Puget Sound Clean Air Agency

Notice of Construction No. **11986**

HEREBY ISSUES AN ORDER OF APPROVAL TO CONSTRUCT, INSTALL, OR ESTABLISH

Registration No. **21432**

Date

The installation of a Shredder Emission Control System (ECS) that consists of an enclosure to route emissions to a drop out box, two wet venturi scrubbers, two regenerative thermal oxidizers (RTOs) with low NOx burners and two acid gas scrubbers designed to handle 2,000 tons per day of material fed to the shredder.

Facility-wide synthetic minor emission limit of VOC emissions.

OWNER	INSTALLATION ADDRESS
Schnitzer Steel Industries **PO Box 110636** **Portland, OR 97296-0047**	**Schnitzer Steel Industries** **1902 Marine View Dr** **Tacoma, WA 98422**

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Facility-wide Conditions:

3. The owner or operator shall limit facility-wide emissions of hazardous air pollutants in Section 112(b) of the federal Clean Air Act (HAPs) to less than 9 tons of any single listed HAP, 24 tons of all HAPs combined, and 90 tons of volatile organic compounds (VOCs) during any 12 consecutive rolling months after the completion of commissioning of the equipment authorized by of this Order of Approval.

Specific Conditions:

4. The shredder shall not operate without the exhaust going through the emission control system (ECS), consisting of two wet venturi scrubbers, two regenerative thermal oxidizes, and two acid gas scrubbers.

Shredder Enclosure:

5. The Permittee shall demonstrate that the pollutant capture system (PCS) has been constructed to minimize the enclosure's draft openings, and the extraction vent system operates at a sufficient flow rate to promote air flow into the enclosure to sufficiently capture pollutants emanating from the shredder and ensure a minimum of 95% capture efficiency. The Permittee shall also monitor to verify that the permanent enclosure is continuously maintained under negative pressure during normal operations. The Permittee shall measure the total system air flow rate, or equivalent, to aid in the establishment of a parametric monitoring program for the PCS. The parametric monitoring program shall be established in the facility's Operation and Maintenance Plan. The owner or operator shall notify the Agency any substantive changes of the Operation and Maintenance Plan.

Wet Venturi Scrubbers:

6. The owner or operator shall install and maintain monitoring to measure the pressure drop across the wet venturi scrubbers and the recirculated water flow rates used at each wet venturi scrubber. Within 90 days after beginning operations, the acceptable range for the gauge shall be clearly marked on or nearby the gauge.

7. Once each day that the baghouse is used, the owner or operator shall determine and record if the pressure drop across the filtration system is in the acceptable range. If the pressure drop is not within the acceptable range, the owner or operator shall take corrective action as specified in the facility's Operation and Maintenance Plan.

8. The exhaust gas shall not exceed 0.005 gr/dscf per U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.

RTOs:

9. The exhaust from each wet venturi scrubber shall be routed to a regenerative thermal oxidizer (RTO) for control.

10. The RTOs shall be operated at all times when the shredder is operating.

11. Each RTO shall achieve a 98.0% or higher destruction efficiency, or 20 ppmdv or less at the RTO outlet, as determined by EPA Method 25A.

12. Two RTOs combined shall not emit more 5.48 lbs of NO_x as NO_2 per hour as measured by EPA method 7E. The total emissions should be determined based on 50 lb per million standard feet natural gas consumed and 0.016 lbs per ton feed at the shredder.

13. The RTO shall operate at a combustion zone temperature of no less than 1,600 degrees F on an hourly average until completion of the performance test required in Condition 17. After completion of the performance test, the Owner and/or Operator shall maintain the RTO combustion zone temperature at no less than the "baseline" temperature, taken on an hourly average. The “baseline” temperature shall be defined as the lower of 1600 degrees F, or the average operating temperature that was observed in the most recent VOC performance test. The baseline temperature shall be clearly marked on or near the RTO temperature display.

14. The owner or operator shall install, operate, calibrate and maintain a monitoring device to monitor and record operations of each RTO to ensure that the minimum required combustion chamber temperature defined by condition 13 is achieved prior to feeding material into the shredder and ensure this minimum temperature is maintained at all times while material is being fed into and processed by the shredder. Both audible and visual alarms shall be used to indicate the need to initiate corrective actions and/or discontinue operation of the shredder infeed conveyor.

ACID GAS SCRUBBERS:

15. The Permittee shall install, operate, calibrate and maintain a monitoring device to continuously monitor to ensure that each acid gas scrubber solution is recirculating at all times the unit(s) is/are in operation. The scrubbing solution flow monitors shall be connected to a visible and audible alarm to alert operator if scrubber solution flow is out of range.
16. Emissions from the acid gas scrubbers may exceed neither 2 ppm of HCl nor 2 ppm of HF as measured

by EPA method 26, EPA Method 26A, EPA method 321 or other agency approved method.

