APPLICATION REPORT

General Metals of Tacoma > Tacoma, WA

Notice of Construction Application

Prepared By:

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Project 194801.0015

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1. EXECUTIVE SUMMARY

General Metals of Tacoma (GMT) owns and operates a metal recycling facility in Tacoma, Washington (the Tacoma facility), under the jurisdiction of the Puget Sound Clean Air Agency (PSCAA). The Tacoma facility operates a metal shredder and hammermill, (referred to in this application as "the shredder"), originally permitted in 1998 under Order of Approval (OOA) No. 7609 (this Order has since been superseded by NOC 11539 issued in February 2019). The shredder is currently unenclosed. Emissions from [REDACTED FOR CONFIDENTIALITY] are controlled by a baghouse.

GMT is proposing several changes that will significantly reduce emissions from the shredder:

- Capture of emissions by constructing an enclosure around the shredder and venting the enclosure to an abatement system;
- Reduce Volatile Organic Compound (VOC) and organic Toxic Air Pollutant (TAP) emissions by adding [REDACTED FOR CONFIDENTIALITY] to treat the exhaust from the shredder enclosure;
- Add particulate controls in the form of [REDACTED FOR CONFIDENTIALITY]; and
- Reduce potential acid gas emissions formed in the VOC control system by adding [REDACTED FOR CONFIDENTIALITY].

This project requires a Notice of Construction (NOC) application because the project involves small emission increases associated with natural gas combustion and potential acid gas formation within proposed treatment devices, and the addition of new emission capture and control equipment. This document serves as the required application, and includes the following elements:

- Section 2: Description of Facility
- Section 3: Emission Calculations
- Section 4: Regulatory Applicability
- Appendix A: NOC Forms and State Environmental Policy Act (SEPA) checklist
- Appendix B: Detailed Emission Calculations
- Appendix C: Project Process Flow Diagram (PFD)
- Appendix D: [REDACTED FOR CONFIDENTIALITY]

GMT has included the NOC filing fee of $1,150 with the submittal of this application. GMT will pay any remaining fees upon receiving an invoice from PSCAA.

General Metals of Tacoma (GMT) owns and operates a scrap metal recovery, shredding, and recycling facility in Tacoma, Washington (the Tacoma facility), within the jurisdiction of PSCAA. The Tacoma facility currently operates under several orders of approval that specify conditions of operation for equipment at the site. In addition to bulk scrap metal, recyclable material consisting of non-bulk ferrous/nonferrous metal scrap is also received at the Tacoma facility.

Bulk recyclable material, comprised of heavy iron, auto bodies, appliances, other light iron, and nonferrous metal is delivered to the Tacoma facility [REDACTED FOR CONFIDENTIALITY]. Incoming material is inspected and sorted based on type and size. Auto bodies and light iron materials, including appliances and other recyclable light steel materials, are processed in the shredder prior to additional separation of nonferrous metal at the Joint Products Plant. The shredder is currently unenclosed. Emissions from [REDACTED FOR CONFIDENTIALITY] are controlled by a baghouse.

2.1. PROPOSED EMISSION CONTROL SYSTEM

GMT is proposing to install a shredder emission control system (ECS) for the metal shredding operations to control the shredder emissions which are currently classified as fugitive emissions. The ECS will consist of [REDACTED FOR CONFIDENTIALITY].

The enclosure will be designed [REDACTED FOR CONFIDENTIALITY]. Exhaust from the enclosure will be directed through the emission abatement equipment discussed above. The existing [REDACTED FOR CONFIDENTIALITY] will remain in operation [REDACTED FOR CONFIDENTIALITY].

GMT is currently evaluating two fine particulate emission control technologies. [REDACTED FOR CONFIDENTIALITY] Whichever fine particulate control technology is selected, greater than 95% control of fine particulate is expected.

The proposed VOC control system will have a minimum VOC control efficiency of 98% [REDACTED FOR CONFIDENTIALITY].

While engineering of the system is currently still underway, diagrams showing the basic emission control system design (for the installed controls at another facility owned by GMT's parent company) are provided in Appendix C.

The following sections describe and summarize the methodologies for calculating emissions associated with the proposed emission control system. Detailed emission calculations are presented in Appendix B of this report.

3.1. EMISSION CALCULATION METHODOLOGY

Installation of the emission control system will reduce VOC and PM/PM_{10}/$PM_{2.5}$ from the shredder through improved particulate emission controls and new VOC controls. Estimated current uncontrolled emissions from the shredder are based on [REDACTED FOR CONFIDENTIALITY]. The PTE emission rate is calculated using an operating capacity of 2,000 tons per day, as listed in the OOA 7609 for the initial permitting of the shredder/hammermill, operating 365 days per year.

Estimated post-project emissions from the shredder account for 98 percent VOC control [REDACTED FOR CONFIDENTIALITY] and installation of the improved particulate control technology with a 95 percent control efficiency. Fugitive emissions from the shredder are calculated assuming a 95% capture efficiency for the shredder enclosure. TAP emissions are calculated for the shredder [REDACTED FOR CONFIDENTIALITY] and applying reductions for TAP subject to emission controls. The calculations account for a net decrease in TAP from the shredder since 95% of TAP are routed to the treatment equipment, which will achieve treatment efficiencies discussed above.

Acid gas (HCl and HF) emissions may be formed [REDACTED FOR CONFIDENTIALITY]. The calculations use a mass balance approach to estimate these emissions. In this method, TAPs [REDACTED FOR CONFIDENTIALITY] that have chlorine or fluorine atoms as part of their molecular structure are conservatively assumed to completely convert to HCl or HF. These calculations are included in detail in Appendix B of this application report and summarized in Tables 3-1 and 3-2 below.

GMT conservatively estimates combustion emissions of PM/PM_{10}/$PM_{2.5}$, SO_2, NO_x, VOC, and CO from natural gas [REDACTED FOR CONFIDENTIALITY] using emission factors from EPA's AP-42 Section 1.4, *Natural Gas Combustion,* Tables 1.4-1 and 1.4-2. Actual emissions are expected to be less than those estimated using AP-42. [REDACTED FOR CONFIDENTIALITY]. The PTE is conservatively calculated [REDACTED FOR CONFIDENTIALITY] applying that for 8,760 hours per year. Actual emissions will be much [REDACTED FOR CONFIDENTIALITY].

