5.73	---	---	23	20%	Q-17
Cadmium	ND	---	0.211	mg/kg	10	---	0.126	---	---	***	20%	
Copper	27.5	---	2.11	mg/kg	10	---	29.9	---	---	9	20%	
Lead	0.462	---	0.211	mg/kg	10	---	0.532	---	---	14	20%	
Manganese	393	---	1.05	mg/kg	10	---	385	---	---	2	20%	

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Bridgewater Group**7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:**

A3A0454 - 01 30 23 1627

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	Limits	RPD	RPD Limit	Notes
Batch 23A0735 - EPA 3051A						Solid						
Duplicate (23A0735-DUP1)			Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:18									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
Mercury	ND	---	0.844	mg/kg	10	---	ND	---	---	---	20%	R-01
Nickel	316	---	2.11	mg/kg	10	---	309	---	---	2	20%	
Selenium	ND	---	1.05	mg/kg	10	---	ND	---	---	---	20%	
Silver	ND	---	0.211	mg/kg	10	---	ND	---	---	---	20%	
Titanium	50.7	---	4.22	mg/kg	10	---	45.0	---	---	12	20%	
Vanadium	4.84	---	2.11	mg/kg	10	---	4.59	---	---	5	20%	
Zinc	47.5	---	4.22	mg/kg	10	---	56.9	---	---	18	20%	
Duplicate (23A0735-DUP2)			Prepared: 01/23/23 06:54 Analyzed: 01/23/23 17:20									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01RE1)												
EPA 6020B												
Chromium	1120	---	10.5	mg/kg	100	---	846	---	---	28	20%	Q-16
Cobalt	2340	---	10.5	mg/kg	100	---	1780	---	---	27	20%	Q-16
Iron	65200	---	527	mg/kg	100	---	58200	---	---	11	20%	Q-16
Duplicate (23A0735-DUP3)			Prepared: 01/23/23 06:54 Analyzed: 01/24/23 12:39									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01RE2)												
EPA 6020B												
Beryllium	ND	---	0.211	mg/kg	10	---	ND	---	---	---	20%	Q-16
Duplicate (23A0735-DUP4)			Prepared: 01/23/23 06:54 Analyzed: 01/24/23 18:00									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
EPA 6020B												
Phosphorus	136	---	105	mg/kg	10	---	136	---	---	0.3	20%	
Matrix Spike (23A0735-MS1)			Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:23									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
EPA 6020B												
Aluminum	2710	---	51.3	mg/kg	10	2570	307	93	75-125%	---	---	
Antimony	23.7	---	1.03	mg/kg	10	25.7	1.81	85	75-125%	---	---	
Arsenic	48.6	---	1.03	mg/kg	10	51.3	2.56	90	75-125%	---	---	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Bridgewater Group**7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:**

A3A0454 - 01 30 23 1627

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23A0735 - EPA 3051A						Solid						
Matrix Spike (23A0735-MS1)			Prepared: 01/23/23 06:54 Analyzed: 01/23/23 16:23									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
Barium	51.2	---	1.03	mg/kg	10	51.3	5.73	89	75-125%	---	---	
Cadmium	45.3	---	0.205	mg/kg	10	51.3	0.126	88	75-125%	---	---	
Chromium	1370	---	1.03	mg/kg	10	51.3	940	833	75-125%	---	---	E, Q-65
Cobalt	2700	---	1.03	mg/kg	10	51.3	1930	1500	75-125%	---	---	E, Q-65
Copper	79.6	---	2.05	mg/kg	10	51.3	29.9	97	75-125%	---	---	
Iron	71000	---	51.3	mg/kg	10	2570	61800	356	75-125%	---	---	E, Q-65
Lead	46.4	---	0.205	mg/kg	10	51.3	0.532	89	75-125%	---	---	
Manganese	481	---	1.03	mg/kg	10	51.3	385	187	75-125%	---	---	Q-65
Mercury	1.13	---	0.821	mg/kg	10	1.03	ND	110	75-125%	---	---	R-01
Nickel	436	---	2.05	mg/kg	10	51.3	309	249	75-125%	---	---	Q-65
Selenium	22.6	---	1.03	mg/kg	10	25.7	ND	88	75-125%	---	---	
Silver	23.7	---	0.205	mg/kg	10	25.7	ND	92	75-125%	---	---	
Titanium	124	---	4.11	mg/kg	10	51.3	45.0	155	75-125%	---	---	Q-04
Vanadium	52.1	---	2.05	mg/kg	10	51.3	4.59	93	75-125%	---	---	
Zinc	112	---	4.11	mg/kg	10	51.3	56.9	107	75-125%	---	---	
Matrix Spike (23A0735-MS2)			Prepared: 01/23/23 06:54 Analyzed: 01/24/23 12:43									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01RE2)												
EPA 6020B												
Beryllium	22.9	---	0.205	mg/kg	10	25.7	ND	89	75-125%	---	---	Q-16
Matrix Spike (23A0735-MS3)			Prepared: 01/23/23 06:54 Analyzed: 01/24/23 18:06									
QC Source Sample: Mill A Grinding Cyclone (A3A0454-01)												
EPA 6020B												
Phosphorus	2470	---	103	mg/kg	10	2570	136	91	75-125%	---	---	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062**Bridgewater Group**7100 SW Hampton St. Suite 235
Tigard, OR 97223Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning****Report ID:****A3A0454 - 01 30 23 1627****SAMPLE PREPARATION INFORMATION****Total Metals by EPA 6020B (ICPMS)**

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23A0735							
A3A0454-01	Solid	EPA 6020B	01/06/23 09:40	01/23/23 06:54	0.472g/50mL	0.5g/50mL	1.06
A3A0454-01RE1	Solid	EPA 6020B	01/06/23 09:40	01/23/23 06:54	0.472g/50mL	0.5g/50mL	1.06
A3A0454-01RE2	Solid	EPA 6020B	01/06/23 09:40	01/23/23 06:54	0.472g/50mL	0.5g/50mL	1.06
A3A0454-02	Solid	EPA 6020B	01/06/23 09:45	01/23/23 06:54	0.474g/50mL	0.5g/50mL	1.05
A3A0454-02RE1	Solid	EPA 6020B	01/06/23 09:45	01/23/23 06:54	0.474g/50mL	0.5g/50mL	1.05
A3A0454-02RE2	Solid	EPA 6020B	01/06/23 09:45	01/23/23 06:54	0.474g/50mL	0.5g/50mL	1.05
A3A0454-03	Solid	EPA 6020B	01/06/23 10:10	01/23/23 06:54	0.485g/50mL	0.5g/50mL	1.03
A3A0454-03RE1	Solid	EPA 6020B	01/06/23 10:10	01/23/23 06:54	0.485g/50mL	0.5g/50mL	1.03
A3A0454-03RE2	Solid	EPA 6020B	01/06/23 10:10	01/23/23 06:54	0.485g/50mL	0.5g/50mL	1.03
A3A0454-03RE3	Solid	EPA 6020B	01/06/23 10:10	01/23/23 06:54	0.485g/50mL	0.5g/50mL	1.03

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ORELAP ID: OR100062

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7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning**

Report ID:

A3A0454 - 01 30 23 1627

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- A-04** Subsequent analysis had poor precision due to sample matrix.
- E** Estimated Value. The result is above the calibration range of the instrument.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-17** RPD between original and duplicate sample is outside of established control limits.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- Q-65** Spike recovery is estimated due to the high analyte concentration of the source sample.
- R-01** The Reporting Limit for this analyte has been raised to account for matrix interference.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Bridgewater Group

7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning**

Report ID:

A3A0454 - 01 30 23 1627

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Bridgewater Group

7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning**

Report ID:

A3A0454 - 01 30 23 1627

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darrell Auvil, Client Services Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Bridgewater Group

7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning**

Report ID:

A3A0454 - 01 30 23 1627

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -

EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Darrell Auvil, Client Services Manager



000 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Project: SPI-Eugene
Project Number: [none]
Project Manager: John Browning

Report ID:
A3A0454 - 01 30 23 1627

[illegible]

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Apex Laboratories

Donald LaSalle

Darrell Auvil, Client Services Manager



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Bridgewater Group

7100 SW Hampton St. Suite 235
Tigard, OR 97223

Project: **SPI-Eugene**

Project Number: [none]

Project Manager: **John Browning**

Report ID:

A3A0454 - 01 30 23 1627

APEX LABS COOLER RECEIPT FORM

Client: Bridgewater Element WO#: A3A0454

Project/Project #: SPI-Eugene

Delivery Info:

Date/time received: 1/13/23 @ 1101 By: AJM

Delivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐

Cooler Inspection Date/time inspected: 1/13/23 @ 1106 By: AJM

Chain of Custody included? Yes ☒ No ☐

Signed/dated by client? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>2.2</u>						

Custody seals? (Y/N)	<u>N</u>						
----------------------	----------	--	--	--	--	--	--

Received on ice? (Y/N)	<u>Y</u>						
------------------------	----------	--	--	--	--	--	--

Temp. blanks? (Y/N)	<u>Y</u>						
---------------------	----------	--	--	--	--	--	--

Ice type: (Gel/Real/Other)	<u>Gel</u>						
----------------------------	------------	--	--	--	--	--	--

Condition (In/Out):	<u>In</u>						
---------------------	-----------	--	--	--	--	--	--

Cooler out of temp? (Y/N) Possible reason why:

Green dots applied to out of temperature samples? Yes ☒ No ☐

Out of temperature samples form initiated? Yes ☒ No ☐

Sample Inspection: Date/time inspected: 1/13/23 @ 11:24 By: KAM

All samples intact? Yes ☒ No ☐ Comments:

Bottle labels/COCs agree? Yes ☒ No ☐ Comments:

COC/container discrepancies form initiated? Yes ☐ No ☒

Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments:

Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments:

Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒

Comments:

Additional information:

Labeled by: KAM Witness: Cooler Inspected by: AJM

Form Y-003 R-00

Apex Laboratories

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Darrell Auvin

Darrell Auvin, Client Services Manager



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment G – Paint Booth Information

SURFACE COATING INFORMATION

**FORM AQ211
ANSWER SHEET**

Facility Name: Seneca Sawmill Company Permit Number: 207459

General Information:

1. Materials being coated (list) Fabricated metal structures

2. Describe the coating equipment Graco Ultra Max II 495 Airless Pump

3. Type of paint guns (list) Graco SG3 airless gun

4. How many paint booths? When were they or will they be installed?

Paint Booth ID	Date installed
Booth 1	2024-25
5. Are powder coatings or other special coating processes used? (describe) No

6. Are there any pollution controls? if yes, complete an appropriate AQ300 series form and list the ID numbers here Overspray filters
7. Capture efficiency (%) and basis >98% efficiency (manufacturer claims 98.81%)

8. Source test results:

Date	<u>None</u>
Inlet concentration (ppm)	_____
Outlet concentration (ppm)	_____
Mass emissions rate (lb/hr)	_____
Destruction efficiency (%)	_____
9. Describe equipment cleaning operations and list solvents: Water

- POTENTIAL TO EMIT:**

- | | | |
|----|--|---------|
| 1. | Uncontrolled VOC PTE | tons/yr |
| 2. | Controlled VOC PTE | tons/yr |
| 3. | Are the controls an integral part of the operations or do the controls have efficiency alarms? (yes or no) | |
| 4. | Most recent highest actual VOC emissions (year and amount) | tons/yr |
| 5. | Is the facility a major source of VOC emissions? (yes or no) | |
| 6. | Controlled single HAP PTE | tons/yr |
| 7. | Controlled combined HAP PTE | tons/yr |
| 8. | Is the facility a major source of HAP emissions? (yes or no) | |
| 9. | Were there any changes in chemical usage or equipment changes in the last 5 years? (If so, see instructions) | |

NSPS, NESHAP APPLICABILITY:

1. Are any of the following NSPS requirements applicable to the facility? (enter yes or no)

- | | |
|--|----|
| a. Surface Coating of Metal Furniture (if yes, complete questions 2-4 below for Surface Coating of Metal Furniture NSPS Information) | No |
| b. Automobile and Light Duty Truck Surface Coating | No |
| c. Tape and Label Surface Coating | No |
| d. Industrial Surface Coating: Large Appliances | No |
| e. Metal Coil Surface Coating | No |
| f. Beverage Can Surface Coating Industry | No |
| g. Flexible Vinyl and Urethane Coating and Printing | No |
| h. Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines (if yes, complete questions 17 & 18) | No |
| i. Polymeric Coating of Supporting Substrates Facilities | No |

Surface Coating of Metal Furniture NSPS Information:

- | | |
|--|--------------------|
| 2. List specific paint lines or paint booths that have been constructed, modified, or reconstructed since 11/28/80 and the date installed. | _____ |
| | _____ |
| | _____ |
| 3. What was the highest annual volume of coating used, as applied, over the past 2 years | _____ gallons/year |
| 4. What is the projected maximum annual volume of coating to be used, as applied, during the next 5 years | _____ gallons/year |
| | _____ |

5. As applied coating information:

Coating name	Projected daily quantity used (as applied), gal.	Coating weight, #/gal.	VOC content, as applied, #/gal.	Solids content, as applied, #/gal	Transfer efficiency	Capture Efficiency	Destruction Efficiency

Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines NSPS Information:

6. List specific paint lines or paint booths that have been constructed, modified, or reconstructed since 11/28/80 and the date installed. _____

7. As applied coating information:

Coating name	Coating type	Coating weight, #/gal.	VOC content, as applied, #/gal.	Solids content, as applied, #/gal	Transfer efficiency	Capture Efficiency	Destruction Efficiency

8. Are any of the following NESHAP requirements applicable to the facility? (enter yes or no)

- a. Hard and Decorative Chromium Electroplating and Chromium Anodizing _____
b. Halogenated Solvent Cleaning _____
c. Magnetic Tape Operations _____
d. Aerospace Manufacturing and Rework Facilities _____
e. Shipbuilding and Ship Repair Operations _____
f. Wood Furniture Manufacturing Operations _____

ROYAL

EXTERIOR SATIN
160B100 – 160B440

PRODUCT FEATURES

- Exterior Paint & Primer
- Excellent durability & adhesion
- Provides a mildew resistant finish
- Resists peeling & blistering
- Acrylic latex enamel
- Low VOC
- Lifetime warranty*

Royal Exterior Latex Paint is a 100% acrylic formulation that's specially designed as a paint and primer in one. Formulated with excellent adhesion and durability, this paint will provide weathering protection and a mildew resistant finish for a variety of exterior surfaces. Use on all properly prepared exterior wood, brick, masonry, stucco, factory primed hardboard, vinyl or aluminum siding, cement cinder block and primed metal surfaces.

