Clean Air Act Compliance Inspection Report

United States Environmental Protection Agency
Region 10 – Seattle, WA

Partial Compliance Evaluation

Real Alloy Recycling, Inc.
Post Falls, Idaho

Inspection Date: September 28, 2021

JON KLEMESRUD

Digitally signed by JON KLEMESRUD
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EPA Region 10

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Katie McClintock
Supervisor, Air & Toxics Enforcement Section
EPA Region 10

- **Contents**

I. Facility Information

Facility Name:	Real Alloy Recycling, Inc. – Post Falls
Facility Owner:	Real Alloy Holding, LLC
Facility Address:	16168 West Prarie Avenue Post Falls, Idaho 83854
Mailing Address:	16168 West Prarie Avenue Post Falls, Idaho 83854
Facility Contact(s):	Jeff Bohannon – Plant Manager Real Alloy Recycling, Inc. – Post Falls (208) 733-1527 ext. 1608, jeff.bohannon@realalloy.com Gary Milan – Maintenance Supervisor Real Alloy Recycling, Inc. – Post Falls Jeff Ferg, Environmental Health & Safety Real Alloy Recycling, Inc. - Headquarters jeff.ferg@realalloy.com
Latitude/Longitude:	N 47.74244 W -117.004636
NAICS Code(s):	331314 – (Secondary Smelting and Alloying of Aluminum)
AFS/FRS Number:	ID0000001605500031
IDEQ Facility ID:	055-00031
Permit Number:	Permit to Construct, P-2009.0139 Issued 01/02/2020

Disclaimer:
Unless otherwise noted, all details in this inspection report were obtained from conversations with Jeff Bohannon, Gary Milan, or from observations made during the inspection and/or file review. The report is a summary of observations and information gathered, it does not constitute a final decision regarding compliance with the Clean Air Act (CAA) and applicable regulations or permits.

II. Inspection Information

Inspection Date:	September 28, 2021

EPA Inspector(s):	Jon Klemesrud, Inspector EPA Region 10 (206) 553-5068 klemesrud.jon@epa.gov Zach Hedgpeth, PE EPA Region 10 (206) 553-1217 hedgpeth.zach@epa.gov
Other Individuals Present:	Almer Casile, CAA Compliance Analyst Idaho Department of Environmental Quality Coeur d'Alene Regional Office (208) 666-4600 almer.casile@deq.idaho.gov Shawn Sweetapple, Air Quality Manager Idaho Department of Environmental Quality Coeur d'Alene Regional Office (208) 666-4602 shawn.sweetapple@deq.idaho.gov
Inspection Start/End Times:	8:50am – 3:50pm
Inspection Notice:	Unannounced

This was a partial compliance evaluation (PCE) by the Environmental Protection Agency Region 10 (EPA R10) and the Idaho Department of Environmental Quality (IDEQ). to determine the facility's compliance with the State issued Permit (P-2009.0139) and federal regulations under the Clean Air Act (CAA).

III. Facility Background

Real Alloy Recycling, Inc. – Post Falls ("Facility") is owned and operated by Real Alloy Holding, LLC. According to the company's website *(www.realalloy.com)*, there are twenty-three Real Alloy facilities in six countries across North America and Europe. The company is headquartered in Beachwood, Ohio. The Facility is located along the northwestern edge of Post Falls, Idaho and has operated at its current location since 1988.

The Facility operates as a secondary aluminum production plant, producing recycled scrap ingots (RSI) from the melting and recovery of aluminum scrap and aluminum dross. For a general footprint and location, an aerial image from Google Earth® is attached to this report as (**Attachment A)**.

The facility operates under State-issued Idaho Title V Permit to Construct No. P-2009.0139 (**Attachment B)**. The permit was most recently reissued on January 2, 2020.

Major components of the Facility include aluminum scrap and aluminum dross receiving and storage, two natural gas fired rotary furnaces, aluminum casting, flux

handling/storage, product storage, associated environmental control equipment and supporting operations.

Production of aluminum RSI at the Facility consists of the following processes:

1. receiving and storing of aluminum scrap and aluminum dross
2. melting the scrap/dross in a rotary furnace
3. addition of solid flux material and alloying agents
4. pouring the molten metal into sow molds
5. casting into various grade RSI for sale and distribution
6. byproduct ("salt cakes") is poured out of the rotary furnace and disposed of via approved landfill.

A more detailed process and emission unit description can be found in the Statement of Basis (**Attachment C**) associated with the IDEQ Permit.

There are seven sources of regulated emissions listed within the current version of the IDEQ Permit including: Rotary Furnace #3 (RF3), Rotary Furnace #6 (RF6), Salt Cake Staging and Handling for RF3, Salt Cake Staging and Handling for RF6, Crucible Cleaning, Scrap Receiving/Hauling, and Dross Receiving/Hauling.

The Facility has been determined to be an area source as defined by 40 CFR 63.2 (Subpart A General Provisions) for hazardous air pollutants (HAP). The Facility is subject to federal requirements under the National Emission Standards for Hazardous Air Pollutants (NESHAP) standards for Secondary Aluminum Production (40 CFR Part 63 Subpart RRR). The furnaces at the Facility are considered Group 1 furnaces as defined in the NESHAP. Regulated pollutants from the emission units include criteria pollutants, dioxins and furans (D/F) and fluoride.

According to EPA's Enforcement Compliance History Online (ECHO), the Facility was last inspected by IDEQ on October 18, 2017. The inspection report documented that the Facility was in compliance with the terms and conditions of the permit at the time of inspection.

The most recent source compliance testing at the facility occurred in August of 2021 and July 2020.

IV. Inspection Chronology

This inspection was unannounced. On day of the inspection, Zach Hedgpeth (EPA) and I arrived at the Facility and met with Jeff Bohannon (Plant Manager) near the entrance. We had our initial introductions, I informed Mr. Bohannon that Zach Hedgpeth and I had been asked to conduct a routine inspection at the Facility to assess compliance with the CAA and associated Idaho Department of Environmental Quality (IDEQ) Permit. Mr. Bohannon welcomed the visit and we followed him into the Facility's conference

room to begin the inspection. I informed Mr. Bohannon that we would be joined on the inspection by representatives of IDEQ, at this time they had yet to arrive.
The inspection included an opening conference, a facility walk-through, a records review, and a closing conference.

For the facility walk-though, we observed the general facility operations, toured each emission unit (EU), and observed the monitoring areas associated with the IDEQ Permit. We were allowed to inspect all areas requested.

The records review occurred at various times throughout the walk-through and within the conference room, prior to the closing conference. Records not available at the time of inspection were requested and provided via email post-inspection.

The closing conference occurred within the Facility's conference room following the walk-though. During the closing conference, Zach and I discussed our observations from the walk-through and from the initial records review.

V. Opening Conference

The opening conference was held with Mr. Bohannon inside the Facility's conference room. Almer Casile (IDEQ) and Sean Sweetapple (IDEQ) arrived mid-conference. During the opening conference, Zach and I exchanged business cards with Mr. Bohannon and presented our EPA inspector credentials. I explained that I would be leading the EPA inspection with Zach Hedgpeth (EPA), IDEQ's participation was for observation purposes only.

I discussed the purpose and expectations of the inspection and provided Mr. Bohannon with a copy of the EPA Small Business Resource Information Sheet as well as EPA's Confidential Business Information (CBI) Notice Forms. We discussed the EPA forms and also how photographs would be taken as part of the inspection. In consultation with corporate staff, for CBI purposes Mr. Bohannon requested certain views/angles of the rotary furnaces be excluded from the photographs, as well as direct photographs of the RSI molding/casting process.

VI. Site Review

Following the opening conference, Mr. Bohannon provided a general background of the Facility's history and general operations. Mr. Bohannon stated that he has been employed at the Facility since 1989. During that span, he has worked in a variety of roles since becoming Plant Manager. Mr. Bohannon also stated that the Facility has been without an Environmental, Health & Safety (EHS) position for approximately one-year and that he has assumed those roles in the interim. In addition, the Facility receives additional EHS support from their corporate staff in Ohio, primarily Mr. Jeff Ferg.

When discussing general operations, Mr. Bohannon stated that production has been down overall, mostly attributed to a staffing shortage associated with the COVID-19

pandemic. Due to the staffing shortage, the Facility has only been operating one of the two rotary furnaces (Rotary Furnace #3).

Scrap aluminum is brought to the Facility in many forms, including traditional scrap, "popcorn" scrap, "sawdust" scrap and compressed "pucks." Once onsite, scrap aluminum is stored outdoors until transported into the rotary furnace for melting/refining. According to Mr. Bohannon, no shredding occurs on-site. Mr. Bohannon also stated that the Facility stopped the transportation of molten aluminum in 2003/2004 (approx.).

According to the Permit, aluminum dross is brought to the dross recovery facility via dump trucks and stored indoors until melted. Mr. Bohannon stated salt flux material (potassium chloride and cryolite) is also added into the furnaces during operations.

The walk-through began at approximately 9:55am. Mr. Bohannon provided a safety briefing prior to us leaving the conference room to begin the walk-through.

Photographs used in this inspection report and a complete photo log appear in (**Attachment D)**. For the entire walk-through we were joined by Mr. Bohannon, we were also joined by Gary Milan (Maintenance Supervisor) for portions of the walk-through.

At the time inspection, the Facility was melting scrap aluminum within Rotary Furnace #3 (RF3). No operations were occuring at Rotary Furnace #6 (RF6). According to Mr. Bohannon, RF6 has not operated in 2021 with the exception of the month of July and the first weeks of August for testing.

RF3 and RF6 are separate operations and located in different buildings within the Facility. According to Mr. Bohannon, production at Rotary Furnace #3 (RF3) is a continuous operation 7/days a week. Prior to the staffing shortages, Rotary Furnace #6 (RF6) was also operated continuously, approximately 4/days a week.

Alliance Source Testing, LLC conducted the recent (2020 & 2021) source testing. Target parameters for the testing included Particulate Matter (PM_{10}), Nitrogen Oxides (NOx), Visible Emissions (VEE), and hood flow measurements for RF6. NOx, VEE, and hood flow measurements for RF3 were also competed. The Source Test Reports showed emission rates below the limits set in their IDEQ permit.

For the walk-through we first observed areas where RSI's and scrap aluminium are stored/handled outdoors, no fugitive dust/emissions were observed. These outdoor storage areas are generally present throughout the Facility (**Photo 1 & Photo 2**).

According to the Mr. Bohannon, raw materials brought to the Facility for processing are approximately 70% scrap and 30% dross. Raw materials are primarily transported to the Facility via truck, with a limited amount transported via rail. According to Mr.

Bohannon, the Facility's primary scrap supplier is Kaiser Aluminum, aluminum also comes from "Hydro Aluminum" and "CASS" out of California among other sources.

Our walkthrough continued into the building that houses RF3, and we observed RF3 operating within it's enclosure **(Photo 3**). According to Mr. Bohannon, the Facility was currently producing aluminum 7050 alloy and "running scrap" in RF3 at the time of inspection.

Aluminum charged in the rotary furnace is handled by a front loader. The load is weighed and recorded prior to every charge into the furnace (**Photo 4**). The IDEQ Permit establishes a feed charge limit for RF3 of 175 tons per day on a monthly average and 63,875 tons per year.

According to Mr. Bohannon, each "heat" is approximately 25,000 – 30,000 lbs. The scale used for weighing/tracking each feed charge is calibrated monthly by Unitec Dorsch, LLC. According to Facility records, the scale was last calibrated on September 17, 2021.

Aluminum is charged directly into the front opening of the furnace along with the flux material and any alloying agents. At the conclusion of the "heat", the furnace is tapped by tilting the furnace and pouring the molten metal into a trough where it is transferred into sow molds and cast into RSI. According to Mr. Bohannon the total process takes about 2 or 2 ½ hours.

RF3 is contained in a vestibule that includes a hood and ducting designed to capture process emissions (**Photo 5**). The captured emissions are routed to a trona-injected, shaker style baghouse (RFB3) that consists of six compartments and then exits via an exhaust stack.

After the aluminum is tapped, the byproduct (salt cake) is poured out of the furnace into pans and placed under a hood adjacent to the furnace to cool (**Photo 6**). The hood for this salt cake staging area is routed to Baghouse 9 (BH9).

Following our initial observations of the charging and tapping of RF3, we continued our walk-through outside and observed the components of RFB3 and its associated cooling tower and exhaust stack (**Photo 7, Photo 8 & Photo 9)**. No opacity was observed from the RFB3 stack at the time of inspection. We also briefly observed BH9 (**Photo 10**).

According to the 2021 Semiannual Report, the RF3 Baghouse is equipped with a bag leak detection system which includes a PCME DT990 sensor and a Pyrotek 001532 thermocouple. The Facility conducts an Electronic Drift Check each month. According to Facility records, the last occurrence was on August 30, 2021 (**Photo 11**). The PCME DT990 is calibrated annually and the thermocouple calibration is verified every 6 months.

We continued our walk-through back inside to view the Trona-feed system (**Photo 12**). According to Mr. Bohannon, approximately 2000 lbs of Trona is added every 18 hours. At the time of inspection, the Trona-feed system was set to 99 lbs/hour. The feed rate is verified once per month via a pan test/calibration. The Trona-feed system is checked each shift (3x daily) as a component of the RF3 #3 Baghouse Checklist.

We then viewed the dross and salt-cake storage areas (**Photo 13**) and broke for lunch at approximately 11:15am. As we were leaving the RF3 building, Zach Hedgpeth (EPA) observed potential visible emissions near the rear of the RF3. We discussed with Mr. Bohannon that we would like to return to this area during the next heat cycle.

We regrouped from lunch at approximately 12:45pm, we first observed/discussed the monitoring display of the bag leak detection system for RFB3. According to Mr. Bohannon, settings/alarms for the bag leak detection systems are maintained by engineers out of Real Alloy's corporate office in Ohio.

We continued the walk-through back to the RFB3 to view the location of the associated probes/monitoring equipment. Mr. Milan also provided a demonstration of the pan test procedures of the RFB3 Trona-feed system.

The walk-through continued to the building that houses RF6, we first viewed the salt cake staging area associated with RF6 (**Photo 14**). Similar to operations at RF3, when RF6 is operating, the salt cake staging area is equipped with a hood which is intended to capture and route emissions to Baghouse 8 (BH8) (**Photo 15**). We observed the components of the RF6 enclosure and capture system as well as labeling required by the NESHAP.

Our walk-through continued outside, and we viewed RFB6 (**Photo 16**). RFB6 is a pulse-jet style baghouse that consists of five compartments, each compartment has 330 bags. According to Mr. Bohannon, RFB6 was replaced in 2015. RFB6 utilizes a Filter Sense EM 30LGX bag leak detector that is calibrated annually.

At this time, Almer Casile (IDEQ) and Sean Sweetapple (IDEQ) departed the inspection, we continued the walk-through with Mr. Bohannon back to RF3. A new heat cycle had started, and we revisited the area where potential visible emissions were observed earlier in the day. While viewing RF3 from rear, visible emissions were observed for approximately one minute or less (**Photo 17**) as emissions appeared to exit from the rear of the enclosure of RF3. It was unclear what stage in the heat cycle RF3 was in at the time of the observed visible emissions. The roof of the building that houses RF3 is vented from the ceiling.

The walk-through concluded and we returned to the Facility's conference room to review/request additional records that hadn't been observed during the walk-through.

VII. Records/Permit Condition Review

Throughout the course of the on-site inspection, the following permit related records were reviewed:

1. 2021 Excess Emissions/Summary Report [40. CFR 63.10(e)(3)(v)] Permit Citation 2.21.

2. Operation, Maintenance, & Monitoring Plan for Rotary Furnace #3 [(40.CFR 63.1510(b)] Permit Citation 2.13.

3. Operation, Maintenance, & Monitoring Plan for Rotary Furnace #6 [40.CFR 63.1510(b)] Permit Citation 2.1.

4. Rotary Furnace #3 Baghouse Checklist (September 2021) [40.CFR 63.1510(j)] [40 CFR 63.1510(h)] Permit Citation 2.10, 2.13.

5. Trona Feed Flow Rate Verification (August 16, 2021) [40.CFR 63.1510(j)] Permit Citation 2.10.

6. Rotary Furnace #3 Baghouse Malfunction Occurrence Log [40 CFR 63.1506(m) Permit Citation 2.11.

7. Rotary Furnace #6 Baghouse Malfunction Occurrence Log [40 CFR 63.1506(m) Permit Citation 2.11.

8. Rotary Furnace #3 Baghouse PCME DT 990 Response Test Monthly Record (August 2021) [40 CFR 63.1510(f)] Permit Citation 2.13.

VIII. Closing Conference

Following the walk-through and initial file review, a closing conference was held with Mr. Bohannon inside the Facility's conference room. We discussed our inspection observations and noted that additional records were requested in order to evaluate compliance related to the RF3 capture system and the visual emissions observed at RF3.

Additional records were also requested in order to evaluate compliance with the bag leak detection system settings for RFB3. See (**Attachment E)**, for a list of records requested at the time of the closing conference.

We discussed that potential compliance concerns could be identified during the post-inspection records review. We then thanked Mr. Bohanon for his time and cooperation with the inspection.

IX. Post Inspection Correspondence

Post-inspection, on September 29, 2021, Mr. Bohannon called Mr. Hedgpeth to provide verbal clarification regarding the bag leak detection system equipment on RF3. Mr.

Bohannon followed up the call with an email containing photos of the equipment (**Photo 18 & Photo 19**).

Also, on September 30, 2021, Mr. Ferg submitted documentation via email to address the records requested at the time of the closing conference. The following records were provided by Mr. Ferg:

1. Source Test Report (Rotary Furnace #3 & Rotary Furnace #6) August 17 &18, 2021 [40 CFR 63.1505(a), 40 CFR 63 1505(i)(3) and 40 CFR 63.1505(k)(3)] Permit Condition(s) 2.6 and 2.7.
2. 2020 Capture and Control System Annual Inspection Report [40 CFR 1506(c)] Permit Citation 2.13.
3. 2021 Capture and Control System Annual Inspection Report [40 CFR 1506(c)] Permit Citation 2.13.
4. October 2020 Bag Leak Sensor Setup for Rotary Furnace Baghouse #3 [40 CFR 1501(f)] Permit Citation 2.13.
5. September 2021 Bag Leak Sensor Setup for Rotary Furnace Baghouse #3 [40 CFR 1501(f)] Permit Citation 2.13.
6. February 2020 Bag Leak Sensor Setup for Rotary Furnace Baghouse #3 [40 CFR 1501(f)] Permit Citation 2.13.
7. PCME DT 990 Aleris Operating Procedure[40 CFR 1501(f)] Permit Citation 2.13.
8. FilterSense 70 & 30 Series Control Units PS 10 Sensors Installation & Operating Manual [40 CFR 1501(f)] Permit Citation 2.13

X. Potential Compliance Concerns

Observations during the on-site inspection and post-inspection records review identified one potential compliance concern:

A. Hood Opening Area Measurements from the Rear of RF3

Within Part 2.11 of the Facility's Permit (40 CFR 63, Subpart RRR – Operation Requirements), the permit states that the permittee shall "*design and install a system for the capture and collection of emissions to meet the engineering*

standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists (ACGIH) in Chapters 3 and 5 of Industrial Ventilation: A Manual of Recommended Practice."

The hood opening flow/exhaust rate is determined by the measured hood flow divided by the measured hood opening area (ft^2). Based upon a review of the submitted Rotary Furnace #3 hood opening area measurements, only openings from the front of the furnace appear to be accounted for in the calculation of hood opening area that is used to document compliance with the minimum exhaust rates contained in the ACGIH Guidelines.

As described earlier in this report, at the time of inspection, visible emissions were observed coming from openings near the rear of the Rotary Furnace #3 (**Attachment D, Photo 17**). Openings from the rear of the furnace did not appear to be included in the hood opening area measurements.

ATTACHMENT A

Aerial Image
(Google Earth)

ATTACHMENT B

IDEQ Permit to Construct #P-2009.0139

Air Quality

PERMIT TO CONSTRUCT

Permittee	Real Alloy Recycling LLC
Permit Number	P-2009.0139
Project ID	62352
Facility ID	055-00031
Facility Location	16168 West Prairie Avenue Post Falls, ID 83854

Permit Authority

This permit (a) is issued according to the "Rules for the Control of Air Pollution in Idaho" (Rules), IDAPA 58.01.01.200–228; (b) pertains only to emissions of air contaminants regulated by the State of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with the application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; and (g) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment, or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200–228.

Date Issued January 2, 2020

Chris Duerschner, Permit Writer

Mike Simon, Stationary Source Manager

Contents

1 Permit Scope

Purpose

1.1 This is a revised Permit to Construct to align a monitoring and recordkeeping requirement with its underlying operating requirement.

1.2 Those permit conditions that have been modified or revised by this permitting action are identified by the permit issue date citation located directly under the permit condition and on the right-hand margin.

1.3 This PTC replaces Permit to Construct No. P-2009.0139, issued on December 6, 2019.

[01/02/2020]

Regulated Sources

Table 1.1 lists all sources of regulated emissions in this permit.