3.2. POTENTIAL EMISSIONS FROM SHREDDER [REDACTED FOR CONFIDENTIALITY]

A summary of potential criteria pollutant emissions from this project is provided in Table 3-1. Pre-project criteria pollutant emissions include only fugitive VOC and PM/PM_{10}/$PM_{2.5}$ from the shredder, since there is currently no enclosure in place or emission controls installed. Post-project emissions include controlled emissions from the shredder, which account for controls for VOC and particulates; fugitive emissions not captured by the shredder enclosure; and combustion emissions from natural gas supplied to the [REDACTED FOR CONFIDENTIALITY]. A summary of these values can also be found in Table 1 of Appendix B.

Table 3-1. Annual Criteria Pollutant PTE for Shredder

Pollutant	Pre-Project Potential Emissions	Post-Project Potential Emissions				Change in Shredder PTE
		Shredder Stack	Shredder Fugitives	[REDACTED FOR CONFIDEN-TIALITY]	Total	
	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
PM	96.00	4.56	4.80	1.04	10.40	-85.59
PM_{10}	42.24	2.01	2.11	1.04	5.16	-37.08
$PM_{2.5}$	Negligible	Negligible	Negligible	1.04	1.04	1.04
SO_2	--	--	--	0.08	0.08	0.08
NO_x	--	--	--	6.87	6.87	6.87
VOC	231.87	4.41	11.59	0.76	16.75	-215.11
CO	--	--	--	11.54	11.54	11.54

Table 3-2 provides a list of the Toxic Air Pollutants (TAP) that will have increased emission rates [REDACTED FOR CONFIDENTIALITY] These pollutants include TAP [REDACTED FOR CONFIDENTIALITY]. Emissions for each of these TAP are compared to their respective SQER as listed in WAC 173-460-150. Other TAP compounds emitted from the shredder will have decreased emissions [REDACTED FOR CONFIDENTIALITY]. A complete list of all TAP emissions from this project, as well as the subsequent increase or decrease in emissions for each TAP, can be found in Table 2 of Appendix B.

Table 3-2. Toxic Air Pollutant Emission Increases from Project

TAP	Project Emission Increase		SQER	Averaging period	Below SQER?
	lb/hr	tpy			
Acrolein	[REDACTED FOR CONFIDEN-TIALITY]	3.71E-04	2.60E-02	24-hr	Yes
Copper Compounds	[REDACTED FOR CONFIDEN-TIALITY]	1.17E-04	1.90E-01	1-hr	Yes
Formaldehyde	[REDACTED FOR CONFIDEN-TIALITY]	1.03E-02	2.70E+01	Annual	Yes
Hydrogen Chloride	[REDACTED FOR CONFIDEN-TIALITY]	5.31E-04	6.70E-01	24-hr	Yes
Hydrogen Fluoride	[REDACTED FOR CONFIDEN-TIALITY]	6.88E-04	1.00E+00	24-hr	Yes
Naphthalene	[REDACTED FOR CONFIDEN-TIALITY]	4.12E-05	4.80E+00	Annual	Yes

The Facility is subject to various federal and local air quality regulations. This section summarizes the air quality regulations that will apply to the proposed project. Specifically, the applicability of Prevention of Significant Deterioration (PSD) permitting requirements, New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and regulations from Ecology or PSCAA at the state or local level.

4.1. NOC APPLICABILITY

The Tacoma facility is regulated under the Puget Sound Clean Air Agency (PSCAA). A NOC application must be filed under PSCAA Regulation I, Section 6.03, and the permit issued by PSCAA, prior to the construction, reconstruction or modification of an affected facility. Additionally, a NOC application must be filed under WAC 173-400-114 for the replacement or substantial alteration of emission control technologies.

The proposed project includes emission increases associated with [REDACTED FOR CONFIDENTIALITY] and also includes the addition of new emission control equipment. Therefore, a NOC application is required. This report constitutes the required NOC application. The relevant NOC forms and a State Environmental Protection Act (SEPA) checklist are included in Appendix A.

4.2. PREVENTION OF SIGNIFICANT DETERIORATION (PSD) APPLICABILITY

The Tacoma facility is a minor source with respect to EPA's Prevention of Significant Deterioration (PSD) permit program. The PTE from the shredder, along with existing sources at the facility, will remain below the relevant PSD permitting threshold of 250 tpy. Therefore, this project does not require review under the PSD permit program.

4.3. NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards (NSPS) have been established in 40 CFR Part 60 and apply to certain types of equipment that are newly constructed, modified, or reconstructed after a given applicability date. NSPS are designed to control emissions to the level achievable by the best-demonstrated technology as specified in the applicable provisions or subparts. No NSPS are applicable to the installation of the emission control system on the shredder.

4.4. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are federal regulations that apply to sources of HAPs. NESHAP subparts codified under 40 CFR 61 are pollutant-specific regulations applicable to certain sources of HAPs and NESHAP subparts codified under 40 CFR 63 are source category-specific regulations. No NESHAPs are applicable to the Tacoma facility for installation of the emission control system on the shredder.

4.5. BEST AVAILABLE CONTROL TECHNOLOGY

Under PSCAA rules, modified equipment with increased emissions of criteria pollutants or TAPs must implement Best Available Control Technology (BACT) and BACT for toxics (tBACT), respectively. The proposed emission control system project reduces emissions of most pollutants, except for [REDACTED FOR

CONFIDENTIALITY]. These pollutants are the natural result from the operation of a well-designed emission control system for the other pollutants controlled, and no BACT or tBACT limitations are necessary.

4.6. PSCAA REGULATIONS

In addition to the federal air regulations described previously, PSCAA establishes regulations applicable at the emission unit level and at the facility level. PSCAA Regulations I, II and III set forth general requirements, emission standards on criteria pollutants and toxic air pollutants defined under WAC 173-460. Below is a list of specific regulations that apply or may potentially apply to the shredder.

- Opacity shall not exceed 20 percent for more than 3 minutes in any 1-hour period, per PSCAA Regulation I, Section 9.03.
- No source shall emit SO_2 with a concentration exceeding 1,000 ppmv on a dry basis, with a 1-hour averaging period at 7% oxygen per PSCAA Regulation I, Section 9.07;
- Particulate matter emissions shall not exceed 0.05 gr/dscf, per PSCAA Regulation I, Section 9.09;
- Emissions of hydrogen chloride shall not exceed 100 ppm with a 1-hour averaging period, per PSCAA Regulation I, Section 9.10(a).
- No emissions of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property are allowed, per PSCAA Regulation I, Section 9.11
- No device to conceal or mask emissions of an air contaminant shall be allowed, per PSCAA Regulation I, Section 9.13

APPENDIX A: PSCAA NOC APPLICATION FORMS AND SEPA CHECKLIST

Notice of Construction Form P
[REDACTED FOR CONFIDENTIALITY]
[REDACTED FOR CONFIDENTIALITY]
SEPA Checklist

AGENCY USE ONLY	NOC#:	REG#:	Date Fee Pd:	Eng. Assigned:

Puget Sound Clean Air Agency

1904 Third Avenue, Suite 105 | Seattle, WA 98101-3317

Phone 206-343-8800 | 206-343-7522 Fax

Need assistance? Free translation services available at 206-343-8800

Español 中文 Tiếng Việt 한국어 Tagalog русский

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

The following information must be submitted as part of this application packet before an Agency engineer is assigned to review your project.

