

**TECHNICAL REVIEW AND EVALUATION  
OF APPLICATION FOR  
AIR QUALITY PERMIT NO. 47460**

**I. INTRODUCTION**

This Class II Air Quality Permit is issued to Total Resource Recycling, Inc., to construct and operate an aluminum recycling furnace near Salome, Arizona, designed to melt aluminum into ingots for the recycled aluminum market.

**A. Company Information**

Facility Name: Total Resource Recycling, Inc.  
Mailing Address: 84811 Avenue 48  
Coachella, CA 92236  
Facility Address: Salome, AZ 85348  
La Paz County  
Latitude: N 33 deg, 39 min, 34.9 sec  
Longitude: W 113 deg, 46 min, 35 sec  
Parcel Information: 305-11-024A

**B. Attainment Classification**

The source is in an attainment area with respect to all the criteria pollutants

**II. FACILITY DESCRIPTION**

**A. Process Description**

Scrap pretreatment involves sorting and processing scrap to remove contaminants and to prepare the material for smelting. Sorting and processing separates the aluminum from other metals, dirt, oil, plastics, and paint.

After scrap pretreatment, smelting is performed. During smelting, all combustible materials burn off and their combustion byproducts, if they have been incompletely burned in the primary chamber, are emitted to the afterburner. In the afterburner, these byproducts are reduced to their most simple constituents. Produced aluminum ingots are sold and any iron metal and dross are sold.

## B. Air Pollution Control Equipment

An afterburner is used to burn combustion byproducts from the aluminum recycling furnace at the facility.

## III. EMISSIONS

The facility is classified as a minor source pursuant to Arizona Administration Code (A.A.C.) R18-2-101.61. Table #1 quantifies the total uncontrolled emissions from the entire facility.

**Table 1: Facility Wide Uncontrolled Emissions**

Pollutant	Emissions
	Tons/year
PM	63.62
PM <sub>10</sub>	58.36
SO <sub>2</sub>	0.32
NO <sub>x</sub>	1.99
CO	1.15
VOC	0.15
HAPs*	0.67

\* Hazardous Air Pollutant (HAP) Emissions - The HAP emissions listed above are fuel burning emissions. The Department has required the facility to conduct a performance test within 180 days of start-up to estimate speciated HAP emissions from the sweat furnace.

## IV. APPLICABLE REGULATIONS

Table 2 identifies the applicable regulations corresponding to every process unit and also provides verification as to why that standard applies

**Table 2: Verification of Applicable Regulations**

Unit	Control Device	Rule	Verification
Aluminum King Sweat Furnace	Afterburner	A.A.C. R18-2-730, 40 CFR 63, Subpart RRR (NESHAP)	This Standard is applicable to any unclassified source. National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production is also applicable.
Fugitive dust	Water and other reasonable precautions	Article 6, A.A.C. R18-2-702	These are applicable to any fugitive dust source.
Spray painting operations	N/A	A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.
Demolition/renovation operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Mobile Sources	N/A	A.A.C. R-18-2-801 A.A.C. R-18-2-802 A.A.C. R-18-2-804	These regulations are applicable to all mobile sources

## V. MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

### 1. Aluminum Recycling Furnace Requirements

#### a. Monitoring Requirements

- i. The permit requires monthly surveys of visual emissions from the furnace stack to be performed by a certified EPA Reference Method 9 observer. If the opacity of the emissions observed appears to exceed the standard, the observer is required to conduct a certified EPA Reference Method 9 observation.
- ii. The afterburner temperature must be monitored continuously.

#### b. Recordkeeping Requirements

- i. The Permittee is required to record the emission point being observed, date, time and the results of all visible emission surveys or Method 9 observation made monthly, as well as the name of the observer who conducted the test. In the event of opacity going beyond the limit, the Permittee will keep a record of the corrective action taken to bring the opacity below the standard.
- ii. The Permittee is required to keep records of part of the Federal Energy Regulatory Commission (FERC) - approved tariff agreement that contains the lower heating value of the fuel.
- iii. The Permittee is required to keep daily, monthly, and annual records of the amount of scrap metal fed into the recycling furnace. The Permittee shall calculate the annual records based on rolling 12 month totals.
- iv. The Permittee, burning "on specification" used oil, is required to maintain, on site, copies of the fuel analysis supplied by the marketer for each batch of "on specification" used oil fuel, and shall be responsible for ensuring that the results of the analyses confirm that the contaminant levels specified in the permit are not exceeded.
- v. The Permittee is required to maintain files of all information (including all reports and notifications) required by the permit.