Table 1.1 Regulated Sources

Permit Section	Source	Control Equipment
2 & 4	Rotary Furnace #3 (RF3): RF3 was previously referred to as Furnace #1 for a period of years prior to the 2015 permit revision. Manufacturer: IMSAMET of Idaho Heat input rating: 27 MMBtu/hr Maximum Capacity: 300,000 lb feed charge/day Date of Construction: 1999	RF3 Baghouse (RFB3): 98% control of PM/PM_{10}
	Rotary Furnace #6 (RF6): Manufacturer: IMSAMET of Idaho Heat input rating: 27 MMBtu/hr Maximum Capacity: 300,000 lb feed charge/day Date of Construction: 2015	RF6 Baghouse (RFB6): 98% control of PM/PM_{10}
	Salt Cake Staging and Handling (SKSG) – RF3 Maximum capacity: 100,000 lb feed charge/day Date of construction: 1999	Baghouse #9 (BH9)
	Salt Cake Staging and Handling (SKSG) – RF6 Maximum capacity: 100,000 lb feed charge/day	Baghouse #8 (BH8)
3 & 4	Crucible Cleaning Maximum Operation: 60 operations per year	Baghouse #8 (BH8)
	Scrap Receiving and Hauling	Reasonable controls
	Dross Receiving and Hauling	Reasonable controls

2 Rotary Furnaces and Salt Cake Processes

2.1 Process Description

The facility operates two rotary furnaces and associated environmental control equipment. The rotary furnaces are used to melt and extract aluminum from aluminum scrap and aluminum dross. Dross is slag from the aluminum melting and refining operations consisting of fluxing agents, impurities, oxidized and non-oxidized aluminum and/or pre-consumer aluminum scrap. These are defined as Group 1 furnaces (40 CFR 63 Subpart RRR) and all emissions are directed to Trona-injected baghouses. The baghouses are equipped with a bag leak detection system. The regulated pollutants from the emission units include criteria pollutants, dioxins and furans (D/F) and fluoride.

Dross and scrap aluminum come to the facility from several sources. Dross is brought to the dross recovery facility by dump trucks and stored inside buildings until needed. Dross is transferred from storage piles located inside the dross recovery building to the rotary furnace where it is smelted. Scrap aluminum is brought to the facility by dump trucks and stored in outdoor piles until needed. Scrap aluminum is transferred from outdoor storage piles to the rotary furnace where it is melted. The furnace is fired by natural gas. Salt flux is added into the furnaces via mobile equipment. Once the melting cycle is complete, the molten metal is poured by rotary furnaces into sow molds where it is cast, or is transported in crucibles as molten aluminum for direct product shipment.

After the aluminum is tapped, the salt is poured out of the furnace into salt cake pans and placed under a hood adjacent to the furnace. After cooling, the salt cake is moved to under roof storage bins and/or loaded into tubs that are used to load dump trucks where it is trucked to an approved landfill for disposal.

The facility currently operates a 158 horsepower (HP) diesel-fired emergency generator used to power an electric fire pump. The engine is exempt from state permitting requirements pursuant to IDAPA 58.01.222.01.d. The engine is subject to the area source requirements of 40 CFR 63, Subpart ZZZZ, and these requirements are not included in this permit.

[05/06/2015]

2.2 Control Device Descriptions

Table 2.1 Rotary Furnaces and Salt Cake Processes Description

Emissions Units / Processes	Control Devices	Emission Points
Rotary Furnace #3 (RF3)	RF3 Baghouse (RFBH3) 98% control of PM/PM_{10}	RFBH3 Stack
Rotary Furnace #6 (RF6)	RF6 Baghouse (RFBH6) 98% control of PM/PM_{10}	RFBH6 Stack
Salt Cake Staging and Handling – RF3	Baghouse #9 (BH9) 99% control of PM/PM_{10}	BH9 Stack
Salt Cake Staging and Handling – RF6	Baghouse #8 (BH8) 99% control of PM/PM_{10}	BH8 Stack

Emission Limits

2.3 Emission Limits

The PM10 and NO_X emissions from RF3 and RF6 shall not exceed any corresponding emission rate limit listed in the following table.

Table 2.2 Rotary Furnace Emission Limits [a]

Source Description	PM_{10} [b]		NO_X		Total Fluoride	
	lb/hr [c]	T/yr [d]	lb/hr [c]	T/yr [d]	lb/hr [c]	T/yr [d]
RF3	1.74	7.60	3.66	16.03	0.22	0.96
RF6	1.16	5.07	2.44	10.68	0.14	0.62

a) In absence of any other credible evidence, compliance is ensured by complying with permit operating, monitoring, and record keeping requirements.
b) Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers, including condensable particulate as defined in IDAPA 58.01.01.006.
c) Pounds per hour, as determined by a test method prescribed by IDAPA 58.01.01.157, EPA reference test method, continuous emission monitoring system (CEMS) data, or DEQ-approved alternative.
d) Tons per any consecutive 12-calendar month period.

2.4 Fluoride Limits

The combined total particulate fluoride and gaseous fluoride emissions shall not exceed 0.22 pounds per hour (lb/hr) and 0.96 tons per year (T/yr) for RF3 and 0.14 pounds per hour (lb/hr) and 0.62 tons per year (T/yr) for RF6.

[05/06/2015]

2.5 Feed Charge Limits

The feed charge for RF3 shall not exceed 175 tons per day on a monthly average. The feed charge for RF3 shall not exceed 63,875 tons per year (T/yr). The feed charge for RF6 shall not exceed 125 tons per day on a monthly average. The feed charge for RF6 shall not exceed 45,630 tons per year (T/yr).

[12/06/2019]

2.6 Opacity Limit

Emissions from the RF3 stack, the RF6 stack, or any other stack, vent, or functionally equivalent opening shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

[05/06/2015]

2.7 40 CFR 63, Subpart RRR – Emissions Standards

The permittee shall comply with all applicable emissions limitations of the National Emissions Standards for Hazardous Air Pollutants for Secondary Aluminum Production, 40 CFR 63, Subpart RRR, in accordance with IDAPA 58.01.01.107 and IDAPA 58.01.01.210.20-21.

- Emission Standards: 40 CFR 63.1505(a), 40 CFR 63.1505(i)(3), and 40 CFR 63.1505(k)(3) and Table 1 to Subpart RRR of 40 CFR 63.
- 15 µg of dioxins and furans (D/F) (TEQ) per Mg (2.1 × 10−4 grams of D/F TEQ per ton) of feed/charge from a group 1 furnace, in accordance with 40 CFR 63.1505(i)(3). This limit does not apply if the furnace processes only clean charge.
- The permittee shall comply with the emission limit calculated using the equation for D/F for each secondary aluminum processing unit, in accordance with 40 CFR 63.1505(k)(3). The permittee shall not discharge or allow to be discharged to the atmosphere any 3-day, 24-hour rolling average emissions of D/F in excess of:

$$L_{c_{D/F}} = \frac{\sum_{i=1}^{N} \left(L_{ti_{D/F}} \times T_{ti} \right)}{\sum_{i=1}^{N} \left(T_{ti} \right)}$$

Where,

$L_{ti_{D/F}}$ = The D/F emission limit for individual emission unit i for a group 1 furnace; and

$L_{c_{D/F}}$ = The D/F emission limit for the secondary aluminum processing unit

T_{ti} = The mass of feed/charge for 24 hours for individual emission unit 'i'.

(note: clean charge furnaces cannot be included in this calculation since they are not subject to the D/F limit.)

- In accordance with 40 CFR 63.1505(k)(5), the permittee may demonstrate compliance with the emission limit by demonstrating that each emission unit is in compliance with the emission limit in 40 CFR 63.1505(i)(3).

[05/06/2015]

Operating Requirements

2.8 Baghouse Control of Salt Cake Staging and Handling

The permittee shall control emissions from the salt cake staging and handling for RF3 by operating a baghouse with a minimum control efficiency of 98% for PM_{10}. The permittee shall control emissions from the salt cake staging and handling for RF6 by operating a baghouse with a minimum control efficiency of 98% for PM_{10}.

[12/06/2019]

2.9 The permittee shall comply with the Air Pollution Emergency Rules in IDAPA 58.01.01.550-562.

2.10 The permittee shall monitor and record the following information and a compilation of the most recent five y ears of records shall be kept on site and shall be made available to DEQ representatives upon request.

- Baghouse maintenance documentation, including frequency of cleaning and number of baghouse section cleaned.

2.11 40 CFR 63, Subpart RRR – Operating Requirements

The permittee shall comply with all applicable operating requirements of 40 CFR 63, Subpart RRR, in accordance with IDAPA 58.01.01.107 and IDAPA 58.01.01.221.20-21. The permittee shall operate all new and existing affected sources and control equipment (Table 1.1) according to the requirements of 40 CFR 63, Subpart RRR, in accordance with 40 CFR 63.1506.

- Operating Requirements: 40 CFR 63.1506 and Table 2 of Subpart RRR of 40 CFE 63.
- *Labeling.* The permittee shall provide and maintain easily visible labels posted at each group 1 furnace, group 2 furnace, in-line fluxer and scrap dryer/delacquering kiln/decoating kiln that identifies the applicable emission limits and means of compliance, in accordance with 40 CFR 63.1506(b) as follows:
  - The type of affected source or emission unit (e.g. scrap dryer/delacquering kiln/decoating kiln, group 1 furnace, group 2 furnace, in-line fluxer).
  - The applicable operational standard(s) and control method(s) (work practice or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g., operating parameter ranges and requirements as incorporated in the Operation, Maintenance, and Monitoring (OM&M) plan.
- *Capture/collection systems.* For each affected source or emission unit equipped with an add-on air pollution control device, the permittee shall comply with 40 CFR 63.1506(c) as follows:
  - Design and install a system for the capture and collection of emissions to meet the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice";
  - Vent captured emissions through a closed system, except that dilution air may be added to emission streams for the purpose of controlling temperature at the inlet to a fabric filter; and
  - Operate each capture/collection system according to the procedures and requirements in the OM&M plan.
- *Feed/charge weight.* For each affected source or emission unit subject to an emission limit in kg/Mg (lb/ton) or µg/Mg (gr/ton) of feed/charge, the permittee shall comply with 40 CFR 63.1506(d) as follows:
  - Except as provided in paragraph (d)(3) of this section, install and operate a device that measures and records or otherwise determine weight of feed/charge (or throughput) for each operating cycle or time period used in the performance test; and
  - Operate each weight measurement system or other weight determination procedure in accordance with the OM&M plan.

- The owner or operator may choose to measure and record aluminum production weight from an affected source or emission unit rather than feed/charge weight to an affected source or emission unit, provided that (i) the aluminum production weight, rather than feed/charge weight is measured and recorded for all emission units within a SAPU; and (ii) all calculations to demonstrate compliance with the emission limits for SAPUs are based on aluminum production weight rather than feed/charge weight.

- *Group 1 furnace with add-on air pollution control devices.* For each group 1 furnace with emissions controlled by a lime-injected fabric filter, the permittee shall comply with 40 CFR 63.1506(m) as follows:
  - If a bag leak detection system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall: (i) initiate corrective action within 1 hour of a bag leak detection system alarm; (ii) complete the corrective action procedures in accordance with the OM&M plan; (iii) operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month block reporting period. In calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If the owner or operator takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by the owner or operator to initiate corrective action.
  - If a continuous opacity monitoring system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall: (i) initiate corrective action within 1 hour of any 6-minute average reading of 5 percent or more opacity; and (ii) complete the corrective action procedures in accordance with the OM&M plan.
  - Maintain the 3-hour block average inlet temperature for each fabric filter at or below the average temperature established during the D/F performance test, plus 14 °C (plus 25°F). This maximum baghouse inlet temperature shall be maintained in the OM&M plan.
  - Maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the D/F performance test. This maximum flux injection rate shall be maintained in the OM&M plan.
  - Operate each sidewell furnace such that: (i) the level of molten metal remains above the top of the passage between the sidewell and hearth during reactive flux injection, unless emissions from both the sidewell and the hearth are included in demonstrating compliance with all applicable emission limits; (ii) reactive flux is added only in the sidewell, unless emissions from both the sidewell and the hearth are included in demonstrating compliance with all applicable emission limits.

- *Corrective Action.* When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the D/F performance test and incorporated in the OM&M plan, the permittee shall initiate corrective action in accordance with 40 CFR 63.1506(p). Corrective action must restore operation of the affected source of emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken must include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation.

[05/06/2015]

Monitoring and Recordkeeping Requirements

2.12 Feed Charge Tracking

The permittee shall monitor and record, each day when operating, the amount of feed charge in pounds per day for RF3. The permittee shall monitor and record, each day when operating, the amount of feed charge in pounds per day for RF6. The daily amounts shall be averaged monthly, and then each month's amount of feed charge shall be summed over the previous consecutive 12-month period.

[01/02/2020]

2.13 40 CFR 63, Subpart RRR – Monitoring and Compliance Requirements

The permittee shall comply with all applicable monitoring and compliance requirements in 40 CFE 63, Subpart RRR. The permittee shall monitor all control equipment and processes according to the requirements of 40 CFR 63, Subpart RRR, in accordance with 40 CFR 63.1510. Monitoring requirements for each type of affected source and emission unit are summarized in Table 3 to 40 CFR 63, Subpart RRR.

- *OM&M Plan (40 CFR 63.1510(b).* The permittee shall prepare and implement for each new or existing affected source and emission unit, a written OM&M plan. The permittee of an existing affected source must submit the OM&M plan to the responsible permitting authority no later than the compliance date established by 40 CFR 63.1510(a). The permittee of any new affected source must submit the OM&M plan to the responsible permitting authority within 90 days after a successful initial performance test under 40 CFR 63.1511(b), or within 90 days after the compliance date established by 40 CFR 63.1501(b), if no initial performance test is required. The plan must be accompanied by a written certification by the owner or operator that the OM&M plan satisfies all requirements of this section and is otherwise consistent with the requirements of this subpart. The permittee shall comply with all of the provisions of the OM&M plan as submitted to the permitting authority, unless and until the plan is revised in accordance with the following procedures. If the permitting authority determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of this section or this subpart, the permittee shall promptly make all necessary revisions and resubmit the revised plan. If the permittee determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the permittee submits a description of the changes and a revised plan incorporating them to the permitting authority. Each plan must contain the following information:
  - Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device.
  - A monitoring schedule for each affected source and emission unit.
  - Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in 40 CFR 63.1505.
  - Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including: (i) calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and (ii) procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in subpart A of this part.

- Procedures for monitoring process and control device parameters, including procedures for annual inspections of afterburners, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used.
- Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in paragraph (b)(1) of §63.1510, including: (i) procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and (ii) procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed.

- *Labeling (40 CFR 63.1510(c)).* The permittee shall inspect the labels for each group 1 furnace, group 2 furnace, in-line fluxer and scrap dryer/delacquering kiln/decoating kiln at least once per calendar month to confirm that posted labels as required by the operational standard in 40 CFR 63.1506(b) are intact and legible.
- *Capture/collection system (40 CFR 63.1510(d)).* The permittee shall:
  - Install, operate, and maintain a capture/collection system for each affected source and emission unit equipped with an add-on pollution control device; and
  - Inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in 40 CFR 63.1506(c) and record the results of each inspection.
- *Feed charge/weight (40 CFR 63.1510(e)).* The permittee of an affected source or emission unit subject to an emission limit in kg/Mg (lb/ton) or μg/Mg (gr/ton) of feed/charge shall install, calibrate, operate and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. Feed/charge or aluminum production within SAPUs must be measured and recorded on an emission unit-by-emission unit basis. As an alternative to a measurement device, the permittee may use a procedure acceptable to DEQ to determine the total weight of feed/charge or aluminum production to the affected source of emission unit.
  - The accuracy of the weight measurement device or procedure must be ±1 percent of the weight being measured. The permittee may apply to the permitting agency for approval to use a device of alternative accuracy if the required accuracy cannot be achieved as a result of equipment layout or charging practices. A device of alternative accuracy will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standard.
  - The permittee must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
- *Fabric filters and lime-injected fabric filters (40 CFR 63.1510(f)).* The permittee of an affected source or emission unit using a fabric filter or lime-injected fabric filter to comply with the requirements of this subpart shall install, calibrate, maintain, and continuously operate a bag leak detection system or a continuous opacity monitoring system. The permittee of an aluminum scrap shredder must install and operate a bag leak detection system, install and operate a continuous opacity monitoring system, or conduct visible emission observations.
  - These requirements apply to the owner or operator of a new or existing affected source or existing unit using a bag leak detection system: (i) the permittee shall install and operate

a bag leak detection system for each exhaust stack of a fabric filter; (ii) each triboelectric bag leak detection system must be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (September 1997). This document is available from the U.S. Environmental Protection Agency; Office of Air Quality Planning and Standards; Emissions, Monitoring and Analysis Division; Emission Measurement Technical Information (EMTIC), Continuous Emission Monitoring. Other bag leak detection systems must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations; (iii) the bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less; (iv) the bag leak detection system sensor must provide output of relative or absolute PM loadings; (v) the bag leak detection system must be equipped with a device to continuously record the output signal from the sensor; (vi) the bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel; (vii) for positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter; (viii) where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors; (ix) the baseline output must be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time; (x) following initial adjustment of the system, the permittee shall not adjust sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent of a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.

  - These requirements apply to the owner or operator of a new or existing affected source or an existing emission unit using a continuous opacity monitoring system: (i) the permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system to measure and record the opacity of emissions exiting each exhaust stack; (ii) each continuous opacity monitoring system must meet the design and installation requirements of Performance Specification 1 in appendix B to 40 CFR part 60.
  - These requirements apply to the owner or operator of a new or existing aluminum scrap shredder who conducts visible emission observations. The owner or operator shall: (i) perform a visible emission test for each aluminum scrap shredder using a certified observer at least once a day according to the requirements of Method 9 in appendix A to 40 CFR part 60. Each Method 9 test must consist of five 6-minute observations in a 30 minute period; and (ii) record the results of each test.

- *Fabric filter inlet temperature (40 CFR 63.1510(h)).* These requirements apply to the owner or operator of a scrap dryer/delacquering kiln/decoating kiln or group 1 furnace using a lime-injected fabric filter to comply with the requirements of this subpart.
  - The permittee shall install, calibrate, maintain, and operate a device to continuously monitor and record the temperature of the fabric filter inlet gases consistent with the requirements for continuous monitoring systems in subpart A of 40 CFR 63.
  - The temperature monitoring device must meet each of these performance and equipment specifications: (i) the monitoring system must record the temperature in 15-minute block averages and calculate and record the average temperature for each 3-hour block period;

(ii) the recorder response range must include zero and 1.5 times the average temperature established according to the requirements in 40 CFR 63.1512(n); (iii) the reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

- *Lime injection (40 CFR 63.1510(i)).* These requirements apply to the owner or operator of an affected source or emission unit using a lime-injected fabric filter to comply with the requirements of this subpart.
  - The permittee shall verify that lime is always free-flowing by either:
    (i) Inspecting each feed hopper or silo at least once each 8-hour period and recording the results of each inspection. If lime is found not to be free-flowing during any of the 8-hour periods, the owner or operator must increase the frequency of inspections to at least once every 4-hour period for the next 3 days. The permittee may return to inspections at least once every 8 hour period if corrective actions results in no further blockages of lime during the 3-day period; or
    (ii) Subject to the approval of DEQ, installing, operating and maintaining a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system, or other system to confirm that lime is free-flowing. If lime if found not to be free-flowing, the permittee must promptly initiate and complete corrective action; or
    (iii) Subject to the approval of DEQ, installing operating and maintaining a device to monitor the concentration of HCl at the outlet of the fabric filter. If an increase in the concentration of HCl indicates that the lime is not free-flowing, the permittee must promptly initiate and complete corrective action.
  - The owner or operator of a continuous lime injection system must record the lime feeder setting once each day of operation.
  - An owner or operator who intermittently adds lime to a lime coated fabric filter must obtain approval from DEQ for a lime addition monitoring procedure. DEQ will not approve a monitoring procedure unless data and information are submitted establishing that the procedure is adequate to ensure that relevant emission standards will be met on a continuous basis.
- *Total reactive flux injection rate 40 CFR 63.1510(j)).* These requirements apply to the owner or operator of a group 1 furnace (with or without add-on air pollution control devices) or in-line fluxer. The permittee shall:
  - Install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit. (i) the monitoring system must record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test; (ii) the accuracy of the weight measurement device must be ±1 percent of the weight of the reactive component of the flux being measured. The owner or operator may apply to the permitting authority for permission to use a weight measurement device of alternative accuracy in cases where the reactive flux flow rates are so low as to make the use of a weight measurement device of ±1 percent impracticable. A device of alternative accuracy will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standards; (iii) the permittee shall verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.

- Calculate and record the gaseous or liquid reactive flux injection rate (kg/Mg or lb/ton) for each operating cycle or time period used in the D/F performance test using the procedure in 40 CFR 63.1512(o).
- Record, for each 15-minute block period during each operating cycle or time period used in the D/F performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of: (i) gaseous or liquid reactive flux other than chlorine; and (ii) solid reactive flux.
- Calculate and record the total reactive flux injection rate for each operating cycle or time period used in the D/F performance test using the procedure in 40 CFR 63.1512(o).
- The permittee of a group 1 furnace or in-line fluxer performing reactive fluxing may apply to the Administrator for approval of an alternative method for monitoring and recording the total reactive flux addition rate based on monitoring the weight or quantity of reactive flux per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis.