SECTION 1. FACILITY INFORMATION

Business Name General Metals of Tacoma (GMT)			
Equipment Installation Address 1902 Marine View Dr	City Tacoma	State WA	Zip 98422
Is the business registered with the Agency at this equipment installation address? ☒ Yes. Current Registration or AOP No. 21432 ☐ No, not registered ☐ Unknown			
Business Owner Name General Metals of Tacoma			
Business Mailing Address 1902 Marine View Dr	City Tacoma	State WA	Zip 98422
Type of Business Recycling			
NAICS Code 423930	NAICS Description Recyclable Material Merchant Wholesalers		
Contact Name (for this application) Bryan Graham	Phone (253) 404-6686	Email bgraham@schn.com	
Provide a 1-2 sentence simple description of this project: GMT is proposing to install [REDACTED FOR CONFIDENTIALITY].			

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS

1) **$1,150 filing fee** (nonrefundable)

☐ PAY BY CHECK – Attached and made payable to **Puget Sound Clean Air Agency**

☒ PAY BY CREDIT – Accounting technician will contact person identified below for payment information

Contact Name:	Contact Number:
Bryan Graham	(253) 404-6686

2) **Detailed Project Description**

The project description must include a detailed description of the project, a list of process and control equipment to be installed or modified, a description of how the proposed project will impact your existing operations (if applicable), and measures that will be taken to minimize air emissions.

Detailed description of the proposed project included in packet?

☒ YES, attached. ☐ NO, not attached. This application is incomplete.

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS (CONT)

3) **Process flow diagram**
☒ YES, attached. ☐ NO, not attached. This application is incomplete

4) **Emission estimate.** Emission rate increases for all pollutants.
☒ YES, attached. ☐ NO, not attached. This application is incomplete.

5) **Environmental Checklist** (or a determination made by another Agency under the State Environmental Policy Act)
www.pscleanair.org/DocumentCenter/View/170
☒ YES, attached. ☐ NO, not attached. This application is incomplete..

6) Attach **equipment form**(s) applicable to your operation. Forms are available online at
www.pscleanair.org/178/Apply-for-Notice-of-Construction-Permit
☒ YES, attached. ☐ NO, not attached. This application is incomplete.

SECTION 3: PROCESS AND CONTROL EQUIPMENT (attach additional pages if necessary)

Process Equipment		Does this equipment have air pollution control equipment?	Air Pollution Control Equipment	
# of Units	Equipment Type & Design Capacity		# of Units	Equipment Type
1	Existing Shredder 2,000 tons/day	☒ Yes ☐ No	2	[REDACTED FOR CONFIDENTIALITY]
1		☒ Yes ☐ No	2	[REDACTED FOR CONFIDENTIALITY]
1		☒ Yes ☐ No	2	[REDACTED FOR CONFIDENTIALITY]

SECTION 4: CERTIFICATION STATEMENT

I, the undersigned, certify that the information contained in this application and the accompanying forms, plans, specifications, and supplemental data described herein is, to the best of my knowledge, accurate and complete.

Signature: Bryan Graham — Date: 4/28/20

Printed Name: Bryan Graham — Title: Sr. Env. Mgr

SECTION 5: APPLICATION SUBMITTAL

☒ **EMAIL application and attachments to:**
NOC@pscleanair.org

-OR-

☐ **MAIL application, payment, and attachments to:**
Puget Sound Clean Air Agency
ATTN: NOC Application Submittal
1904 3rd Ave, Suite 105 - Seattle, WA 98101

THIS SECTION FOR AGENCY USE ONLY						
Eng. Assigned (Compliance Mgr)	Eng. Rec'd (Eng)	Web description (Eng)	Completeness review (Eng)	Routed for OA Prep (Eng)	OA signed (Compliance Mgr)	OA mailed (Admin)
Date:	Date:	Date:	Date:	Date:	Date:	Date:

pscleanair.org
Puget Sound Clean Air Agency

Puget Sound Clean Air Agency
1904 Third Avenue, Suite 105 | Seattle, WA 98101-3317
Phone 206-343-8800 | 206-343-7522 Fax

ENVIRONMENTAL CHECKLIST

Because of the State Environmental Policy Act, the action for which you are filing a Notice of Construction and Application for Approval to this Agency requires the completion of an environmental checklist.

BUT: If you can answer "yes" to either of the following statements with respect to the action being proposed, the attached checklist need not be completed:

1. I have obtained a State, City, or County Permit and filled out an environmental checklist.

   ☐ **Yes** ☒ **No**

   If yes, complete the following:

   State, City or County Department: _____

   Date the checklist was completed: _____

   Attach a copy of the checklist

2. An environmental checklist or assessment has previously been filled out for another agency.

   ☐ **Yes** ☒ **No**

   If yes, complete the following:

   Agency: _____

   Date the checklist was completed: _____

   Attach a copy of the checklist

If your answers are NO to both of the above statements, you must complete the attached environmental checklist.

Prepared by:

Signature _____

Name Bryan Graham

Position Senior Environmental Manager

Agency/Organization General Metals of Tacoma

Date Submitted 7/28/20

ENVIRONMENTAL CHECKLIST

Date: 4/3/20

Proponent: Puget Sound Clean Air Agency

Project, Brief Title: Shredder Emission Control System

Purpose of Checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use “not applicable” or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of Checklist for Nonproject Proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of Sections A, B, and C plus section D: Supplemental Sheet for Nonproject Actions.

Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Section B: Environmental Elements that do not contribute meaningfully to the analysis of the proposal.