Vehicle Type	100% Acrylic
--------------	--------------

Pigment Type	Titanium Dioxide
--------------	------------------

Volume Solids	37.9 ± 2%
---------------	-----------

Weight Solids	52.1 ± 2%
---------------	-----------

Coverage per Gallon at Recommended Film Thickness	350 – 450 Sq. Ft.
---	-------------------

Recommended Film Thickness	– Wet	3.5 – 4.3 mils
	– Dry	1.3 – 1.6 mils

Depending on surface texture and porosity.

Dry Time @ 77 °F (25 °C) @ 50% RH	– To Touch	1 Hour
	– To Recoat	4 Hours

High humidity and cool temperatures will result in longer dry, recoat and service times.

Dries By	Evaporation, Coalescence
----------	--------------------------

Viscosity	100 ± 2 KU
-----------	------------

Flash Point	None
-------------	------

Gloss / Sheen	Satin (10 – 20 @ 60°)
---------------	-----------------------

Surface Temperature at Application	– Min.	40 °F
	– Max.	90 °F

Thin With	Clean Water
-----------	-------------

Clean Up Thinner	Clean Water
------------------	-------------

Weight Per Gallon	10.9 lbs
-------------------	----------

Storage Temperature	– Min.	40 °F
	– Max.	90 °F

Volatile Organic Compounds (VOC)	44 g/L
	0.36 lbs./gallon

VOC compliant in all regulated areas

* Lifetime warranty listed on product label

SURFACE PREPARATION

All surfaces, including eaves and overhangs, must be clean and mildew free. Dull glossy areas, remove chalking, loose or scaling paint. Spot prime stained areas, nail holes, and bare spots. Prime before caulking and reprime over caulked areas before applying finish coat. Masonry: All new masonry surfaces must be power washed or brushed thoroughly with stiff fiber bristles to remove loose particles. New masonry substrates must be allowed to cure for 30 days before priming or painting. This product is self-priming over masonry.

Metal Surfaces: Prime bare metal with the appropriate metal primer.

New Wood: For non-bleeding wood or wood composite, prime with this product. For tannin-rich woods like cedar and redwood, use a stain blocking primer.

Aluminum Siding: Badly weathered or chalky siding should be thoroughly cleaned and spot-primed as needed.

Vinyl Siding: Do not paint vinyl siding darker than the original siding color.

Factory Primed Siding: When painting, follow the manufacturer's instructions.

If unavailable, re-prime with a 100% acrylic stain blocking primer.

APPLICATION

Stir thoroughly with a circular lifting motion before and occasionally during application. Thinning is not recommended, but if necessary, use clean water sparingly. Apply liberally over the full length of the surface to avoid lap marks. Do not apply in direct sunlight. Do not apply when air, surface or product temperature is below 40 °F (4.4 °C) or if temperature might drop to this level within 4 hours of application. Do not apply in temperatures above 90 °F (32 °C). For best results, use a top quality polyester or nylon brush, appropriate length nap roller (3/8" length for most surfaces, 1/2" for rough surfaces like stucco), or sprayer.

CLEAN UP

Clean up tools and spills immediately with warm, soapy water.

USE COMPLETELY OR DISPOSE OF PROPERLY. Dry empty containers may be recycled in a can recycling program. **Local disposal requirements vary; consult your sanitation department or state-designated environmental agency on disposal options.**

WARNING! If you scrape, sand or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Environmental Health & Safety Information

WARNING!

Possible birth defect hazard. Contains, 2,2,4-trimethyl-1,3-pentanediol diisobutyrate, which may cause birth defects based on animal data.

Use only with adequate ventilation Do not breathe vapors, spray mist or sanding dust. Ensure fresh air entry during application and drying. Avoid contact with eyes and prolonged or repeated contact with skin. Avoid exposure to dust and spray mist by wearing a NIOSH approved respirator during application, sanding and clean up. Follow respirator manufacturer's directions for respirator use. Close container after each use. Wash thoroughly after handling.



WARNING: Cancer and Reproductive Harm – www.P65warnings.ca.gov

WARNING: This product contains isothiazolinone compounds at levels of <0.1%. These substances are biocides commonly found in most paints and a variety of personal care products as a preservative. Certain individuals may be sensitive or allergic to these substances, even at low levels.

FIRST AID: In case of eye contact, flush immediately with plenty of water for at least 15 minutes; for skin, wash thoroughly with soap and water. If symptoms persist, seek medical attention. If you experience difficulty breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

IN CASE OF SPILL – Absorb with inert material and dispose of as specified under “Clean up”.

KEEP OUT OF REACH OF CHILDREN - PROTECT FROM FREEZING

Refer to Safety Data Sheet for additional health and safety information.
SDS information can be obtained from your local authorized C+K retailer.

Technical Data Based on 160B100 and is true and accurate to the best of our knowledge, but is subject to change without prior notice.

Manufactured exclusively for C+K Distribution, LLC | 2200 Kensington Court | Oak Brook, IL 60523, USA – Technical Information: 1-800-777-6797, Option 7
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SAFETY DATA SHEET

Revision Date: 04-Nov-2021

Revision Number: 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	ROYAL EXTERIOR ACRYLIC LATEX PAINT & PRIMER SATIN, NEUTRAL TINT BASE
Product Code	160B440
Alternate Product Code	H1603Z
SAP Material Number	AH160B440
SKU Number	1020724, 1020725, 1020730
Product Class	Water thinned paint
Color	All
Recommended use	Paint
Restrictions on use	No information available

Manufactured For
C+K Distribution, LLC
2200 Kensington Court
Oak Brook, IL, 60523, USA
Phone: 855-674-4460

Emergency Telephone
INFOTRAC 1-800-535-5053, 1-352-323-3500

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label elements

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Appearance liquid

Odor little or no odor

Hazards not otherwise classified (HNOC)
Not applicable

Other information
No information available

WARNING: This product contains isothiazolinone compounds at levels of <0.1%. These substances are biocides

commonly found in most paints and a variety of personal care products as a preservative. Certain individuals may be sensitive or allergic to these substances, even at low levels.

3. COMPOSITION INFORMATION ON COMPONENTS

Chemical name	CAS No.	Weight-%
Nepheline syenite	37244-96-5	10 - 15
Zinc oxide	1314-13-2	1 - 5
Propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol	25265-77-4	1 - 5
Sodium C14-C16 olefin sulfonate	68439-57-6	0.1 - 0.5

4. FIRST AID MEASURES

General Advice	No hazards which require special first aid measures.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Consult a physician if necessary.
Most Important Symptoms/Effects	None known.
Notes To Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Specific Hazards Arising From The Chemical	Closed containers may rupture if exposed to fire or extreme heat.
Sensitivity to mechanical impact	No
Sensitivity to static discharge	No
Flash Point Data	
Flash point (°F)	Not applicable
Flash Point (°C)	Not applicable

Method

Not applicable

Flammability Limits In Air

Lower flammability limit:

Not applicable

Upper flammability limit:

Not applicable

NFPA

Health: 1

Flammability: 0

Instability: 0

Special: Not Applicable

NFPA Legend

0 - Not Hazardous

1 - Slightly

2 - Moderate

3 - High

4 - Severe

The ratings assigned are only suggested ratings, the contractor/employer has ultimate responsibilities for NFPA ratings where this system is used.

Additional information regarding the NFPA rating system is available from the National Fire Protection Agency (NFPA) at www.nfpa.org.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

Other Information

Prevent further leakage or spillage if safe to do so.

Environmental precautions

See Section 12 for additional Ecological Information.

Methods for Cleaning Up

Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin, eyes and clothing. Avoid breathing vapors, spray mists or sanding dust. In case of insufficient ventilation, wear suitable respiratory equipment.

Storage

Keep container tightly closed. Keep out of the reach of children.

Incompatible Materials

No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL
Zinc oxide	STEL: 10 mg/m ³ respirable particulate matter TWA: 2 mg/m ³ respirable particulate matter	5 mg/m ³ - TWA 15 mg/m ³ - TWA

Legend

ACGIH - American Conference of Governmental Industrial Hygienists Exposure Limits

OSHA - Occupational Safety & Health Administration Exposure Limits
N/E - Not Established

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection	Safety glasses with side-shields.
Skin Protection	Protective gloves and impervious clothing.
Respiratory Protection	In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene Measures Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	liquid
Odor	little or no odor
Odor Threshold	No information available
Density (lbs/gal)	9.5 - 9.6
Specific Gravity	1.13 - 1.15
pH	No information available
Viscosity (cps)	No information available
Solubility(ies)	No information available
Water solubility	No information available
Evaporation Rate	No information available
Vapor pressure	No information available
Vapor density	No information available
Wt. % Solids	40 - 50
Vol. % Solids	30 - 40
Wt. % Volatiles	50 - 60
Vol. % Volatiles	60 - 70
VOC Regulatory Limit (g/L)	< 50
Boiling Point (°F)	212
Boiling Point (°C)	100
Freezing point (°F)	32
Freezing Point (°C)	0
Flash point (°F)	Not applicable
Flash Point (°C)	Not applicable
Method	Not applicable
Flammability (solid, gas)	Not applicable
Upper flammability limit:	Not applicable
Lower flammability limit:	Not applicable
Autoignition Temperature (°F)	No information available
Autoignition Temperature (°C)	No information available
Decomposition Temperature (°F)	No information available
Decomposition Temperature (°C)	No information available
Partition coefficient	No information available

10. STABILITY AND REACTIVITY

Reactivity Not Applicable

Chemical Stability	Stable under normal conditions.
Conditions to avoid	Prevent from freezing.
Incompatible Materials	No materials to be especially mentioned.
Hazardous Decomposition Products	None under normal use.
Possibility of hazardous reactions	None under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Product Information

Information on likely routes of exposure

Principal Routes of Exposure Eye contact, skin contact and inhalation.

Acute Toxicity

Product Information No information available

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eye contact	May cause slight irritation.
Skin contact	Substance may cause slight skin irritation. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation	May cause irritation of respiratory tract.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Sensitization	No information available
Neurological Effects	No information available.
Mutagenic Effects	No information available.
Reproductive Effects	No information available.
Developmental Effects	No information available.
Target organ effects	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Other adverse effects	No information available.
Aspiration Hazard	No information available

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc oxide 1314-13-2	> 5000 mg/kg (Rat)	-	-

Propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol 25265-77-4	= 3200 mg/kg (Rat)	> 15200 mg/kg (Rat)	-
Sodium C14-C16 olefin sulfonate 68439-57-6	= 2220 mg/kg (Rat)	> 740 mg/kg (Rabbit)	> 52 mg/L (Rat) 4 h

Chronic Toxicity

Carcinogenicity

There are no known carcinogenic chemicals in this product above reportable levels.

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

The environmental impact of this product has not been fully investigated.

Product Information

Acute Toxicity to Fish

No information available

Acute Toxicity to Aquatic Invertebrates

No information available

Acute Toxicity to Aquatic Plants

No information available

Persistence / Degradability

No information available.

Bioaccumulation

There is no data for this product.

Mobility in Environmental Media

No information available.

Ozone

No information available

Component Information

Acute Toxicity to Fish

No information available

Acute Toxicity to Aquatic Invertebrates

No information available

Acute Toxicity to Aquatic Plants

No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method Dispose of in accordance with federal, state, and local regulations. Local requirements may vary, consult your sanitation department or state-designated environmental protection agency for more disposal options.

14. TRANSPORT INFORMATION

DOT Not regulated

ICAO / IATA Not regulated

IMDG / IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA: United States Yes - All components are listed or exempt.
DSL: Canada Yes - All components are listed or exempt.

Federal Regulations

SARA 311/312 hazardous categorization

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

<u>Chemical name</u>	<u>CAS No.</u>	<u>Weight-%</u>	<u>CERCLA/SARA 313</u> <u>(de minimis concentration)</u>
Zinc oxide	1314-13-2	1 - 5	1.0

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

None

US State Regulations

California Proposition 65

 **WARNING:** Cancer and Reproductive Harm— www.P65warnings.ca.gov

State Right-to-Know

Chemical name	Massachusetts	New Jersey	Pennsylvania
Zinc oxide	X	X	X

Legend

X - Listed

16. OTHER INFORMATION

HMIS - **Health:** 1 **Flammability:** 0 **Reactivity:** 0 **PPE:** -

HMIS Legend

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard
- * - Chronic Hazard

X - Consult your supervisor or S.O.P. for "Special" handling instructions.

Note: The PPE rating has intentionally been left blank. Choose appropriate PPE that will protect employees from the hazards the material will present under the actual normal conditions of use.

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer, has chosen to provide them. HMIS® ratings are to be used only in conjunction with a fully implemented HMIS® program by workers who have received appropriate HMIS® training. HMIS® is a registered trade and service mark of the NPCA. HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

WARNING! If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Prepared By Product Stewardship Department
 Complementary Coatings Corp.
 360 Route 206
 Flanders, NJ 07836
 Phone: 855-674-4460

Revision Date: 04-Nov-2021
Revision Summary Not available

Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a

supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, provincial, and local laws and regulations.

End of Safety Data Sheet

MIDSIZE ELECTRIC SPRAYERS

INCREASED PRODUCTIVITY — UNMATCHED RELIABILITY

Graco's midsize electric airless sprayers make it easier to get more work done in a day with increased flow and production rates.

