

State of Oregon

Department of Environmental Quality

Memorandum

Date: 4/20/2021

**To:** File/Kenzie Billings  
**From:** Thomas Rhodes

**Subject:** Source Test Review Report  
Columbia Steel Casting Co., Inc  
Permit Number: 26-1869

Sample Date: February 23, 2021  
Report Received: March 29, 2021  
Tester: SLR International  
DEQ Observed: No

**I) Facility Description:** Columbia Steel operates an alloy steel casting facility which produces medium to large size castings. The processes include metal melting, metal pouring, casting shakeout and casting finishing.

**II) Process(es)/Emissions Unit(s) Tested:** Baghouse 26 collects emissions from two Rotoblast shot blasting stations located in Building 11. Baghouse dust samples were collected immediately upon drum change out.

**III) Test Purpose:** Dust sampling to develop emission factors for air toxics to use in the Cleaner Air Oregon Emissions Inventory.

**IV) Testing Methodology:** The following testing methods were utilized during the testing program:

Total Metals: EPA Method 6020  
Hexavalent Chromium: EPA Method 7196A

**V) Summary of Results:** Test results are summarized in the Table below:

Table 1: BH#26 Multi metals and hexavalent chromium

**TABLE 1: BH#26 Multi Metals and Hexavalent Chromium**

|                                       | Sample   | Duplicate | Average  |
|---------------------------------------|----------|-----------|----------|
| <b>Arsenic Emissions:</b>             |          |           |          |
| dust analysis (mg/kg)                 | 7.30     | 7.43      | 7.37     |
| lb/ton                                | 1.02E-07 | 1.04E-07  | 1.03E-07 |
| <b>Chromium Emissions:</b>            |          |           |          |
| dust analysis (mg/kg)                 | 2,010    | 1,980     | 1,995    |
| lb/ton                                | 2.81E-05 | 2.77E-05  | 2.79E-05 |
| <b>Hexavalent Chromium Emissions:</b> |          |           |          |
| dust analysis (mg/kg)                 | 0.553    | 0.326     | 0.44     |
| lb/ton                                | 7.74E-09 | 4.56E-09  | 6.15E-09 |
| % of total chromium                   | 0.03%    | 0.02%     | 0.02%    |
| <b>Lead Emissions:</b>                |          |           |          |
| dust analysis (mg/kg)                 | 2.17     | 1.95      | 2.06     |
| lb/ton                                | 3.04E-08 | 2.73E-08  | 2.88E-08 |
| <b>Manganese Emissions:</b>           |          |           |          |
| dust analysis (mg/kg)                 | 17,900   | 18,700    | 18,300   |
| lb/ton                                | 2.51E-04 | 2.62E-04  | 2.56E-04 |
| <b>Nickel Emissions:</b>              |          |           |          |
| dust analysis (mg/kg)                 | 2,940    | 3,280     | 3,110    |
| lb/ton                                | 4.12E-05 | 4.59E-05  | 4.35E-05 |

**VI) Comments & Concerns:**

- 1) Metal emission factors were calculated by applying the metal concentration in the dust samples to the particulate emission factor of 0.014 lb/ton metal from the ACDP.
- 2) Some of the spike recoveries, matrix spikes and/or duplicate analysis were outside the laboratory control limits.

**VII) Overall Evaluation:** The sampling conducted and the data provided are sufficient to evaluate the emission factors for the unit.