

## STATEMENT OF BASIS

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### Title V Air Operation Permit Revision Permit No. 0570119-018-AV

#### APPLICANT

The applicant for this project is Trademark Metals Recycling, LLC. The applicant's responsible official and mailing address are: Michael Walbridge, Vice President, Trademark Metals Recycling, LLC, 400 N Ashley Drive STE 1300, Tampa, FL 33602.

#### FACILITY DESCRIPTION

The applicant operates a secondary aluminum smelting operation which is located at 6912 E 9<sup>th</sup> Avenue, Tampa, FL 33619.

The purpose of this permit is to revise the Title V operation permit by incorporating Permit No. 0570119-017-AC, which authorized the replacement of the existing rotary furnace burners from 6 MMBtu/hr to 7.5 MMBtu/hr burners, while maintaining the permitted restrictions on the process rates. Emissions from the two rotary furnaces are controlled by a 50,000 ACFM four-compartment Control Design & Integration Model SMF-50-3.0 Reverse Air Type Baghouse with a continuous lime injection system.

Trademark Metals Recycling, LLC is a secondary aluminum smelting facility that processes scrap aluminum received from a variety of business and recycling centers. The scrap aluminum is classified, separated and stored in various piles throughout the site in preparation for processing in the furnaces. Prior to smelting, the aluminum scrap is reduced in volume by one of two diesel-fired compactor/balers. The molten aluminum is cast on-site and then sold for reuse in production of other aluminum products.

The primary operation at the facility is the two rotary Group 1 furnaces designated as Aluminum Rotary Furnace #1 (EU No. 005) and Aluminum Rotary Furnace #2 (EU No. 006), which will each be fired on natural gas with burners rated at a design capacity of 7.5 MMBtu/hr (operationally restricted to 6 MMBtu/hr by permit), and are allowed to process up to 6,000 lbs/hr of aluminum scrap per furnace. Prior to the initial charge of aluminum and as needed throughout the melting process, a flux comprised of a salt and potash blend is placed in the furnaces for removal of the impurities in the scrap aluminum and for temperature control. Cryolite (a compound consisting of calcium aluminum fluorides) and calcium chloride are also added as needed for an increased aluminum recovery rate. Scrap aluminum without a substantial quantity of iron is then loaded into the furnaces with a front end loader. The furnaces are typically charged with primarily aluminum products (beverage cans, milled turnings, rolled aluminum sheets, etc.); however, Aluminum Rotary Furnace #1 is also fed with scrap more contaminated with foreign material (aluminum castings, automotive engines and transmission parts, etc.), which results in a lower quality finished product. After a sufficient quantity has been added, the burner door shuts and the burner is fired. The charge in the rotating furnace then becomes molten after 10-30 minutes. More charge is then added in the same manner until the furnace is full. Occasionally, some additional product (i.e. magnesium, etc.) is then added in small quantities to meet specifications regarding alloy quality. The molten aluminum is then poured into preheated kettles and transferred to a holding furnace, or poured directly into a mold (sow) for cooling and hardening. Dross is skimmed from the surface of the sows prior to hardening. The remaining slag in the furnace is then removed and stored for disposal off-site.

PM, HCl, and D/F (dioxins and furans) emissions from the rotary furnaces are ducted to a 4-chamber lime-injected 50,000 ACFM four-compartment induced-draft Control Design & Integration Model SMF-50-3.0 Reverse Air Type Baghouse. Hoods are present over the openings of each furnace with emissions induced into the corresponding ducts by means of a 50,000 ACFM fan located downstream of the baghouse. The duct for Aluminum Rotary Furnace #1 has a damper set to open at approximately 500°F to allow for dilution air to cool the exhaust stream. Another damper is present in the duct downstream from the point where the two furnace ducts join together. This duct is also for dilution air, with an opening set-point of approximately 350°F, as measured in the baghouse chamber. The system also has an emergency shut-off set at approximately 375°F to protect the baghouse from high temperatures. The baghouse has a continuous feed lime-injection system to control D/F and

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HCl emissions. As required by applicable MACT standards, a new bag leak detection system was installed on the exhaust of the baghouse to ensure continual compliance. An Operation, Maintenance and Monitoring (OM&M) Plan has been included in the permit, which establishes requirements for maintenance and inspection of the process equipment.

The Holding Furnace (EU No. 004) is used exclusively for storage of molten aluminum and maintains the temperature through use of a combined 6 MMBtu/hr burner arrangement, fired on natural gas. The holding furnace is capable of processing up to 2,500 lbs/hr of clean charge as defined in 40 CFR 63.1503 and is considered a Group 2 furnace. Emissions from this operation vent directly to the atmosphere. Permit No. 0570119-016-AC was issued to install a charging well and increase the hourly capacity and heat input rate of the Holding Furnace; however, the construction for the project has not yet been completed. The molten aluminum is allowed to pass through a 0.25 MMBtu/hr natural gas-fired heated trough and into molds (deox or ingots) running on a conveyor system. The molds are automatically filled and the dross is manually skimmed. The molds then travel down the conveyor while being water quenched for rapid cooling. The steam from the water quenching is drawn through a stack that exits on the roof. The hardened aluminum is then popped free from the molds and stored for shipment off-site.