ULTRA MAX II 490-595 PC PRO MODELS:



INCREASED SPRAY CONSISTENCY

SmartControl with Digital Display

- Even pressure delivery on every job
- Constantly monitors performance and adjusts motor speed to match your tip size and spraying needs



ALL-DAY COMFORT AND CONTROL

Contractor PC Spray Gun

- Lightest weight gun in its class
- Up to 50% lighter trigger pull force

- NEW! RAC X LP SWITCHTIP**
- Up to 50% less overspray
 - Perfect Airless Finish
 - Up to 2X tip life

THE LONGEST LASTING DRIVE

Advantage Drive™

- Hardened steel gears provide extremely quiet operation and a lifetime warranty

GET MORE WORK DONE

MaxPower™ Motor and Advantage drive

- Creates more torque and delivers maintenance-free performance

FastFlush™ High-Flow Cleaning System

- 4X faster cleaning with ½ the water

DURABLE ENDURANCE PUMP

- Lasts 2X longer than competing pumps
- Long life V-Max Blue™ Packings, Chromex rod, and hardened stainless steel cylinder
- Faster cleaning with the QuikAccess intake valve

EASY MAINTENANCE AND LESS CLOGGING

Easy Out™ Pump Filter

- Exclusive inside-out filtering process ensures a quality finish
- Large filtration area reduces tip clog

ELIMINATE COSTLY DOWNTIME

ProConnect One-Part Pump Replacement System

- Pump swaps in minutes — no tools, pins, or parts to lose

EASY TRANSPORT

- Only 34 lbs (Stand model)
- Kickstand for easy one-person bucket changes (Hi-Boy only)



Ready to Spray: Complete with Contractor PC Spray Gun, 50 ft Blue Max II hose, and RAC X LP 517 SwitchTip

Ultra Max II 490 PC Pro Stand 17E852



THE LIGHTEST WEIGHT 2-GUN ELECTRIC AIRLESS SPRAYER

ULTRA MAX II 650 PC PRO:

INCLUDES ALL FEATURES FOUND ON 490-595 PC PRO MODELS, **PLUS**

DURABLE ENDURANCE PUMP

- Endurance Piston Pump**
- Lasts 2X longer than competing pumps
 - Chromex piston rod with longer stroke
 - Chrome plated stainless steel sleeve
 - V-Max Blue™ packings
 - Larger intake to handle heavier coatings

- ProConnect**
- Eliminate downtime with fast and easy on-the-job repair



- 2-GUN CAPABILITY**
- 2-Hose Connection Manifold**
- Supports up to .019" tips
 - EasyOut filter provides easy maintenance and less clogging

UPGRADE FOR A LOWER COST OF OWNERSHIP

Ready to Spray: Complete with Contractor PC Spray Gun, 50 ft Blue Max II Hose, and RAC X LP 517 SwitchTip



Ultra Max II 650 PC Pro Hi-Boy 19Y128

MIDSIZE ELECTRIC MODELS	MAX TIP SIZE	MAX GPM	STAND	HI-BOY	LO-BOY
Ultra Max II 490 PC Pro	.023	.54	17E852	17E854	17E853
Ultra Max II 495 PC Pro	.025	.60	17E855	17E857	17E856
Ultra Max II 595 PC Pro	.027	.70	—	17E859	17E858

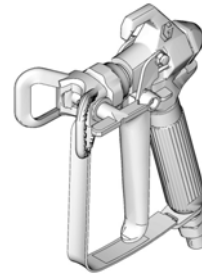
MIDSIZE ELECTRIC MODELS	MAX TIP SIZE	MAX GPM	HI-BOY	LO-BOY
Ultra Max II 650 PC Pro	.029	.80	19Y128	19Y129

SG2, SG3 Spray Guns

Models: 243011, 243012, 246506, 243238, 243382, 289843, 257359, 16W431, 16X214, 17J910, 25R553 CAN011, CAN012



312830M
EN



ti11562a



IMPORTANT SAFETY INSTRUCTIONS. Refer to your sprayer instruction manual for Pressure Relief, priming and spray instructions. Keep these instructions.

Maximum Working Pressure: 3600 psi (248 bar, 24.8 MPa)

- For the application of architectural paints and coatings -

The following Warnings are for the setup, use, grounding, maintenance and repair of this equipment. The exclamation point symbol alerts you to a general warning and hazard symbols refer to procedure-specific risks. Refer back to these Warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.



WARNINGS



SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately**. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



PRESSURIZED ALUMINUM PARTS HAZARD

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.



PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or in the operating area of the equipment to help protect you from serious injury. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

Pressure Relief Procedure



WARNING



Follow this **Pressure Relief Procedure** whenever instructed to relieve pressure, stop spraying, check or service equipment, or install or clean spray tip.

1. Turn OFF power and turn sprayer pressure control to low-pressure setting.
2. Hold gun against side of flushing pail. Trigger gun into pail to relieve pressure.

If you suspect spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, **VERY SLOWLY** loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

Gun Trigger Lock

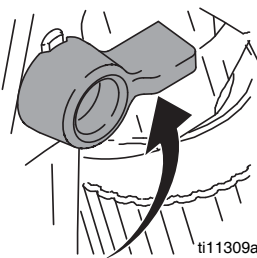


WARNING

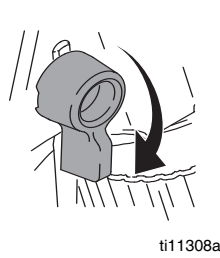


To prevent injury when the gun is not in use, always set the gun's trigger lock if unit is being shut down or left unattended.

Trigger Locked
(no spray)



Trigger Unlocked
(spray)



Setup



WARNING

Make sure sprayer is turned off and unplugged from power source. Refer to your sprayer instruction manual for priming and spray instructions.

Connect Gun to Sprayer

1. Attach supply hose to sprayer fluid outlet.
2. Attach other end of supply hose to gun swivel (5). Use two wrenches (one on the swivel (5) and one on the hose), to tighten all connections securely.
3. Refer to sprayer instruction manual for priming instructions.

Installing Tip (26) and Guard (25) on Gun



WARNING



1. If equipment has recently been operated, **relieve pressure**. Set trigger lock.
2. Using a pencil or similar object, insert seal (24) into back of guard (25).
3. Install guard (25) over end of gun (1).
4. Insert tip (26) in guard (25). Tighten retaining nut.

Operation

Spraying

1. Unlock trigger lock.
2. Be sure the arrow shaped tip (26) faces forward (spray).
3. Hold gun perpendicular and approximately 12-inches (30 cm) from surface. Move gun first, then pull gun trigger (3) to spray a test pattern.
4. Slowly increase pump pressure until coverage is uniform and even (see sprayer instruction manual for additional information).

Aligning Spray



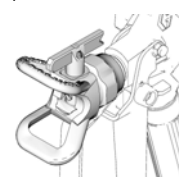
WARNING



1. **Relieve pressure**. Set trigger lock.
2. Loosen guard retaining nut.
3. Align guard (25) horizontally to spray a horizontal pattern.
4. Align guard (25) vertically to spray a vertical pattern.

(3) Horizontal

(4) Vertical



Clearing Clogs



WARNING

1. **Relieve pressure**. Set trigger lock.
2. Rotate tip (26) 180°. Unlock trigger lock. Trigger gun into pail or onto ground to remove clog.
3. Set trigger lock. Rotate tip (26) 180° back to spray position.

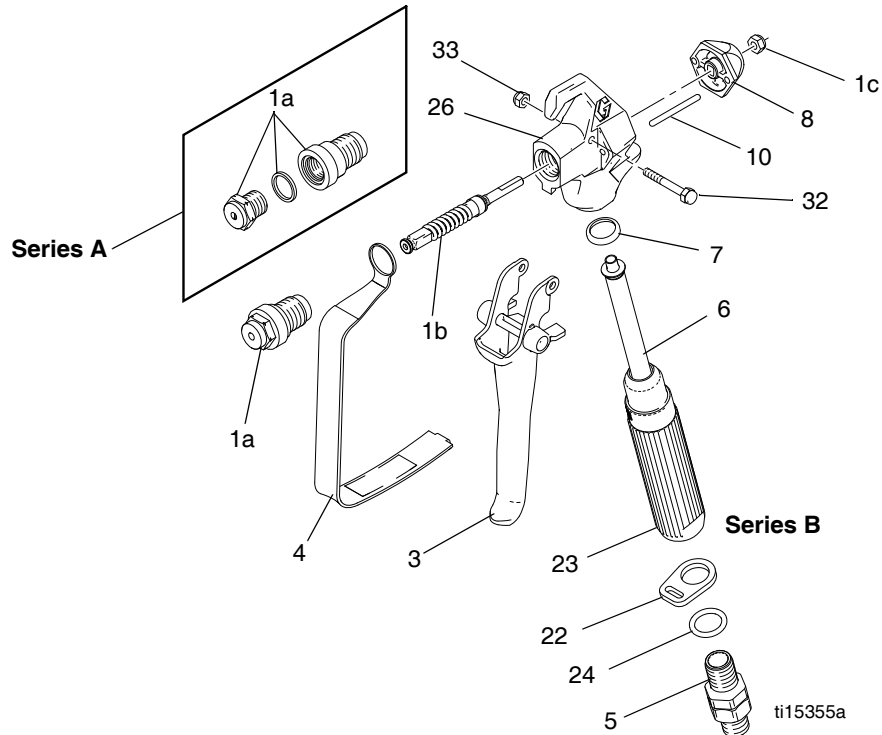
Cleanup

Flush gun after each work shift and store in a dry location. Do not leave the gun or any parts in water or cleaning solvents.

Parts

*Kit 288817 repairs both series A and B guns.

1a replaces these three components of series A.

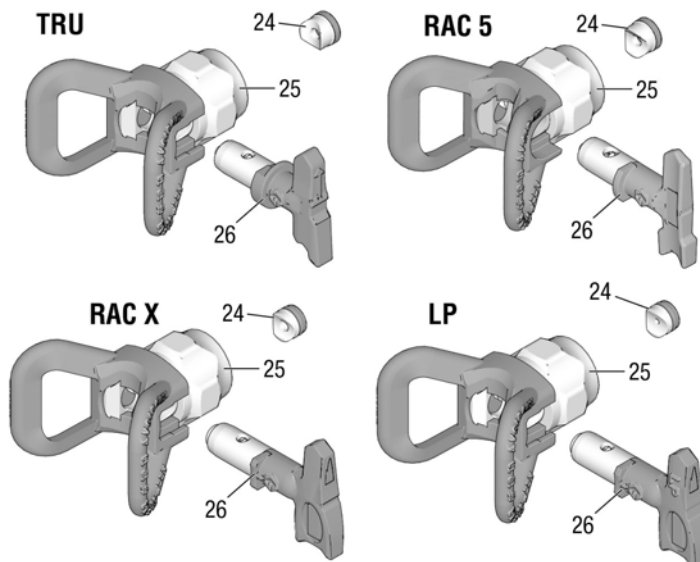


Ref.	Part	Description	Qty.
1	288817	KIT, repair, gun (includes 1a, 1b, 1c)	1
1a		SEAT, valve	1
1b		NEEDLE, gun	1
1c	131477	NUT, lock	1
3	243639	TRIGGER, repair kit includes 10, 32, 33	1
4	195495	GUARD, trigger	1
5	238817	KIT, swivel	1
	195384	ADAPTER, gun inlet (SG2)	1
6✓	288749	FILTER, gun	1
	CAN085	FILTER, gun	1
7✓	179733	SEAL, sleeve	1
8	195395	CAP, end	1

Ref.	Part	Description	Qty.
10	115484	PIN, actuator	2
22	113409	RETAINER, guard	1
23	195393	HANDLE, gun (SG2)	1
	195788	HANDLE, gun (SG3, SG3-E)	1
	195920	HANDLE, gun (SG3-A)	1
24	115485	O-RING	1
26	17R014	HOUSING, fluid	1
32	177538	STUD, trigger	1
33	131476	NUT, lock, hex	1

▲ Replacement Warning labels, tags and cards are available at no cost.

✓ Keep these spare parts on hand to reduce down time



i137675b

Ref	Part	Description	Qty
24	243004	Single seal TRU	1
	CAN004	Single seal TRU	1
	243281	OneSeal™, RAC 5 (5-pack)	1
	246453	OneSeal™, RAC X (5-pack)	1
	17P501	KIT, gasket, FFLP, LP (5-pack)	1
25	237859	GUARD, TRU	1
	CAN001	GUARD, TRU	1
	243161	GUARD, RAC 5	1
	246215	GUARD, RAC X and LP	2
26	TRU515	TIP, spray 515, TRU	1
	CAN515	TIP, spray 515, TRU	1
	286515	TIP, spray 515, RAC 5	1
	LTX515	TIP, spray 515, RAC X	1
	TRU517	TIP, spray 517, TRU	1
	CAN517	TIP, spray 517, TRU	1
	262515	TIP, spray 515, RAC 5	1
	LP519	TIP, spray, 519, LP	1

Maintenance



WARNING

Before performing any maintenance on gun, read all warnings on front cover of this manual and **relieve pressure**.

Cleaning/Replacing Filter (6)



1. **Relieve pressure.** Set trigger lock

2. Disconnect fluid hose from gun at swivel (5).
3. Disconnect trigger guard (4) from guard retainer (22).
4. Unscrew handle (23) from gun (1).
5. Remove filter (6) through top of handle (23).
6. Clean filter (6). Use a soft brush to loosen and remove excess debris.
7. Insert clean filter (6) into handle (23).
8. Reattach handle (23) to gun (1). Tighten securely.
9. Reconnect trigger guard (4) to guard retainer (22).

Translated Manuals

French - 312831	Estonian - 312845
Spanish - 312832	Latvian - 312846
Dutch - 312833	Lithuanian - 312847
German - 312834	Polish - 312848
Italian - 312835	Hungarian - 312849
Turkish - 312836	Czech - 312850
Greek - 312837	Slovakian - 312851
Croatian - 312838	Slovenian - 312852
Portuguese - 312839	Romanian - 312853
Danish - 312840	Bulgarian - 312854
Finnish - 312841	Chinese - 312855
Swedish - 312842	Japanese - 312856
Norwegian - 312843	Korean - 312857
Russian - 312844	

Translated manuals can be requested through a distributor or at www.graco.com.

Technical Data

Maximum working pressure	3600 psi (248 bar, 24.8 MPa)
Fluid orifice size	0.125 in. (3.18 mm)
Weight (with tip and guard)	22 oz. (630 g)
Inlet	
Maximum material temperature	120 F (49 C)
Wetted Parts	Stainless steel, polyurethane, nylon, aluminum, tungsten carbide, brass
*Noise Level: Sound power	87 dBA
Sound pressure	78 dBA
*Measured at 3.1 ft (1m) while spraying water-based paint, specific gravity 1.36, through a 517 tip at 3000 psi (207 bar, 20.7 MPa) per ISO 3744	

For complete warranty information contact your local Graco distributor, call Graco customer service: 1-800-690-2894 or visit our website: www.graco.com.
All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.
For patent information, see www.graco.com/patents.