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of proposed project, if applicable: Shredder Emission Control System			
2. Name of Applicant General Metals of Tacoma (GMT)			
3. Applicant Address 1902 Marine View Drive	City Tacoma	State WA	Zip 98422
Applicant Phone (253) 404-6686	Applicant Email bgraham@schn.com		
Contact Person Bryan Graham	Title Senior Environmental Manager		
Company/Firm General Metals of Tacoma			
4. Date Checklist Prepared 4/3/20	**5.** Agency Requesting Checklist Puget Sound Clean Air Agency		
6. Proposed timing or schedule (including phasing, if applicable). As soon as possible			
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? ☐ Yes ☒ No. If yes, explain.			
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. Notice of Construction Application to PSCAA, under the provisions of PSCAA Regulation I, Section 6.03 and WAC 173-400-114.			
9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? ☐ Yes ☒ No. If yes, explain.			
10. List any government approvals or permits that will be needed for your proposal, if known. Notice of Construction Application to PSCAA, under the provisions of PSCAA Regulation I, Section 6.03 and WAC 173-400-114.			

ENVIRONMENTAL CHECKLIST

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

[REDACTED FOR CONFIDENTIALITY]

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

1902 Marine View Drive
Tacoma, WA 98422

B. ENVIRONMENTAL ELEMENTS

1. EARTH
a. General description of the site: ☒ flat ☐ rolling ☐ hilly ☐ steep slopes ☐ mountains ☐ other _____
b. What is the steepest slope on the site (approximate percent slope)? Most of the project site is flat, with sloping up to 25% near the shoreline
c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. The soil on site is primarily fill of undetermined classification
d. Are there surface indications or history of unstable soils in the immediate vicinity? ☐ Yes ☒ No. If yes, describe.
e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. No filling or grading is proposed.
f. Could erosion occur as a result of clearing, construction, or use? ☐ Yes ☒ No. If yes, generally describe.
g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? No additional impervious surface is proposed. The facility is 100% paved
h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: No erosion control methods proposed.

ENVIRONMENTAL CHECKLIST

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke, greenhouse gases) during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities, if known.

[REDACTED FOR CONFIDENTIALITY]

b. Are there any off-site sources of emissions or odor that may affect your proposal? ☐ Yes ☒ No.
If yes, generally describe.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

[REDACTED FOR CONFIDENTIALITY]

3. WATER

a. Surface

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands) ? ☒ Yes ☐ No. If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The site is adjacent to the Hylebos Waterway which is a tributary to Commencement Bay and greater Puget Sound.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? ☐ Yes ☒ No. If yes, please describe and attach available plans.

The project will occur more than 200 feet from the OHWM associated with the Hylebos Waterway.

3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill material will be removed or placed into the Hylebos or nearby wetlands during this project.

4. Will the proposal require surface water withdrawals or diversions? ☐ Yes ☒ No.
Give general description, purpose, and approximate quantities if known.

5. Does the proposal lie within a 100-year floodplain? ☐ Yes ☒ No. If yes, note location on the site plan.

6. Does the proposal involve any discharges of waste materials to surface waters? ☐ Yes ☒ No. If yes, describe the type of waste and anticipated volume of discharge.

b. Ground Water

1. Will groundwater be withdrawn from a well for drinking water or other purposes? ☐ Yes ☒ No. If yes, give a general description of the well, proposed uses and approximate quantities withdrawn from the well.

Will water be discharged to groundwater? ☐ Yes ☒ No. If yes, give general description, purpose, and approximate quantities, if known.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the systems, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

N/A

c. Water Runoff (including storm water)

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? ☐ Yes ☐ No. If yes, describe.

All stormwater is treated and discharged to the Hylebos Waterway in accordance with NPDES Permit WA0040347.

2. Could waste material enter ground or surface waters? ☐ Yes ☒ No. If yes, generally describe.

3. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? ☐ Yes ☒ No. If yes, describe.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, impacts, if any:

None.

ENVIRONMENTAL CHECKLIST

4. PLANTS				
a. Check the types of vegetation found on the site:				
Deciduous Trees:	☐ Alder	☐ Maple	☐ Aspen	☐ other (specify):
Evergreen Trees:	☐ Fir	☐ Cedar	☐ Pine	☐ other (specify):
☐ Shrubs				
☐ Grass				
☐ Pasture				
☐ Crop or Grain				
☐ Orchards, Vineyards, or other permanent crops				
☐ Other types of Vegetation (specify):				
Wet Soil Plants:	☐ Cattail	☐ Buttercup	☐ other (specify):	
	☐ Bulrush	☐ Skunk Cabbage		
Water Plants:	☐ Water Lily	☐ Eelgrass	☐ Milfoil	☐ other (specify):

b. What kind and amount of vegetation will be removed or altered?

None

c. List threatened or endangered species known to be on or near the site.

No listed plant species are known on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

There is no terrestrial vegetation in the project area. No landscaping is proposed for the site, due to its industrial usage.

e. List all noxious weeds and invasive species known to be on or near the site.

None

ENVIRONMENTAL CHECKLIST

5. ANIMALS

a. Indicate birds and other animals that have been observed on or near the site or are known to be on or near the site.

Birds:	☒ Hawk	☒ Heron	☐ other (specify):
	☐ Eagle	☐ Songbirds	
Mammals:	☐ Deer	☐ Bear	☐ other (specify):
	☐ Elk	☐ Beaver	
Fish:	☐ Bass	☒ Salmon	☒ Trout
	☐ Hearing	☐ Shellfish	☐ other (specify):

b. List any threatened or endangered species known to be on or near the site.

The Hylebos Waterway supports Puget Sound chinook salmon and critical habitat, Coastal Puget Sound bull trout and critical habitat, Puget Sound steelhead trout, bocaccio rockfish, yelloweye rockfish, and canary rockfish. Commencement Bay supports leatherback sea turtles, humpback whales, Southern Resident killer whales, stellar sea lion, and marbled murrelet. Because the project will take place in an existing industrial area over 200 ft landward of the OHW mark, there is no effect expected to these marine species.

c. Is the site part of a migration route? ☒ Yes ☐ No. If yes, explain.

The Hylebos River is used by coho, fall chum, pink, and fall chinook salmon species and steelhead trout for migration. Washington is within the Pacific Flyway for migratory birds, but industrialized areas of the lower Hylebos River do not provide quality habitat for migratory bird species.

d. Proposed measures to preserve or enhance wildlife, if any:

No impact to wildlife is expected from the propose project; therefore, no measures are proposed.

e. List any invasive animal species known to be on or near the site.