The sweat furnace that was previously part of EU No. 004 is an Al-Jon Model AS-990-R-20 dual chamber furnace that is designed to process irony scrap and is controlled by an afterburner. However, it has not operated since 1999, and though it is still on-site, it will require a new air construction permit prior to start-up. Also present at the facility is a second sweat furnace (Model MS-1500), formerly identified as Emission Unit 001. The furnace has been determined to have been out of service for over 10 years and, pursuant to Rule 62-210.300(2)(a)3.c., F.A.C., cannot resume operation without submission of an air permit application and issuance of an air construction permit. Both sweat furnaces must comply with all requirements of the NESHAP (Subpart RRR) prior to any resumption of operation.

The facility is subject to the Secondary Aluminum NESHAP (40 CFR 63 Subpart RRR) for the rotary and holding furnaces. The rotary furnaces are also subject to PM RACT Rule 62-296.712, F.A.C. The two portable baler engines are not subject to 40 CFR 63 Subpart ZZZZ unless they remain on-site at the facility for more than twelve (12) consecutive months. Also included in the revised Title V permit are miscellaneous unregulated/insignificant emissions units and/or activities.

### PROJECT DESCRIPTION

The purpose of this project is to revise the existing Title V permit to incorporate the concurrently processed Air Construction Permit No. 0570119-017-AC which authorized the replacement of the 6 MMBtu/hr natural gas burners for Aluminum Rotary Furnace #'s 1 and 2 with 7.5 MMBtu/hr burners while maintaining the existing permitted process rates. The proposed burners are Eclipse ThermJet Model TJ0750 (or equivalent) burners rated at a maximum of 7.5 MMBtu/hr. Compliance with the burner heat input rates will be demonstrated by tracking the natural gas usage and hours of operation for each rotary furnace. A secondary compliance indicator will be measurement of the pressure drop across the gas and air orifices. The Air Construction and Title V Permit revision were processed concurrently since there are no additional compliance testing requirements resulting from this modification. However, emissions compliance testing is being required within 75 days of exceeding the previously permitted 6 MMBtu/hr heat input rate, in the event that the facility exceeds the rate, based on the daily recordkeeping.

### PROCESSING SCHEDULE AND RELATED DOCUMENTS

Initial Title V Permit Application received May 4, 2004  
FINAL Title V Permit issued February 2, 2006  
Title V Permit Renewal Application received July 16, 2010  
FINAL Title V Permit Renewal issued January 31, 2011

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Title V Permit Revision Application received June 30, 2011  
Transfer of Ownership issued March 29, 2012  
FINAL Title V Permit Revision issued May 16, 2012  
Air Construction/Title V Permit Revision Application received January 18, 2013

### PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as an area source of hazardous air pollutants (HAP).

Title V: The facility is a Title V source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is not a Prevention of Significant Deterioration (PSD) major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does not operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility does operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63 Subpart RRR, specifically for the rotary and holding furnaces.

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility.

### PROJECT REVIEW

This Title V Permit revision updated portions of the permit, summarized as follows:

- 1) The Process Description was updated to reflect that the maximum design capacity for Aluminum Rotary Furnace #'s 1 and 2 was increased from 6 to 7.5 MMBtu/hr per furnace. However, the currently permitted operating rate is 6 MMBtu/hr per furnace. Compliance with the permitted heat input rate will be demonstrated by keeping records of natural gas usage and hours of operation of each rotary furnace. A secondary compliance indicator will be measurement of the pressure drop across the gas and air orifices. However, emissions compliance testing is being required within 75 days of exceeding the previously permitted 6 MMBtu/hr heat input rate, should the facility exceed that rate, based on the daily recordkeeping.
- 2) A compliance plan, Appendix CP-1, was included with Title V Permit No. 0570119-014-AV to require a one-time compliance test for HCl, in order to quantify the HCl emissions from the rotary furnaces and determine whether the facility is a major or area (minor) source of HAP emissions. HCl emissions testing was conducted on September 5, 2012 using EPA Method 26A and it was determined, based on the test conditions, that the facility is an area source of HAP emissions. Therefore, based on discussions with EPC Air Compliance Staff, the intent of the conditions of the compliance plan was determined to be satisfied and no further HCl testing is being required in this permit revision. The permit has been modified to require that the facility maintain the lime feed rate from the most recent successful HCl or D/F compliance test, whichever is greater.

### CONCLUSION

This project revises Title V Air Operation Permit No. 0570119-014-AV, which was issued on May 16, 2012. This Title V permit revision is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.