- *Site-specific requirements for secondary aluminum processing units (40 CFR 63.1510(s)).* The SAPUs at this facility include RF3 and RF6. This facility does not conduct "in-line fluxing."
  - A permittee of a secondary aluminum processing unit at a facility must include, within the OM&M plan prepared in accordance with 40 CFR 63.1510(b), the following information: (i) the identification of each emission unit in the secondary aluminum processing unit; (ii) the specific control technology or pollution prevention measure to be used for each emission unit in the secondary aluminum processing unit and the date of its installation or application; (iii) The emission limit calculated for each secondary aluminum processing unit and performance test results with supporting calculations demonstrating initial compliance with each applicable emission limit; (iv) information and data demonstrating compliance for each emission unit with all applicable design, equipment, work practice or operational standards of this subpart; and (v) the monitoring requirements applicable to each emission unit in a secondary aluminum processing unit and the monitoring procedures for daily calculation of the 3-day, 24-hour rolling average using the procedure in 40 CFR 63.1510(t).
  - The SAPU compliance procedures within the OM&M plan may not contain any of the following provisions: (i) any averaging among emissions of a differing pollutants; (ii) the inclusion of any affected sources other than emission units in a secondary aluminum processing unit; (iii) the inclusion of any emission unit while it is shutdown; or (iv) the inclusion of any periods of startup, shutdown, or malfunction in emission calculations.
  - To revise the SAPU compliance provisions within the OM&M plan prior to the end of the permit term, the permittee shall submit a request to the applicable permitting authority containing the information required by paragraph (s)(1) of this section and obtain approval of the applicable permitting authority prior to implementing any revisions.
- *Secondary aluminum processing unit (40 CFR 63.1510(t)).* Except as provided in 40 CFR 63.1510(u), the permittee shall calculate and record the 3-day and 24-hour rolling average emissions of PM, HCl, and D/F for each secondary aluminum processing unit on a daily basis. To calculate the 3-day, 24-hour rolling average, the owner or operator must:
  - Calculate and record the total weight of material charged to each emission unit in the secondary aluminum processing unit for each 24-hour day of operation using the

feed/charge weight information required in paragraph (e) of this section. If the owner or operator chooses to comply on the basis of weight of aluminum produced by the emission unit, rather than weight of material charged to the emission unit, all performance test emissions results and all calculations must be conducted on the aluminum production weight basis.

- Multiply the total feed/charge weight to the emission unit, or the weight of aluminum produced by the emission unit, for each emission unit for the 24-hour period by the emission rate (in lb/ton of feed/charge) for that emission unit (as determined during the performance test) to provide emissions for each emission unit for the 24-hour period, in pounds.
- Divide the total emissions for each SAPU for the 24-hour period by the total material charged to the SAPU, or the weight of aluminum produced by the SAPU over the 24-hour period to provide the daily emission rate for the SAPU.
- Compute the 24-hour daily emission rate using Equation 4.

$$E_{day} = \frac{\sum_{i=1}^{N}(T_i \times ER_i)}{\sum_{i=1}^{N} T_i} \quad (Eq. 4)$$

Where,

E_{day} = The daily PM, HCl, or D/F emission rate for the secondary aluminum processing unit for the 24-hour period;

T_i = The total amount of feed, or aluminum produced, for emission unit 'i' for the 24-hour period (tons or Mg);

ER_i = The measured emission rate for emission unit 'i' as determined in the performance test (lb/ton or µg/Mg of feed /charge); and

n = the number of emission units in the secondary aluminum processing unit.

- *Secondary aluminum processing unit compliance by individual emission unit demonstration (40 CFR 63.1510(u)).* As an alternative to the procedures of 40 CFR 63.1510(t), the permittee may demonstrate, through performance tests, that each individual emission unit within the secondary aluminum production unit is in compliance with the applicable emission limits for the emission unit.

[05/06/2015]

2.14 Incorporation of Federal Requirements by Reference

Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein. Documents include, but are not limited to:

- 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, Subpart RRR.

For permit conditions referencing or cited in accordance with any document incorporated by reference (including permit conditions identified as NESHAP), should there be any conflict between the requirements of the permit condition and the requirements of the document, the requirements of the document shall govern, including any amendments to that regulation.

[12/31/2009]

2.15 The permittee shall comply with the requirements of the monitoring and recordkeeping general provision.

[12/31/2009]

Performance Testing Requirements

2.16 Supplemental NO_X Performance Test

Within 180 days of the issuance of this PTC modification, the permittee shall notify DEQ of their intent to perform source tests for NO_X on RF3 and RF6 to supplement the results of the engineering test performed on November 29, 2018. These source tests shall be performed in accordance with the General Provisions for Performance Testing of this permit and EPA Reference Method 7, and shall be conducted within 180 days of the issuance of this PTC modification.

[12/06/2019]

2.17 PM_{10} Performance Tests

The permittee shall conduct a performance test to measure the PM_{10} emissions from RF3 every five years. The permittee shall conduct a performance test to measure the PM10 emissions from RF6 every five years The performance tests shall be performed in accordance with the General Provisions for Performance Testing of this permit and EPA Reference Methods 5 and 202 described in 40 CFR 60, appendix A. Visible emissions shall be observed during the emission test using the methods specified in IDAPA 58.01.01.625. The operating feed charge weight rates (input) of the rotary furnaces shall be measured and recorded during the source test. All subsequent source tests shall be completed no later than July 15 of the testing year. RF3 was tested July 26, 2019, so the next test is required no later than July 15, 2024. RF6 was tested November 10-11, 2015, so the next test is required no later than July 15, 2020.

[12/06/2019]

2.18 Particulate Fluoride Performance Tests

The permittee shall conduct a performance test to measure gaseous and particulate fluoride compounds emissions from RF3 every five years. The permittee shall conduct a performance test to measure gaseous and particulate fluoride compounds emissions from RF6 every five years. The performance tests shall be performed in accordance with the General Provisions for Performance Testing of this permit and EPA Reference Methods 13A or 13B described in 40 CFR 60, Appendix A. Visible emissions shall be observed during the source test using the methods specified in IDAPA 58.01.01.625. The feed charge weight rates (input) of rotary furnaces shall be measured and recorded during the source test. RF3 was tested June 26, 2019, therefore the next test is required no later than June 15, 2024. RF6 was tested April 9, 2016, therefore the next test is required no later than July 15, 2021.

[12/06/2019]

2.19 40 CFR 63, Subpart RRR – Performance Test/Compliance Demonstration General Requirements

The permittee shall comply with all applicable performance test requirements in 40 CFR 63, Subpart RRR. The permittee shall perform all applicable performance tests according to the requirements of 40 CFR 63, Subpart RRR, in accordance with 40 CFR 63.1511.

- *Site-specific test plan (40 CFR 63.1511(a)).* Prior to conducting any performance test required, the permittee shall prepare a site-specific test plan which satisfies all of the

requirements, and must obtain approval of the plan pursuant to the procedures, set forth in §63.7(c).

- *Initial performance test (40 CFR 63.1511(b)).* Following approval of the site-specific test plan, the permittee shall demonstrate initial compliance with each applicable emission, equipment, work practice, or operational standard for each affected source and emission unit, and report the results in the notification of compliance status report as described in §63.1515(b). The permittee must conduct this initial performance test no later than the date for compliance established by §63.1501(a). The permittee must conduct this initial performance test within 90 days after the date for compliance established by §63.1501(b). Except for the date by which the performance test must be conducted, the permittee must conduct each performance test in accordance with the requirements and procedures set forth in §63.7(c). Permittees of affected sources located at facilities which are area sources are subject only to those performance testing requirements pertaining to D/F.
    - The permittee must conduct each test while the affected source or emission unit is operating at the highest production level with charge materials representative of the range of materials processed by the unit and, if applicable, at the highest reactive fluxing rate.
    - Each performance test for a continuous process must consist of 3 separate runs; pollutant sampling for each run must be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of 3 hours.
    - Each performance test for a batch process must consist of three separate runs; pollutant sampling for each run must be conducted over the entire process operating cycle.
    - Where multiple affected sources or emission units are exhausted through a common stack, pollutant sampling for each run must be conducted over a period of time during which all affected sources or emission units complete at least 1 entire process operating cycle or for 24 hours, whichever is shorter.
    - Initial compliance with an applicable emission limit or standard is demonstrated if the average of three runs conducted during the performance test is less than or equal to the applicable emission limit or standard.
- *Test methods (40 CFR 63.1511(c)).* The permittee must use the following methods in appendix A to 40 CFR part 60 to determine compliance with the applicable emission limits or standards:
    - Method 1 for sample and velocity traverses
    - Method 2 for velocity and volumetric flow rate
    - Method 3 for gas analysis
    - Method 4 for moisture content of the stack gas
    - Method 5 for the concentration of PM
    - Method 9 for visible emission observations
    - Method 23 for the concentration of D/F
    - Method 25A for the concentration of THC, as propane

- Method 26A for the concentration of HCl. Where a lime-injected fabric filter is used as the control device to comply with the 90 percent reduction standard, the owner or operator must measure the fabric filter inlet concentration of HCl at a point before lime is introduced to the system. Method 26 may be used in place of Method 26A where it can be demonstrated that there are no water droplets in the emission stream. This can be demonstrated by showing that the vapor pressure of water in the emission stream that you are testing is less than the equilibrium vapor pressure of water at the emission stream temperature, and by certifying that the emission stream is not controlled by a wet scrubber.

- *Establishment of monitoring and operating parameter values (40 CFR 63.1511(g)).* The permittee must establish a minimum or maximum operating parameter value, or an operating parameter range for each parameter to be monitored as required by §63.1510 that ensures compliance with the applicable emission limit or standard. To establish the minimum or maximum value or range, permittee must use the appropriate procedures and submit the information required by §63.1515(b)(4) in the notification of compliance status report. The permittee may use existing data in addition to the results of performance tests to establish operating parameter values for compliance monitoring provided each of the following conditions are met to the satisfaction of DEQ:
  - The complete emission test report(s) used as the basis of the parameter(s) is submitted.
  - The same test methods and procedures as required by the subpart were used in the test.
  - The permittee certifies that no design or work practice changes have been made to the source, process, or emission control equipment since the time of the report.
  - All process and control equipment operating parameters required to be monitored were monitored as required in the subpart and documented in the test report.

[05/06/2015]

2.20 40 CFR 63, Subpart RRR – Performance Test/Compliance Demonstration Requirements and Procedures

The permittee shall comply with all applicable performance test requirements in 40 CFR 63, Subpart RRR. The permittee shall perform all compliance demonstration requirements and procedures according to the requirements of 40 CFR 63, Subpart RRR, in accordance with 40 CFR 63.1512, as applicable.

- *Group 1 furnace with add-on air pollution control devices (40 CFR 63.1512(d)).*
  - The permittee of a group 1 furnace that processes scrap other than clean charge materials with emissions controlled by a lime-injected fabric filter must conduct performance tests to measure emissions of PM and D/F at the outlet of the control device and emissions of HCl at the outlet (for the emission limit) or the inlet and the outlet (for the percent reduction standard).
  - The permittee may choose to determine the rate of reactive flux addition to the group 1 furnace and assume, for the purposes of demonstrating compliance with the SAPU emission limit, that all reactive flux added to the group 1 furnace is emitted. Under these circumstances, the permittee is not required to conduct an emission test for HCl.
- *Secondary aluminum processing unit (40 CFR 63.1512(j)).* The permittee must conduct performance tests as described below. The results of the performance tests are used to establish emission rates in lb/ton of feed/charge for PM and HCl and µg TEQ/Mg of

feed/charge for D/F emissions from each emission unit, as applicable. These emission rates are used for compliance monitoring in the calculation of the 3-day, 24-hour rolling average emission rates using the equation in §63.1510(t).

- *Feed/charge weight measurement (40 CFR 63.1512(k)).* During the emission test(s) conducted to determine compliance with emission limits in a kg/Mg (lb/ton) format, the owner or operator of an affected source or emission unit, subject to an emission limit in a kg/Mg (lb/ton) of feed/charge format, must measure (or otherwise determine) and record the total weight of feed/charge to the affected source or emission unit for each of the three test runs and calculate and record the total weight. An owner or operator that chooses to demonstrate compliance on the basis of the aluminum production weight must measure the weight of aluminum produced by the emission unit or affected source instead of the feed/charge weight.

- *Continuous opacity monitoring system (40 CFR 63.1512(l)).* The owner or operator of an affected source or emission unit using a continuous opacity monitoring system must conduct a performance evaluation to demonstrate compliance with Performance Specification 1 in appendix B to 40 CFR part 60. Following the performance evaluation, the owner or operator must measure and record the opacity of emissions from each exhaust stack for all consecutive 6-minute periods during the PM emission test.

- *Inlet gas temperature (40 CFR 63.1512(n)).* The owner or operator of a scrap dryer/delacquering kiln/decoating kiln or a group 1 furnace using a lime-injected fabric filter must use these procedures to establish an operating parameter value or range for the inlet gas temperature.
  - Continuously measure and record the temperature at the inlet to the lime-injected fabric filter every 15 minutes during the HCl and D/F performance tests, as applicable;
  - Determine and record the 15-minute block average temperatures for the 3 test runs; and
  - Determine and record the 3-hour block average of the recorded temperature measurements for the 3 test runs.

- *Flux injection rate (40 CFR 63.1512(o)).* The permittee must use these procedures to establish an operating parameter value or range for the total reactive chlorine flux injection rate.
  - Continuously measure and record the weight of gaseous or liquid reactive flux injected for each 15 minute period during the HCl and D/F tests, as applicable, determine and record the 15-minute block average weights, and calculate and record the total weight of the gaseous or liquid reactive flux for the 3 test runs;
  - Record the identity, composition, and total weight of each addition of solid reactive flux for the 3 test runs;
  - Determine the total reactive chlorine flux injection rate by adding the recorded measurement of the total weight of chlorine in the gaseous or liquid reactive flux injected and the total weight of chlorine in the solid reactive flux using Equation 5:

    $$W_t = F_1 W_1 + F_2 W_2 \quad Eq. 5$$

    Where,

    W_t = Total chlorine usage, by weight;

    F_1 = Fraction of gaseous or liquid flux that is chlorine;

W_1 = Weight of reactive flux gas injected;

F_2 = Fraction of solid reactive flux that is chlorine (e.g., F = 0.75 for magnesium chloride); and

W_2 = Weight of solid reactive flux;

- Divide the weight of total chlorine usage (W_t) for the 3 test runs by the recorded measurement of the total weight of feed for the 3 test runs; and
- If the solid reactive flux other than magnesium chloride is used, the permittee must derive the appropriate proportion factor to approval by DEQ.

- *Lime (trona) injection (40 CFR 63.1512(p)).* The permittee of an affected source or emission unit using a lime-injected fabric filter system must use these procedures during the HCl and D/F tests, as applicable, to establish an operating parameter value for the feeder setting for each operating cycle or time period used in the performance test.
  - For continuous lime injection systems, ensure that lime, or trona, in the feed hopper or silo is free-flowing at all times; and
  - Record the feeder setting for the 3 test runs. If the feed rate setting varies during the runs, determine and record the average feed rate from the 3 runs.
- *Bag leak detection system (40 CFR 63.1512(q)).* The permittee of an affected source or emission unit using a bag leak detection system must submit the information described in §63.1515(b)(6) as part of the notification of compliance status report to document conformance with the specifications and requirements in §63.1510(f).
- *Labeling (40 CFR 63.1512(r)).* The permittee of each scrap dryer/delacquering kiln/decoating kiln, group 1 furnace, group 2 furnace and in-line fluxer must submit the information described in §63.1515(b)(3) as part of the notification of compliance status report to document conformance with the operational standard in §63.1506(b).
- *Capture/collection system (40 CFR 63.1512(s)).* The permittee of a new or existing affected source or emission unit with an add-on control device must submit the information described in §63.1515(b)(2) as part of the notification of compliance status report to document conformance with the operational standard in §63.1506(c).

Reporting Requirements

2.21 40 CFR 63, Subpart RRR – Notifications, Reports, and Records

On and after the compliance date specified in 40 CFR 63.1501, the permittee shall comply with all applicable Notifications, Reports, and Records standards of 40 CFR 63, Subpart RRR. The permittee shall refer to the following sections in 40 CFR 63, Subpart RRR:

- *Initial notifications.* The permittee shall submit initial notifications to DEQ in accordance with 40 CFR 63.1515(a).
  - The permittee shall provide notification for any area source that subsequently increases its emissions such that the source is a major source, as required by 40 CFR 63.9(b)(1).
  - The permittee of a new or reconstructed affected source, or a source that has been reconstructed such that it is an affected source, that has an initial startup and for which an application for approval of construction or reconstruction is not required under 40 CFR 63.5(d), shall provide notification that the source is subject to the standard, as required by 40 CFR 63.9(b)(3).

- The permittee of a new or reconstructed major affected source that has an initial startup after the effective date of this subpart and for which an application for approval of construction or reconstruction is required by 40 CFR 63.5(d) shall provide the following notifications, as required by 40 CFR 63.9(b)(4).

  (i) Intention to construct a new major affected source, reconstruct a major source, or reconstruct a major source that has become a major affected source;

  (ii) Date when construction or reconstruction was commenced (submitted simultaneously with the application for approval of construction or reconstruction if construction or reconstruction was commenced before the effective date of this subpart, or no later than 30 days after the date construction or reconstruction commenced if construction or reconstruction commenced after the effective date of this subpart);

  (iii) Anticipated date of startup; and

  (iv) Actual date of startup.

- If the permittee intends to construct a new affected source or reconstruct an affected source, or reconstruct a source such that it becomes an affected source, the permittee shall provide notification of the intended construction or reconstruction, as required by 40 CFR 63.9(b)(5). The notification must include all the information required for an application for approval of construction or reconstruction as required by 40 CFR 63.5(d). For major sources, the application for approval of construction or reconstruction may be used to fulfill these requirements.

- The permittee shall provide notification of any special compliance obligations for a new source, as required by 40 CFR 63.9(d).

- The permittee shall provide notification of the anticipated date for conducting performance tests and visible emission observations, as required by 40 CFR 63.9(e) and (f). The permittee shall notify DEQ of the intent to conduct a performance test at least 60 days before the performance test is scheduled; notification of opacity or visible emissions observations for a performance test must be provided at least 30 days before the observations are scheduled to take place.

- The permittee shall provide additional notifications for sources with continuous emission monitoring systems or continuous opacity monitoring systems, as required by 40 CFR 63.9(g).

- *Notification of compliance status report*. The permittee shall submit a notification of compliance status report within 60 days after the compliance date established by 40 CFR 63.1501(a), in accordance with 40 CFR 63.1515(b). The permittee shall submit a notification of compliance status report for each new affected source within 90 days after conducting the initial performance test required by 40 CFR 63.1511(b), or within 90 days after the compliance date established by 40 CFR 63.1501(b) if no initial performance test is required. The notification must be signed by the responsible official who must certify its accuracy. A complete notification of compliance status report must include the information specified in 40 CFR 63.1515(a). The permittee shall provide notification to DEQ. A complete notification of compliance status report shall include:

  - All information required by 40 CFR 63.9(h). The permittee shall provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests).

- The approved site-specific test plan and performance evaluation test results for each continuous monitoring system (including a continuous emission or opacity monitoring system).
- Unit labeling as described in 40 CFR 63.1506(b), including process type or furnace classification and operating requirements.
- The compliant operating parameter value or range established for each affected source or emission unit with supporting documentation and a description of the procedure used to establish the value (e.g., lime injection rate, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature), including the operating cycle or time period used in the performance test.
- Design information and analysis, with supporting documentation, demonstrating conformance with the requirements for capture/collection systems in 40 CFR 63.1506(c).
- If applicable, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in 40 CFR 63.1510(f).
- Manufacturer's specifications or analysis documenting the design residence time of no less than 1 second for each afterburner used to control emissions from a scrap dryer/delacquering kiln/decoating kiln subject to alternative emission standards in 40 CFR 63.1505(e).
- Manufacturer's specification or analysis documenting the design residence time of no less than 0.8 seconds and design operating temperature of no less than 1,600 °F for each afterburner used to control emissions from a sweat furnace that is not subject to a performance test.
- The OM&M plan (including site-specific monitoring plan for each group 1 furnace with no add-on air pollution control device).
- Startup, shutdown, and malfunction plan, with revisions.

- *Startup, shutdown, and malfunction plan/reports*. The permittee shall develop a written plan as described in 40 CFR 63.6(e)(3) that contains specific procedures to be followed for operating and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the standard, in accordance with 40 CFR 63.1516(a). The owner or operator shall also keep records of each event as required by 40 CFR 63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in 40 CFR 63.6(e)(3). In addition to the information required in 40 CFR 63.6(e)(3), the plan must include:
  - Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended; and
  - Corrective actions to be taken in the event of a malfunction of a process or control device, including procedures for recording the actions taken to correct the malfunction or minimize emissions.
- *Excess emissions/summary report*. The permittee shall submit semiannual reports according to the requirements in 40 CFR 63.10(e)(3), in accordance with 40 CFR 63.1516(b). Except, the permittee shall submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR 63.10(e)(3)(v). When no deviations of parameters have occurred, the permittee shall submit a report stating that no excess emissions occurred during the reporting period.

- A report must be submitted if any of these conditions occur during a 6-month reporting period:
  - (i) The corrective action specified in the OM&M plan for a bag leak detection system alarm was not initiated within 1 hour.
  - (ii) The corrective action specified in the OM&M plan for a continuous opacity monitoring deviation was not initiated within 1 hour.
  - (iii) The corrective action specified in the OM&M plan for visible emissions from an aluminum scrap shredder was not initiated within 1 hour.
  - (iv) An excursion of a compliant process or operating parameter value or range (e.g., lime injection rate or screw feeder setting, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature, definition of acceptable scrap, or other approved operating parameter).
  - (v) An action taken during a startup, shutdown, or malfunction was not consistent with the procedures in the plan as described in 40 CFR 63.6(e)(3).
  - (vi) An affected source (including an emission unit in a secondary aluminum processing unit) was not operated according to the requirements of this subpart.
  - (vii) A deviation from the 3-day, 24-hour rolling average emission limit for a secondary aluminum processing unit.
- Each report must include each of these certifications, as applicable:
  - (i) For each thermal chip dryer: "Only unpainted aluminum chips were used as feedstock in any thermal chip dryer during this reporting period."
  - (ii) For each dross-only furnace: "Only dross and salt flux were used as the charge materials in any dross-only furnace during this reporting period."
  - (iii) For each sidewell group 1 furnace with add-on air pollution control devices: "Each furnace was operated such that the level of molten metal remained above the top of the passage between the sidewell and hearth during reactive fluxing, and reactive flux, except for cover flux, was added only to the sidewell or to a furnace hearth equipped with an add-on air pollution control device for PM, HCl, and D/F emissions during this reporting period."
  - (iv) For each group 1 melting/holding furnace without add-on air pollution control devices and using pollution prevention measures that processes only clean charge material: "Each group 1 furnace without add-on air pollution control devices subject to emission limits in 40 CFR 63.1505(i)(2) processed only clean charge during this reporting period."
- The permittee shall submit the results of any performance test conducted during the reporting period, including one complete report documenting test methods and procedures, process operation, and monitoring parameter ranges or values for each test method used for a particular type of emission point tested.