17. **Performance Testing:**

a. The Owner and/or Operator shall conduct performance tests on the following equipment within 60 days after completion of commissioning of the applicable equipment. The testing deadline may be extended for good cause if pre-approval is obtained in writing by the Agency, but in no case shall the testing deadline extend beyond 180 days after completion of commissioning of the new applicable equipment.
   i. Permanent enclosure
   ii. Wet Venturi Scrubbers
   iii. RTOs
   iv. Acid Gas Scrubbers

b. The Owner and/or Operator shall conduct a performance test of the equipment listed above while operating the shredder and ECS as close to normal operation as possible.

c. Emission Control System:

   i. The Owner and/or Operator shall measure the concentrations of PM, VOC, NOX and HCl and HF in the exhaust stream.

   ii. If showing destruction efficiency, the inlet to the RTO shall be measured for VOC, and determined on a lb/hr basis.

   iii. A capture efficiency evaluation shall be performed on the enclosure.

d. Test Frequency: Following the initial performance test for this permit, The Owner and/or Operator shall conduct a performance test every year (within 15 months) from the last respective test. Testing shall measure the concentrations of PM, NOx, VOC, HCl, and HF in the exhaust stream.

e. Testing Criteria: Testing of sources for compliance with emission standards shall be performed in accordance with Regulation 1, Article 3, Section 3.07. The Owner and/or Operator shall notify the Agency in writing at least 21 days in advance of the actual date and time of each performance test as required by Regulation 1, Section 3.07(b). The Owner and/or Operator shall complete and submit a separate test report for each performance test to the Department within 60 days after the completion of testing in accordance with the requirements specified in Regulation 1, Section 3.07(c).

f. Test Methods: Sampling sites and velocity traverse points shall be selected in accordance with EPA Test Method 1 or 1A. Adequate and safe access to the test ports must be provided. The gas volumetric flow rate shall be measured in accordance with EPA Test Method 2. The dry molecular weight shall be determined in accordance with EPA Test Method 3 or 3A. The stack gas moisture shall be determined in accordance with EPA Test Method 4. These methods must be performed, as applicable, during each test run.

   i. PM testing shall be conducted in accordance with PSCAA Method 5.

   ii. VOC testing shall be conducted in accordance with US EPA Test Method 25A. Testing to quantify exempt compounds, such as methane, shall be conducted in accordance with US EPA Test Methods 18.

   iii. NOX testing shall be conducted in accordance with US EPA Test Method 7E.

   iv. CO testing shall be conducted in accordance with US EPA Test Method 10.

   v. The fugitive visible emissions evaluation shall be conducted in accordance with US EPA Test Method 22.

   vi. HCl and HF shall be measured using US EPA Method 26, 26A or 321.

vii. Test methods listed above may be modified if approved by the Agency ahead of performance testing.

g. The Owner and/or Operator shall submit a separate test protocol for each performance test to the Department for Review at least 21 days prior to each performance test.

h. Minimum Testing Requirements: Each performance test shall consist of three separate test runs with each test run being at least one hour in duration unless otherwise specified in the applicable standard or test method. The same test methods shall be conducted for both the inlet and outlet measurements, if applicable and technically feasible, which must be conducted simultaneously. Emissions rates, concentrations, grain loadings, and/or efficiencies shall be determined as the arithmetic average of the values determined for each individual test run. Performance tests may only be stopped for good cause, which includes forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Owner and/or Operator's control. Termination of a performance test without good cause after the first test run has commenced shall constitute a failure of the performance test.

i. During the compliance testing, the following shall be measured and recorded:
   a. Production rate through the shredder
   b. Fan speed and amperage of the exhaust fans.
   c. The operational temperature of the RTO
   d. pH of the acid gas scrubber liquid.
   e. Pressure difference across the wet venturi scrubbers and recirculated water flow rate.

General Repo**rting and Recordkeeping:**

18. Records to be maintained by this Order of Approval shall be kept onsite for at least two years from the date of generation, and made available to Puget Sound Clean Air Agency personnel upon request.

19. Within 30 days of the end of each month after completion of commissioning of the emission control system, the owner or operator shall calculate the facility-wide VOC emissions for the previous 12 months using the emission factor from the last source test or based on the source tests performed at the Schnitzer Steel facility in Oakland, CA, as documented in Foulweather Consulting's memorandum of recommended emission factors (dated October 2019).

20. The Owner and/or Operator shall notify the Agency, in writing, within 30 days after the end of each 12-month period if, during that period, emissions of any single HAP exceeded 9 tons, emissions of all HAPs combined exceeded 24 tons, or emissions of VOCs exceeded 90 tons. The report shall include emissions data for the time period for which these thresholds were exceeded.

21. The Owner and/or Operator shall calculate the emissions of PM, NOx, CO and VOC from the shredder using the arithmetic average of emission factors from the three most recent stack tests or using emission factors from AP-42 or other references if stack test information is not available.

22. The owner and/or operator shall notify the Agency, in writing, within 30 days of discovering an exceedance of any limitations identified in Conditions #5, #8, #11, and #12 .

Order of Approval for NC No. 11986

APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

Carl Slimp	John Dawson
Reviewing Engineer	Engineering Manager