Original instructions. This manual contains English. MM 312830

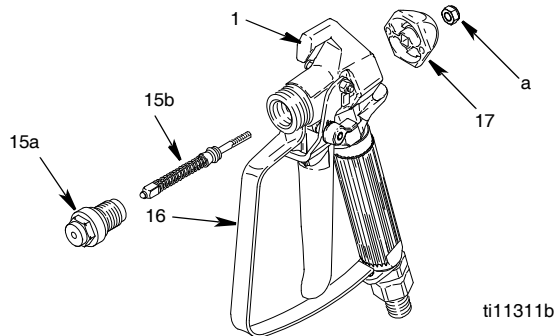
Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

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Revised M, August 2020

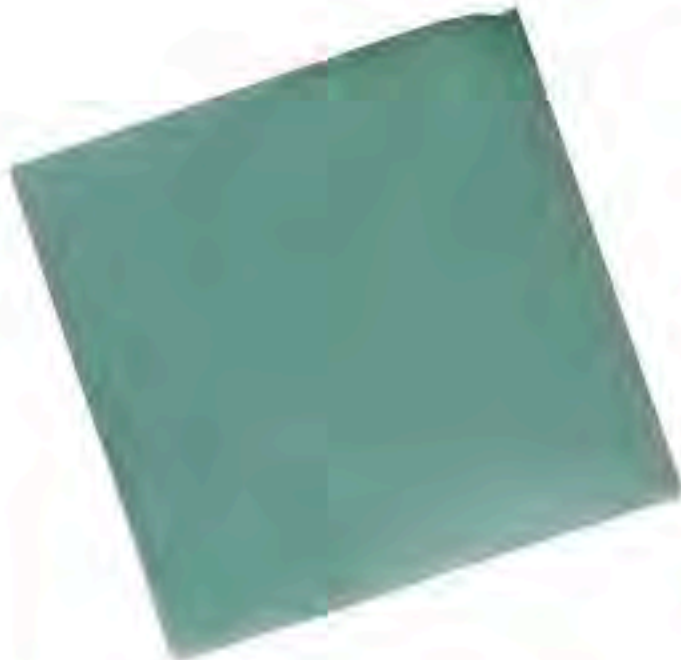
Repair

Replacing Needle



WARNING

1. **Relieve pressure.** Set trigger lock.
2. Remove tip (26) and guard (25) from gun (1).
3. Disconnect fluid hose from gun at swivel (5).
4. Squeeze trigger while unscrewing diffuser.
5. Remove locknut and end cap.
6. Tap out needle.
7. Use a soft brush to clean out internal passages of gun.
8. Grease o-rings of new needle using a non-silicon grease.
9. Guide new needle (15b) through front of gun .
10. Install end cap and locknut, loosely.
11. For needle housing (15a), apply medium strength (blue) thread sealant to threads.
12. Squeeze trigger while installing needle housing. Torque to 26-32 ft-lb (35-43 N•m).
13. Hold gun with nozzle facing up.
14. Set trigger lock.
15. Turn locknut (a) clockwise until you see and feel trigger (3) raise slightly.
16. Turn locknut (a) 3/4 turn counter-clockwise.
NOTE: When needle is properly adjusted, trigger will move freely.
17. Connect fluid hose. Install tip (26) and guard (25).
18. Prime sprayer. See sprayer instruction manual.
19. Trigger gun into bucket until fluid flows from gun.
20. Release trigger (3). Fluid flow should stop immediately.
21. Set trigger lock.
22. Aim gun into bucket. Trigger gun. No fluid should flow.
23. If the gun fails tests, steps 19 and/or 21, relieve pressure and disconnect hose. Readjust needle. Repeat tests.



AFC 15 Gram Fiberglass Arrestor Pads

SKU #1700369

Price: **\$79.99–\$179.99**

Choose Options -

▼

Qty:

1

ADD TO CART

or 4 interest-free payments of **\$20.00** with  sezzle ⓘ

Description

Reviews

GA/PA Series 15 Gram Fiberglass Product Application Our most popular arrestor, ideal for use in most spray booth applications and our most economical option. For use where the user requires a good basic filter and cost is a major consideration.

Product Specification

- All are 2" deep
- Green, water resistant
- 15 gram fiberglass
- 98.81% efficient with an average paint holding capacity of 2.22 pounds in a 20"x20" pad
- Available in pads (GA)
- Compliant with EPA 6H law

Due to its size this product may have a shipping surcharge. You will be contacted with any additional shipping charges before your order is processed.



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment H – Weld Wire SDS

SAFETY DATA SHEET

This Safety Data Sheet (SDS) is for welding consumables and related products and may be used to comply with OSHA's Hazard Communication standard, 29 CFR 1910.1200, and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499 and Canadian Workplace Hazardous Materials Information System (WHMIS) per Health Canada administrative policy. The OSHA standard must be consulted for specific requirements. This Safety Data Sheet complies with ISO 11014-1 and ANSI Z400.1. This document is translated in several languages and is available on our website at www.hobartbrothers.com, from your sales representative or by calling customer service at 1 (937) 332-4000.

SECTION 1 – IDENTIFICATION

Manufacturer/ Supplier Name:	HOBART BROTHERS LLC	Telephone No: +1 (937) 332-4000
Address:	101 TRADE SQUARE EAST, TROY, OH 45373	Emergency No: +1 (800) 424-9300
Canadian Address:	2570 NORTH TALBOT ROAD, OLDCASTLE, ONTARIO, CANADA N0R1L0	Canada: +1 (519) 737-3000
Website:	www.hobartbrothers.com	
Products Type:	TUBULAR ARC WELDING ELECTRODES	
GROUP A: Product For:	Gas Shielded Carbon and Low Alloy Steel	
Trade Name:	FABCO 37, 72, 73, 82HD, 85, 105D2, 711M, 791, 811A1, EXCEL-ARC 71, HORNET, RXR, RXR-XLS, SUPER-COR, TR70, TRIPLE-7, TRIPLE-8, XL-71; FABCOR 70, 71, 80D2, 80XLS, 86R, 702, F6; ULTIMET 716; SubCOR EM12K-S, EM13K-S, EM13K-S MOD; HOBART 71T, 71TM, 77TM, E71T-GS	
GROUP B: Product For:	Self-Shielded Carbon Steel	
Trade Name:	FABSHIELD 4, 21B, 23, 7027	
GROUP C: Product For:	Carbon and Low Alloy Steel	
Trade Name:	FABCO 70XHP, 71 HYD, 71 HYN, 80K2-C, 81B2, 81K2-C, 81N1, 85K2, 85XHP, 90K2, 91B3, 91K2-C, 95K2, 101, 101K3, 101M, 107G, 110, 110K3-M, 111-V, 115, 115K3, 125K4, 712C, 712M, 750C, 750M, 803, 811B2, 811N1, 811W, 812C, 812-Ni1M, 881K2, 910, 911B3, 911N2, 1101K3-C, MIL-101-TM, PREMIER 70, XLS25, XLS50; FABCOR 80B2, 80N1, 80N2, 90, 90B3, 100, 1100, 4130SR, CVN, EDGE, EDGE D2, EDGE MC, EDGE Ni1, EDGE XP, ELEVATE, HERCULES, MATRIX; FABCO XTREME 71, 85, 95, 101, 120, B2, B3; FABCO ELEMENT 70C, 70M, 71C, 71M, 71Ni1C, 71Ni1M, 71T1C, 71T1M, 81K2C, 81Ni2C, 81K2M; FABCOR ELEMENT 70C6, 80Ni1; FABSHIELD 71K6, 71K6-NP, 71T8, 81N1, 81N2, 91T8, 718, K54, XLNT-6, XLR-8, X80, X90, X100; TM- 770, 771, 811N3; MEGAFIL 810M, 710M, 713R, 350B, 731B, 235M, 825R, 735B 240M, 716R, 819R, 740B, 281 M, 281MCR, 781R, 781RCr, 281B, 741M, 610M, 940M, 742M, 1100M, 550R, 610R, 620R, 690R, 741B, 501B, 610B, 742B, 745, 807M, 807B, 236M, 237M, 836R, P36B, 736B, 737B; SubCOR SL 731, SL 840 HC, SL 735 1W, SL 735 2W, SL 735 3W, SL 735 4W, SL 735 5W, SL 741, SL 742, SL 745, SL 281 Cr, SL P1, SL P1 MOD, SL P11, SL P12 MOD, SL P36, SL P22, SL P24; SubCOR 92-S, F2-S, 100F3-S, 120-S, N1-S, W-S, B2-S, B3-S, 4130 SR	
GROUP D: Product For:	Corrosion Resisting Steel	
Trade Name:	FABCO 5055, B6, B9 FABCOR 409; FABLOY 409, 439; FABTUF 960; MEGAFIL P5M; SubCOR SL P5, SL P9, SL P91, SL P92	
AWS Specification:	Varies	
Recommended Use:	TUBULAR ARC WELDING ELECTRODES	
Restrictions on Use:	Use only as indicated for welding operations.	

SECTION 2 – IDENTIFICATION OF HAZARDS

HAZARD CLASSIFICATION – The products described in Section 1 are not classified as hazardous according to applicable GHS hazard classification criteria as required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200), Canada's Hazardous Products Regulations and Mexico's Harmonized System for Identification and Communication of Hazards and Risks from Hazardous Chemicals in the Workplace.

LABEL ELEMENTS: **Hazard Symbol** – No symbol required
Hazard Statement – Not applicable

Signal Word – No signal word required
Precautionary Statement – Not Applicable

HAZARDS NOT OTHERWISE CLASSIFIED

WARNING! - Avoid breathing welding fumes and gases, they may be dangerous to your health. Always use adequate ventilation. Always use appropriate personal protective equipment.

PRIMARY ROUTES OF ENTRY: Respiratory System, Eyes and/or Skin.

ARC RAYS: The welding arc can injure eyes and burn skin.

ELECTRIC SHOCK: Arc welding and associated processes can kill. See Section 8.

FUMES AND GASES: Can be dangerous to your health.

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Most fume ingredients are present as complex oxides and compounds and not as pure metals. When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation, plus those from the base metal and coating, etc., of the materials shown in Section 3 of this Safety Data Sheet. Monitor for the component materials identified in the list in Section 3.

Fumes from the use of this product may contain complex oxides or compounds of the following elements and molecules: amorphous silica fume, antimony trioxide, barium, calcium oxide, cerium oxide, chromium, cobalt, copper, fluor spar or fluorides, lithium, manganese, nickel, silica and strontium. Other reasonably expected constituents of the fume would also include complex oxides of iron, titanium, silicon and molybdenum. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities). One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1 and F1.3, available from the "American Welding Society", 8669 NW 36 Street, # 130, Miami, Florida 33166-6672, Phone: 800-443-9353 or 305-443-9353.

SAFETY DATA SHEET

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

IMPORTANT - This section covers the hazardous materials from which this product is manufactured. This data has been classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) as required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The fumes and gases produced during welding with normal use of this product are addressed in Section 8.

INGREDIENT	CAS NO.	EINECS [*]	GROUP AND %WEIGHT				GHS Classification(s)	GHS HAZARD STATEMENTS (See Section 16 for Complete Phrases)
			A	B	C	D		
ALUMINUM	7429-90-5	231-072-3	<2	<5	<3 ⁽¹⁾	---	Powder (pyrophoric): - Pyr. Sol. 1 ⁽²⁾ - Water-react. 2 ⁽³⁾ Powder (Stabilized): - Flam. Sol. 1 ⁽⁴⁾ - Water-react. 2 ⁽³⁾	H250 H261 H228 H261
ALUMINUM OXIDE	1344-28-1	215-691-6	---	---	<3	---	NONE	
ANTIMONY TRIOXIDE	1309-64-4	215-175-0	---	---	<1 ⁽⁵⁾	---	- Carc. 2 ⁽⁶⁾	H351
BARIUM CMPDS (as Ba)	7440-39-3	231-149-1	---	---	<2 ⁽⁷⁾	---	NONE	
BARIUM FLOURIDE	7787-32-8	232-108-0	---	<12 ⁽⁸⁾	<12 ⁽⁹⁾	---	NONE	
CALCIUM CARBONATE	1317-65-3	215-279-6	---	<2 ⁽¹⁰⁾	<2 ⁽¹⁰⁾	---	NONE	
CERIUM OXIDE	1306-38-3	215-150-4	---	---	<2 ⁽¹¹⁾	---	NONE	
CHROMIUM (metal)	7440-47-3	231-157-5	---	---	<3	5-20	NONE	
COBALT	7440-48-4	231-158-0	---	---	<1 ⁽¹²⁾	---	- Resp. Sens. 1 ⁽¹³⁾ - Skin Sens. 1 ⁽¹⁴⁾ - Aquatic Chronic 4	H334 H317 H413
COPPER	7440-50-8	231-159-6	<1 ⁽¹⁵⁾	---	<2 ⁽¹⁵⁾	<1 ⁽¹⁵⁾	NONE	
FLUORSPAR	7789-75-5	232-188-7	<5 ⁽¹⁶⁾	<10	<5	---	NONE	
IRON	7439-89-6	231-096-4	75-98	75-95	75-98	75-95	NONE	
IRON OXIDE	1309-37-1	215-168-2	---	---	<12	---	NONE	
LITHIUM CARBONATE	554-13-2	209-062-5	---	---	<2	---	- EUH014 ⁽¹⁷⁾ - Skin Corr. 1B ⁽¹⁸⁾	EUH014 H314
LITHIUM FLUORIDE	7789-24-4	232-152-0	---	<2 ⁽¹⁹⁾	<2 ⁽¹⁹⁾	---	- EUH014 ⁽¹⁷⁾ - Skin Corr. 1B ⁽¹⁸⁾	EUH014 H314
LITHIUM OXIDE	12057-24-8	235-019-5	---	---	<2	---	- EUH014 ⁽¹⁷⁾ - Skin Corr. 1B ⁽¹⁸⁾	EUH014 H314
MAGNESIUM	7439-95-4	231-104-6	---	<3	<2	---	Powder (pyrophoric): - Pyr. Sol. 1 ⁽²⁾ - Water-react. 1 ⁽³⁾ Powder or turnings: - Flam. Sol. 1 ⁽⁴⁾ - Self-heat. 1 ⁽²⁰⁾ - Water-react. 2 ⁽³⁾	H250 H260 H228 H252 H261
MAGNESIUM OXIDE	1309-48-4	215-171-9	---	<3	<2	---	NONE	
MANGANESE	7439-96-5	231-105-1	<5	<2	<4	<2	- Acute Tox. 4 (Inhalation) ⁽²¹⁾ - Acute Tox. 4 (Oral) ⁽²¹⁾ - STOT RE 1 ⁽²²⁾	H332 H302 H372
MANGANESE OXIDE	1344-43-0	215-171-9	---	---	<2	---	NONE	
MOLYBDENUM	7439-98-7	231-107-2	<1	---	<2	<2	- STOT RE 2 ⁽²²⁾ - Eye Irrit. 2 ⁽²³⁾ - STOT SE 3 ⁽²⁴⁾	H373 H319 H335