- As required by 40 CFR 63.10(b), the permittee shall maintain files of all information (including all reports and notifications) required by the general provisions and 40 CFR 63, Subpart RRR, in accordance with 40 CFR 63.1517(a).
  - The permittee shall retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most

recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site.

- The permittee may retain records on microfilm, computer disks, magnetic tape, or microfiche; and
- The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.

- In addition to the general records required by 40 CFR 63.10(b), for a new or existing affected source (including an emission unit in a secondary aluminum processing unit) the permittee shall maintain records of the following, in accordance with 40 CFR 63.1517(b):
  - For each affected source and emission unit with emissions controlled by a fabric filter or a lime-injected fabric filter:
    (i) If a bag leak detection system is used, the number of total operating hours for the affected source or emission unit during each 6-month reporting period, records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action(s) taken.
    (ii) If a continuous opacity monitoring system is used, records of opacity measurement data, including records where the average opacity of any 6-minute period exceeds 5 percent, with a brief explanation of the cause of the emissions, the time the emissions occurred, the time corrective action was initiated and completed, and the corrective action taken.
    (iii) If an aluminum scrap shredder is subject to visible emission observation requirements, records of all Method 9 observations, including records of any visible emissions during a 30-minute daily test, with a brief explanation of the cause of the emissions, the time the emissions occurred, the time corrective action was initiated and completed, and the corrective action taken.
  - For each group 1 furnace (with or without add-on air pollution control devices) or in-line fluxer, records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations (including records of the identity, composition, and weight of each addition of gaseous, liquid or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken.
  - For each continuous monitoring system, records required by 40 CFR 63.10(c).
  - For each affected source and emission unit subject to an emission standard in kg/Mg (lb/ton) of feed/charge, records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test.
  - Approved site-specific monitoring plan for a group 1 furnace without add-on air pollution control devices with records documenting conformance with the plan.
  - Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements.
  - Records of annual inspections of emission capture/collection and closed vent systems.
  - Records for any approved alternative monitoring or test procedure.
  - Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including:

(i) Startup, shutdown, and malfunction plan;

(ii) OM&M plan; and

(iii) Site-specific secondary aluminum processing unit emission plan (if applicable).

- For each secondary aluminum processing unit, records of total charge weight, or if the owner or operator chooses to comply on the basis of aluminum production, total aluminum produced for each 24-hour period and calculations of 3-day, 24-hour rolling average emissions.

[12/06/2019]

3 Fugitive Emission Sources

3.1 Process Description

Fugitive sources at the facility include the following:

- Scrap receiving and hauling to storage
- Dross receiving and hauling to storage
- Rotary furnace charge staging and handling operations
- Salt cake staging and handling operations

[05/06/2015]

Operating Requirements

3.2 Reasonable Control of Fugitive Dust Emissions

All reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651. In determining what is reasonable, consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of particulate matter. Some of the reasonable precautions include, but are not limited to, the following:

- Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands.
- Application, where practical, of asphalt, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust.
- Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
- Covering, where practical, of open bodied trucks transporting materials likely to give rise to airborne dusts.
- Paving of roadways and their maintenance in a clean condition, where practical.
- Prompt removal of earth or other stored material from streets, where practical.

[05/06/2015]

Monitoring and Recordkeeping Requirements

3.3 Fugitive Dust Monitoring

The permittee shall monitor and maintain records of the frequency and method(s) used (i.e., water, chemical dust suppressants, etc.) to reasonably control fugitive dust emissions. The permittee shall maintain records of all fugitive dust complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

3.4 Reasonable Control Measures

The permittee shall conduct a quarterly, by calendar year, facility-wide inspection of potential sources of fugitive emissions, during daylight hours and under normal operating conditions, to

ensure that the methods used to reasonably control fugitive emissions are effective. If fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive emission inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive emissions, and the date the corrective action was taken.

Records of this information shall remain on site for the most recent five year period and shall be made available to DEQ representatives upon request.

3.5 The permittee shall comply with the requirements of the recordkeeping General Provisions.

[12/31/2009]

4 General Provisions

General Compliance

4.1 The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the "Rules for the Control of Air Pollution in Idaho." The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit, the "Rules for the Control of Air Pollution in Idaho," and the Environmental Protection and Health Act (Idaho Code §39-101, et seq).

[Idaho Code §39-101, et seq.]

4.2 The permittee shall at all times (except as provided in the "Rules for the Control of Air Pollution in Idaho") maintain in good working order and operate as efficiently as practicable all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

[IDAPA 58.01.01.211, 5/1/94]

4.3 Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules, and regulations.

[IDAPA 58.01.01.212.01, 5/1/94]

Inspection and Entry

4.4 Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where an emissions source is located, emissions-related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108]

Construction and Operation Notification

4.5 This permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.

[IDAPA 58.01.01.211.02, 5/1/94]

4.6 The permittee shall furnish DEQ written notifications as follows:

- A notification of the date of initiation of construction, within five working days after occurrence; except in the case where pre-permit construction approval has been granted then notification shall be made within five working days after occurrence or within five working days after permit issuance whichever is later;
- A notification of the date of any suspension of construction, if such suspension lasts for one year or more; and
- A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

[IDAPA 58.01.01.211.01, 5/1/94]

- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date; and
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date.

[IDAPA 58.01.01.211.03, 5/1/94]

Performance Testing

4.7 If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

4.8 All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

4.9 Within 60 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

[IDAPA 58.01.01.157, 4/5/00 and 4/11/15]

Monitoring and Recordkeeping

4.10 The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Monitoring records shall include, but not be limited to, the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.211, 5/1/94]

Excess Emissions

4.11 The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130–136 for excess emissions due to start-up, shut-down, scheduled maintenance, safety measures, upsets, and breakdowns.

[IDAPA 58.01.01.130–136, 4/5/00]

Certification

4.12 All documents submitted to DEQ—including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification—shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

[IDAPA 58.01.01.123, 5/1/94]

False Statements

4.13 No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

Tampering

4.14 No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Transferability

4.15 This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06.

[IDAPA 58.01.01.209.06, 4/11/06]

Severability

4.16 The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[IDAPA 58.01.01.211, 5/1/94]

ATTACHMENT C

IDEQ Statement of Basis
Permit to Construct #P-2009.0139

Statement of Basis

Permit to Construct No. P-2009.0139
Project ID 62290

Real Alloy Recycling LLC
Post Falls, Idaho

Facility ID 055-00031

Final

December 6, 2019
Chris Duerschner CD
Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GACT	Generally Available Control Technology
HAP	hazardous air pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PAH	polyaromatic hydrocarbons
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
T/yr	tons per consecutive 12 calendar month period
TAP	toxic air pollutants
VOC	volatile organic compounds

FACILITY INFORMATION

Description

Real Alloy Recycling, LLC. is a secondary aluminum production facility (SIC 3341) which produces recycled scrap ingots (RSI) from the melting and recovery of aluminum and aluminum dross. The recovery of aluminum from scrap aluminum and aluminum dross and the subsequent production of aluminum ingot have been defined by EPA as a secondary aluminum production process. This facility is an area source as defined by 40 CFR 63.2 (Subpart A General Provisions) for hazardous air pollutants (HAP) and therefore subject to the requirements of 40 CFR 63, Subpart RRR.

The facility operates two rotary furnaces and associated environmental control equipment. The rotary furnaces are used to melt and extract aluminum from aluminum scrap and aluminum dross. Dross is slag from the aluminum melting and refining operations consisting of fluxing agents, impurities, oxidized and non-oxidized aluminum and/or pre-consumer aluminum scrap. These are defined as Group 1 furnaces (40 CFR 63 Subpart RRR) and all emissions are directed to Trona-injected baghouses. The baghouses are equipped with a bag leak detection system. The regulated pollutants from the emission units include criteria pollutants, dioxins and furans (D/F) and fluoride.

Dross and scrap aluminum come to the facility from several sources. Dross is brought to the dross recovery facility by dump trucks and stored inside buildings until needed. Dross is transferred from storage piles located inside the dross recovery building to the rotary furnace where it is smelted. Scrap aluminum is brought to the facility by dump trucks and stored in outdoor piles until needed. Scrap aluminum is transferred from outdoor storage piles to the rotary furnace where it is melted. The furnace is fired by natural gas. Salt flux is added into the furnaces via mobile equipment. Once the melting cycle is complete, the molten metal is poured by rotary furnaces into sow molds where it is cast, or is transported in crucibles as molten aluminum for direct product shipment.

After the aluminum is tapped, the salt is poured out of the furnace into salt cake pans and placed under a hood adjacent to the furnace. After cooling, the salt cake is moved to under roof storage bins and/or loaded into tubs that are used to load dump trucks where it is trucked to an approved landfill for disposal.

The facility currently operates a 158 horsepower (HP) diesel-fired emergency generator used to power an electric fire pump. The engine is exempt from state permitting requirements pursuant to IDAPA 58.01.222.01.d. The engine is subject to the area source requirements of 40 CFR 63, Subpart ZZZZ, and these requirements are not included in this permit.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

Table 1 Permitting History

Issue Date	Permit Number	Project	Status	History Explanation
September 2, 1988	086-0031	Initial Permit for facility formerly named International Mill Services Inc.	S	Initial permit.
November 15, 1994	055-00031	Modification to add salt cake process and change furnace testing schedule.	S	Revised 086-0031.
February 3, 1995	055-00031	Amendment for correction.	S	Revised 055-00031 (11/15/94)
December 21, 1995	055-00031	Amendment.	S	Revised 055-00031 (2/3/95)
November 27, 1998	055-00031	Modification to replace RF3.	S	Revised 055-00031 (12/21/95)
February 14, 2000	055-00031	Revision to modify delacquering system and UBC pollution control system, to install delacquering system baghouse, and to increase RF3 heat input.	S	Revised 055-00031 (11/27/98)
April 10, 2001	055-00031	Revision to re-instate RF6 limits, remove testing requirements for formaldehyde, acetaldehyde, and Acrolein, and to increase HCl emissions.	S	Revised 055-00031 (2/14/00)
June 4, 2002	055-00031	Modification to increase fluoride emissions from rotary furnace.	S	Revised 055-00031 (4/10/01)
March 27, 2007	P-2007.0004	Modification to increase VOC emissions in RF6 and remove several emission units. Addition of 40 CFR 63, Subpart RR - NESHAP for Secondary Aluminum Production.	S	Revised 055-00031 (6/4/02)
April 25, 2007	P-2007.0004	Revision to update conditions 2.9 and fix typographical errors.	S	Revised P-2007.0004 (3/27/07)
December 31, 2009	P-2007.0050	Revision to revise frequency of source testing.	S	Revised P-2007.0004 (4/25/07)
May 28, 2010	P-2009.0139 PROJ 0140	Revision to change facility name.	S	Revised P-2007.0004 (12/31/09)
January 23, 2013	P-2009.0139 PROJ 61123	Revision to remove slat cake staging baghouse.	S	Revised P-2009.0139 (3/28/10)
May 6, 2015	P-2009.0139 PROJ 61440	Modification to add RF6, salt cake handling and crucible cleaning operations, and comply with consent decree requirements.	S	Revised P-2009.0139 (1/23/13)
December 6, 2019	P-2009.0139 PROJ 62290	Modification to increase allowable production for RF3 and RF6 based on recent performance testing and to eliminate restrictions on salt cake production.	A	Revised P-2009.0139 (3/6/15)

Application Scope

This PTC is for a minor modification at an existing minor facility. The applicant has proposed to:

- Increase allowable production for RF3 and RF 6 based on recent performance testing results.
- Eliminate restrictions on salt cake production.

Application Chronology

August 22, 2019	DEQ received an application and an application fee.
August 27 – Sept. 11, 2019	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
September 20, 2019	DEQ determined that the application was complete.

November 4, 2019	DEQ made available the draft permit and statement of basis for peer and regional office review.
November 7, 2019	DEQ made available the draft permit and statement of basis for applicant review.
December 3, 2019	DEQ received the permit processing fee.
December 6, 2019	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 2 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
RF3	Rotary Furnace #3 (RF3)	RF3 Baghouse (RFB3)	RFB3 Stack
RF6	Rotary Furnace #6 (RF6)	RF6 Baghouse (RFB6)	RFB6 Stack
SKSG 3	Salt Cake Staging and Handling for RF3	Baghouse #9 (BH9)	BH9 Stack
SKSG 6	Salt Cake Staging and Handling for RF6	Baghouse #8 (BH8)	BH8 Stack
	Crucible Cleaning	Baghouse #8 (BH8)	BH8 Stack
	Fugitive Emission Sources	Reasonable Controls	

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the two rotary furnaces and salt cake staging and handling operations at the facility (see Appendix A) associated with this proposed project. Project emission estimates were based on source testing at the facility. For RF3 (RF3), emissions of $PM_{10}/PM_{2.5}$ and HF are based on a source test performed on June 26, 2019, and emissions of Dioxin/Furan (D/F) are based on a source test performed on May 24, 2019. For RF6 (RF6), emissions of $PM_{10}/PM_{2.5}$ and HCl are based on a source test performed on November 10-11, 2015, emissions of Dioxin/Furan (D/F) are based on a source test performed on May 24, 2017, and emissions of HF are based on a source test performed on March 9, 2016. For both RF3 and RF6, NO_X emissions are based on an engineering test performed on November 29, 2018.

Note that the NO_X engineering test is not a sufficient basis for an emission unit PTE. A supplemental NO_X source test will be required to reinforce the results of the engineering test.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

The following table presents the pre-project potential to emit for all criteria pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
RF3	1.74	7.60	0.02	0.07	3.66	16.03	6.88	30.11	0.38	1.64
RF6	1.16	5.07	0.02	0.07	2.44	10.68	4.58	20.08	0.25	1.10
Salt Cake Handling (for RF3)	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salk Cake Handling (for RF6)	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crucible Heater #1	0.01	0.05	0.001	0.004	0.15	0.64	0.12	0.54	0.01	0.04
Crucible Heater #2	0.01	0.05	0.001	0.004	0.15	0.64	0.12	0.54	0.01	0.04
Diesel Engine	0.02	0.09	0.02	0.08	0.28	1.22	0.06	0.27	0.02	0.10
Pre-Project Totals	**2.97**	**12.97**	**0.06**	**0.23**	**6.68**	**29.21**	**11.76**	**51.54**	**0.67**	**2.92**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria pollutants from all emissions units affected by the proposed modifications as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
RF3	0.41	1.81	0.02	0.07	2.99	13.11	7.70	33.73	0.44	1.92
RF6	0.78	3.41	0.02	0.09	2.99	13.11	5.50	24.09		
Salt Cake Handling (for RF3)	0.039	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salk Cake Handling (for RF6)	0.027	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crucible Heater #1	0.01	0.05	0.001	0.004	0.15	0.64	0.12	0.54	0.01	0.04
Crucible Heater #2	0.01	0.05	0.001	0.004	0.15	0.64	0.12	0.54	0.01	0.04
Diesel Engine	0.02	0.09	0.02	0.08	0.28	1.22	0.06	0.27	0.02	0.10
Post Project Totals	**1.30**	**5.70**	**0.06**	**0.25**	**6.56**	**28.72**	**13.50**	**59.17**	**0.48**	**2.10**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	2.97	12.97	0.06	0.23	6.68	29.21	11.76	51.54	0.67	2.92
Post Project Potential to Emit	1.30	5.70	0.06	0.25	6.56	28.72	13.50	59.17	0.48	2.10
Changes in Potential to Emit	**-1.67**	**-7.27**	**0.00**	**0.02**	**-0.12**	**-0.49**	**1.74**	**7.63**	**-0.19**	**-0.82**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
3-Methylchloranthrene	1.01E-07	1.01E-07	0.0000	2.50E-06	N
Acrolein	3.80E-04	3.80E-04	0.0000	1.70E-02	N
Cobalt	4.69E-06	4.69E-06	0.0000	3.30E-03	N
Copper	4.75E-05	4.75E-05	0.0000	1.30E-02	N
HCl	2.15E+00	1.68E+00	-0.4700	5.00E-02	N
Hexane	1.01E-01	1.01E-01	0.0000	1.20E+01	N
HF	3.60E-01	5.66E-02	-0.3034	1.67E-01	N
Manganese	2.12E-05	2.12E-05	0.0000	6.67E-02	N
Molybdenum	6.15E-05	6.15E-05	0.0000	3.33E-01	N
Naphthalene	3.83E-04	3.83E-04	0.0000	3.33E+01	N
Selenium	1.34E-06	1.34E-06	0.0000	1.30E-02	N
Toluene	1.87E-03	1.87E-03	0.0000	2.50E+01	N
Vanadium	1.29E-04	1.29E-04	0.0000	3.00E-03	N
Xylene	1.17E-03	1.17E-03	0.0000	2.90E+01	N
Zinc	1.62E-03	1.62E-03	0.0000	6.67E-01	N

All changes in emissions rates for non-carcinogenic TAP were below EL (screening emissions level) as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average non-carcinogenic screening ELs identified in IDAPA 58.01.01.585 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Acetaldehyde	3.15E-03	3.15E-03	0.0000	3.00E-03	N
Benzene	3.95E-03	3.95E-03	0.0000	8.00E-04	N
1,2-Butadiene	1.61E-04	1.61E-04	0.0000	2.40E-05	N
Formaldehyde	9.04E-03	9.04E-03	0.0000	5.10E-04	N
7-PAH1	6.37E-07	6.37E-07	0.0000	2.00E-06	N
Arsenic	1.12E-05	1.12E-05	0.0000	1.50E-06	N
Beryllium	6.71E-07	6.71E-07	0.0000	2.80E-05	N
Cadmium	6.15E-05	6.15E-05	0.0000	3.70E-06	N
Chromium	7.82E-05	7.82E-05	0.0000	3.30E-02	N
Nickel	1.17E-04	1.17E-04	0.0000	2.70E-05	N
2,3,7,8-TCDD2	2.85E-07	1.88E-08	-0.00000027	1.50E-10	N

a) Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

All changes in emissions rates for carcinogenic TAP were below EL (screening emissions level) as a result of this project. Therefore, modeling is not required for any carcinogenic TAP because none of the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (lb/hr)	PTE (T/yr)
Acrolein	3.80E-04	1.66E-03
Cobalt	4.69E-06	2.06E-05
Hexane	1.01E-01	4.41E-01
HF	6.23E-02	2.73E-01
HCl	1.69E+00	7.40E+00
Manganese	2.12E-05	9.30E-05
Naphthalene	3.83E-04	1.68E-03
Toluene	1.34E-06	5.87E-06
Xylene	1.87E-03	8.19E-03
1,2-Butadiene	1.17E-03	5.12E-03
2,3,7,8-TCDD	1.61E-04	7.05E-04
Acetaldehyde	2.23E-08	9.78E-08
Arsenic	3.15E-03	1.38E-02
Benzene	1.12E-05	4.90E-05
Beryllium	3.95E-03	1.73E-02
Cadmium	6.71E-07	2.94E-06
Chromium	6.15E-05	2.69E-04
Formaldehyde	7.82E-05	3.43E-04
Nickel	9.04E-03	3.96E-02
POM[a]	1.17E-04	5.14E-04
Total	6.37E-07	2.79E-06
Totals	**1.87**	**8.20**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of all TAP were below applicable screening emission levels (EL), the estimated facility-wide emission rates of SO_2 and Lead were below regulatory concern, and the estimated change in emission rate for CO was below the published DEQ modelling threshold established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix A.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Kootenai County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total

HAPs) has permitted emissions > 25 T/yr.

SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.

SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.

UNK = Class is unknown.

For All Other Pollutants:

A = Use when permitted emissions of a pollutant are > 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

Table 9 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	2,588	52.52	**100**	SM
PM_{10}	316.2	5.70	**100**	SM
$PM_{2.5}$	316.2	5.70	**100**	SM
SO_2	0.25	0.25	**100**	B
NO_X	28.72	28.72	**100**	B
CO	59.17	59.17	**100**	B
VOC	2.10	2.10	**100**	B
HAP (single)	>10	7.4	**10**	SM
Total HAPs	>25	8.20	**25**	SM

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the increase in allowable production and elimination of salt cake production limits. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401..... Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 ..... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by the Opacity Limit Permit Condition (2.6).

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for any criteria pollutant or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements in 40 CFR Part 60, and this permitting action does not alter the applicability status of existing affected sources at the facility.

NESHAP Applicability (40 CFR 61)

The proposed source is not an affected source subject to NESHAP in 40 CFR 61, and this permitting action does not alter the applicability status of existing affected sources at the facility.

MACT/GACT Applicability (40 CFR 63)

The facility has proposed to operate as a minor source of hazardous air pollutant (HAP) emissions, and is subject to the requirements of 40 CFR 63, Subpart RRR–National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production. DEQ is delegated this Subpart. Refer to the Statement of Basis issued on May 6, 2015 for a breakdown of the requirements of this subpart.

Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Section 1

Section 1 was updated to reflect the current permitting action.

Permit Condition 2.5

Feed charge limits were increased from 150 lb/hr and 54,750 T/yr to 175 lb/hr and 63,875 T/yr for RF3 and from 100 lb/hr and 36,500 T/yr to 125 lb/hr and 45,630 T/yr for RF 6.

Permit Condition 2.8

Because salt cake production rate limitations were eliminated by this permitting action, permit condition 2.8 was modified to require that particulate emissions from the salt cake staging and handling areas be controlled by baghouses with 98% minimum control efficiency for PM_{10}. This ensures that the emission of PM by the salt cake staging and handling areas does not exceed its permitted limit.