N/A

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, woodstove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

[REDACTED FOR CONFIDENTIALITY]

b. Would your project affect the potential use of solar energy by adjacent properties? ☐ Yes ☒ No. If yes, generally describe.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

[REDACTED FOR CONFIDENTIALITY]

ENVIRONMENTAL CHECKLIST

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? ☒ Yes ☐ No.
If yes, describe:

The equipment will be cleaned in accordance with the manufacturer's recommendations and all material removed will be managed according to applicable local, State, and Federal regulations. [REDACTED FOR CONFIDENTIALITY]

2. Describe any known or possible contamination at the site from present or past uses.

Historic operations at the site has resulted in limited areas of impacted soil and groundwater due to PCBs and metals. All soil and groundwater at the site is managed in accordance with the State-approved Soil and Groundwater Management Plan.

3. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

N/A

4. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

[REDACTED FOR CONFIDENTIALITY]

5. Describe special emergency services that might be required.

No special emergency services would be required. Spill containment kits are maintained on site as part of standard operating procedures, and the risk of injury to workers is no greater than during regular GMT metal processing operations.

6. Proposed measures to reduce or control environmental health hazards, if any:

[REDACTED FOR CONFIDENTIALITY]

b. Noise

1. What types of noise exist in the area that may affect your project (for example, traffic, equipment, operation, other)?

The facility is heavily industrialized and experiences a high level of ambient noise associated with traffic (vehicle, vessel, and rail) and commercial and industrial operations. This noise will not affect the project.

2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

[REDACTED FOR CONFIDENTIALITY]

3. Proposed measures to reduce or control noise impacts, if any:

As stated in the response to B.7.b.1, construction of the emissions control system and operations of the shredder will continue to comply with the City of Tacoma Noise Ordinance that includes restricted hours of operation

ENVIRONMENTAL CHECKLIST

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? ☐ Yes ☒ No. If yes, describe.

The property is an industrial site used for metals recycling. The proposed work will take place on the industrial site. The adjacent properties are owned by Jesse Investments to the southeast and the Hylebos Marina (Penn Aqua Property, LLC) to the north.

b. Has the project site been used as working farmlands or working forest lands? ☐ Yes ☒ No. If yes, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? ☐ Yes ☒ No. If yes, how?

c. Describe any structures on the site.

The property houses an office building, several warehouses associated with metal recycling, heavy machinery, conveyors feed lines, 18-wheeler trailers, and stacks of metal in various stages of processing .

d. Will any structures be demolished? ☐ Yes ☒ No. If yes, what?

e. What is the current zoning classification of the site?

PMI Port Maritime and Industrial
S10 Shoreline Port Industrial

f. What is the current comprehensive plan designation of the site?

Tier 1 – Primary Growth Area
S10 Shoreline Port Industrial

g. If applicable, what is the current shoreline master program designation of the site?

S10 Shoreline Port Industrial

h. Has any part of the site been classified as a critical area by the city or community? ☐ Yes ☒ No. If yes, specify.

No portion of the project site is classified as environmentally sensitive. The Hylebos Waterway is listed on the State of Washington 303(d) list for impaired waterbodies.

i. Approximately how many people would reside or work in the completed project?

There are no changes to the current staffing.

j. Approximately how many people would the completed project displace?

There are no changes to the current staffing.

k. Proposed measures to avoid or reduce displacement impacts, if any:

N/A

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

N/A

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

N/A

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high- middle- or low-income housing.

N/A

b. Approximately how many units, if any, would be eliminated? Indicate whether high- middle- or low-income housing.

N/A

c. Proposed measures to reduce or control housing impacts, if any:

N/A

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

[REDACTED FOR CONFIDENTIALITY]

b. What views in the immediate vicinity would be altered or obstructed?

N/A. The site is industrial and there are no views that would be obstructed.

c. Proposed measures to reduce or control aesthetic impacts, if any:

N/A

ENVIRONMENTAL CHECKLIST

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

N/A

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No

c. What existing off-site sources of light or glare may affect your proposal?

N/A

d. Proposed measures to reduce or control light and glare impacts, if any:

N/A

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

Recreational boaters use the Hylebos Waterway

b. Would the proposed project displace any existing recreational uses? ☐ Yes ☒ No. If yes, describe.

c. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant, if any:

N/A

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site?
☐ Yes ☒ No. If yes, specifically describe.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no landmarks, features, or other evidence of Indian or historic use or occupation. This area has a history of considerable modification, including tideflat fill during early development of this area. Please see the Cultural Resources Assessment and Unanticipated Discovery Plan (May 12, 2010) submitted to the City of Tacoma under previous permit applications for further information.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

N/A

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

N/A

14. TRANSPORTATION

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on-site plans, if any.

The site is served by Marine View Drive, which is easily accessible from Highway 509 and Interstate 5. The project will not require any modifications to existing site access, and will not affect traffic or transit along Marine View Drive.

b. Is site or affected geographic area currently served by public transit? ☒ Yes ☐ No. If yes, generally describe. If not, what is the approximate distance to the nearest transit stop?

Pierce County Transit Route #61 services Marine View Drive on weekdays.

c. How many parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

N/A

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? ☐ Yes ☒ No. If yes, generally describe (indicate whether public or private).

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? ☐ Yes ☒ No. If yes, generally describe.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

No extra vehicular trips per day would be generated.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? ☐ Yes ☒ No. If yes, generally describe.

h. Proposed measures to reduce or control transportation impacts, if any:

N/A

15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example, fire protection, police protection, public transit, health care, schools, other)? ☐ Yes ☒ No. If yes, generally describe.

b. Proposed measures to reduce or control direct impacts on public services, if any:

N/A

16. UTILITIES

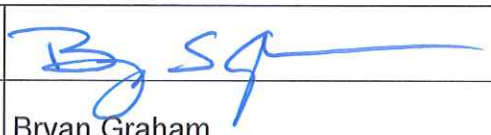
a. Indicate utilities currently available at the site:

☒ Electricity	☒ Natural gas	☒ Water	☒ Refuse Service
☒ Telephone	☒ Sanitary Sewer	☐ Septic System	☐ Other (specify):

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity that might be needed.

[REDACTED FOR CONFIDENTIALITY]

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.	
Signature	
Name	Bryan Graham
Position	Senior Environmental Manager
Agency/Organization	General Metals of Tacoma
Date Submitted	4/28/20

D. SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS

(Do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment in section B of this checklist.