SAFETY DATA SHEET

INGREDIENT	CAS NO.	EINECS*	GROUP AND %WEIGHT				GHS Classification(s)	GHS HAZARD STATEMENTS (See Section 16 for Complete Phrases)
			A	B	C	D		
NICKEL	7440-02-0	231-111-4	---	---	<4	<1	Powder/Element: - Carc. 2 ⁽⁶⁾ - Skin Sens. 1 ⁽¹⁴⁾ - STOT RE 1 ⁽²²⁾ - Aquatic Chronic 3	H351 H317 H372 H412
SILICA	14808-60-7	238-878-4	<2	<2	<2	---	- STOT RE 2 ⁽²²⁾ - Carc. 2 ⁽⁶⁾ - Acute Tox. 4 (Inhalation) ⁽²¹⁾	H373 H351 H332
(Amorphous Silica Fume)	69012-64-2	273-761-1	---	---	---	---	NONE	
SILICON	7440-21-3	231-130-8	<4	---	<4	<2	NONE	
STRONTIUM FLUORIDE	7783-48-4	232-000-3	---	<2 ⁽²⁵⁾	---	---	NONE	
TITANIUM	7440-32-6	231-142-3	---	---	<2	<2	NONE	
TITANIUM DIOXIDE	13463-67-7	236-675-5	<10	---	<10	<2	- Carc. 2 ⁽⁶⁾	H351
ZIRCONIUM	7440-67-7	231-176-9	---	---	<1	---	- Pyr. Sol. 1 ⁽²⁾ - Water-react. 1 ⁽³⁾	H250 H260
HEXAVALENT CHROMIUM [CHROMIUM (VI) TRIOXIDE] (Fume constituent)	1333-82-0	215-607-8	Varies	Varies	Varies	Varies	- Ox. Sol. 1 ⁽²⁶⁾ - Carc. 1A ⁽⁶⁾ - Muta. 1B ⁽²⁷⁾ - Repr. Tox 2 ⁽²⁸⁾ - Acute Tox. 2 (Inhalation) ⁽²¹⁾ - Acute Tox. 3 (Skin & Oral) ⁽²¹⁾ - STOT RE 1 ⁽²²⁾ - Skin Corr. 1A ⁽¹⁸⁾ - Skin Sens. 1 ⁽¹⁴⁾ - Resp. Sens. 1 ⁽¹³⁾ - Aquatic Acute 1 - Aquatic Chronic 1	H271 H350 H340 H361f H330 H311, H301 H372 H314 H317 H334, H317 H400 H410

--- Dashes indicate the ingredient is not present within the group of products; F – European Inventory of Existing Commercial Chemical Substance Number (1) Present only in FABCO ELEMENT 70C, 70M and 71M; FABCO XTREME 71, 85, 95, 101, 120, B2, B3; FABSHIELD 71K6, 71K6-NP, 71T8, 81N1, 81N2, 91T8, 718, X80, X90, X100, XLNT-6 (2) Pyrophoric solid (Cat. 1) (3) Substance or mixture which in contact with water emits flammable gases (Cat. 1, 2 and 3) (4) Flammable solid (Cat. 1 and 2) (5) Present only in FABCOR 90, CVN, EDGE, EDGE D2, EDGE MC, EDGE Ni1, EDGE XP, ELEMENT 70C6, ELEMENT 80Ni1, ELEVATE, HERCULES, MATRIX; (6) Carcinogenicity (Cat. 1A, 1B and 2) (7) Present only in FABCO XTREME 71, 85, 95, 101, 120, B2, B3; FABSHIELD XLNT-6 (8) Present only in FABSHIELD 21B, 23; (9) Present only in FABCO XTREME 71, 85, 95, 101, 120, B2, B3; FABSHIELD 71K6, 71K6-NP, 71T8, 81N1, 81N1+, 81N2, 91T8, 718, XLNT-6, X80, X90, X100; (10) Present only in FABSHIELD 21B, 0.030" and 0.035" 23, 7027; (11) Present only in FABSHIELD 71K6, 71K6-NP, 71T8, 81N1, 81N1+, 81N2, 91T8, 718, E 71Ni, XLR-8, X80, X90, X100; FABCO XTREME 85, 95, 120 (12) Present only in FABSHIELD 71K6, 81N1, 81N2, X80, X90, X100 (13) Respiratory sensitization (Cat. 1, Sub-cat. 1A and 1B) (14) Skin sensitization (Cat. 1, Sub-cat. 1A and 1B) (15) Present only in ELEMENT 71T1C, 81Ni2C; FABCO 105D2, 110K3-M; SubCOR WS; all MEGAFIL and SubCOR SL products (16) Present only in FABCO 85, 105D2; SubCOR EM13K-S, EM13K-S MOD (17) See EUH-Statements in Section 16 (18) Skin corrosion/irritation (Cat. 1, 1A, 1B, 1C and 2) (19) Present only in FABCO 70XHP, 71 HYD, 101, 101M, 712C, 712M, 750C, 750M, 812C, 812-Ni1M, 91K2-C (0.052-in. only); ELEMENT 71T1C, 71T1M, 71Ni1C, 71Ni1M, 81K2C, 81K2M, 81Ni2C; FABSHIELD 71K6, 71K6-NP, 71T8, 81N1, 81N2, 91T8, 718, 7027, X80, X90, X100 (20) Self-heating substance or mixture (Cat. 1 and 2) (21) Acute toxicity (Cat. 1, 2, 3 and 4) (22) Specific target organ toxicity (STOT) – repeated exposure (Cat. 1 and 2) (23) Serious eye damage/eye irritation (Cat. 1 and 2) (24) Specific target organ toxicity (STOT) – single exposure ((Cat. 1, 2) and Cat. 3 for narcotic effects and respiratory tract irritation, only) (25) Present only in FABSHIELD 21B 0.045" – 3/32" (26) Oxidizing solid (Cat. 1, 2 and 3)(27) Germ cell mutagenicity (Cat. 1A, 1B and 2) (28) Reproductive toxicity (Cat. 1A, 1B and 2)

SECTION 4 – FIRST-AID MEASURES

INGESTION: Not an expected route of exposure. Do not eat, drink, or smoke while welding; wash hands thoroughly before performing these activities. If symptoms develop, seek medical attention at once.

INHALATION during welding: If breathing is difficult, provide fresh air and contact physician. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.

SKIN CONTACT during welding: Remove contaminated clothing and wash the skin thoroughly with soap and water. If symptoms develop, seek medical attention at once. **EYE CONTACT during welding:** Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until victim is transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.

Arc rays can injure eyes. If exposed to arc rays, move victim to dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.

Section 11 of this SDS covers the acute effects of overexposure to the various ingredients within the welding consumable. Section 8 of this SDS lists the exposure limits and covers methods for protecting yourself and your co-workers.

SECTION 5 – FIRE-FIGHTING MEASURES

Fire Hazards: Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, non-explosive and essentially nonhazardous until welded.

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Welding arcs and sparks can ignite combustibles and flammable products. If there are flammable materials, including fuel or hydraulic lines, in the work area and the worker cannot move the work or the flammable material, a fire-resistant shield such as a piece of sheet metal or fire resistant blanket should be placed over the flammable material. If welding work is conducted within 35 feet or so of flammable materials, station a responsible person in the work zone to act as fire watcher to observe where sparks are flying and to grab an extinguisher or sound the alarm if needed.

Unused welding consumables may remain hot for a period of time after completion of a welding process. See American National Standard Institute (ANSI) Z49.1 for further general safety information on the use and handling of welding consumables and associated procedures.

Suitable Extinguishing Media: This product is essentially nonflammable until welded; therefore, use a suitable extinguishing agent for a surrounding fire.

Unsuitable Extinguishing Media: None known.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

In the case of a release of solid welding consumable products, solid objects can be picked up and placed into a disposal container. If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8. Wear proper personal protective equipment while handling. Do not discard as general trash.

SECTION 7 - HANDLING AND STORAGE

HANDLING: No specific requirements in the form supplied. Handle with care to avoid cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and product labels.

STORAGE: Keep separate from acids and strong bases to prevent possible chemical reactions.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Read and understand the instructions and the labels on the packaging. Welding fumes do not have a specific OSHA PEL (Permissible Exposure Limit) or ACGIH TLV (Threshold Limit Value). The OSHA PEL for Particulate – Not Otherwise Regulated (PNOR) is 5 mg/m³ – Respirable Fraction, 15 mg/m³ – Total Dust. The ACGIH TLV for Particles – Not Otherwise Specified (PNOS) is 3 mg/m³ – Respirable Particles, 10 mg/m³ – Inhalable Particles. The individual complex compounds within the fume may have a lower OSHA PEL or ACGIH TLV than the OSHA PNOR and ACGIH PNOS. An Industrial Hygienist, the OSHA PELs for Air Contaminants (29 CFR 1910.1000), and the ACGIH TLVs should be consulted to determine the specific fume constituents present and their respective exposure limits. All exposure limits are in milligrams per cubic meter (mg/m³).

INGREDIENT	CAS	EINECS	OSHA PEL	ACGIH TLV
ALUMINUM###	7429-90-5	231-072-3	5 R* (Dust), 15	1 R* {A4}
ALUMINUM OXIDE##	1344-28-1	215-691-6	5 R*	5 (Welding fumes, as Al)
ANTIMONY TRIOXIDE	1309-64-4	215-175-0	0.5 (as Sb)	1 R* {A4}
BARIUM CMPDS (as Ba)	7440-39-3	231-149-1	0.5 (as Ba)	10 (as Al, Tot particulate)
BARIUM FLOURIDE#	7787-32-8	232-108-0	0.5 (as Ba)	0.5 (as Sb) {A2}
CALCIUM CARBONATE	1317-65-3	215-279-6	5 R*, 5 (as CaO)	0.5 (as Ba) {A4}
CERIUM OXIDE	1306-38-3	215-150-4	5 R*, 15 (Dust)	3 R*, 2 (as CaO)
CHROMIUM#	7440-47-3	231-157-5	1 (Metal)	3 R*, 10
			0.5 (Cr II & Cr III Cpnds)	0.5 (Metal)
			0.005 (Cr VI Cpnds, Calif. OSHA PEL)	0.003 (Cr III Cpnds) {A4; DSEN; RSEN}
COBALT (Metal, dust and fume, as Co)	7440-48-4	231-158-0	0.1 (Dust and Fume)	0.0002 (Cr VI Sol Cpnds) {A1; Skin; DSEN; RSEN}
COPPER	7440-50-8	231-159-6	0.1 (Fume), 1 (Dust)	0.0005 (Cr VI STEL)
FLUORSPAR	7789-75-5	232-188-7	2.5 (as F)	0.02 {A3}
IRON+	7439-89-6	231-096-4	5 R*	0.2 (Fume), 1 (Dust)
IRON OXIDE	1309-37-1	215-168-2	10 (Oxide Fume)	2.5 (as F) {A4}
LITHIUM CARBONATE	554-13-2	209-062-5	5 R*, 15 (Dust)	5 R* {Fe ₂ O ₃ } {A4}
LITHIUM FLUORIDE	7789-24-4	232-152-0	2.5 (as F)	5 R* {Fe ₂ O ₃ } {A4}
LITHIUM OXIDE	12057-24-8	235-019-5	1 ■ ■ ■	3 R*, 10 (Dust)
MAGNESIUM+	7439-95-4	231-104-6	5 R*	2.5 (as F) {A4}
MAGNESIUM OXIDE	1309-48-4	215-171-9	15 (Fume, Total Part)	3 R*, 10 (Dust)
MANGANESE#	7439-96-5	231-105-1	5 CL ** (Fume)	3 R*
			1, 3 STEL *** ■	10 I* {A4}
MANGANESE OXIDE	1344-43-0	215-171-9	5 CL ** (Fume)	0.1 I* {A4} ◆
			1, 3 STEL *** ■	0.02 R* ◆◆
MOLYBDENUM	7439-98-7	231-107-2	5 R*	0.1 I* {A4} ◆
NICKEL#	7440-02-0	231-111-4	1 (Metal)	0.02 R* ◆◆
			1 (Sol Cpnds)	3 R*, 10 I* (Ele and Insol)
			1 (Insol Cpnds)	0.5 R* (Sol Cpnds) {A3}
SILICA++	14808-60-7	238-878-4	0.05 R*	1.5 I* (Ele) {A5}
(Amorphous Silica Fume)	69012-64-2	273-761-1	0.8	0.1 I* (Sol Cpnds) {A4}
SILICON+	7440-21-3	231-130-8	5 R*	0.2 I* (Insol Cpnds) {A1}
STRONTIUM FLUORIDE	7783-48-4	232-000-3	2.5 (as F)	0.025 R* {A2}
TITANIUM+	7440-32-6	231-142-3	5 R*	3 R*
TITANIUM DIOXIDE	13463-67-7	236-675-5	15 (Dust)	3 R*
ZIRCONIUM	7440-67-7	231-176-9	5 (Zr Cpnds)	2.5 (as F) {A4}
			5, 10 STEL *** (Zr Cpnds)	3 R*

R* - Respirable Fraction I* - Inhalable Fraction ** - Ceiling Limit *** - Short Term Exposure Limit + - As a nuisance particulate covered under "Particulates Not Otherwise Regulated" by OSHA or "Particulates Not Otherwise Specified" by ACGIH ++ - Crystalline silica is bound within the product as it exists in the package. However, research indicates silica is present in welding fume in the amorphous (noncrystalline) form # - Reportable material under Section 313 of SARA ## - Reportable material under Section 313 of SARA only in fibrous form ### - Reportable material under Section 313 of SARA as dust or fume ■ - NIOSH REL TWA and STEL ■■ - AIHA Ceiling Limit of 1 mg/m³ ◆ - Limit of 0.1 mg/m³ is for Inhalable Mn in 20153 by ACGIH ◆◆ - Limit of 0.02 mg/m³ is for Respirable Mn in 2015 by ACGIH Ele - Element Sol - Soluble Insol - Insoluble Inorg - Inorganic Cpnds - Compounds NOS - Not Otherwise Specified {A1} - Confirmed Human Carcinogen per ACGIH {A2} - Suspected Human Carcinogen per ACGIH {A3} - Confirmed Animal Carcinogen with Unknown Relevance to Humans per ACGIH {A4} - Not Classifiable as a Human Carcinogen per ACGIH {A5} - Not Suspected as a Human Carcinogen per ACGIH (noncrystalline form) DSEN - Dermal Sensitization RSEN - Respiratory Sensitization EINECS - European Inventory of Existing Commercial Chemical Substance Number OSHA - U.S. Occupational Safety and Health Administration ACGIH - American Conference of Governmental Industrial Hygienists

VENTILATION: Use enough ventilation or local exhaust at the arc or both to keep the fumes and gases below the PEL/TLV in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

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RESPIRATORY PROTECTION: Use NIOSH-approved or equivalent fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the regulatory limits.