Existing Permit Condition 2.9

Existing permit condition 2.9 was removed.

Permit Condition 2.11

This permit condition was revised to fix a typographical error ('lg' was changed to 'lb').

Permit Condition 2.12

Existing Permit Condition 2.13 (Salt Cake Production Rate Tracking) of PTC No. P-2009.0139 issued May 6, 2015 was deleted in response to the removal of salt cake production limits.

Permit Condition 2.16

New Permit Condition 2.17 was added to require a source test for NO_X to reinforce the results of the engineering test which forms the basis of the NO_X PTE for RF3 and FR6.

Permit Condition 2.17

The source test deadline for PM_{10} was updated from June 26, 2019 to July 15, 2024 for RF3. A source test deadline of June 15, 2021 for RF6 was included.

Permit Condition 2.18

The source test deadline for particulate fluoride was updated from June 26, 2019 to July 15, 2024 for RF3. A source test deadline of June 15, 2021 for RF6 was included.

Permit Condition 2.21

Permit condition 2.22 was modified to fix a typographical error under the paragraph titled *Notification of compliance status report.* In addition, this paragraph required dual notification to the EPA regarding the notification of compliance, however because DEQ has been delegated authority for 40 CFR 63, Subpart RRR, dual notification is not required. Therefore, permit condition 2.22 was further modified to require only notification to DEQ.

Existing Permit Condition 2.22

Existing permit condition 2.22 was removed because it was redundant with permit condition 2.14 (Incorporation of Federal Requirements by Reference)

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

RF #3

Material Throughput (ton/yr): 63,875
Burner Rated Capacity (MMBtu/hr): 27

Pollutant	Emission Factor					Safety Factor	Emissions		
	Existing EF		EF from Source Testing						
	(lb/T)	(lb/MMBtu)	Emission Rate (lb/hr)	Throughput (lb/hr)	Calculated EF (lb/T)		lb/hr	T/yr	
NOX	-	-	1.33	-	-	2.25	2.99	13.11	<-- Based on engineering test. Require subsequent source test to verify.
CO	0.88	-				1.20	7.70	33.73	
SO2	-	0.000588				1	0.02	0.07	
PM	0.763	-				1.25	6.95	30.46	
PM10	-	-	0.33	11,672	0.057	1	0.41	1.81	<-- Source test on 6/26/2019
PM2.5	-	-	0.33	11,672	0.057	1	0.41	1.81	<-- Source test on 6/26/2019
VOC	0.048	-				1.25	0.44	1.92	
Dioxin/Furan		-		12,116				0.00	<-- Source test on 5/24/2019 (TEST CONDUCTED ON RF6)
HCl	0.181	-				1.25	1.65	7.23	
HF	-	-	0.029	11,672	0.005	1	0.04	0.16	<-- Source test on 6/26/2019

RF #6

Material Throughput (ton/yr): 45,630
Burner Rated Capacity (MMBtu/hr): 27

Pollutant	Emission Factor					Safety Factor	Emissions		
	Existing EF		EF from Source Testing						
	(lb/T)	(lb/MMBtu)	Emission Rate (lb/hr)	Throughput (lb/hr)	Calculated EF (lb/T)		lb/hr	T/yr	
NOX	-	-	1.33	-	-	2.25	2.99	13.11	<-- Based on engineering test. Require subsequent source test to verify.
CO	0.88	-				1.20	5.50	24.09	
SO2	-	0.000588				1.25	0.02	0.09	
PM	0.763	-				1.25	4.97	21.76	
PM10	-	-	1.04	13,935	0.149	1	0.78	3.41	<-- Source test on 11/10-11/2015
PM2.5	-	-	1.04	13,935	0.149	1	0.78	3.41	<-- Source test on 11/10-11/2015
VOC	0.048	-				1.25	0.31	1.37	
Dioxin/Furan		-		12,116				0.00	<-- Source test on 5/24/2017
HCl	0.181	-	0.042	13,303	0.006	1	0.94	4.13	<-- Source test on 11/10-11/2015
HF	-	-	0.021	10,720	0.004	1	0.02	0.09	<-- Source Test on 03/09/2016. Note, source test on 11/10/2015 showed much

	SKSG #3	SKSG #6
Charge to Furnace (T/yr)	63,875	45,625
Aluminum Recovery Rate	50%	50%
Aluminum Recovered (T/yr)	31,938	22,813
Salt to Charge Ratio	0.25	0.2
Salt Usage (T/yr)	15,969	9,125
Salt Cake Produced (T/yr)	47,906	31,938
Airborne PM Generated (T/yr)	17.64	11.76
Fume Hood Capture Efficiency	0.98	0.98
Baghouse Control Efficiency	0.99	0.99
PM Emissions (T/yr)	0.17	0.12
Fugitive Emissions (T/yr)	0.35	0.24
	17.64	11.76

		RF #3	RF #6	CH	Gen	Total
		0.026470588	0.0264706	0.0029412		
3-Methylchloranthrene	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
7,12-Dimethylbenz(a)anthracene	<1.60E-05	4.24E-07	4.24E-07	4.71E-08		8.94E-07
Acetaldehyde		0.00E+00	0.00E+00	0.00E+00	3.15E-03	3.15E-03
Acrolein		0.00E+00	0.00E+00	0.00E+00	3.80E-04	3.80E-04
Acenaphthene	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Acenaphthylene	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Anthracene	<2.40E-06	6.35E-08	6.35E-08	7.06E-09		1.34E-07
Benz(a)anthracene[3]	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Benzene	2.10E-03	5.56E-05	5.56E-05	6.18E-06	3.83E-03	3.95E-03
Benzo(a)pyrene[3]	<1.20E-06	3.18E-08	3.18E-08	3.53E-09		6.71E-08
Benzo(b)fluoranthene[3]	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Benzo(g,h,i)perylene	<1.20E-06	3.18E-08	3.18E-08	3.53E-09		6.71E-08
Benzo(k)fluoranthene[3]	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
1,2-Butadiene		0.00E+00	0.00E+00	0.00E+00	1.61E-04	1.61E-04
Chrysene[3]	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Dibenzo(a,h)anthracene[3]	<1.20E-06	3.18E-08	3.18E-08	3.53E-09		6.71E-08
Dichlorobenzene	1.20E-03	3.18E-05	3.18E-05	3.53E-06		6.71E-05
Fluoranthene	3.00E-06	7.94E-08	7.94E-08	8.82E-09		1.68E-07
Fluorene	2.80E-06	7.41E-08	7.41E-08	8.24E-09		1.56E-07
Formaldehyde	7.50E-02	1.99E-03	1.99E-03	2.21E-04	4.85E-03	9.04E-03
Hexane	1.80E+00	4.76E-02	4.76E-02	5.29E-03		1.01E-01
Indeno(1,2,3-cd)pyrene[3]	<1.80E-06	4.76E-08	4.76E-08	5.29E-09		1.01E-07
Naphthalene	6.10E-04	1.61E-05	1.61E-05	1.79E-06	3.49E-04	3.83E-04
Phenanathrene	1.70E-05	4.50E-07	4.50E-07	5.00E-08		9.50E-07
Pyrene	5.00E-06	1.32E-07	1.32E-07	1.47E-08		2.79E-07
Toluene	3.40E-03	9.00E-05	9.00E-05	1.00E-05	1.68E-03	1.87E-03
Xylene		0.00E+00	0.00E+00	0.00E+00	1.17E-03	1.17E-03
7-PAH		3.02E-07	3.02E-07	3.35E-08		6.37E-07
Arsenic	2.00E-04	5.29E-06	5.29E-06	5.88E-07		1.12E-05
Beryllium	<1.20E-05	3.18E-07	3.18E-07	3.53E-08		6.71E-07
Cadmium	1.10E-03	2.91E-05	2.91E-05	3.24E-06		6.15E-05
Chromium	1.40E-03	3.71E-05	3.71E-05	4.12E-06		7.82E-05
Cobalt	8.40E-05	2.22E-06	2.22E-06	2.47E-07		4.69E-06
Copper	8.50E-04	2.25E-05	2.25E-05	2.50E-06		4.75E-05
Manganese	3.80E-04	1.01E-05	1.01E-05	1.12E-06		2.12E-05
Mercury	2.60E-04	6.88E-06	6.88E-06	7.65E-07		1.45E-05
Molybdenum	1.10E-03	2.91E-05	2.91E-05	3.24E-06		6.15E-05
Nickel	2.10E-03	5.56E-05	5.56E-05	6.18E-06		1.17E-04
Selenium	<2.40E-05	6.35E-07	6.35E-07	7.06E-08		1.34E-06
Vanadium	<2.30E-03	6.09E-05	6.09E-05	6.76E-06		1.29E-04
Zinc	<2.90E-02	7.68E-04	7.68E-04	8.53E-05		1.62E-03
HF		3.62E-02	2.04E-02	0.00E+00		5.66E-02
HCl		1.65E+00	9.43E-01	0.00E+00		2.59E+00
2,3,7,8-TCDD		0.00E+00	0.00E+00	0.00E+00		0.00E+00

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: October 30, 2019

TO: Chris Duerschner, Permit Writer, Air Program

FROM: Darrin Mehr, Dispersion Modeling Analyst, Air Program

PROJECT: P-2009.0139 PROJ 62290 – Permit to Construct (PTC) Application for the Real Alloy, LLC for Increased Throughputs for Rotary Kilns #3 and #6 Modification for the Existing Facility near Post Falls, Idaho

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a Non-Carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
ACFM	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ARM	Ambient Ratio Method
bhp	Brake horsepower
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
Btu/hr	British Thermal Units per hour
CFR	Code of Federal Regulations
cfm	Cubic Feet per Minute
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
EI	Emissions Inventory
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
fps	Feet per second
GEP	Good Engineering Practice
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
kW	Kilowatts
m	Meters
MACT	Maximum Achievable Control Technology
m/s	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NEI	National Emissions Inventory
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standard
NWS	National Weather Service
NW AIRQUEST	Northwest International Air Quality Environmental Science and Technology Consortium
O_3	Ozone
Pb	Lead

PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	Parts Per Billion
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
Real Alloy	Real Alloy Recycling, LLC (permittee)
RF#3	Rotary Furnace #3
RF#6	Rotary Furnace #6
SIL	Significant Impact Level
SO_2	Sulfur Dioxide
SOB	Statement of Basis
TAP	Toxic Air Pollutant
tons/year	Ton(s) per year
T/yr	Tons per year
Trinity	Trinity Consultants (project permitting consultant)
ULSD	Ultra Low Sulfur Diesel
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOCs	Volatile Organic Compounds
°F	Degrees Fahrenheit
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

1.1 General Project Summary

On August 22, 2019, Real Alloy Recycling, LLC (Real Alloy) submitted a Permit to Construct (PTC) application to change existing permit conditions for their existing facility located at 16168 West Prairie Avenue near Post Falls, Idaho.

Real Alloy was issued PTC P-2009.0139 Project 62075, on June 12, 2018, for the facility name change of the facility from Real Alloy Recycling, Inc., to Real Alloy Recycling, LLC. This PTC superseded PTC P-2009.0139 Project 61440, issued May 6, 2015, which created underlying conditions for emission units, including emission and product throughput limits affected by the current project. The current project includes:

- Rotary Furnace #3 (RF#3) current permitted throughput capacity of 150 tons/day, monthly average basis, and 54,750 tons/year will be increased to 175 tons/day and 63,875 tons/year.
- Rotary Furnace (RF#6) current permitted throughput capacity of 100 tons/day, monthly average basis, and 36,500 tons/year will be increased to 125 tons/day and 45,630 tons/year.
- The current permitted RF#3 by-product salt cake production is limited to 4,108 pounds/hour on a monthly average basis, and 17,995 tons/year. This limit was requested to be removed from the PTC, and the PTC modification application reflected salt cake production rates of 11,089 pounds/hour and 47,906 tons/year.
- The current permitted by-product salt cake throughputs for RF#6 are currently limited to 2,628 pounds/hour on a monthly average basis, and 11,516 tons/year. This limit was requested to be removed from the PTC, and the PTC modification application reflected salt cake production rates of 7,393 pounds/hour and 31,938 tons/year.

Due to the relaxation of permit-allowable throughput limitations and changes to the requested potential emissions rates, without a physical change or change in the method of operation, the project is effectively a revision of the previous project. The revision is analyzed using the current version of AERMOD, updated meteorological dataset determined to be most appropriate for the facility site, updated DEQ-approved ambient background concentrations, and requested future permit allowable emission rates. DEQ performed the air impact analyses for this project because there were no physical changes to the facility and DEQ had modeling files readily available from previous permitting analyses for the facility.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the entire facility were performed by DEQ to demonstrate that the proposed modification's post-project potential emissions would not cause or significantly contribute to a violation of any ambient air quality standard as required by IDAPA 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03).

The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of the applicable air quality standards. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This modeling review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the DEQ Statement of Basis.

The air quality impact analyses: 1) utilized appropriate methods and models according to established DEQ/EPA rules, policies, guidance, and procedures; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from applicable emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project do not result in increased emissions and modeling was not required to demonstrate compliance with any TAPs increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Process Throughputs This project's modeled emission rates reflected altered emission factors that estimated lower emission rates for a given process throughput for the two rotary furnaces (RF). The lower emission factors were combined with requests for 25 tons/hour increases of permit-allowable process throughputs for each of the two rotary furnaces (RF#3 and RF#6). Requested daily emission rate limits were modeled. Worst-case daily emissions are required to be modeled for compliance with the 24-hour average NAAQS. **Emissions were modeled for the following process throughputs:** • RF#3: 175 tons/day and 63,875 tons/year • RF#6: 125 tons/day and 45,630 tons/year • RF#3 by-product salt cake generation: 11,089 pounds/hour and 47,906 tons/year • RF#6 by-product salt cake generation: 7,393 pounds/hour and 31,938 tons/year.	DEQ modeled the requested daily emissions for the 24-hour PM_{10} and $PM_{2.5}$ NAAQS. NAAQS compliance demonstrations are required to be based on the maximum requested quantity of emissions over the averaging period. Throughputs above the requested daily limits were not modeled for this project, and emissions modeled must be the maximum allowed by the permit for the averaging period of the NAAQS. Additional capacity should be incorporated in the permit application for operational flexibility. Daily production or throughputs averaged over a monthly period do not confirm that the worst-case daily emission rates were represented in the NAAQS compliance demonstration. Compliance with 24-hour NAAQS are only assured by permit limits that are a 24-hour maximum. Additional production flexibility could be accommodated by using higher requested permit-allowable daily process throughputs for RF#3 and RF#6, followed by revision of 24-hour averaged air impact analyses. Annual process throughputs may remain unchanged.
Process Change on Salt Cake Cooling A dedicated by-product salt cake cooler unit is no longer used by Real Alloy. The unaided cooling of salt cake by-product still occurs inside the furnace building and 98% capture of emissions via a hood system was assumed. The captured emissions are controlled by routing the emissions to the existing salt cake handling baghouses (model IDs STCK9_RF3SCH and STCK8_RF6SCH).	Salt cake cooling does not occur outside of the building. No new process fugitive sources must be accounted for in the air impact analyses. The increase in the process material throughput was accounted for in the $PM_{2.5}$ and PM_{10} emission estimates for the salt cake handling baghouses and the fugitive $PM_{2.5}$ and PM_{10} emissions rates for the existing sources were increased accordingly.
Diesel-Fired Firewater Pump Engine DEQ modeled the firewater pump for three cases: 1) unlimited 24 hours/day; 2) 6 hours/day as a reasonable worst-case scenario; and 3) 1.36 hours /day as represented in the historical 2015 permit project modeling analyses and emission inventory (EI) for testing and maintenance.	The emergency firewater pump engine is not specifically included in the current PTC on the basis that it was exempt from permitting requirements per the Statement of Basis (SOB) for PTC P-2009.0139 Project 61440, issued May 6, 2015. This project's ambient air impact analysis produced impacts indicating that facility-wide NAAQS compliance is demonstrated assuming unlimited daily operating hours at full

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
	load capacity of this emission unit for the most constraining pollutant and averaging period—24-hour average $PM_{2.5}$. A limitation for daily hours of testing and maintenance operation is not necessary for this emergency engine from a NAAQS protection standpoint.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (*Guideline on Air Quality Models*). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department, using DEQ/EPA established guidance, policies, and procedures, that operation of the proposed facility or modification will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

1.2 Summary of Submittals and Actions

August 12, 2019: Representatives of Real Alloy and DEQ participated in a pre-application meeting via telephone conference call.

August 22, 2019: Real Alloy submitted a permit application for the modification project.

August 23, 2019: The regulatory start date for completeness review commenced.

September 20, 2019: DEQ declared the permit application incomplete.

September 30, 2019: Trinity submitted additional clarification of the requested changes to the salt cake handling process and the emissions inventory via an email submittal, which included the following:

- Real Alloy and Trinity stated there are no additional sources of process fugitives created with the discontinued use of the salt cake coolers process units.
- The current salt cake cooling process still occurs within the furnace building. This means all natural cooling fugitive emissions were treated with a 98% capture efficiency.
- Trinity and Real Alloy stated that the submitted emissions inventory contains the worst-case maximum emissions for the salt cake handling process in support of this project's request to remove of all throughput limitations associated with salt cake handling from the PTC.

2.0 Background Information

2.1 Permit Requirements for Permits to Construct

PTCs are issued to authorize the construction of a new source or modification of an existing source or permit. Idaho Air Rules Section 203.02 requires that emissions from the new source or modification not cause or significantly contribute to a violation of an air quality standard, and Idaho Air Rules Section 203.03 requires that emissions from a new source or modification comply with applicable toxic air pollutant (TAP) increments of Idaho Air Rules Sections 585 and 586.

2.2 Project Location and Area Classification

The facility is located near Post Falls, Idaho, in Kootenai County. This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$).

2.3 Modeling Applicability for Criteria Pollutants

2.3.1 Below Regulatory Concern, DEQ Modeling Thresholds, and Project Definition

Idaho Air Rules Section 203.02 state that a PTC cannot be issued unless the application demonstrates to the satisfaction of DEQ that the new source or modification will not cause or significantly contribute to a NAAQS violation. Atmospheric dispersion modeling is used to evaluate the potential impact of a proposed project to ambient air and demonstrate NAAQS compliance. However, if the emissions associated with a project are very small, project-specific modeling analyses may not be necessary.

If project-wide potential to emit (PTE) values for criteria pollutants would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more criteria pollutants exceeding the BRC threshold of 10% of emissions defined by Idaho Air Rules as significant, then an air impact analysis may not be required for those pollutants. DEQ's regulatory interpretation policy[1] of exemption provisions of Idaho Air Rules Section 221 is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant." The interpretation policy also states that the exemption criteria of uncontrolled PTE not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year. BRC is based only on annual emissions, but the BRC exemption from the requirements of Idaho Air Rules Section 203.02 applies to all averaging periods of that specific pollutant. Air impact analyses for SO_2 and lead were not necessary for permit issuance because post-project facility-wide non-fugitive emissions of those pollutants are below BRC levels. This permitting project does not qualify for a BRC exemption from Idaho Air Rules Section 203.02 for PM_{10}, $PM_{2.5}$, CO, and NO_2 because there are existing permit conditions that require changes to throughput and emission limitations.

Site-specific air impact analyses may not be required for a project, even when the project cannot use the BRC exemption from the NAAQS demonstration requirements. If the emission increases associated with a project are below modeling applicability thresholds established in the *Idaho Air Modeling Guideline* ("State of Idaho Guideline for Performing Air Quality Impact Analyses[2]," available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf), then a project-specific analysis is not required. Modeling applicability emissions thresholds were developed by DEQ based on modeling of a hypothetical source and were designed to reasonably ensure that impacts are below the applicable SIL. DEQ has established two threshold levels: Level 1 thresholds are unconditional thresholds, requiring no DEQ approval for use; Level 2 thresholds are conditional upon DEQ approval, which depends on evaluation of the project and the site, including emissions quantities, stack parameters, number of sources emissions are distributed amongst, distance between the sources and the ambient air boundary, and the presence of sensitive receptors near the ambient air boundary.

Real Alloy was issued PTC P-2009.0139 Project 62075, on June 12, 2018, to change the name of the facility from Real Alloy Recycling, Inc. to Real Alloy Recycling, LLC. This PTC superseded PTC P-2009.0139 Project 61440, issued May 6, 2015, which established emission and product throughput limits of emission units affected by the current project. This project requests increased daily and annual throughputs for Rotary Furnaces #3 and #6. Revised emission factors derived from performance test results were applied to the requested increased process throughputs to calculate emissions.

The existing permit regulates emissions through a limit on both production/throughput and emission rate. The facility's PTE is the achievable emission quantity associated with maximum operations under the most restrictive of either the production/throughput limit or the emission limit. With revised emission factors that are lower than what was used for setting the existing limits, the existing production/throughput restriction is now the emission-limiting permit condition that establishes PTE. Therefore, increasing production/throughput will result in an emission increase, even though the emission limit in the revised permit may not increase. Since the project is effectively a revision of the existing permit to allow an increase in production without a physical modification of the facility, the project will not be evaluated based only on the change in emissions (therefore, Level 1 or Level 2 Modeling Applicability Thresholds are not applicable). The required air impact analyses are a revision of the analyses performed in support of the 2015 permit establishing the emission and production/throughput limits that are now proposed for change by this project.

Table 2 summarizes NAAQS compliance demonstration applicability. The increase in emissions resulting from the project are shown and compared to Modeling Applicability Thresholds for information purposes only. Modeling Applicability Thresholds were not used to evaluate the need to perform project-specific air impact modeling, as described above. Effectively, the 2015 era facility-wide NAAQS analyses were revised using future allowable PTE values with current meteorological data, ambient background values, and AERMOD version.