When answering these questions, be aware of how the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substance; or production of noise?
Proposed measures to avoid or reduce such increases are:
2. How would the proposal be likely to affect plants, animals, fish, or marine life?
Proposed measures to protect or conserve plants, animals, fish, or marine life are:
3. How would the proposal be likely to deplete energy or natural resources?
Proposed measures to protect or conserve energy and natural resources are:
4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?
Proposed measures to protect such resources or to avoid or reduce impacts are:
5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:
6. How would the proposal be likely to increase demands on transportation or public services and utilities?
Proposed measures to reduce or respond to such demand(s) are:
7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

APPENDIX B: EMISSION CALCULATIONS

Table 1. Shredder Criteria Pollutant Potential to Emit (PTE) Summary[1]

Pollutant	Pre-Project Hourly PTE (lb/hr)	Pre-Project Annual PTE (tpy)	Post-Project Hourly PTE (lb/hr)	Post-Project Annual PTE (tpy)	Project Hourly PTE Increase[2] (lb/hr)	Project Annual PTE Increase[2] (tpy)
PM	[REDACTED FOR CONFIDENTIALITY]	96.00	[REDACTED FOR CONFIDENTIALITY]	10.40	[REDACTED FOR CONFIDENTIALITY]	-85.59
PM_{10}		42.24		5.16		-37.08
$PM_{2.5}$		Negligible		1.04		1.04
SO_2		0.00		0.08		0.08
NO_x		0.00		6.87		6.87
VOC		231.87		16.75		-215.11
CO		0.00		11.54		11.54

1. [REDACTED FOR CONFIDENTIALITY]
2. Emissions for pollutants that will increase total emission rate due to this project are presented in bold.

Table 2. Shredder Toxic Air Pollutant (TAP) and Hazardous Air Pollutant (HAP) Emission Summary[1]

Pollutant	Hazardous Air Pollutant (HAP)?[2] (Yes/No)	Pre-Project Hourly Emissions (lb/hr)	Pre-Project Annual Emissions (tpy)	Post-Project Hourly Emissions (lb/hr)	Post-Project Annual Emissions (tpy)	Project Hourly Emission Increase (lb/hr)	Project Annual Emission Increase (tpy)
1,1-Difluoroethane	No	[REDACTED FOR CONFIDENTIALITY]	1.06E-01	[REDACTED FOR CONFIDENTIALITY]	7.30E-03	[REDACTED FOR CONFIDENTIALITY]	-9.85E-02
1,3-Butadiene	Yes		2.65E-02		1.83E-03		-2.47E-02
Acetaldehyde	Yes		8.68E-02		6.58E-03		-8.03E-02
Acrolein	Yes		0.00E+00		3.71E-04		3.71E-04
Benzene	Yes		6.30E-01		4.37E-02		-5.86E-01
Cadmium Compounds	Yes		4.16E-04		4.06E-05		-3.76E-04
Chlorodifluoromethane	No		2.39E+00		1.65E-01		-2.23E+00
Chromium (non-VI) Compounds	No		1.28E-05		1.25E-06		-1.15E-05
Chromium (VI) Compounds	No		5.66E-06		5.52E-07		-5.11E-06
Chromium Compounds (total)	Yes		1.84E-05		1.80E-06		-1.66E-05
Copper Compounds	Yes		0.00E+00		1.17E-04		1.17E-04
Cumene	Yes		7.31E-02		5.05E-03		-6.81E-02
Ethylbenzene	Yes		1.45E+00		1.01E-01		-1.34E+00
Formaldehyde	Yes		0.00E+00		1.03E-02		1.03E-02
Hexachloroethane (PCA)	Yes		1.16E+01		8.01E-01		-1.08E+01
Hexane (n-Hexane)	Yes		2.35E+00		4.10E-01		-1.94E+00
Hydrogen Chloride	Yes		0.00E+00		5.31E-04		5.31E-04
Hydrogen Fluoride	Yes		0.00E+00		6.88E-04		6.88E-04
Lead Compounds	Yes		2.94E-03		2.86E-04		-2.65E-03
Methanol	Yes		8.00E-01		5.52E-02		-7.45E-01
Methyl Chloroform (1,1,1-Trichloroethane)	Yes		3.48E-01		2.40E-02		-3.24E-01
Methyl Isobutyl Ketone (MIBK)	Yes		7.95E-02		5.49E-03		-7.40E-02
Methylene Chloride	Yes		2.25E-01		1.55E-02		-2.09E-01
Naphthalene	Yes		0.00E+00		4.12E-05		4.12E-05
Norflurane (HFC134a)	No		4.66E+00		3.22E-01		-4.34E+00
Tetrachloroethylene (PCE)	Yes		3.80E-01		2.62E-02		-3.54E-01
Polychlorinated Biphenyls (PCBs)[4]	Yes		2.02E-02		1.39E-03		-1.88E-02
Propylene	No		7.40E-01		1.52E-01		-5.89E-01
Styrene	Yes		3.53E-01		2.44E-02		-3.29E-01
Toluene	Yes		5.87E+00		4.10E-01		-5.46E+00
Xylenes (m-, o-, and p-)[5]	Yes		7.42E+00		5.12E-01		-6.91E+00
Highest Individual HAP[6]:	--	--	11.60	--	0.80	--	-10.80
Total HAPs[6] (tpy)	--	--	31.72	--	2.46	--	-29.26

1. [REDACTED FOR CONFIDENTIALITY]
2. [REDACTED FOR CONFIDENTIALITY].
3. [REDACTED FOR CONFIDENTIALITY].
4. [REDACTED FOR CONFIDENTIALITY].
5. [REDACTED FOR CONFIDENTIALITY].
6. Total HAP and highest individual HAP calculations exclude any Washington TAP that is not also a HAP.

Table 3. Shredder Parameters

Parameter	Value	Units
Maximum Annual Throughput[1]	[REDACTED FOR CONFIDENTIALITY]	tpy
Maximum Hourly Throughput[2]	[REDACTED FOR CONFIDENTIALITY]	tph
Shredder Enclosure Capture Efficiency[3]	95	%
[REDACTED FOR CONFIDENTIALITY] Control Efficiency4	95	%
[REDACTED FOR CONFIDENTIALITY] Control Efficiency4	98	%
[REDACTED FOR CONFIDENTIALITY] Control Efficiency4	98	%
Number of [REDACTED FOR CONFIDENTIALITY]	2	Control Units

1. Maximum annual throughput is based on operation at the daily maximum throughput of [REDACTED FOR CONFIDENTIALITY] throughout the entire year.
2. Maximum hourly throughput is based on operation at the daily maximum throughput of [REDACTED FOR CONFIDENTIALITY].
3. Proposed design capture efficiency of shredder enclosure system.
4. Proposed design criteria for the new emission control system.