EYE PROTECTION: Wear helmet or use face shield with filter lens for open arc welding processes. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others from the weld arc flash.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection as well as dark non-synthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable

SPECIAL PRECAUTIONS (IMPORTANT): When welding with electrodes that require special ventilation (such as stainless or hardfacing, or other products which require special ventilation, or on lead- or cadmium-plated steel and other metals or coatings like galvanized steel, which produce hazardous fumes) maintain exposure below the PEL/TLV. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLV. Always use exhaust ventilation. Refer to the following sources for important additional information: American National Standard Institute (ANSI) Z49.1; Safety in Welding and Cutting published by the American Welding Society, 8669 NW 36 Street, # 130, Miami, Florida 33166-6672, Phone: 800-443-9353 or 305-443-9353; and OSHA Publication 2206 (29 CFR 1910), U.S. Government Printing Office, Washington, DC 20402.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, non-explosive and essentially nonhazardous until welded.

PHYSICAL STATE: Solid

APPEARANCE: Round, Cored Wire

COLOR: Gray or Copper (shiny metallic)

ODOR: Odorless

ODOR THRESHOLD: Not Applicable

pH: Not Applicable

MELTING POINT/FREEZING POINT: Not Available

INITIAL BOILING POINT AND BOILING RANGE: Not Available

FLASH POINT: Not Available

EVAPORATION RATE: Not Applicable

FLAMMABILITY (SOLID, GAS): Not Available

UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Not Available

VAPOR PRESSURE: Not Applicable

VAPOR DENSITY: Not Applicable

RELATIVE DENSITY: Not Available

SOLUBILITY(IES): Not Available

PARTITION COEFFICIENT: N-OCTANOL/WATER: Not Applicable

AUTO-IGNITION TEMPERATURE: Not Available

DECOMPOSITION TEMPERATURE: Not Available

VISCOSITY: Not Applicable

SECTION 10 – STABILITY AND REACTIVITY

GENERAL: Welding consumables applicable to this sheet are solid and nonvolatile as shipped. This product is only intended for use per the welding parameters it was designed for. When this product is used for welding, hazardous fumes may be created. Other factors to consider include the base metal, base metal preparation and base metal coatings. All of these factors can contribute to the fume and gases generated during welding. The amount of fume varies with the welding parameters.

STABILITY: This product is stable under normal conditions.

REACTIVITY: Contact with acids or strong bases may cause generation of gas.

SECTION 11 – TOXICOLOGICAL INFORMATION

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS: **Welding Fumes** - May result in discomfort such as dizziness, nausea or dryness or irritation of nose, throat or eyes. **Aluminum Oxide** - Irritation of the respiratory system. **Antimony Compounds** - Irritation of nose, throat, eyes and skin. **Barium** - Aching eyes, rhinitis, frontal headache, wheezing, laryngeal spasms, salivation or anorexia. **Calcium Oxide** - Dust or fumes may cause irritation of the respiratory system, skin and eyes. **Chromium** - Inhalation of fume with chromium (VI) compounds can cause irritation of the respiratory tract, lung damage and asthma-like symptoms. Swallowing chromium (VI) salts can cause severe injury or death. Dust on skin can form ulcers. Eyes may be burned by chromium (VI) compounds. Allergic reactions may occur in some people. **Cobalt** - Pulmonary irritation, cough, dermatitis, weight loss. **Copper** - Metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure. **Fluorides** - Fluoride compounds evolved may cause skin and eye burns, pulmonary edema and bronchitis. **Iron, Iron Oxide** - None are known. Treat as nuisance dust or fume. **Lithium Compounds** - Overexposure may cause tremor and nausea. **Magnesium, Magnesium Oxide** - Overexposure to the oxide may cause metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure. **Manganese, Manganese Oxide** - Metal fume fever characterized by chills, fever, upset stomach, vomiting, irritation of the throat and aching of body. Recovery is generally complete within 48 hours of the overexposure. **Molybdenum, Cerium Oxide** - Irritation of the eyes, nose and throat. **Nickel, Nickel Compounds** - Metallic taste, nausea, tightness in chest, metal fume fever, allergic reaction. **Silica (Amorphous)** - Dust and fumes may cause irritation of the respiratory system, skin and eyes. **Strontium Compounds** - Strontium salts are generally non-toxic and are normally present in the human body. In large oral doses, they may cause gastrointestinal disorders, vomiting and diarrhea. **Titanium Dioxide** - Irritation of respiratory system. **Zirconium** - May cause irritation of the eyes, nose and throat due to mechanical effects.

LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS: **Welding Fumes** - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis." Studies have concluded that there is sufficient evidence for ocular melanoma in welders. **Aluminum Oxide** - Pulmonary fibrosis and emphysema. **Antimony Compounds** - Metal fume fever, dermatitis, keratitis, conjunctivitis and ulceration and perforation of the nasal septum. Avoid conditions in which fresh hydrogen will react with antimony to form stibine which is extremely toxic. **Barium** - Long term overexposure to soluble barium compounds may cause nervous disorders and may have deleterious effects on the heart, circulatory system and musculature. **Calcium Oxide** - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. **Chromium** - Ulceration and perforation of nasal septum. Respiratory irritation may occur with symptoms resembling asthma. Studies have shown that chromate production workers exposed to hexavalent chromium compounds have an excess of lung cancers. Chromium (VI) compounds are more readily absorbed through the skin than chromium (III) compounds. Good practice requires the reduction of employee exposure to chromium (III) and (VI) compounds. **Cobalt** - Repeated overexposure to cobalt compounds can produce reduced pulmonary function, diffuse nodular fibrosis of lungs and respiratory hypersensitivity. **Copper** - Copper poisoning has been reported in the literature from exposure to high levels of copper. Liver damage can occur due to copper accumulating in the liver characterized by cell destruction and cirrhosis. High levels of copper may cause anemia and jaundice. High levels of copper may cause central nervous system damage characterized by nerve fiber separation and cerebral degeneration. **Fluorides** - Serious bone erosion (Osteoporosis) and mottling of teeth. **Iron, Iron Oxide Fumes** - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposure to iron and its compounds ceases. Iron and magnetite (Fe₃O₄) are not regarded as fibrogenic materials. **Lithium Compounds** - May be considered as potentially teratogenic. **Magnesium, Magnesium Oxide** - No adverse long term health effects have been reported in the literature. **Manganese, Manganese Oxide** - Long-term overexposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson's disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are overexposed to manganese compounds should be seen by a physician for early detection of neurologic problems. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait. **Molybdenum, Cerium Oxide** - Prolonged overexposure may result in loss of appetite, weight loss, loss of muscle coordination, difficulty in breathing and anemia. **Nickel, Nickel Compounds** - Lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. **Silica (Amorphous)** - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause

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pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential. **Strontium Compounds** - Strontium at high doses is known to concentrate in bone. Major signs of chronic toxicity, which involve the skeleton, have been labeled as "strontium rickets". **Titanium Dioxide** - Pulmonary irritation and slight fibrosis. **Zirconium** - May cause pulmonary fibrosis and pneumoconiosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing impaired lung functions (asthma-like conditions). Persons with a pacemaker should not go near welding and cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. Respirators are to be worn only after being medically cleared by your company-designated physician.

EMERGENCY AND FIRST AID PROCEDURES: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. If irritation or flash burns develop after exposure, consult a physician.

CARCINOGENICITY: Chromium VI compounds, nickel compounds, silica (crystalline quartz), ultraviolet radiation and welding fumes are classified as IARC^E Group 1 and NTP^Z Group K carcinogens. Titanium dioxide, nickel metal/alloys, antimony trioxide and cobalt are classified as IARC Group 2B carcinogens.

CALIFORNIA PROPOSITION 65:

WARNING: These products can expose you to chemicals, including titanium dioxide and/or chromium and/or nickel, which are known to the State of California to cause cancer, and to carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

INGREDIENT	CAS	IARC ^E	NTP ^Z	OSHA ^H	65 ^Θ
ALUMINUM	7429-90-5	---	---	---	---
ALUMINUM OXIDE	1344-28-1	---	---	---	---
ANTIMONY TRIOXIDE	1309-64-4	2B	---	---	X
BARIUM CMPDS (as Ba)	7440-39-3	---	---	---	---
BARIUM FLOURIDE	7787-32-8	---	---	---	---
CALCIUM CARBONATE	1317-65-3	---	---	---	---
CERIUM OXIDE	1306-38-3	---	---	---	---
CHROMIUM	7440-47-3	1 ^{ΣΣ} , 3 ^Σ	K ^{ΣΣ}	X ^{ΣΣ}	X ^{ΣΣ}
COBALT	7440-48-4	2B	---	X	X
COPPER	7440-50-8	---	---	---	---
FLUORSPAR	7789-75-5	---	---	---	---
IRON	7439-89-6	---	---	---	---
IRON OXIDE	1309-37-1	3	---	---	---
LITHIUM CARBONATE	554-13-2	---	---	---	X
LITHIUM FLUORIDE	7789-24-4	---	---	---	---
LITHIUM OXIDE	12057-24-8	---	---	---	---
MAGNESIUM	7439-95-4	---	---	---	---
MAGNESIUM OXIDE	1309-48-4	---	---	---	---
MANGANESE	7439-96-5	---	---	---	---
MANGANESE OXIDE	1344-43-0	---	---	---	---
MOLYBDENUM	7439-98-7	---	---	---	---
NICKEL	7440-02-0	2B ^β , 1 ^{ββ}	S ^β , K ^{ββ}	---	X ^β , X ^{ββ}
SILICA	14808-60-7	1 ^ψ	K	---	X
(Amorphous Silica Fume)	69012-64-2	3	---	---	---
SILICON	7440-21-3	---	---	---	---
STRONTIUM FLUORIDE	7783-48-4	---	---	---	---
TITANIUM	7440-32-6	---	---	---	---
TITANIUM DIOXIDE	13463-67-7	2B	---	---	X
Ultraviolet Radiation	---	1	---	---	---
Welding Fumes	---	1	---	---	---
ZIRCONIUM	7440-67-7	---	---	---	---

E – International Agency for Research on Cancer (1 – Carcinogenic to Humans, 2A – Probably Carcinogenic to Humans, 2B – Possibly Carcinogenic to Humans, 3 – Not Classifiable as to its Carcinogenicity to Humans, 4 Probably Not Carcinogenic to Humans) Z – US National Toxicology Program (K – Known Carcinogen, S – Suspected Carcinogen) H – OSHA Designated Carcinogen List Θ – California Proposition 65 (X – On Proposition 65 list) --- Dashes indicate the ingredient is not listed with the IARC, NTP, OSHA or 65 Σ – Chromium Metal and Chromium III Compounds ΣΣ – Chromium VI β – Nickel metal and alloys ββ – Nickel compounds ψ – Silica Crystalline α-Quartz --- Dashes indicate the ingredient is not listed with the IARC, NTP, OSHA or Proposition 65

SECTION 12 – ECOLOGICAL INFORMATION

Welding processes can release fumes directly to the environment. Welding wire can degrade if left outside and unprotected. Residues from welding consumables and processes could degrade and accumulate in the soil and groundwater.

SECTION 13 – DISPOSAL CONSIDERATIONS

Use recycling procedures if available. Discard any product, residue, packaging, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

No international regulations or restrictions are applicable. No special precautions are necessary.

SECTION 15 – REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label and the safety data sheet. Observe all local and federal rules and regulations. Take all necessary precautions to protect yourself and others.

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA TITLE III: Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

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Ingredient name

Products on this SDS are a solid solution in the form of a solid article.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

Section 311 Hazard Class

As shipped: Immediate

RQ(lb)

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TPQ (lb)

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In use: Immediate delayed

EPCRA/SARA TITLE III 313 TOXIC CHEMICALS: The following metallic components are listed as SARA 313 "Toxic Chemicals" and potentially subject to annual SARA 312 reporting: Aluminum, Antimony Trioxide, Barium Compounds, Barium Fluoride, Chromium, Cobalt, Copper, Lithium Carbonate, Manganese, Manganese Oxide, and Nickel. See Section 3 for weight percentage.

CANADIAN CONTROLLED PRODUCTS REGULATION: This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

SECTION 16 – OTHER INFORMATION

The following Hazard Statements, provided in the OSHA Hazard Communication Standard (29 CFR Part 1910.1200) correspond to the columns labeled 'GHS Hazard Statements' within Section 3 of this safety data sheet. Take appropriate precautions and protective measures to eliminate or limit the associated hazard.

H228: Flammable solid
H250: Catches fire spontaneously if exposed to air
H252: Self-heating in large quantities; may catch fire
H260: In contact with water releases flammable gases which may ignite spontaneously
H261: In contact with water releases flammable gases
H271: May cause fire or explosion; strong oxidizer
H301: Toxic if swallowed
H302: Harmful if swallowed
H311: Toxic in contact with skin
H314: Causes severe skin burns and eye damage
H317: May cause an allergic skin reaction
H319: Causes serious eye irritation
H330: Fatal if inhaled
H332: Harmful if inhaled
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335: May cause respiratory irritation
H340: May cause genetic defects
H350: May cause cancer
H351: Suspected of causing cancer
H361f: Suspected of damaging fertility or the unborn child
H372: Causes damage to organs through prolonged or repeated exposure
H373: May cause damage to organs through prolonged or repeated exposure
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects
H412: Harmful to aquatic life with long lasting effects.

The following Supplemental Hazard Information (EUH-Statement) pertaining to Section 3 is also taken from the OSHA Hazard Communication Standard (29 CFR Part 1910.1200):
EUH014 - Reacts violently with water

For additional information please refer to the following sources:

USA: **American National Standard Institute (ANSI) Z49.1** "Safety in Welding and Cutting", **ANSI/American Welding Society (AWS) F1.5** "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", **ANSI/AWS F1.1** "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", **AWSF3.2M/F3.2** "Ventilation Guide for Weld Fume", American Welding Society, 8669 NW 36 Street, # 130, Miami, Florida 33166-6672, Phone: 800-443-9353 or 305-443-9353. Safety and Health Fact Sheets available from AWS at www.aws.org.

OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.

Threshold Limit Values and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists (ACGIH), 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

Canada: **CSA Standard CAN/CSA-W117.2-01** "Safety in Welding, Cutting and Allied Processes".

Hobart Brothers LLC strongly recommends the users of this product study this SDS, the product label information and become aware of all hazards associated with welding. Hobart Brothers LLC believes this data to be accurate and to reflect qualified expert opinion regarding current research. However, Hobart Brothers LLC cannot make any expressed or implied warranty as to this information.