Table 2. CRITERIA POLLUTANT SIL AND NAAQS COMPLIANCE DEMONSTRATION APPLICABILITY							
Pollutant	**Averaging Period**	**BRC[a] Threshold (ton/year)**	**Post Project Facility-wide Emissions (ton/year)**	**Project Exempted Based on Facility-wide BRC?**	**Applicable Potential Emissions Increase for the Project**	**Level 1 Modeling Thresholds[b]**	**Project Exempted Based on Level 1 Thresholds?**
PM_{10}[c]	24-hour average	1.5	6.7	No	1.5 lb/hr	0.22 lb/hr[e]	No
$PM_{2.5}$[d]	24-hour average	1.0	6.7	No	1.5 lb/hr	0.054 lb/hr	No
	Annual				6.7 T/yr[f]	0.35 T/yr	No
Carbon Monoxide (CO)	1-hour and 8-hour	10	59.2	No	14.5[g] lb/hr	15 lb/hr	Yes
Sulfur Dioxide (SO_2)	1-hour and 3-hour	4.0	0.23	Yes	NA[h]	0.21 lb/hr	NA[h]
Nitrogen Oxides (NOx)	1-hour	4.0	27.7[h]	No	11.2[g,i] lb/hr	0.20 lb/hr	No
	Annual				27.7[i] T/yr	1.2 T/yr	No
Lead (Pb)	monthly	0.06	1.0E-05	Yes	NA	14 lb/month	NA[h]

a. Below Regulatory Concern equal to 10% of the significant emission rate.
b. Modeling Applicability Thresholds were not used, but are listed for comparative purposes.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
e. Pounds per hour.
f. Tons/year.
g. Maximum hourly emission rate based on rated engine capacity instead of the emission inventory submittal's calculation method to derive an hourly emission rate by averaging 500 hours per year of operation over 8,760 hours per year.
h. Not assessed because facility-wide emissions are below BRC thresholds.
i. Emergency engine NOx emissions count toward applicability but are not required for inclusion in 1-hour NO_2 SIL and NAAQS modeling per DEQ policy.

2.3.2 Ozone Modeling Applicability

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NO_x, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.3.3) cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of*

100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."

The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."

Allowable facility-wide emissions estimates for the project of VOCs at 3.5 ton/year and NOx at 28.7 ton/year are well below the 100 ton/year threshold, and DEQ determined it was not appropriate or necessary to require a quantitative source-specific O_3 impact analysis.

Secondary formation of ozone on an 8-hour basis was not required to be evaluated for particulate formation from VOCs and NOx emissions.

2.3.3 Secondary Particulate Formation Modeling Applicability

The impact from secondary particulate formation resulting from allowable facility-wide emissions of NOx at 28.7 ton/year and SO_2 at 0.2 ton/year was assumed by DEQ to be negligible on the basis of the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM_{10} and $PM_{2.5}$ impacts would be anticipated.

Requested allowable facility-wide criteria pollutant emissions were below annual significant emission rate thresholds. Secondary formation of $PM_{2.5}$ on 24-hour and annual bases was not required to be evaluated for particulate formation from SO_2 and NO_x.

2.4 Significant and Cumulative NAAQS Impact Analyses

If maximum modeled pollutant impacts to ambient air from emissions sources associated with a new facility or the emissions increase associated with a modification exceed the SILs of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules), or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis may also be required for permit revisions driven by compliance/enforcement actions, any correction of emissions limits or other operational parameters that may affect pollutant impacts to ambient air, or other cases where DEQ believes NAAQS may be threatened by the emissions associated with the facility or proposed project.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts, according to established DEQ/EPA guidance, policies, and procedures, from applicable facility-wide emissions and emissions from any nearby co-contributing sources. A DEQ-approved background concentration value is then added to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 3. Table 3 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 3. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.2	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b Micrograms per cubic meter.
c Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g Concentration at any modeled receptor when using five years of meteorological data.
h Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w Annual 4th highest daily maximum 8-hour concentration averaged over three years.

If the cumulative NAAQS impact analysis predicts a violation of the standard, the permit cannot be issued if the proposed project or facility has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. The facility or project does not have a significant contribution to a violation if impacts are below the SIL at all specific receptors showing violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is demonstrated if: a) specific applicable criteria pollutant emissions increases are at a level defined as Below Regulatory Concern (BRC), using the criteria established by DEQ regulatory interpretation[1], or alternatively, if BRC is not applicable, pollutant emissions increases are at a level below the Level 1 de minimis modeling threshold or the

DEQ-approved Level 2 modeling threshold in the DEQ *Modeling Guideline*[2]; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling applicable emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60 (NSPS), 61 (NESHAP), or 63 (MACT), then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion. The facility's rotary furnaces (RF#3 and RF#6) are subject to 40 CFR 63 Subpart RRR, and emissions of hydrogen chloride, fluorides, and dioxins and furans, which are state TAPs that are also federal HAPs regulated by this MACT standard, are exempted from modeling requirements. The diesel-fired emergency firewater pump engine is subject to area source requirements for 40 CFR 63 Subpart ZZZZ.

There were no TAPs emissions increases from emissions units not regulated by an NSPS, NESHAP, or MACT, thus, no other TAPs emission exceeded any screening emission rate limit listed in Sections 585 and 586 of the Idaho *Air Rules*.

The ambient impact analyses for PTC P-2009.0139 Project 61440, issued May 6, 2015, analyzed TAPs compliance for natural gas combustion in heaters supporting each rotary furnace and RF#3 and RF#6, as well as two small crucible heaters. Arsenic, cadmium, formaldehyde, and nickel emissions were emitted from the primary furnace stacks #6 and #7, which are controlled with trona-injected baghouses. Formaldehyde emissions from the diesel-fired emergency firewater pump engine were also included, and it is evident that the engine's TAPs that are HAPs qualified for exemption under Section 210.20 of the Idaho *Air Rules*, including formaldehyde. The 2015-era project's TAPs analyses utilized a unit emission rate analysis using the maximum annual impact for each stack that was not paired in space or time. The unit emission rate impact showed that the engine stack had a maximum annual impact over 3 times greater than either rotary furnace stack. The diesel engine's formaldehyde emission rate of 0.00485 pounds/hour was approximately equal to the total natural combustion formaldehyde emissions for the rotary furnace stacks combined (0.0042 pounds/hour), so the majority of the facility-wide formaldehyde ambient impact was attributed to the engine. Impacts for the arsenic, cadmium, and nickel emissions were 8% or less than the allowable increment; and based on the results of the revised criteria pollutant analyses, DEQ is confident that TAPs compliance would not be affected. Also, there is no underlying emissions increase to trigger any such remodeling requirement.

TAPs modeling was not required nor performed for this project.

3.0 Analytical Methods and Data

3.1 Modeling Methodology

This section describes the modeling methods used by DEQ to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

DEQ performed project-specific air impact analyses that were regarded by DEQ to be reasonably representative of the facility, using established DEQ policies, guidance, and procedures. Results of the submitted analyses, in combination with DEQ's analyses, demonstrated compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum. The DEQ-approved dispersion modeling analyses submitted by Real Alloy for PTC P-2009.0139 Project 61440, issued May 6, 2015, was used as the baseline model setup for this project.

Table 4 provides a brief description of parameters used in the modeling analyses. The Project 61440 modeling demonstration's setup for receptors, buildings, and emission points was used for the basis of these ambient impact analyses and this information is presented in Table 4.

Table 4. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Post Falls, Idaho	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 19191.
Meteorological Data	Spokane	2012-2016 - See Section 3.1.5 of this memorandum. Surface data from Coeur d'Alene and upper air data from Spokane, Washington.
Terrain	Considered	Receptor, building, and emissions source stack base elevations were determined using USGS 1.0 arc second National Elevation Dataset

Table 4. MODELING PARAMETERS		
Parameter	**Description/Values**	**Documentation/Addition Description**
		(NED) files based on the NAD83 datum.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility.
Receptor Grid	Grid 1	50-meter spacing along the ambient air boundary except along the southeast ambient air boundary, shared with Solid Rock Gate Supply, where the 15-meter spacing is present and along the eastern boundary where a maximum spacing of 45 meters was present.
	Grid 2	15-meter spacing within the property parcel in the southeast corner of the property owned and operated by Solid Rock Gate Supply.
	Grid 3	50-meter spacing in a rectangular grid from the ambient air boundary outward to a distance of 500 meters along the ambient air boundary in the primary south, east, and west directions. North of the ambient air boundary and in the regions not covered by the 50-meter rectangular grid, located southwest and southeast of the facility, receptors were spaced at distances ranging from approximately 5 meters to 150 meters.
	Grid 4	100-meter spacing in a 2,000-meter (x) by 2,000-meter (y) rectangular grid roughly centered on Grid 3.
	Grid 5	250-meter spacing in a 5,000-meter (x) by 5,000-meter (y) rectangular grid centered on Grid 4.
	Grid 6	500-meter spacing in a 10-kilometer (x) by 10-kilometer (y) rectangular grid centered on Grid 5.
	Grid 7	1,000-meter spacing in a 20-kilometer (x) by 20-kilometer (y) rectangular grid centered on Grid 6.
	Grid 8	5,000-meter spacing in a 100-kilometer (x) by 100kilometer (y) rectangular grid centered on Grid 7.

3.1.2 Modeling Protocol

A modeling protocol was not submitted to DEQ for this project. Project-specific modeling was conducted using data and methods described in the *Idaho Air Modeling Guideline*[2].

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of air pollutant concentrations in ambient air be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight-line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

DEQ used AERMOD version 19191 to evaluate pollutant impacts to ambient air from the facility, which is the current version of AERMOD.

NO_2 1-hour impacts can be assessed using a tiered approach to account for $NO/NO_2/O_3$ chemistry. Tier 1 assumes full conversion of NO to NO_2. Tier 2 Ambient Ratio Method (ARM) assumes a 0.80 default ambient ratio of NO_2/NOx. Tier 2 ARM2[3] was recently developed and replaces the previous ARM. Recent EPA guidance[4] on compliance methods for NO_2 states the following for ARM2:

> "This method is based on an evaluation of the ratios of NO_2/NO_x from the EPA's Air Quality System (AQS) record of ambient air quality data. The ARM2 development report (API, 2013)

specifies that ARM2 was developed by binning all the AQS data into bins of 10 ppb increments for NO_x values less than 200 ppb and into bins of 20 ppb for NO_x in the range of 200-600 ppb. From each bin, the 98th percentile NO_2/NO_x ratio was determined and finally, a sixth-order polynomial regression was generated based on the 98th percentile ratios from each bin to obtain the ARM2 equation, which is used to compute a NO_2/NO_x ratio based on the total NO_x levels."

Tier 3 methods account for more refined assessment of the NO to NO_2 conversion, using a supplemental modeling program with AERMOD to better account for $NO/NO_2/O_3$ atmospheric chemistry. Either the Plume Volume Molar Ratio Method (PVMRM) or the Ozone Limiting Method (OLM) can be specified within the AERMOD input file for the Tier 3 approach. EPA guidance (Memorandum: from Tyler Fox, Leader, Air Quality Modeling Group, C439-01, Office of Air Quality Planning and Standards, USEPA; to Regional Air Division Directors. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard.* March 01, 2011) has not indicated a preference for one option over the other (PVMRM vs OLM) for particular applications.

The Tier 2 ARM2 and Tier 3 PVMRM and OLM methods are now regulatory options following the publication of final changes to EPA's Guideline on Air Quality Models on January 17, 2017. DEQ used the Tier 1 compliance method for the 1-hour NO_2 and annual NO_2 NAAQS demonstrations where 100% of NOx is assumed to be converted to NO_2. This is a conservative approach and if compliance is easily demonstrated using the Tier 1 method there is no need to apply Tier 2 or Tier 3 methods.

The existing diesel-fired emergency electricity generator engines are exempted from 1-hour NO_2 modeling requirements, but modeling may be required for all other pollutants and averaging periods.

AERMOD algorithms for treatment of point sources with horizontal release orientation or equipped with a rain cap that impedes the vertical momentum of exhaust plumes were adopted as guideline techniques with the revisions to Appendix W (Guideline on Air Quality Models). The Appendix W final rule was signed by the Administrator on December 2016, and published in January 17, 2017, in the Federal Register, with a delayed final effective date of May 22, 2017. This method eliminates momentum-induced plume rise while still accounting for thermal buoyancy-induced plume rise. All point sources in the Real Alloy analyses were modeled as uninterrupted vertical releases and horizontal or capped algorithms were not applied.

3.2 Background Concentrations

Updated background concentration values were used for analyses supporting this project. The modeling conducted for the 2015 PTC project for the construction of RF#6 used the ambient background lookup tool developed by the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST). This tool was recently replaced by a new ambient background tool developed by the Idaho Department of Environmental Quality, Washington State Department of Ecology, and Oregon Department of Environmental Quality. The new tool is based on ambient monitoring data from July 2014 through June 2017, and uses regional scale modeling of pollutants in Washington, Oregon, and Idaho, which was conducted by Washington State University using the Community Multi-Scale Air Quality Model (CMAQ), a gridded photochemical atmospheric dispersion model, using a fine resolution 4 kilometer grid. The current 2014-2017 background tool may be accessed at the following link: https://arcg.is/1jXmHH.

The background concentration is added to the design value for each pollutant and averaging period. The default ambient background values were used for 24-hour PM_{10}, 24-hour $PM_{2.5}$, annual $PM_{2.5}$, 1-hour NO_2, and annual NO_2 for the cumulative compliance demonstration.

The DEQ-approved background concentrations are shown in Tables 5.

Table 5. AMBIENT BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]
PM_{10}[b]	24-hour	95.5
$PM_{2.5}$[c]	24-hour	21.7
	Annual	7.6
NO_2[d]	1-hour	34.2 (18.2 ppb[e])
	Annual	9.0 (4.8 ppb[e])

a. Micrograms per cubic meter, except where noted otherwise.
b. Particulate matter with an aerodynamic diameter of 10 microns.
c. Particulate matter with an aerodynamic diameter of 2.5 microns.
d. Nitrogen dioxide.
e. Parts per billion by volume.

3.3 Meteorological Data

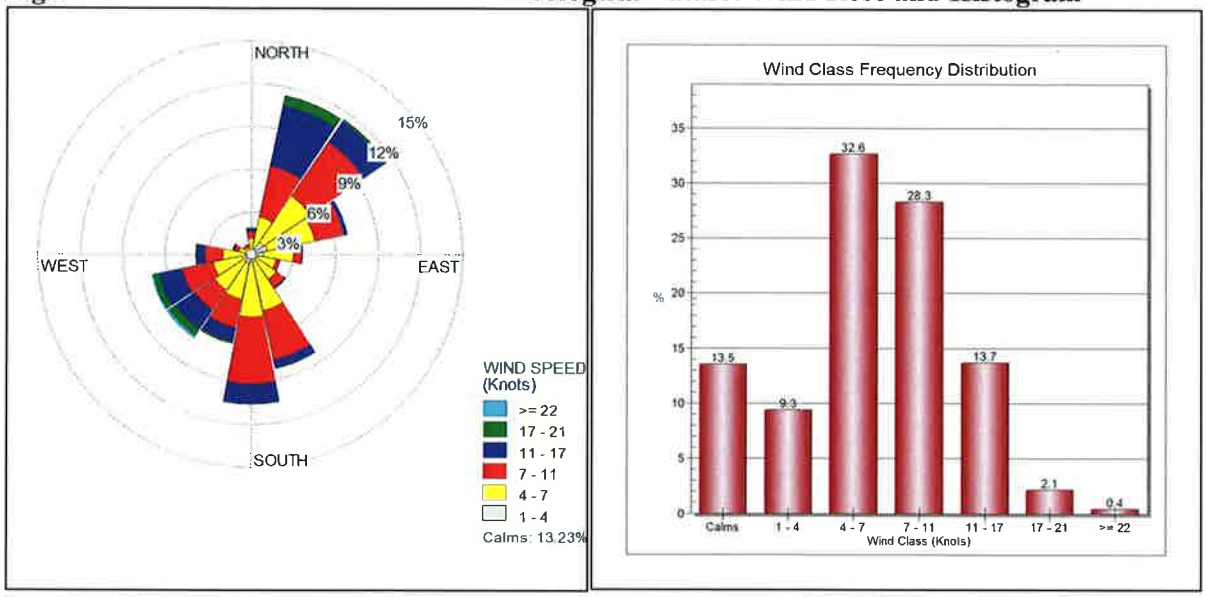
A DEQ-generated meteorological dataset using Spokane surface and upper air data for the years 2008 through 2012 was used for the previous ambient impact analyses. DEQ has generated an AERMOD-ready meteorological dataset using more current data covering 2012 through 2016, consisting of Coeur d'Alene airport surface data and Spokane airport upper air data, which is regarded by DEQ as the appropriate dataset for this project.

The dataset was generated from monitored surface data collected for five consecutive years for 2012 through 2016, at the Coeur d'Alene airport (FAA airport code KCOE, station ID 727834-24136). Upper air data were obtained from the Spokane, Washington airport (Station ID 04106). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. DEQ modeling staff evaluated annual moisture conditions for the AERSURFACE runs based on thirty years of Boise airport precipitation data. Conditions were determined to be "wet" for 2012, with 35.4 inches of precipitation, and 2016, with 27.4 inches of precipitation in this year. The year 2014 was determined to be an "average" year for precipitation with 23.5 inches of precipitation. The years 2013 and 2015 were determined to by "dry" years with 18.6 and 13.7 inches of precipitation, respectively. Average moisture conditions were established for years of moisture exceeding the 30th percentile of the thirty-year mean value of 11.2 inches. Continuous snow cover at the Coeur d'Alene airport site was determined to have existed during these years. ASOS wind data for processing with AERMINUTE and use in AERMET was not available for the Coeur d'Alene airport site. AERMET version 18101 was used to process surface and upper air data and to generate a model-ready meteorological data input file. DEQ determined these data were representative for the project site and approved use of this dataset for the project.

DEQ generated separate datasets processed with and without the "adjust U star" (ADJ_U*) option with AERMET. The ADJ_U* option adjusts the surface friction velocity (u*) to address AERMOD's

tendency to over predict from some sources under stable, low wind speed conditions. The method was approved as a regulatory guideline method in EPA's final rulemaking for changes to the 40 CFR 51, Appendix W-Guideline on Air Quality Models, published in the Federal Register on January 17, 2017. The analyses were performed by using the ADJ_U* option. Figure 1 presents wind direction, frequency, and magnitude of wind speed in the meteorological dataset's wind rose and the histogram of the wind speed data. Missing data and calms were each less than 1% of the total data.

Figure 1: 2012-2016 Coeur d'Alene Meteorological Dataset Wind Rose and Histogram



3.4 Terrain Effects

A 1 arc second National Elevation Dataset (NED) files, in the North American Datum 1983 (NAD83), was used to calculate elevations of receptors. The terrain preprocessor AERMAP version 11103 was used to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses the hill heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain.

3.5 Building Downwash Effects on Modeled Impacts

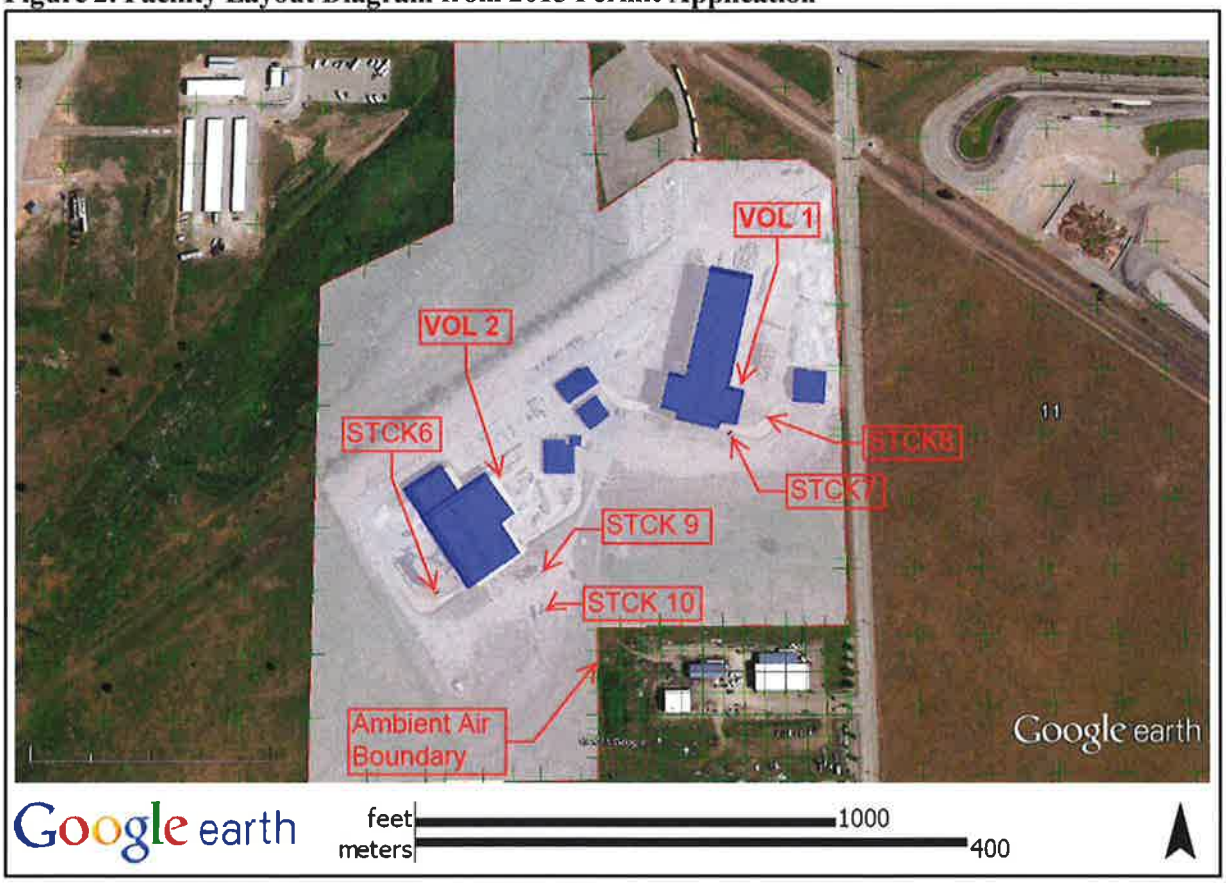
Potential downwash effects on the emissions plume were accounted for in the model by using building dimensions and locations in the model setup. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and release parameters for input to AERMOD. Modeled structure base elevations and stack base elevations nearly matched, thereby assuring that downwash is appropriately handled in the model. Base elevations of stacks were determined using AERMAP. The 2015 PTC's modeling setup was used without any changes. No structure or physical changes to stack parameters were noted in the permit

application and DEQ did not alter the model setup structure and stack base elevations, release heights, and diameters.