#### c. Reporting Requirements

Upon completion of the initial performance test, the Permittee is required to submit speciated calculations of the hazardous air pollutant emissions from the furnace, based on the results of the performance test.

## **2. Fugitive Dust Requirements**

### **a. Monitoring Requirements**

The permit requires monthly visual surveys or EPA Reference Method 9 observations of fugitive emissions by a certified Method 9 observer.

### **b. Recordkeeping Requirements**

The Permittee is required to record the emission point being observed, date, time and the results of all observations made, as well as the name of the observer who conducted the test. In the event of opacity going beyond the limit, the Permittee will keep a record of the corrective action taken to bring the opacity below the standard.

## **VI. TESTING REQUIREMENTS**

### **Hazardous Air Pollutants**

The Permittee is required to conduct an initial performance test for HAPs on the furnace stack within 180 days after startup of the facility. Additional performance tests will be performed at the request of the Director. The Permittee is required to burn used oil fuel in the recycling furnace during all performance tests.

## **VII. LEARNING SITES POLICY**

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by Total Resource Recycling, Inc. Learning sites consist of all existing public schools, charter schools and private schools at the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

There are no learning sites within two miles of the facility. The Department has determined that the operation of the facility will not adversely affect learning sites.

## **VIII. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS**

The facility is subject to the NESHAP requirements under 40 CFR 63 Subpart RRR. All requirements under this subpart for a sweat furnace with an afterburner have been included in the permit.

## IX. IMPACTS TO AMBIENT AIR QUALITY

### A. Introduction

As part of the Total Resource Recycling, Inc. Class II permit, an in-house air quality impact analysis (i.e. modeling analysis, SCREEN3) was conducted. The modeling analysis included the emissions from the afterburner.

The purpose of the modeling analysis is to determine whether air quality impacts from proposed criteria pollutant emissions will cause or contribute to a violation of any air quality standard, or worsen an existing air quality problem. Applicable standards include the National Ambient Air Quality Standards (NAAQS).

### B. Modeling Analysis Overview

NAAQS Analysis

Table 3 below shows the SCREEN3 results of NAAQS analysis for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>. Background concentrations over three year period from ADEQ's Bullhead City Monitoring Station were used towards accounting for the final concentrations presented in the Table 3 below. All pollutants are within the standards.

**Table 3. Modeling Analysis Results**

Total Modeled Concentrations Compared to Standards (Including Background Concentrations)										
Pollutant	1-hr		3-hr		8-hr		24-hr		Annual	
	Total Conc. [ $\mu\text{g}/\text{m}^3$ ]	Standard	Total Conc. [ $\mu\text{g}/\text{m}^3$ ]	Standard	Total Conc. [ $\mu\text{g}/\text{m}^3$ ]	Standard	Total Conc. [ $\mu\text{g}/\text{m}^3$ ]	Standard	Total Conc. [ $\mu\text{g}/\text{m}^3$ ]	Standard
CO	585.21	40000			584.25	10000				
SO <sub>x</sub>			214.71	1300			60.62	365	7.52	80
NO <sub>x</sub>									3.93	100
PM <sub>10</sub>							127.46	150	19.22	50

## X. LIST OF ABBREVIATIONS

A.A.C	.....	Arizona Administrative Code
ADEQ	.....	Arizona Department of Environmental Quality
AQD	.....	Air Quality Division
CFR	.....	Code of Federal Regulations
EPA	.....	Environmental Protection Agency
FERC	.....	Federal Energy Regulatory Commission
HAP	.....	Hazardous Air Pollutant
hr	.....	Hour
lb	.....	Pound
LPG	.....	Liquefied Petroleum Gas
NESHAP	.....	National Emission Standards for Hazardous Air Pollutants
$\mu\text{g}/\text{m}^3$	.....	Microgram per cubic Meter
$\text{NO}_x$	.....	Nitrogen Oxide
PM	.....	Particulate Matter
$\text{PM}_{10}$	.....	Particulate Matter Nominally less than 10 Micrometers
PTE	.....	Potential-to-Emit
s	.....	Seconds
$\text{SO}_2$	.....	Sulfur Dioxide
TPY	.....	Tons per Year
VOC	.....	Volatile Organic Compound
yr	.....	Year