SENECA SAWMILL COMPANY

P.O. Box 851 · Eugene, OR 97440 · (541) 689-1011

Attachment I – Cleaner Air Oregon Forms

AQ520 Form - Version 1.6
5/10/2021

Facility Information	
Facility Name	Seneca Sawmill Company
Facility Address	90201 Highway 99N
City	Eugene
Zip Code	97402
Source Number (for existing sources)	207459
Facility Contact	Courtney Griesel
Phone Number	541-762-3009

INSTRUCTIONS:
- **Toxic Emissions Unit and Stack/Fugitive ID:** use IDs consistent with permit identifiers if applicable.
- **Activity Units/Type:** where possible, maintain consistency with permitted/reported Units/Type.
- **Max Daily Activity:** for semi-continuous/batch processes this value should account for co-occurring activities, process and/or maintenance that would account for the potential maximum emissions activities for this pollutant.
- **Actual:** values should be based on the last full year reported to DEQ or estimates of normal activity (new sources).
- **Capacity:** maximum activity value achievable with 100% operational up-time for this unit.
- **Requested PTE:** values that a source is requesting to be permitted on that differ from "Actuals" and "Capacity".

AQ520 Form - Version 1.6
5/10/2021

Emissions Unit Information			Stack/Fugitive Information		Activity Information							
Toxics Emissions Unit ID	Unit Description	Control Device[s]	Emission Type (e.g. Point or Fugitive)	Stack or Fugitive ID	Units (e.g. hours operation, tons material, gallons)	Description/Type	Annual - Chronic [units/year]			Max Daily - Acute [units/day]		
							Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity
TEU-1	Widget Maker 1 (EXAMPLE)	Widget Waste RCO	Point	ST-1	tons	Input Material X	100	140	200	0.3	0.5	0.8
Boler 3	Natural Gas Fired Boler	None	Point	KBOIL03	MMscf	Natural Gas		426.9			1.1696	
Boler 4	Natural Gas Fired Boler	None	Point	KBOIL04	MMscf	Natural Gas		426.9			1.1696	
Boler 5	Natural Gas Fired Boler	None	Point	KBOIL05	MMscf	Natural Gas		426.9			1.1696	
Klins	Klin drying of lumber	None	Fugitive	KILN	MBF	Thousand board feet lumber		540000			1542.86	
GDF	Gasoline Dispensing Facility	None	Point	GDF-1	lbs	VOC emissions		7092.63			159.36	
Grind	Mill Grinding	Baghouse (EP-13)	Point	S13	lbs	PM emissions		2016			5.76	
Paint	Paint booth	Booth filters	Point	S15	gallons	paint sprayed		500			10	
Weld	Fab Shop Welding	None	Fugitive	WELD	1000 lbs	weld wire		5.14			0.015	
Plasma	Plasma cutting	None	Fugitive	MCUT	lbs	PM emissions		494.18			2.15	
EGEN	Office Diesel Emergency Generator	None	Stack	EGEN	Mgal	diesel		1.17			0.0468	

INSTRUCTIONS:
- **CAS or DEQ ID:** either use the drop-down provided or simply cut and paste each pollutant CAS number or DEQ ID (see DEQ Pollutant List Worksheet) emitted by the referenced TEU.
- **Chemical Name:** if a CAS number or DEQ ID is entered in *Column B*, *Column C* should perform a lookup from the DEQ Air Toxics list; alternatively, simply cut and paste the chemical names that correspond to the CAS numbers/DEQ ID in *Column B* if applicable.
- **Control Efficiency:** enter the pollutant specific control efficiency - this should include all capture and removal process efficiencies applicable to each individual pollutant.
- **EF Values:** provide emission factors for Annual and Max Daily conditions; if Annual and Max Daily EF values are equivalent, please enter value in *Annual (Column F)*.
- **Emission Factor Information Reference/Notes:** provide EF references (e.g. Source Tests, AP-42, Engineering Estimates, etc) as well as any additional notes (e.g. control efficiencies).
- **Calculated Emissions:** follow guidance in "Form Instructions" worksheet for specific formulas.

AQ520 Form - Version 1.6
5/10/2021

Toxic Emissions Unit ID	Pollutant Information		Control Efficiency	Emission Factor Information				Calculated Emissions					
				EF Values		Units	Reference/Notes	Annual - Chronic [lb/yr]			Max Daily - Acute [lb/day]		
	CAS or DEQ ID	Chemical Name		Annual - Chronic	Max Daily - Acute			Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity
	61-82-5 TEU-1	Amitrole Arsenic and compounds		2.5 0.1		lb/ton lb/ton	Annual and max daily EF values are the same for this TEU and its po The control efficiency does not apply to this pollutant	6.25 10	8.75 14	12.5 20	0.01875 0.03	0.03125 0.05	0.05 0.08
Boiler 3	71-43-2	Benzene		0.0058		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00678368
Boiler 3	50-00-0	Formaldehyde		0.0123		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.01438608
Boiler 3	401	Polycyclic aromatic hydrocarbons (PAHs)		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00011696
Boiler 3	50-32-8	Benzo[a]pyrene		0.0000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000051228
Boiler 3	91-20-3	Naphthalene		0.000033		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00035088
Boiler 3	75-07-0	Acetaldehyde		0.0031		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00362576
Boiler 3	107-02-8	Acrolein		0.0027		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00315792
Boiler 3	7664-41-7	Ammonia		18		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						21.0528
Boiler 3	7440-38-2	Arsenic and compounds		0.0002		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00023392
Boiler 3	7440-39-3	Barium and compounds		0.0044		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00514624
Boiler 3	7440-41-7	Beryllium and compounds		0.000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00051228
Boiler 3	7440-43-9	Cadmium and compounds		0.0011		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00128656
Boiler 3	18540-29-9	Chromium VI, chromate and dichromate particulate		0.0014		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00163744
Boiler 3	7440-48-4	Cobalt and compounds		0.000084		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0008596
Boiler 3	7440-50-8	Copper and compounds		0.00085		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00099416
Boiler 3	100-41-4	Ethyl benzene		0.0069		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00807024
Boiler 3	110-54-3	Hexane		0.0046		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00538016
Boiler 3	7439-92-1	Lead and compounds		0.0005		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0005848
Boiler 3	7439-96-5	Manganese and compounds		0.00038		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00044448
Boiler 3	7439-97-6	Mercury and compounds		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000304096
Boiler 3	1313-27-5	Molybdenum trioxide		0.00165		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00192984
Boiler 3	365	Nickel compounds, insoluble		0.0021		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00245616
Boiler 3	7782-49-2	Selenium and compounds		0.000024		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						2.80704E-05
Boiler 3	108-88-3	Toluene		0.0265		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0309944
Boiler 3	7440-62-2	Vanadium (fume or dust)		0.0023		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00269008
Boiler 3	1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene		0.0197		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.02304112
Boiler 3	7440-66-6	Zinc and compounds		0.029		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0339184
Boiler 4	71-43-2	Benzene		0.0058		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00678368
Boiler 4	50-00-0	Formaldehyde		0.0123		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.01438608
Boiler 4	401	Polycyclic aromatic hydrocarbons (PAHs)		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00011696
Boiler 4	50-32-8	Benzo[a]pyrene		0.0000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000051228
Boiler 4	91-20-3	Naphthalene		0.0003		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00035088
Boiler 4	75-07-0	Acetaldehyde		0.0031		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00362576
Boiler 4	107-02-8	Acrolein		0.0027		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00315792
Boiler 4	7664-41-7	Ammonia		18		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						21.0528
Boiler 4	7440-38-2	Arsenic and compounds		0.0002		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00023392
Boiler 4	7440-39-3	Barium and compounds		0.0044		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00514624
Boiler 4	7440-41-7	Beryllium and compounds		0.000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00051228
Boiler 4	7440-43-9	Cadmium and compounds		0.0011		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00128656
Boiler 4	18540-29-9	Chromium VI, chromate and dichromate particulate		0.0014		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00163744
Boiler 4	7440-48-4	Cobalt and compounds		0.000084		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0008596
Boiler 4	7440-50-8	Copper and compounds		0.00085		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00099416
Boiler 4	100-41-4	Ethyl benzene		0.0069		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00807024
Boiler 4	110-54-3	Hexane		0.0046		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00538016
Boiler 4	7439-92-1	Lead and compounds		0.0005		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0005848
Boiler 4	7439-96-5	Manganese and compounds		0.00038		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00044448
Boiler 4	7439-97-6	Mercury and compounds		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000304096
Boiler 4	1313-27-5	Molybdenum trioxide		0.00165		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00192984
Boiler 4	365	Nickel compounds, insoluble		0.0021		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00245616
Boiler 4	7782-49-2	Selenium and compounds		0.000024		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						2.80704E-05
Boiler 4	108-88-3	Toluene		0.0265		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0309944
Boiler 4	7440-62-2	Vanadium (fume or dust)		0.0023		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00269008
Boiler 4	1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene		0.0197		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.02304112
Boiler 4	7440-66-6	Zinc and compounds		0.029		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0339184
Boiler 5	71-43-2	Benzene		0.0058		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00678368
Boiler 5	50-00-0	Formaldehyde		0.0123		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.01438608
Boiler 5	401	Polycyclic aromatic hydrocarbons (PAHs)		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00011696
Boiler 5	50-32-8	Benzo[a]pyrene		0.0000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000051228
Boiler 5	91-20-3	Naphthalene		0.0003		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00035088
Boiler 5	75-07-0	Acetaldehyde		0.0031		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00362576
Boiler 5	107-02-8	Acrolein		0.0027		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00315792
Boiler 5	7664-41-7	Ammonia		18		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						21.0528
Boiler 5	7440-38-2	Arsenic and compounds		0.0002		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00023392
Boiler 5	7440-39-3	Barium and compounds		0.0044		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00514624
Boiler 5	7440-41-7	Beryllium and compounds		0.000012		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00051228
Boiler 5	7440-43-9	Cadmium and compounds		0.0011		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00128656
Boiler 5	18540-29-9	Chromium VI, chromate and dichromate particulate		0.0014		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00163744
Boiler 5	7440-48-4	Cobalt and compounds		0.000084		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0008596
Boiler 5	7440-50-8	Copper and compounds		0.00085		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00099416
Boiler 5	100-41-4	Ethyl benzene		0.0069		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00807024
Boiler 5	110-54-3	Hexane		0.0046		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00538016
Boiler 5	7439-92-1	Lead and compounds		0.0005		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0005848
Boiler 5	7439-96-5	Manganese and compounds		0.00038		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00044448
Boiler 5	7439-97-6	Mercury and compounds		0.0001		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.000304096
Boiler 5	1313-27-5	Molybdenum trioxide		0.00165		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00192984
Boiler 5	365	Nickel compounds, insoluble		0.0021		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00245616
Boiler 5	7782-49-2	Selenium and compounds		0.000024		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						2.80704E-05
Boiler 5	108-88-3	Toluene		0.0265		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0309944
Boiler 5	7440-62-2	Vanadium (fume or dust)		0.0023		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.00269008
Boiler 5	1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene		0.0197		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.02304112
Boiler 5	7440-66-6	Zinc and compounds		0.029		lb/Mscf	Oregon DEQ 2020 ATEI Combustion EF Tool						0.0339184