3.6 Facility Layout

Real Alloy's modeled emission points, structures, and ambient air boundary in the model setup are shown in Figure 2. The facility's structure locations and horizontal dimensions closely matched those presented in Google earth photographic imagery.

Figure 2. Facility Layout Diagram from 2015 Permit Application



3.7 Ambient Air Boundary

The discussion for the ambient air boundary was taken from the April 22, 2015, modeling review memorandum for Project 61440, and is listed below:

> The ambient air boundary for this project was corrected in the March 19, 2015, revised modeling report and modeling files. Real Alloy has a security fence around the entire facility except in the southeastern corner of the facility. A parcel of property was sold to an entity that is independent from Real Alloy, so common ownership or control of that land does not apply. A welding and fabrication facility currently owns the parcel and the ambient air boundary was adjusted to reflect the limits of the property boundary. Section 4.1 of the final

March 19, 2015, modeling report states:

"The public is precluded from accessing the areas excluded from the receptor network by a security fence. As the fence line will restrict public access it served as the ambient air boundary in the model. Additionally, there are no trespassing signs posted and regular security patrols that inspect the perimeter and routinely ask trespassers to leave. Attachment D provides a recordkeeping form for routine security patrols which also inspect the integrity of physical barriers and illumination that would allow security personnel to identify trespassers. There are no other features such as rivers bisecting the Facility, leasing agreements or right of ways that might complicate ambient air issues."

A combination of physical obstructions and notifications including fencing, gates, and no trespassing signs will be used by Real Alloy along the entire ambient air boundary to preclude public access.

DEQ determined the ambient air boundary described uses appropriate methods to control access as described in DEQ's *Modeling Guideline*[2].

3.8 Receptor Network

Table 4 describes the receptor network used in the DEQ verification modeling analyses. The 50-meter spacing along the ambient air boundary and receptor grid is a relatively coarse grid. Design impacts were predicted to occur at the ambient air boundary near the Rotary Furnace #6 building. The highest impacts are centered in this region and impacts drop off considerably as distance from the sources increases.

Figures 3 and 4 below present the modeled receptor network for the project. This receptor network is identical to the one used in the 2015 PTC project's analyses. DEQ determined that the receptor network was adequate to reasonably assure compliance with applicable air quality standards at all ambient air locations.

Figure 3. Real Alloy Full Receptor Grid

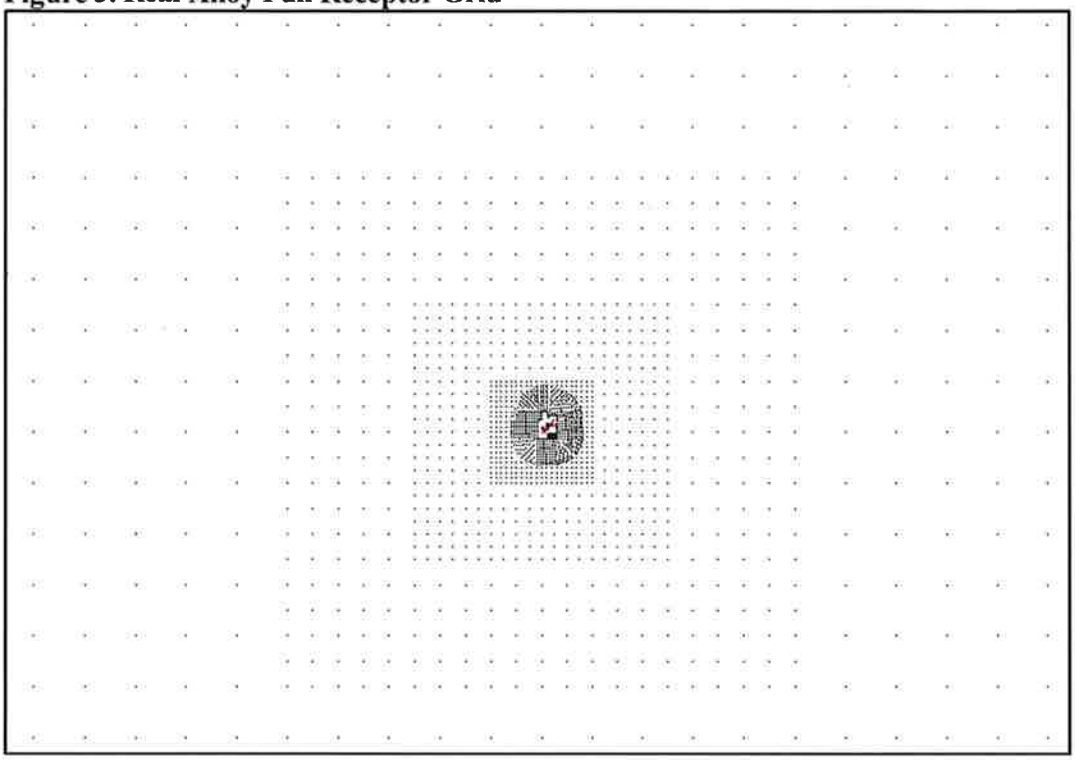
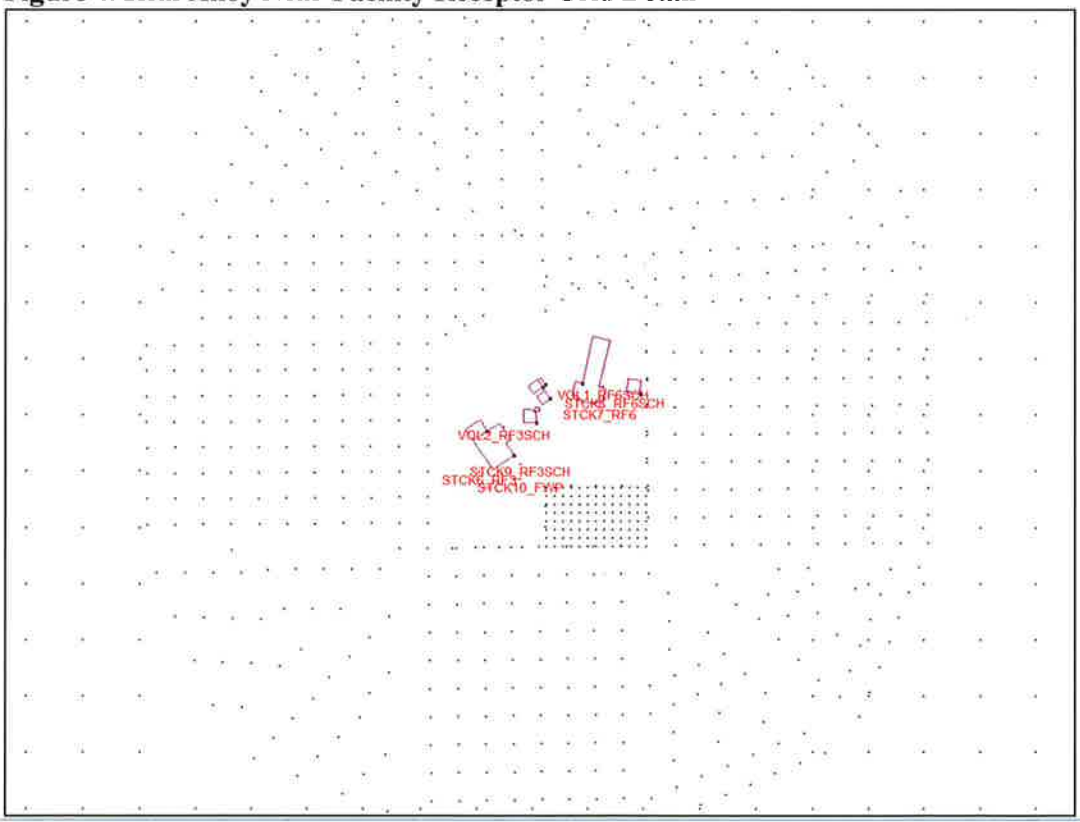


Figure 4. Real Alloy Near Facility Receptor Grid Detail



3.9 Emission Rates

Review and approval of estimated emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emissions estimates is not addressed in this modeling review memorandum. DEQ air impact analyses review included verification that the potential emissions rates provided in the emissions inventory were properly used in the model. The modeled emission rates must represent the maximum allowable rate as averaged over the specified period. This means maximum hourly emission rates must be used for 1-hour averaging period; for the 24-hour averaging period, the total allowable emissions over a 24-hour period may be averaged evenly over 24 hours; and, for the annual average, an average hourly emission rate may be based on the total allowable annual emissions averaged evenly over 8,760 hours per year.

DEQ modeling staff re-evaluated the emissions inventory for the emergency firewater pump engine to determine the appropriate emission rates for each averaging period. This engine is exempted from 1-hour NO_2 NAAQS modeling by DEQ policy and is exempt for 1-hour and 8-hour CO NAAQS modeling based on the Level I modeling threshold. The previous modeling analyses used hourly emission rates based on 500 hours/year of operation averaged evenly over 8,760 hours/year. Current DEQ permitting and modeling methods apply an annual operating limit of 100 hours/year for emergency generator engines, which is only applied to annual averaging periods. Air impact analyses were required for 24-hour average PM_{10} and $PM_{2.5}$ NAAQS. An hour-per-day limitation on engine operation was not requested in the permit application, so DEQ used an unlimited operation case as an upper end to establish whether a daily operating limit for testing and maintenance purposes is necessary. A second case was modeled using six hours per day, which is the upper end of requested daily operating hours for emergency engine operation, and likely to be the highest daily operating hours desired by a permittee for this source. A third case involved using the 2015 project's assumption of 1.36 hours/day (82 minutes/day). Daily emissions were averaged evenly over 24 hours per day.

Emission rates used for the dispersion modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emission rates must be equal to or greater than the facility's potential emissions calculated in the PTC emissions inventory or proposed permit allowable emission rates.

3.9.1 Criteria Pollutant Emissions Rates for NAAQS Analyses

Table 6 lists criteria pollutant continuous (24 hour/day) emission rates used to evaluate NAAQS compliance for standards with averaging periods of 24 hours or less, except where noted. Table 7 lists criteria pollutant continuous (8,760 hours/year) emission rates used to evaluate NAAQS compliance for standards with an annual averaging period.

The modeled PM_{10}, $PM_{2.5}$, and NO_x emission rates were based on throughput-based emission factors establishing the requested potential emission rates for the process emissions sources. The factors, as described in Real Alloy's emission inventory spreadsheet, included a 25% safety factor.

DEQ altered stack identification names used in the modeling analyses. Emission rates, except for the emergency firewater pump engine, were provided by the DEQ permit writer for the ambient air impact analyses. Salt cake handling fugitives did not reflect an additional 50% control efficiency for fugitive emissions created within a building enclosure, so the emission rates derived from the uncaptured 2% of total salt cake handling emissions are conservative estimates.

Table 6. NAAQS SHORT-TERM CRITERIA POLLUTANT EMISSION RATES				
Emissions Point	**Description**	**PM_{10}[a] (lb/hr)[b]**	**$PM_{2.5}$[c] (lb/hr)**	**NO_x[d] (lb/hr)**
STCK6_RF3	Rotary Furnace #3 Stack	0.41	0.41	2.99
STCK7_RF6	Rotary Furnace #6 Stack	0.78	0.78	2.99
STCK9_RF3SCH	Rotary Furnace #3 Salt Cake Handling Baghouse Stack	0.0395	0.0395	0
STCK8_RF6SCH	Rotary Furnace #6 Salt Cake Handling Baghouse Stack	0.0263	0.0263	0
STCK10_FWP	158 hp Diesel-fired Fire Water Pump Engine	0.3476 (24 hours/day operation)	0.3476 (24 hours/day operation)	0[e]
		Not rerun for 6 hours/day operation	0.0869 (6 hours/day operation)	
		Not rerun for 82 minutes/day operation	0.020 (82 minutes/day operation)	
VOL1_RF6SCH	Rotary Furnace#6 Salt Cake Handling Fugitives	0.0537	0.0537	0
VOL2_RF3SCH	Rotary Furnace #3 Salt Cake Handling Fugitives	0.0805	0.0805	0

[a] Particulate matter with a mean aerodynamic diameter of 10 microns or less.
[b] Pounds per hour.
[c] Particulate matter with a mean aerodynamic diameter of 2.5 microns or less.
[d] Nitrogen oxides.
[e] Emergency electrical generator engines are exempted from modeling requirements for the 1-hour average NO_2 SIL and NAAQS in accordance with DEQ policy for testing and maintenance operation of 100 hours or less.[5]

Table 7. NAAQS ANNUAL CRITERIA POLLUTANT EMISSION RATES			
Emissions Point	**Description**	**$PM_{2.5}$[a] (lb/hr)[b]**	**NO_x[c] (lb/hr)**
STCK8_RF6SCH	Rotary Furnace #6 Salt Cake Handling Baghouse Stack	0.0263	0
STCK7_RF6	Rotary Furnace #6 Stack	0.78	2.99
STCK6_RF3	Rotary Furnace #3 Stack	0.41	2.99
STCK10_FWP	158 hp diesel FW Pump Engine	0.00397	0.056
STCK9_RF3SCH	Rotary Furnace #3 Salt Cake Handling Baghouse Stack	0.0395	0
VOL1_RF6SCH	Rotary Furnace#6 Salt Cake Handling Fugitives	0.0537	0
VOL2_RF3SCH	Rotary Furnace #3 Salt Cake Handling Fugitives	0.0805	0

[a] Particulate matter with a mean aerodynamic diameter of 2.5 microns or less.
[b] Pounds per hour.
[c] Nitrogen oxides.

3.9.2 Toxic Air Pollutant Emissions

The increase in emissions from the proposed project are required to demonstrate compliance with the toxic air pollutant (TAP) increments, with an ambient impact analyses for any applicable TAP having a requested potential emission rate that exceeds the screening emissions level (EL) specified by Idaho Air Rules Section 585 or 586. Review of the TAPs emissions inventory is the responsibility of the permit writer. Real Alloy and DEQ's permit writer determined that the both of the facility's rotary furnaces and the diesel-fired emergency fire water pump engine were subject to federal emission standards, thus, all TAPs that also qualify as HAPs were not subject to modeling requirements per Section 210.20 of the Idaho *Air Rules*.

No other sources TAPs emissions were identified in the permit application. Modeling was not required to be performed to demonstrate compliance with TAP increments.

3.10 Emission Release Parameters

Tables 8, 9, 10, and 11 list emission release parameters for modeled sources at the Real Alloy facility for the NAAQS analyses in metric and English units, respectively.

Table 8. EMISSION POINT SOURCE RELEASE PARAMETERS – METRIC

Release Point	Source Description	UTM Coordinates[a]		Stack Base Elevation (m)	Stack Height (m)	Stack Gas Temp (K)[c]	Stack Exit Velocity (m/s)[d]	Stack Diameter (m)	Stack Release Type
		Easting (m)[b]	Northing (m)						
STCK7_RF6	Rotary Furnace #6 Stack	499,755.74	5,287,678.65	645.95	21.34	329.93	22.88	1.38	Default[e]
STCK6_RF3	Rotary Furnace #3 Stack	499,540.42	5,287,562.74	646.79	13.20	347.48	17.31	1.38	Default[e]
STCK8_RF6SCH	Rotary Furnace #6 Salt Cake Handling BH Stack	499,783.13	5,287,699.31	646.06	15.24	352.26	20.37	1.02	Default[e]
STCK9_RF3SCH	Rotary Furnace #3 Salt Cake Handling BH Stack	499,614.14	5,287,577.59	646.42	6.61	352.26	10.82	1.12	Default[e]
STCK10_FWP	158 hp diesel FW Pump engine	499,612.82	5,287,549.77	646.41	2.29	755.37	30.41	0.09	Default[e]

[a] Universal Transverse Mercator, NAD83 horizontal datum, Zone 11.
[b] Meters.
[c] Kelvin.
[d] Meters per second.
[e] "Default" release represents a vertical orientation with an uninterrupted release point.

Table 9. FUGITIVE EMISSION RELEASE PARAMETERS – METRIC

Release Point	Source Description	UTM Coordinate[a] Easting (m)[b]	UTM Coordinate Northing (m)	Source Base Elevation (m)	Release Height (m)	Initial Horizontal Dimension (m)	Initial Vertical Dimension (m)
VOL1_RF6SCH	Rotary Furnace#6 Salt Cake Handling Fugitives	499,762.24	5,287,714.06	645.88	0	1.134	8.0
VOL2_RF3SCH	Rotary Furnace #3 Salt Cake Handling Fugitives	499,584.28	5,287,643.13	646.75	0	1.134	8.0

[a] Universal Transverse Mercator, NAD83 horizontal datum, Zone 11.
[b] Meters.

Table 10. EMISSIONS POINT RELEASE PARAMETERS – ENGLISH									
Release Point	Source Description	UTM Coordinate[a] Easting (m)[b]	UTM Coordinate Northing (m)	Stack Base Elevation (ft)[c]	Stack Height (ft)	Stack Gas Temp (°F)[d]	Stack Flow Velocity (fps)[e]	Stack Diam (ft)	Stack Release Type
STCK7_RF6	Rotary Furnace #6 Stack	499,783.13	5,287,699.31	2,119.62	50.0	174.4	66.85	3.33	Default[f]
STCK6_RF3	Rotary Furnace #3 Stack	499,755.74	5,287,678.65	2,119.26	70.0	134.2	75.06	4.52	Default[f]
STCK8_RF6SCH	Rotary Furnace #6 Salt Cake Handling Baghouse Stack	499,540.42	5,287,562.74	2,122.01	43.3	165.8	56.81	4.52	Default[f]
STCK9_RF3SCH	Rotary Furnace #3 Salt Cake Handling Baghouse Stack	499;612.82	5,287,549.77	2,120.77	7.5	900.0	99.76	0.29	Default[f]
STCK10_FWP	158 hp diesel FW Pump engine	499,612.82	5,287,549.77	2,120.77	7.5	900.0	99.76	0.29	Default[f]

a. Universal Transverse Mercator, NAD83 datum, Zone 11.
b Meters.
c Feet.
d Degrees Fahrenheit.
e Feet per second.
f. Vertical and uninterrupted release.

Table 11. FUGITIVE EMISSION RELEASE PARAMETERS – ENGLISH							
Release Point	Source Description	UTM Coordinate[a] Easting (m)[b]	UTM Coordinate Northing (m)	Source Base Elevation (ft)[c]	Release Height (ft)	Initial Horizontal Dimension (ft)	Initial Vertical Dimension (ft)
VOL1_RF6SCH	Rotary Furnace#6 Salt Cake Handling Fugitives	499,762.24	5,2877,14.06	2,119.03	0	3.72	26.25
VOL2_RF3SCH	Rotary Furnace #3 Salt Cake Handling Fugitives	499,584.28	5,287,643.13	2,121.88	0	3.72	26.25

a. Universal Transverse Mercator, NAD83 horizontal datum, Zone 11.
b Meters.
c Feet.

DEQ's permitting policies and guidance require that each permit application have stand-alone documentation to support the appropriateness of release parameters used in the air impact analyses. The modeling report submitted to DEQ by Real Alloy in the May 2015 permitting project provided justification and documentation of assumptions and data supporting key release parameters used to model the facility's emission sources, except for the exhaust flow rates and exit temperatures for the

RF#3 and RF#6 trona-injected baghouse stacks. Exhaust flow rates and exit temperatures were based on recent performance test documentation for these two stacks.
Stack base elevations for point sources and structure base elevations where the stacks were located were nearly identical, which created a consistent relationship between stack and structures base elevations versus building tier heights for evaluating building downwash effects with BPIP-PRIME.

- **Rotary Furnace #3 (model ID STCK6_RF3)**
  A performance test was conducted on June 26, 2019, for PM, which was used to establish PM_{10} and $PM_{2.5}$ emission factors. A performance test was also conducted on November 29, 2018, which was used to establish a NOx emission factor. Modeling staff was not able to locate the November 29, 2018, performance test in DEQ's document database. The 3-run average exhaust flow rate and exit temperature from June 26, 2019, test were applied in DEQ's revised model setup. The average exhaust flow rate was 54,715 actual cubic feet per minute (ACFM) and the average exhaust temperature was 165.8 degrees Fahrenheit (°F).

  Stack release height and exit diameter were taken from the May 6, 2015, PTC project's model report, and these release parameters were justified by Real Alloy as field-measured values. The performance test report documentation lists the stack diameter as 4.5 feet at the sampling port location.

- **Rotary Furnace #6 (model ID STCK7_RF6)**
  Performance tests were conducted on the RF#6 stack for fluorides, dioxins and furans, hydrogen chloride, PM for PM_{10} and $PM_{2.5}$, and NOx. The NOx test was not found in DEQ's records database. Test average stack flow rates ranged from 72,293 ACFM to 97,747 ACFM. Exhaust temperature ranged from 134.2 °F to 187.4 °F. Worst-case minimum values of 72,293 ACFM and 134.2 °F were applied by DEQ to the model setup.