Table 4. Shredder Stack Criteria Pollutant PTE Summary

Pollutant	Uncontrolled Emission Factor lb/ton	Uncontrolled Hourly Emissions[1] (lb/hr)	Post-Project Emission Factor[2] (lb/ton)	Post-Project Hourly Emissions[3] (lb/hr)	Post-Project Annual Emissions[4] (tpy)
PM	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	4.56
PM_{10}[5]					2.01
$PM_{2.5}$[5]					Negligible
VOC[6]					4.41

1. [REDACTED FOR CONFIDENTIALITY].
2. [REDACTED FOR CONFIDENTIALITY].
3. Hourly Emissions (lb/hr) = Emission Factor (lb/ton) * Maximum Hourly Throughput (tons/hr).
4. Annual Emissions (tpy) = Emission Factor (lb/ton) * Maximum Annual Throughput (ton/yr) / 2000 (lb/ton).
5. [REDACTED FOR CONFIDENTIALITY]
6. [REDACTED FOR CONFIDENTIALITY]

Table 5. Shredder Stack TAP and HAP Emission Summary **CONFIDENTIAL**

Pollutant	HAP[1] (Yes/No)	TAP (Yes/No)	Uncontrolled Emission Factor[2] (lb/ton) Auto Bodies	Light Iron	Tacoma-Specific	Hourly Emissions[3] (lb/hr)	Annual Emissions[4] (tpy)
1,1-Difluoroethane	No	Yes	[REDACTED FOR CONFIDENTIALITY]			[REDACTED FOR CONFIDENTIALITY]	2.01E-03
1,3-Butadiene	Yes	Yes					5.04E-04
Acetaldehyde	Yes	Yes					1.65E-03
Benzene	Yes	Yes					1.20E-02
Cadmium Compounds	Yes	Yes					1.98E-05
Chlorodifluoromethane	No	Yes					4.55E-02
Chromium (non-VI) Compounds	No	Yes					6.07E-07
Chromium (VI) Compounds	No	Yes					2.69E-07
Chromium Compounds (total)	Yes	No					8.76E-07
Cumene	Yes	Yes					1.39E-03
Ethylbenzene	Yes	Yes					2.75E-02
Hexachloroethane (PCA)	Yes	Yes					2.20E-01
Hexane (n-Hexane)	Yes	Yes					4.47E-02
Lead Compounds	Yes	Yes					1.40E-04
Methanol	Yes	Yes					1.52E-02
Methyl Chloroform (1,1,1-Trichloroethane)	Yes	Yes					6.61E-03
Methyl Isobutyl Ketone (MIBK)	Yes	Yes					1.51E-03
Methylene Chloride	Yes	No					4.27E-03
Norflurane (HFC134a)	No	Yes					8.86E-02
Tetrachloroethylene (PCE)	Yes	Yes					7.22E-03
Polychlorinated Biphenyls (PCBs)	Yes	Yes					3.83E-04
Propylene	No	Yes					1.41E-02
Styrene	Yes	Yes					6.72E-03
Toluene	Yes	Yes					1.11E-01
Xylenes (m-, o-, and p-)	Yes	Yes					1.41E-01

1. A Hazardous Air Pollutant (HAP) is any pollutant listed pursuant to Section 112(b) of the Clean Air Act.
2. [REDACTED FOR CONFIDENTIALITY].

The incoming feedstock to the shredder is split between the primary categories of light iron and auto bodies. The percentage of each feed is based on operating data from Schnitzer.

Auto Bodies	[REDACTED FOR CONFIDENTIALITY]
Light Iron	[REDACTED FOR CONFIDENTIALITY]

3. [REDACTED FOR CONFIDENTIALITY].
4. [REDACTED FOR CONFIDENTIALITY].

Table 6. Acid Gas Emission Summary

Pollutant[1]	Molecular Weight[2]	Molar Ratio to HCl[3]	Molar Ratio to HF[3]	Hourly Emissions[4]	Annual Emissions[5]
	lb/lbmol	moles	moles	(lb/hr)	(tpy)
1,1-Difluoroethane	66.05	0	2	See Table 5 above.	
Chlorodifluoromethane	86.47	1	2		
Hexachloroethane (PCA)	236.7	6	0		
Norflurane (HFC-134a)	102.03	0	4		
Methyl Chloroform (1,1,1-Trichloroethane)	133.4	3	0		
Methylene Chloride	84.93	2	0		
Tetrachloroethylene (PCE)	165.8	4	0		
PCBs[6] (209)	498.6	10	0		
Hydrogen Fluoride	20.01	--	--	[REDACTED FOR CONFIDENTIALITY]	5.31E-04
Hydrogen Chloride	36.46	--	--		6.88E-04

1. Pollutants which have at least one chlorine atom and/or fluorine atom are assumed to be completely converted to acid gas.

2. Molecular weight obtained from U.S. National Library of Medicine, National Center for Biotechnology Information.

3. All chlorine atoms and fluorine atoms are conservatively assumed to be converted to hydrochloric acid and hydrofluoric acid, respectively.

4. Hourly Emissions (lb/hr) = [Σ Hourly Emissions from Shredder (lb/hr) / Molar Weight of Pollutant (lb/lbmol) * Molar Ratio to HCl] * Molar Weight of HCl (lb/lbmol) * (1 - Control Efficiency (%)).

5. Annual Emissions (tpy) = [Σ Annual Emissions from Shredder (tpy) * 2000 (lb/ton) / Molar Weight of Pollutant (lb/lbmol) * Molar Ratio to HCl] * Molar Weight of HCl (lb/lbmol) * (1 - Control Efficiency (%)) / 2000 (lb/ton).

6. Emissions of PCB may include a variety of PCB compounds. For the purposes of providing a conservatively high estimate of the chlorine input to the scrubber, this calculation uses the chlorine content from PCB-209, the congener with the highest number of chlorine atoms considered by the EPA.
https://www.epa.gov/sites/production/files/2015-09/documents/congenertable.pdf

Table 7. Shredder Fugitive Criteria Pollutant PTE Summary

Pollutant	Fugitive Emission Factor[1] (lb/ton)	Hourly Emissions[2] (lb/hr)	Annual Emissions[3] (tpy)
PM[4]	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	4.80
PM_{10}[4]			2.11
$PM_{2.5}$[4]			Negligible
VOC[5]			11.59

1. Fugitive Emission Factor (lb/ton) = Uncontrolled Emission Rate (lb/hr) / Maximum Hourly Throughput (ton/hr) * (1 - enclosure efficiency).
2. Hourly Emissions (lb/hr) = Emission Factor (lb/ton) * Maximum Hourly Throughput (tons/hr).
3. Annual Emissions (tpy) = Emission Factor (lb/ton) * Maximum Annual Throughput (ton/yr) / 2000 (lb/ton).
4. Particulate emissions account for both filterable and condensable emissions
5. VOC emissions are provided on an as-methane basis