Kilns	75-07-0	Acetaldehyde	0.1128	lb/Mbf	EQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln	60912	174.034608
Kilns	90-00-0	Formaldehyde	0.0025	lb/Mbf	EQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln	1350	3.85715
Kilns	67-56-1	Methanol	0.0764	lb/Mbf	EQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln	4071	116.331644
Kilns	107-02-8	Acrolein	0.0018	lb/Mbf	EQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln	972	2.777148
Kilns	123-38-6	Propionaldehyde	0.0009	lb/Mbf	EQ HAP and VOC Emission Factors for Lumber Drying, 2021, AQ-EF09 assuming a maximum kiln	486	1.385574
GDF	526-73-8	1,2,3-Trimethylbenzene	0.00007058	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	500597825	0.011247629
GDF	95-63-6	1,2,4-Trimethylbenzene	0.00039799	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	2,822759514	0.083423686
GDF	105-87-8	1,3,5-Trimethylbenzene	0.00015566	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	1.03987386	0.024854384
GDF	540-84-9	2,2,4-Trimethylpentane	0.01543471	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	109.4726872	2.459675386
GDF	91-57-6	2-Methyl naphthalene	0.0000183	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	0.012979513	0.000291629
GDF	71-43-2	Benzene	0.00549442	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	38.96988812	0.875590771
GDF	110-82-7	Cyclohexane	0.00452826	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	32.171623514	0.721623514
GDF	100-41-4	Ethyl benzene	0.00141423	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	10.03016102	0.223716193
GDF	110-54-3	Hexane	0.02169322	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	153.861983	3.457031539
GDF	78-79-5	Isoprene, except for vegetative emission sources	0.00026761	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	1.880658714	0.04264633
GDF	98-82-8	Isopropylbenzene (cumene)	0.0004279	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	0.303493638	0.006819014
GDF	108-38-3	m-Xylene	0.00267533	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	18.97512582	0.426340589
GDF	91-20-3	Naphthalene	0.00005957	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	0.042343001	0.000951379
GDF	95-47-6	o-Xylene	0.00125055	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	8.869688447	0.199287604
GDF	106-42-3	p-Xylene	0.00116709	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	8.277737547	0.185987462
GDF	108-88-3	Toluene	0.013467	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	95.51644821	2.14610112
GDF	1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	0.00539297	lb/b VOC	Annual based on CARB Revised Emission Factors for Gasoline Marketing Operations at California	36.12255181	0.811615699
Grind	7429-90-5	Aluminum and compounds	0.00308	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	6.20628	0.0177408
Grind	7440-36-0	Antimony and compounds	0.0000817	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.01647072	4.70592E-05
Grind	7440-38-2	Arsenic and compounds	0.0001043	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.0288288	0.000082368
Grind	7440-41-7	Beryllium and compounds	0.00000387	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.000780192	2.22912E-06
Grind	7440-43-9	Cadmium and compounds	0.00000117	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.000000047	0.000000001
Grind	18540-29-9	Chromium VI, chromate and dichromate particulate	0.0001455	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.293328	0.000083808
Grind	7440-48-4	Cobalt and compounds	0.00471	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	9.49536	0.0271296
Grind	7440-50-8	Copper and compounds	0.000232	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.467712	0.0133632
Grind	7439-92-1	Lead and compounds	0.00000471	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.00946536	0.71268E-05
Grind	7439-95-5	Manganese and compounds	0.00000004	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.79308	0.0100432
Grind	7439-97-6	Mercury and compounds	0.000000844	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.001701504	4.86144E-06
Grind	365	Nickel compounds, insoluble	0.00158	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	3.18528	0.0091008
Grind	7782-49-2	Selenium and compounds	0.00000105	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.0021168	0.000006048
Grind	7440-22-4	Silver and compounds	0.000000498	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.001003968	2.86848E-06
Grind	7440-25-0	Thallium and compounds	0.000000211	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.00043676	0.000000018
Grind	504	Phosphorus and compounds	0.000132	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.265112	0.00076032
Grind	7440-62-2	Vanadium (fume or dust)	0.000134	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.270144	0.0007184
Grind	7440-66-3	Zinc and compounds	0.00000926	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.1201536	0.000343296
Grind	7440-39-3	Barium and compounds	0.0000225	lb/b PM	PM emissions based on mass of material emitted by well functioning baghouse. The primary material emitted	0.04536	0.0001296
Paint	1314-13-2	Zinc oxide	0.00275	lb/gal	3% zinc oxide from SDS, 35% overspray, and particulate filter	1.00275	0.02005
Weld	18540-29-9	Chromium VI, chromate and dichromate particulate	0.002	lb/1000 lb wire	Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Welding Emission Factor Search	0.01028	0.00003
Weld	7440-48-4	Cobalt and compounds	0.001	lb/1000 lb wire	Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Welding Emission Factor Search	0.00514	0.000015
Weld	7439-95-5	Manganese and compounds	0.062	lb/1000 lb wire	Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Welding Emission Factor Search	3.40268	0.00903
Weld	365	Nickel compounds, insoluble	0.0004	lb/1000 lb wire	Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Welding Emission Factor Search	0.02056	0.00006
Weld	7429-90-5	Aluminum and compounds	0.976	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2023	5.01664	0.01464
Weld	1309-64-4	Antimony trioxide	0.122	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2023	0.62708	0.00183
Weld	7440-39-3	Barium and compounds	1.390741547	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2024	7.148411551	0.020861123
Weld	239	Fluorides	1.163861063	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2025	5.98127862	0.017454916
Weld	7440-43-9	Copper and compounds	0.244	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2026	1.25416	0.00396
Weld	7631-86-9	Silica crystalline (respirable)	0.244	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2027	1.25416	0.00396
Weld	1313-27-5	Molybdenum trioxide	0.366038145	lb/1000 lb wire	San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2028	1.861436065	0.005490572
Plasma	7439-96-5	Manganese and compounds	0.1	lb/b PM	Emissions are based on "Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Steel"	49.418	0.215
Plasma	7440-50-8	Copper and compounds	0.014	lb/b PM	Emissions are based on "Emission of Fume, Nitrogen Oxides and Noise in Plasma Cutting of Steel"	6.91852	0.0301
Plasma	108-99-0	1,3-Bisulfide	0.2174	lb/b PM	Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.25439	0.00117432
EGEN	91-57-6	2-Methyl naphthalene	0.012297907		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.01438552	0.000575542
EGEN	83-32-9	Acenaphthene	0.000734614		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000859499	3.43799E-05
EGEN	208-96-8	Acenaphthylene	0.000809816		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000947485	3.78994E-05
EGEN	75-07-0	Acetaldehyde	0.7633		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.916461	0.0365844
EGEN	107-02-8	Acrolein	0.00039		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.03963	0.00169532
EGEN	7664-41-7	Ammonia	2.9		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	3.393	0.1357
EGEN	120-12-7	Anthracene	0.00045209		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000528945	2.11578E-05
EGEN	7440-36-0	Antimony and compounds	0.000318187		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000372279	1.48912E-05
EGEN	7440-38-2	Arsenic and compounds	0.000276853		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000329318	1.29567E-05
EGEN	7440-39-3	Barium and compounds	0.000373993		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000437455	1.74983E-05
EGEN	56-55-3	Benz[a]anthracene	4.85413E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	5.67933E-05	2.27173E-06
EGEN	71-43-2	Benzene	0.1863		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.217971	0.00871884
EGEN	50-32-8	Benzo[a]pyrene	1.43852E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.68307E-05	6.73229E-07
EGEN	205-99-2	Benzo[b]fluoranthene	4.43536E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	5.16937E-05	2.07573E-06
EGEN	192-97-2	Benzo[k]fluoranthene	2.8863E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	3.84589E-05	1.53824E-06
EGEN	191-24-2	Benzo[h,i]perylene	2.18743E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	2.59292E-05	1.02372E-06
EGEN	207-08-9	Benzo[k]fluoranthene	1.30544E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.52736E-05	6.10944E-07
EGEN	7440-41-7	Beryllium and compounds	4.77085E-06		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	5.58189E-06	2.23278E-07
EGEN	7440-43-9	Cadmium and compounds	8.07783E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	9.45106E-05	3.78042E-06
EGEN	18540-29-9	Chromium VI, chromate and dichromate particulate	0.00039303		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000410439	1.64178E-05
EGEN	218-01-9	Chrysene	6.69996E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	7.83896E-05	3.1356E-06
EGEN	7440-48-4	Cobalt and compounds	1.57511E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.84288E-05	7.37153E-07
EGEN	7440-50-8	Copper and compounds	0.000502135		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000597498	2.34999E-05
EGEN	7440-39-3	Barium and compounds	1.03695E-06		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.23275E-06	4.8531E-08
EGEN	200-70-3	Diesel particulate matter	16.9752457		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	19.86103747	0.794441499
EGEN	100-41-4	Ethyl benzene	0.0109		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.012753	0.00051012
EGEN	206-44-0	Fluoranthene	0.000369653		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000432845	1.73138E-05
EGEN	96-73-7	Fluorene	0.002184397		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.002555745	0.00010223
EGEN	50-09-0	Formaldehyde	2.713062766		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	3.174263436	0.126971337
EGEN	110-54-3	Hexane	0.0269		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.031473	0.00125892
EGEN	7647-01-0	Hydrochloric acid	0.1863		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.217971	0.00871884
EGEN	193-39-5	Indeno[1,2,3-cd]pyrene	1.0711E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.25318E-05	5.01274E-07
EGEN	7439-92-1	Lead and compounds	0.000363672		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000425496	1.70198E-05
EGEN	7439-95-5	Manganese and compounds	0.0004199193		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000491298	0.000491298
EGEN	7439-97-6	Mercury and compounds	1.51073E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.76756E-05	7.07023E-07
EGEN	91-20-3	Naphthalene	0.026352391		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.030832298	0.001232298
EGEN	7440-02-0	Nickel and compounds	0.000182229		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000213208	8.52833E-06
EGEN	198-55-0	Perylene	1.17825E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	1.37855E-05	5.51419E-06
EGEN	85-01-8	Phenanthrene	0.004541947		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.00514077	0.000212653
EGEN	504	Phosphorus and compounds	0.008403986		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.009832663	0.000393307
EGEN	7782-49-2	Selenium and compounds	0.000376383		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.000440368	1.76147E-05
EGEN	7440-22-4	Silver and compounds	4.8013E-05		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	5.61752E-05	2.24701E-06
EGEN	7440-25-0	Thallium and compounds	0.000240094		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.00026891	1.12626E-05
EGEN	108-89-3	Toluene	0.1054		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.123319	0.0049327
EGEN	1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	0.0424		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.049608	0.0019432
EGEN	7440-66-6	Zinc and compounds	0.005226177		Emission factors from ODEQ 2020 Air Toxics Emissions Inventory Combustion Emission Factor Search	0.006114627	0.000245885

- **Toxic Emissions Unit and Stack/Fugitive ID:** use IDs consistent with permit identifiers if applicable.
- **Emission Units or Activity Description:** where possible, maintain consistency with permitted/reported Units/Type.
- **Material Name:** this is the commercial name that is provided on the manufacturer's SDS.
- **Drain/Waste:** this category should be used to account for all waste material shipped off-site, lost to drain, or incorporated into product.
- **Max Daily Activity:** for semi-continuous/batch processes this value should account for co-occurring activities, process and/or maintenance, that would account for the potential maximum emissions activities for the pollutant.
- **Process/Activity:** this category should be used to report the activity (e.g. wet solers) reported to the permit for the activity (new solers added).
- **Capacity:** maximum activity value achievable with 100% operational up-time for this activity.
- **Requested PTE:** values that a source is requesting to be permitted on that differ from "Actuals" and "Capacity".

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[illegible]

Material Name: must be consistent with **Material Name** on "Material Balance Activities" worksheet **Column C**.

- CAS or DEQ ID: either use the drop-down provided or simply cut and paste each pollutant CAS number or DEQ ID (see the DEQ Pollutant List worksheet) emitted by the referenced TEU.

- Chemical Name: if a CAS number or DEQ ID is entered in **Column C**, spreadsheet should provide a lookup from the DEQ Air Toxics list; alternatively, simply cut and paste the chemical names that correspond to the CAS numbers/DEQ ID in **Column E** applicable.

- Control Efficiency: enter the pollutant specific control efficiency - this should include all capture and removal process efficiencies applicable to each individual pollutant.

- Percent Composition: provide raw percent composition values for the pollutant as reported by supporting manufacturer documentation.

- Reference Notes: provide references and notes for control efficiencies and/or any adjustments applied to material usage data via **Material Waste (Columns M-R)** on the "Material Balance Activities" worksheet.

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Waste (Columns M-R) on the "Material Balance Activities" worksheet.						Calculated Emissions								
Calculated Emissions: follow guidance in "Form Instructions" worksheet for specific formulas.						Emissions Data			Annual Emissions - Chronic [lb/yr]			Total Daily Emissions - Acute [lb/day]		
Unit ID	Material Name	CAS or DEQ ID	Chemical Name	Control Efficiency	Percent Composition	Reference/Notes	Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity		
TEU-BOOTH	Widget Paint-A	67-56-1	Methanol	0.00%	35.00%	Includes Transfer Efficiency (72%) and Filter Removal	3500	3990	5250	10.85	11.55	13.3		
TEU-BOOTH	Widget Paint-A	100-40-3	4-Vinylcyclohexene	0.00%	40.00%		4800	5472	7200	14.88	15.84	18.24		
TEU-BOOTH	Widget Paint-A	18540-29-9	Chromium VI, chromate and dichromate particulate	99.72%	5.00%		1.4	1.596	2.1	0.00434	0.00462	0.00532		
TEU-BOOTH	Widget Paint-B	90-43-7	2-Phenylphenol	0.00%	0.50%		4.675	5.85	7.3	0.0225	0.045	0.065		
TEU-BOOTH	Widget Paint-B	50-00-0	Formaldehyde	0.00%	70.00%		654.5	819	1022	3.15	6.3	9.1		
TEU-BOOTH	Widget Paint-B	7440-36-0	Antimony and compounds	99.72%	5.00%	Includes Transfer Efficiency (72%) and Filter Removal	0.1309	0.1638	0.2044	0.00063	0.00126	0.00182		



CATEGORICALLY EXEMPT TOXICS EMISSIONS UNITS

ANSWER SHEET

Facility name: **Seneca Sawmill Company** Permit Number: **207459**

Indicate which of the following categorically exempt activities occur at this facility by checking the appropriate columns below. Submit this form electronically with your Cleaner Air Oregon (CAO) Emissions Inventory AQ520 form to meet the reporting requirements in [OAR 340-245-0040\(4\)\(a\)\(A\)](#) for categorically exempt Toxics Emissions Units (TEUs). This form is the complete list of categorically exempt TEUs, which can be found in the division 245 rules under [OAR 340-245-0060\(3\)\(b\)](#).

Yes	No	Categorically Exempt TEU Activities
☒	☐	Evaporative and tail pipe emissions from on-site motor vehicle operation.
☒	☐	Distillate oil, kerosene, gasoline, natural gas or propane burning equipment, provided the aggregate expected actual emissions of the equipment identified does not exceed the de minimis level for any regulated pollutant, based on the expected maximum annual operation of the equipment. If a source's expected emissions from all such equipment exceed the de minimis levels, then the source may identify a subgroup of such equipment as categorically exempt with the remainder not designated as an exempt TEU. The following equipment may never be included as part of the exempt TEU: A. Any individual distillate oil, kerosene or gasoline burning equipment with a rating greater than 0.4 million Btu/hour; and B. Any individual natural gas or propane burning equipment with a rating greater than 2.0 million Btu/hour.
☒	☐	Distillate oil, kerosene, gasoline, natural gas or propane burning equipment brought on site for six months or less for maintenance, construction or similar purposes, such as but not limited to generators, pumps, hot water pressure washers and space heaters, provided that any such equipment that performs the same function as the permanent equipment, must be operated within the source's existing PSEL.
☒	☐	Office activities.
☐	☒	Food service activities.
☒	☐	Janitorial activities.
☒	☐	Personal care activities.
☒	☐	Grounds keeping activities, including, but not limited to building painting and road and parking lot maintenance.
☐	☒	On-site laundry activities.
☐	☒	On-site recreation facilities.
☒	☐	Instrument calibration.
☐	☒	Automotive storage garages.

☒	☐	Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems.
☒	☐	Temporary construction activities.
☒	☐	Warehouse activities.
☒	☐	Accidental fires and fire suppression.
☒	☐	Air vents from compressors.
☐	☒	Air purification systems.
☐	☒	Continuous emissions monitoring lines.
☐	☒	Demineralized water tanks.
☐	☒	Pre-treatment of municipal water, including use of deionized water purification systems.
☒	☐	Electrical charging stations.
☐	☒	Fire brigade training.
☒	☐	Instrument air dryers and distribution.
☐	☒	Fully enclosed process raw water filtration systems.
☒	☐	Electric motors.
☒	☐	Pressurized tanks containing gaseous compounds that do not contain toxic air contaminants.
☐	☒	Vacuum sheet stacker vents.
☐	☒	Emissions from wastewater discharges to publicly owned treatment works (POTW) provided the source is authorized to discharge to the POTW, not including on-site wastewater treatment and/or holding facilities.
☐	☒	Log ponds.
☒	☐	Stormwater settling basins.
☒	☐	Paved roads and paved parking lots within an urban growth boundary.
☒	☐	Hazardous air pollutant emissions in fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils.
☒	☐	Health, safety, and emergency response activities.
☐	☒	Non-diesel, compression ignition emergency generators* and pumps used only during loss of primary equipment or utility service due to circumstances beyond the

		reasonable control of the owner or operator, or to address a power emergency, provided that the aggregate horsepower rating of all stationary emergency generator and pump engines is not more than 3,000 horsepower. If the aggregate horsepower rating of all the stationary emergency generator and pump engines is more than 3,000 horsepower, then no emergency generators and pumps at the source may be considered categorically exempt. *All spark ignition engines remain exempt.
☒	☐	Non-contact steam vents and leaks and safety and relief valves for boiler steam distribution systems.
☒	☐	Non-contact steam condensate flash tanks.
☒	☐	Non-contact steam vents on condensate receivers, deaerators and similar equipment.
☒	☐	Boiler blowdown tanks.
☐	☒	Ash piles maintained in a wetted condition and associated handling systems and activities.