  Stack release height and diameter were justified in the May 6, 2015, PTC modeling report as field-measured values. The performance test report documentation lists the stack diameter as 4.5 feet at the sampling port location.

DEQ's analyses supporting issuance of this project's permit revision utilized the same release parameters that Real Alloy applied in the modeling demonstration supporting PTC P-2009.0139 Project 61440, issued May 6, 2015, for the other modeled sources. DEQ modeling staff assumed the locations and other release parameters for the RF#6 Salt Cake Handling Baghouse and fugitive volume source are accurate for use in this project's analyses. The modeling review memorandum in the May 6, 2015, SOB modeling memorandum lists the following DEQ review discussion for the remaining release parameters:

STACK #8 (current model ID STCK8_RF6SCH)
Stack #8 represents the baghouse-controlled stack venting emissions collected from the salt cake handling for proposed Rotary Furnace #6. Emissions from an intermittent crucible cleaning operation were also assumed to be vented to this stack. As discussed above, the exhaust parameters for this source were stated as being based on design information that was available at the time the application was submitted. The same stack temperature for the trona-injected baghouse stack for a rotary furnace was applied to salt cake handling and crucible cleaning. It is unknown how the exit temperatures for these two dissimilar processes compare and if there is a varying temperature profile over the period the slag cools before it is transported from the salt cake cooling area. As described above for Stack #7, DEQ found the exhaust parameter substantiation

lacked the necessary detail to concur that exhaust parameters were accurately established for this point source.

STACK #9 (current model ID STCK9_RF3SCH)
Stack #9 is the baghouse-equipped stack that vents the salt cake handling process associated with existing Rotary Furnace #3. The salt cake cooler was removed from service in a previous air permitting project. Real Alloy used the average temperature for the trona-injected baghouse stack that exhausts emissions for existing Rotary Furnace #3. Measured values or design data representative of this source for stack volumetric flow rate and temperature were not available at this time. Real Alloy and Conestoga-Rovers described the values as being based on the best engineering estimate assuming conservative exhaust flow rates. Stack release height and diameter were described as having been measured on-site.

STACK #10 (current model ID STCK10_FWP)
Stack #10 vents the exhaust from the 158-horspower diesel-fired generator engine used to power the firewater pump at the facility. DEQ accepted the modeled exhaust parameters without additional substantiation due to the limited and intermittent operation of the source and the exhaust parameters appear reasonable given the modeled release height of 2.3 meters above grade indicates that the engine is equipped with a very short stack.

VOL1 and VOL2 (current model IDsVOL1_RF6SCH and VOL2_RF3SCH)
The fugitive emissions for the salt cake handling and crucible cleaning operations were modeled as ground level release volume sources from each building housing the process areas. Real Alloy's submittal states that the dimensions of the sources are based on the approximate dimensions of the opening of the bay doorways on each building. The release height was assumed to be at ground level. Given the extremely small particulate matter emissions rates presented in the modeling demonstration for these fugitive sources DEQ accepted the release parameters as submitted.

Of additional note, the diesel-fired emergency firewater pump engine exit temperature falls within the values supported by the Washington Department of Ecology's documentation[6] of various diesel-fired emergency engines. The modeled exit velocity was 30 meters/second, which is well below the 50 meter/sec threshold where DEQ typically requests additional substantiation, and it is accepted as an appropriately conservative value.

DEQ concludes that the release parameters used in the air impact modeling analyses were adequately supported and were appropriate for this project.

4.0 Results for Air Impact Analyses

DEQ performed ambient air impact analyses reflecting the requested allowable emissions rates listed in the permit application, except for the emergency fire water pump engine, where short-term averaging period emission rates were altered by DEQ to reflect emission rates based on the averaging period rather than using annual emissions averaged over 8,760 hours per year to determine whether a daily operating limitation is warranted. $PM_{2.5}$ 24-hour impacts were limiting for NAAQS compliance, and three $PM_{2.5}$ scenarios were analyzed to evaluate permit limit recommendations for emergency engine testing and maintenance operation. The first scenario applied unlimited daily operation of the emergency engine to determine whether an operating hour limitation recommendation would be required, a second scenario applied what is generally considered a very flexible amount of engine

operation at 6 hours per 24-hour period, and a third scenario reflecting the application's emissions inventory equivalent operations at 82 minutes per 24-hour period. The 24-hour average PM_{10} NAAQS analyses modeled firewater pump with unlimited operation at 24 hours per day. Predicted

Annual operating hours for the emergency firewater pump engine were limited to 100 hours per year for annual NO_2 and annual $PM_{2.5}$ NAAQS analyses, which reflects the current standard annual limitation on operating hours.

4.1 Results for Significant Impact Analyses

DEQ did not perform SIL analyses for this project. This project was performed to establish NAAQS compliance for pollutants and averaging periods subject to modeling requirements using the current version of AERMOD, current meteorological data, and the project's potential emissions. A cumulative impact analysis was conducted for all pollutants and averaging periods where future requested potential emissions exceeded the Level I modeling thresholds specified in the DEQ *Modeling Guideline*[2] or the BRC exemption from NAAQS compliance requirements.

4.2 Results for Cumulative NAAQS Impact Analyses

The results for the cumulative impact analyses are listed in Table 12. Ambient impacts for the facility were below the applicable NAAQS.

Table 12. RESULTS FOR CUMULATIVE IMPACT ANALYSES

Pollutant	Averaging Period	Modeled Design Value Concentration ($\mu g/m^3$)[a]	Background Concentration ($\mu g/m^3$)	Maximum Total Ambient Impact ($\mu g/m^3$)	NAAQS[b] ($\mu g/m^3$)	Percent of NAAQS
NO_2[c]	1-hour	35.5[f]	34.2	69.7	188	37%
	Annual	2.6[g]	9.0	11.6	100	12%
$PM_{2.5}$[d]	24-hour (worst-case unlimited 24 hours/day operation of emergency firewater pump engine)	10.5[h]	21.7	32.2	35	92%
	24-hour (emergency firewater pump engine limited to 6 hours/day operation)	5.4[h]		27.1		77%
	24-hour (emergency firewater pump engine limited to 82 minutes/day operation per application emission inventory)	5.0[h]		26.7		76%
	Annual	1.1[i, j]	7.6	8.7	12	73%
PM_{10}[e]	24-hour	14.7[k, l]	95.5	14.7	150	73%

Table 12. RESULTS FOR CUMULATIVE IMPACT ANALYSES

a. Micrograms per cubic meter.
b. National ambient air quality standards.
c. Nitrogen dioxide.
d. Particulate matter with an aerodynamic diameter of 2.5 microns or less.
e. Particulate matter with an aerodynamic diameter of 10 microns or less.
f. Modeled design value is the maximum 5-year mean of 8th highest daily 1-hour maximum impacts for each year of a 5-year meteorological dataset. 100% conversion of NOx to NO_2 was assumed.
g. Maximum annual average impact from 5 individual years of meteorological data is typically used. A concatenated 5-year dataset with the maximum annual impact averaged over 5 years was used in this analysis. The margin of compliance is large and compliance is adequately demonstrated.
h. Modeled design value is the maximum 5-year mean of 8th highest 24-hour average impacts for each year of a 5-year meteorological dataset.
i. Maximum annual impact averaged over 5 years of meteorological data.
j. The firewater pump was modeled with an average hourly emissions rate based on 100 hours per year of operation averaged evenly over 8,760 hours per year.
k. Design value is the 6th highest impact from a 5-year meteorological dataset.
l. Worst-case assumption of 24 hours per day of emergency fire water pump engine operation. Impacts were low enough not to warrant additional modeling runs reflecting limited hours of operation.

5.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the Real Alloy facility will not cause or significantly contribute to a violation of any NAAQS and will not exceed allowable TAP increments.

References

1. *Policy on NAAQS Compliance Demonstration Requirements of IDAPA 58.01.01.203.02 and 403.02.* Idaho Department of Environmental Quality Policy Memorandum. Tiffany Floyd, Administrator, Air Quality Division, June 10, 2014.

2. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

3. *Ambient Ratio Method Version 2 (ARM2) for use with AERMOD for1-hr NO_2 Modeling Development and Evaluation Report,* Prepared for American Petroleum Institute, 1220 L Street NW, Washington, DC 20005, by M. Podrez, RTP Environmental Associates, Inc., 2031 Broadway, Suite 2, Boulder, Colorado 80302, September 20, 2013.

4. *Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard,* R. Chris Owen and Roger Brode, Environmental Protection Agency, Office of Air Quality Planning and Standards, September 30, 2014.

5. *DEQ Guidance for Minor New Source Review Modeling of 1-Hour NO_2 from Intermittent Testing of Emergency Engines*, State of Idaho Department of Environmental Quality September 2013, Doc. I D AQ-011 (September 2013).

6. *Suitability of Diesel-Powered Emergency Generators for Air Quality General Order of Approval: Evaluation of Control Technology, Ambient Impacts, and Potential Approval Criteria*, Washington State Department of Ecology, Air Quality Program, General Order Engineering Team, June 26, 2006.

APPENDIX C – FACILITY DRAFT COMMENTS

The following comments were received from the facility on November 14, 2019:

Facility Comment: We suggest that a consistent, common name should be use for the furnaces in the PTC and SOB. (RF3 and RF6 is what we decided to name the furnaces going forward) Will need change permit and SOB to reflect these names for these furnaces only. There are several names that reference the same two furnaces now.

DEQ Response: All references to Rotary Furnaces #3 and #6 were changed to use the nomenclature RF3 and RF6, respectively.

Facility Comment: Remove Section 2.9 in the PTC. We don't have a #2 Rotary that we are going to leave idle. There were two Reverb furnaces back in the 2003 time period known as #2 and #3 but they are long gone.

DEQ Response: Permit Condition 2.9 was removed.

Facility Comment: Both Section 2.5 and Section 2.13 should read similar in the permit.

DEQ Response:

Facility Comment: See my markups on changes proposed to recordkeeping on Section 2.13 in the PTC. We currently track charge materials on a per heat cycle basis and intend to continue while calculating the average daily and rolling 12-month totals for the permit.

DEQ Response: The marked changes were incorporated to align the emission limits with the recordkeeping requirements.

Facility Comment: Name of the facility has been updated since the May 2018 sale of the company to its current ownership team.

DEQ Response: An instance of the incorrect company name "Real Alloy Inc." was changed to "Real Alloy LLC".

APPENDIX D – PROCESSING FEE

Payment Receipt

Idaho Department of Environmental Quality
State Fiscal Office
1410 North Hilton
Boise ID 83706

Received From:
REAL ALLOY RECYCLING INC
REAL ALLOY RECYCLING INC
JEFF BOHANNON
16168 WEST PRARIE AVE
POST FALLS, ID 83854

Date Received	12/03/2019	**Payment Amount**	$1,000.00
Payment Method	Check		
Check/Ref. No.	1100057508		

Invoices Paid

Date	Number	Amount Applied
11/07/2019	14132	-$1,000.00

ATTACHMENT D

Photograph Log

All photographs taken by Jon Klemesrud (unless otherwise noted) on September 28, 2021

Nikon Coolpix AW100

Photo Log – Real Alloy Recycling, Inc. – Post Falls

Photo #:01 (DSCN2487)
Description: Facing southwest, photo of finished recycled scrap ingots (RSI) produced at the facility, stored on-site ready for shipment.

Photo #:02 (DSCN2488)
Description: Facing northeast, photo of shredded "popcorn" scrap aluminum being stored on- site (foreground). RSI's also stored in area (background).

Photo #:03 (DSCN2489)
Description: Facing north, photo of Rotary Furnace #3 enclosure and capture hood.

Photo #:04 (DSCN2505)
Description: Facing northeast, photo of a loader being weighed prior to adding aluminum to Rotary Furnace #3.

Photo Log- Real Alloy Recycling, Inc. – Post Falls

Photo #:05 (DSCN2490)
Description: Facing north, photo of Rotary Furnace #3 capture hood and ducting.

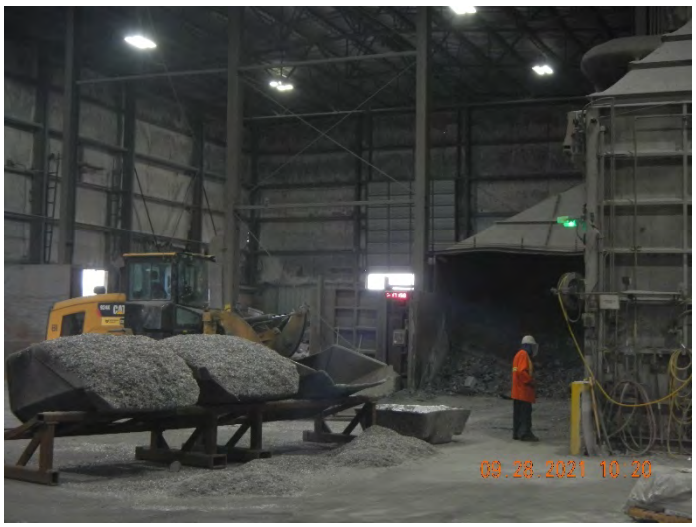


Photo #:06 (DSCN2491)
Description: Facing northeast, photo of the salt cake storage/cooling area and associated capture hood near Rotary Furnace #3.

Photo #:07 (DSCN2499)
Description: Facing west, photo of Baghouse #3.

Photo #:08 (DSCN2498)
Description: Facing northwest, photo of Baghouse #3 cooling tower.

Photo Log- Real Alloy Recycling, Inc. – Post Falls

Photo #:09 (DSCN2497)
Description: Facing east, photo of Baghouse #3 outdoor ducting to cooling tower.

Photo #:10 (DSC2496)
Description: Facing south, photo of Baghouse #9. Used as a pollution control device for the salt cake staging and handling area near Rotary Furnace #3.

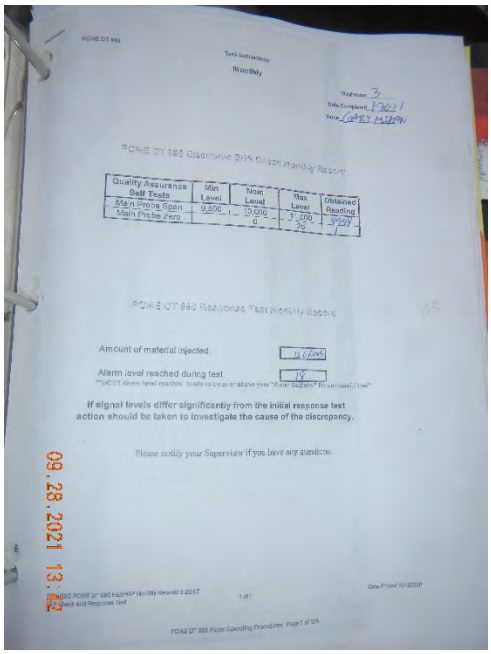


Photo #:11 (DSCN2516)
Description: Photo of the monthly (August 2021) PCME Drift Check and Response Test for Baghouse #3.

Photo #:12 (DSCN2503)
Description: Facing east, photo of the Trona feed system for Baghouse #3.

Photo Log – Real Alloy Recycling, Inc. – Post Falls

Photo #:13 (DSCN2506)
Description: Facing southwest, photo of the dross storage area near Rotary Furnace #3.

Photo #:14 (DSCN2519)
Description: Facing north, photo of the salt cake storage/cooling area and associated capture hood near Rotary Furnace #6.

Photo #:15 (DSCN2524)
Description: Facing north, photo of Baghouse #8. Used as a pollution control device for the salt cake staging and handling area near Rotary Furnace #6.

Photo #:16 (DSCN2523)
Description: Facing northeast, photo of Baghouse #6.

Photo Log – Real Alloy Recycling, Inc. – Post Falls

Photo #:17 (DSCN2526)
Description: Facing southwest, photo of visible emissions near the rear of the Rotary Furnace #3 enclosure.

Photo #:18 (IMG_0932)
Description: Photo of the baghouse leak detection probe. Photo was provided post-inspection via email by Jeff Bohannon.

Photo #:19 (IMG_0927)
Description: Photo of the location of the baghouse leak detection probe. Photo was provided post-inspection via email by Jeff Bohannon.

Complete list of photographs taken during the inspection:

- DSCN2487 – Facing southwest, photo of finished recycled scrap ingots (RSI) produced at the facility, stored on-site ready for shipment.
- DSCN2488 – Facing northeast, photo of shredded "popcorn" scrap aluminum being stored on- site (foreground). RSI's also stored in area (background).
- DSCN2489 – Facing north, photo of Rotary Furnace #3 enclosure and capture hood.
- DSCN2490 – Facing north, photo of Rotary Furnace #3 capture hood and ducting.
- DSCN2491 – Facing northeast, photo of the salt cake storage/cooling area and associated capture hood near Rotary Furnace #3.
- DSCN2492 – Facing north, photo of the scrap staging area near heat/charge bay.
- DSCN2493 – Facing northeast, photo of Rotary Furnace #3 capture hood and ducting.
- DSCN2494 – Facing northeast, photo of Rotary Furnace #3 capture hood and ducting.
- DSCN2495 – Facing south, photo of Baghouse #9. Used as a pollution control device for the salt cake staging and handling area near Rotary Furnace #3.
- DSCN2496 – Facing south, photo of Baghouse #9. Used as a pollution control device for the salt cake staging and handling area near Rotary Furnace #3.
- DSCN2497 –Facing east, photo of Baghouse #3 outdoor ducting to cooling tower.
- DSCN2498 –Facing northwest, photo of Baghouse #3 cooling tower.
- DSCN2499 –Facing west, photo of Baghouse #3.
- DSCN2500 –Facing northwest, photo of Baghouse #3 and associated cell dampers.
- DSCN2501 –Facing north, photo of a damper arm for a Baghouse #3 cell.
- DSCN2502 –Facing southeast, photo of the Trona feed control system for Baghouse #3.
- DSCN2503 –Facing east, photo of the Trona feed system for Baghouse #3.
- DSCN2504 –Photo of a page from the September 2021 Daily Operation Inspection Log for Baghouse #3.
- DSCN2505 –Facing northeast, photo of a loader being weighed prior to adding aluminum to Rotary Furnace #3.
- DSCN2506 –Facing southwest, photo of the dross storage area near Rotary Furnace #3.
- DSCN2507 –Photo of monthly (August 2021) Trona Feed Flow Rate Verification Log.
- DSCN2508 –Photo of the Baghouse #3 operation/control display.
- DSCN2509 –Photo of Malfunction Occurrence Log for Baghouse #6. Alarm Testing occurred 08/31/2021.
- DSCN2510 –Photo of the Smart Air Velocity Transmitter installed on the Baghouse #3 stack. Photo taken by Zach Hedgpeth (EPA).
- DSCN2511– Photo of the Smart Air Velocity Transmitter installed on the Baghouse #3 stack. Photo taken by Zach Hedgpeth (EPA).
- DSCN2512 – Photo of the Smart Air Velocity Transmitter installed on the Baghouse #3 stack. Photo taken by Zach Hedgpeth (EPA).
- DSCN2513 – Photo of the Smart Air Velocity Transmitter probe inside the Baghouse #3 stack. Photo taken by Zach Hedgpeth (EPA).
- DSCN2514– Photo of the thermocouple installed to the Baghouse #3 outlet.
- DSCN2515– Photo of thermocouple installed to Baghouse #3 inlet.

- DSCN2516– Photo of the monthly (August 2021) PCME Drift Check and Response Test for Baghouse #3.
- DSCN2517– Photo of the semi-annual inlet thermocouple calibration test for Baghouse #3, dated February 25, 2021.
- DSCN2518– Photo semi-annual inlet bag break test for Baghouse #3, dated August 30, 2021.
- DSCN2519– Facing north, photo of the salt cake storage/cooling area and associated capture hood near Rotary Furnace #6.
- DSCN2519– Facing north, photo of the salt cake storage/cooling area and associated capture hood near Rotary Furnace #6.
- DSCN2520 – Facing south, photo of Rotary Furnace #6 capture hood and ducting.
- DSCN2521– Photo of the semi-annual inlet thermocouple calibration test for Baghouse #3, dated August 31, 2021.
- DSCN2522– Photo of labeling on Rotary Furnace #6 enclosure.
- DSCN2523– Facing northeast, photo of Baghouse #6.
- DSCN2524 – Facing north, photo of Baghouse #8. Used as a pollution control device for the salt cake staging and handling area near Rotary Furnace #6.
- DSCN2525 – Photo of the super sacks attachment method on Baghouse #8.
- DSCN2526 – Facing southwest, photo of visible emissions near the rear of the Rotary Furnace #3 enclosure.
- DSCN2527 – Photo of an example (September 2021) baghouse operational checklist.
- DSCN2528 – Photo of Malfunction Occurrence Log for Baghouse #3. Dated 08/24/21.
- IMG_0927 - Photo of the location of the baghouse leak detection probe. Photo was provided post-inspection via email by Jeff Bohannon.
- IMG_0932 - Photo of the baghouse leak detection probe. Photo was provided post-inspection via email by Jeff Bohannon.

ATTACHMENT E

Records Request
(at the time of the Closing Conference)

Records Request List
EPA Inspection 9/28/21
Real Alloy – Post Falls, ID

1. Information showing the capture and collection systems (hoods) on Furnaces 3 and 6 meet ACGIH guidelines, as required under 40 CFR 63.1506(c)(1). Annual inspection records, per 63.1510(d)(2). 2 years
2. For the bag leak detection systems on the baghouses controlling Furnaces 3 and 6: records of the initial adjustments of the systems, per section 3.4.2 of the OM&M Plan, and records of the most recent two changes made to the BLD settings, per section 3.4.3.
3. BLD manufacturer instructions/operating procedures, per Appendix F and section 3.4.1 of OM&M Plan.
4. Source Test Report – Aug 17 & 18, 2021.