Table 8. Shredder Fugitive TAP and HAP Emission Summary **CONFIDENTIAL**

Pollutant	HAP[1] (Yes/No)	TAP (Yes/No)	Tacoma-specific Fugitive Emission Factor[2] (lb/ton)	Hourly Emissions[3] (lb/hr)	Annual Emissions[4] (tpy)
1,1-Difluoroethane	No	Yes			5.29E-03
1,3-Butadiene	Yes	Yes			1.33E-03
Acetaldehyde	Yes	Yes			4.34E-03
Benzene	Yes	Yes			3.15E-02
Cadmium Compounds	Yes	Yes			2.08E-05
Chlorodifluoromethane	Yes	Yes			1.20E-01
Chromium (non-VI) Compounds	No	Yes			6.39E-07
Chromium (VI) Compounds	No	Yes			2.83E-07
Chromium Compounds (total)	Yes	No			9.22E-07
Cumene	Yes	Yes			3.66E-03
Ethylbenzene	Yes	Yes			7.23E-02
Hexachloroethane (PCA)	Yes	Yes			5.80E-01
Hexane (n-Hexane)	Yes	Yes			1.18E-01
Lead Compounds	Yes	Yes	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	1.47E-04
Methanol	Yes	Yes			4.00E-02
Methyl Chloroform (1,1,1-Trichloroethane)	Yes	Yes			1.74E-02
Methyl Isobutyl Ketone (MIBK)	Yes	Yes			3.98E-03
Methylene Chloride	Yes	No			1.12E-02
Norflurane (HFC134a)	No	Yes			2.33E-01
Tetrachloroethylene (PCE)	Yes	Yes			1.90E-02
Polychlorinated Biphenyls (PCBs)	Yes	Yes			1.01E-03
Propylene	No	Yes			3.70E-02
Styrene	Yes	Yes			1.77E-02
Toluene	Yes	No			2.93E-01
Xylenes (m-, o-, and p-)	Yes	Yes			3.71E-01

1. A Hazardous Air Pollutant (HAP) is any pollutant listed pursuant to Section 112(b) of the Clean Air Act.

2. [REDACTED FOR CONFIDENTIALITY].
Fugitive Emission Factor (lb/ton) = [Uncontrolled Emission Factor (lb/ton) * (1 - Shredder Enclosure Capture Efficiency (%)].
3. Hourly Emissions (lb/hr) = Fugitive Emission Factor (lb/ton) * Maximum Hourly Throughput (tons/hr).
4. Annual Emissions (tpy) = Fugitive Emission Factor (lb/ton) * Maximum Annual Throughput (ton/yr) / 2000 (lb/ton).

[REDACTED FOR CONFIDENTIALITY]

Parameter	Value	Units
Maximum Daily Hours of Operation (Operating Capacity)[1]	24	hr/day
Daily Hours of Operation (Standby Capacity)[1]	0	hr/day
Maximum Annual Hours of Operation (Operating Capacity)[2]	8760	hr/yr
Annual Hours of Operation (Standby Capacity)[2]	0	hr/yr
[REDACTED FOR CONFIDENTIALITY]	16	MMBtu/hr
[REDACTED FOR CONFIDENTIALITY]	2.5	MMBtu/hr
Natural Gas HHV[4]	1.02E-03	MMBtu/scf
[REDACTED FOR CONFIDENTIALITY]	1.57E-02	MMscf/hr
[REDACTED FOR CONFIDENTIALITY]	2.45E-03	MMscf/hr

1. [REDACTED FOR CONFIDENTIALITY]
2. [REDACTED FOR CONFIDENTIALITY].
3. [REDACTED FOR CONFIDENTIALITY].
4. Natural Gas HHV obtained from AP-42 Section 1.4 on Natural Gas Combustion
5. Gas Firing Rate (MMscf/hr) = Heat Rating (MMBTU/hr) / Natural Gas HHV (MMBTu/scf) / (10^6 scf/MMscf).

[REDACTED FOR CONFIDENTIALITY]

Pollutant	Emission Factor[1] (lb/MMscf)	Maximum Hourly Emissions[2] (lb/hr)	Annual Emissions[3] (tpy)
PM	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	1.04
PM_{10}			1.04
$PM_{2.5}$			1.04
SO_2			0.08
NO_x			6.87
VOC			0.76
CO			11.54

1. [REDACTED FOR CONFIDENTIALITY]
2. [REDACTED FOR CONFIDENTIALITY].
3. Annual Emissions (tpy) = Emission Factor (lb/MMscf) / 2000 (lb/ton) * [Gas Firing Rate at Operating Capacity (MMscf/hr) * Annual Hours of Operation at Operating Capacity (hr/yr) + Gas Firing Rate at Standby Capacity (MMscf/hr) * Annual Hours of Operation at Standby Capacity (hr/yr)] * 2 RTOs.

[REDACTED FOR CONFIDENTIALITY]

TAP	CAS	Emission Factor lb/MMscf	Maximum Hourly Emissions[1] (lb/hr)	Annual Emissions[2] (tpy)	Emission Factor Source[3]
Acetaldehyde	75-07-0	[REDACTED FOR CONFIDENTIALITY]	[REDACTED FOR CONFIDENTIALITY]	5.91E-04	1
Acrolein	107-02-8			3.71E-04	1
Benzene	71-43-2			2.89E-04	2
Copper Compounds	7440-50-8			1.17E-04	2
Ethylbenzene	100-41-4			1.31E-03	1
Formaldehyde	50-00-0			1.03E-02	2
Hexane (n-Hexane)	110-54-3			2.47E-01	2
Naphthalene	91-20-3			4.12E-05	1
Propylene	115-07-1			1.00E-01	1
Toluene	108-88-3			5.03E-03	1

1. [REDACTED FOR CONFIDENTIALITY]
2. [REDACTED FOR CONFIDENTIALITY].
3. PSCAA has provided an informal list of TAP they will be reviewing for sources that use natural gas combustion. The emission factors for each TAP listed are taken from either (1) Ventura County Air Pollution Control District AB 2588 Combustion Emission Factors, Natural Gas Fired Combustion Equipment or (2) AP-42 Section 1.4 Natural Gas Combustion, Tables 1.4-3 and 1.4-4

APPENDIX C: PROCESS FLOW DIAGRAM [REDACTED FOR CONFIDENTIALITY]

APPENDIX D: [REDACTED FOR CONFIDENTIALITY]