

Report of...

# ROP Compliance Testing

performed for...

Metal Technologies, Inc.  
Auburn, Indiana

at

Metal Technologies,  
Ravenna Ductile Iron Plant  
Ravenna, Michigan

on the

Melt Line Exhaust

August 20, 2013

187.03

Network Environmental, Inc.  
Grand Rapids, MI

**RECEIVED**  
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**Performed For:**

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## **I. INTRODUCTION**

Network Environmental, Inc. was retained by Metal Technologies, Inc. of Auburn, Indiana to perform ROP Compliance Emission Testing at their Ravenna Ductile Iron Plant in Ravenna, Michigan. The purpose of the testing was to show compliance with their Renewable Operating Permit # MI-ROP-N5866-2009a.

The established limits for this source are as follows;

<b>Emission Unit</b>	<b>Stack ID</b>	<b>Emission Limit</b>
FG MELTING	SV-MELT-01	0.01#/1000#, 2.5#/Hr and <5% Opacity

Sampling was conducted on the exhaust by employing the following reference test methods:

- \* Particulates - U.S. EPA Method 17
- \* Visible Emissions – U.S. EPA Method 9
- \* Exhaust Gas Parameters (airflow rate, temperature, moisture & density) - U.S. EPA Methods 1-

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The sampling was conducted on August 20, 2013. Stephan K. Byrd, R. Scott Cargill, and David D. Engelhardt of Network Environmental, Inc. performed the testing. Mr. Dann Hollenbeck of Metal Technologies was present to coordinate source operations, perform Visible Emissions Observations and data recording and collection. Mr. Dave Matthews of the MDEQ, Air Quality Division, was present to observe the testing and source operation.

**II. PRESENTATION OF RESULTS**

**II.1 TABLE 1  
PM EMISSION RESULTS SUMMARY  
MELT LINE EXHAUST  
RAVENNA DUCTILE IRON PLANT  
METAL TECHNOLOGIES, INC.  
RAVENNA, MICHIGAN**

Sample	Date	Time	Air Flow Rate DSCFM <sup>(1)</sup>	Concentration	Emission Rate
				Lbs/1000 Lbs, Dry <sup>(2)</sup>	Lbs/Hr <sup>(3)</sup>
1	8/20/13	08:56-10:03	46,228	0.00068	0.140
2	8/20/13	10:27-11:36	49,941	0.00061	0.137
3	8/20/13	12:06-13:11	46,127	0.00055	0.114
<b>Average</b>			<b>47,432</b>	<b>0.00061</b>	<b>0.130</b>

(1) DSCFM = Dry Standard Cubic Feet Per Minute (STP = 68 °F & 29.92 in. Hg)

(2) Lbs/1000 Lbs, Dry = Pounds of Particulate Per Thousand Pounds of Exhaust Gas on a Dry Basis

(3) Lbs/Hr = Pounds of Particulate Per Hour

### **III. DISCUSSION OF RESULTS**

The results of the emission testing performed on August 20, 2013 can be found in Section II, Table II.1. The results of the testing are expressed in terms of pounds per thousand pounds (Lbs/1000 Lbs) and pounds per hour (Lbs/Hr) for particulates.

Opacity readings were taken during the particulate testing. The highest reading was zero percent opacity.

### **IV. SAMPLING AND ANALYTICAL PROTOCOL**

The determinations were performed in accordance with the following sampling and analytical protocols.

**IV.1 Particulate** - The particulate emission sampling was conducted in accordance with U.S. EPA Method 17. Figure 1 is a schematic diagram of the Method 17 sampling train. Each sample was sixty (60) minutes in duration and had a minimum sample volume of thirty (30) dry standard cubic feet. The samples were collected isokinetically on fiberglass filters.

The filters and nozzle rinses were analyzed gravimetrically for weight gain for the particulate analysis. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis.

**IV.2 Visible Emissions** - The VEO's were performed in accordance with EPA Reference Method 9. A certified observer, located in a position with the sun at his back and the exhaust stack in the line of view, recorded observations at fifteen-second intervals during the particulate testing. Readings were rounded to the nearest five percent opacity. The highest readings were reported for each one hour particulate test.

**IV.3 Exhaust Gas Parameters** - The exhaust gas parameters (airflow rate, temperature, moisture, and density) were determined in conjunction with the other

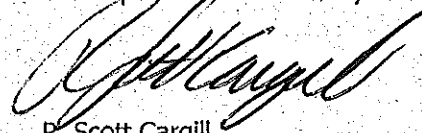
sampling by employing U.S. EPA Reference Methods 1 through 4. All the sampling was conducted on the exhaust stack. There were two sampling ports on the exhaust. The test port location was approximately three duct diameters downstream from the nearest disturbance and greater than two diameters from the exit. A twenty point traverse was used to perform the sampling.

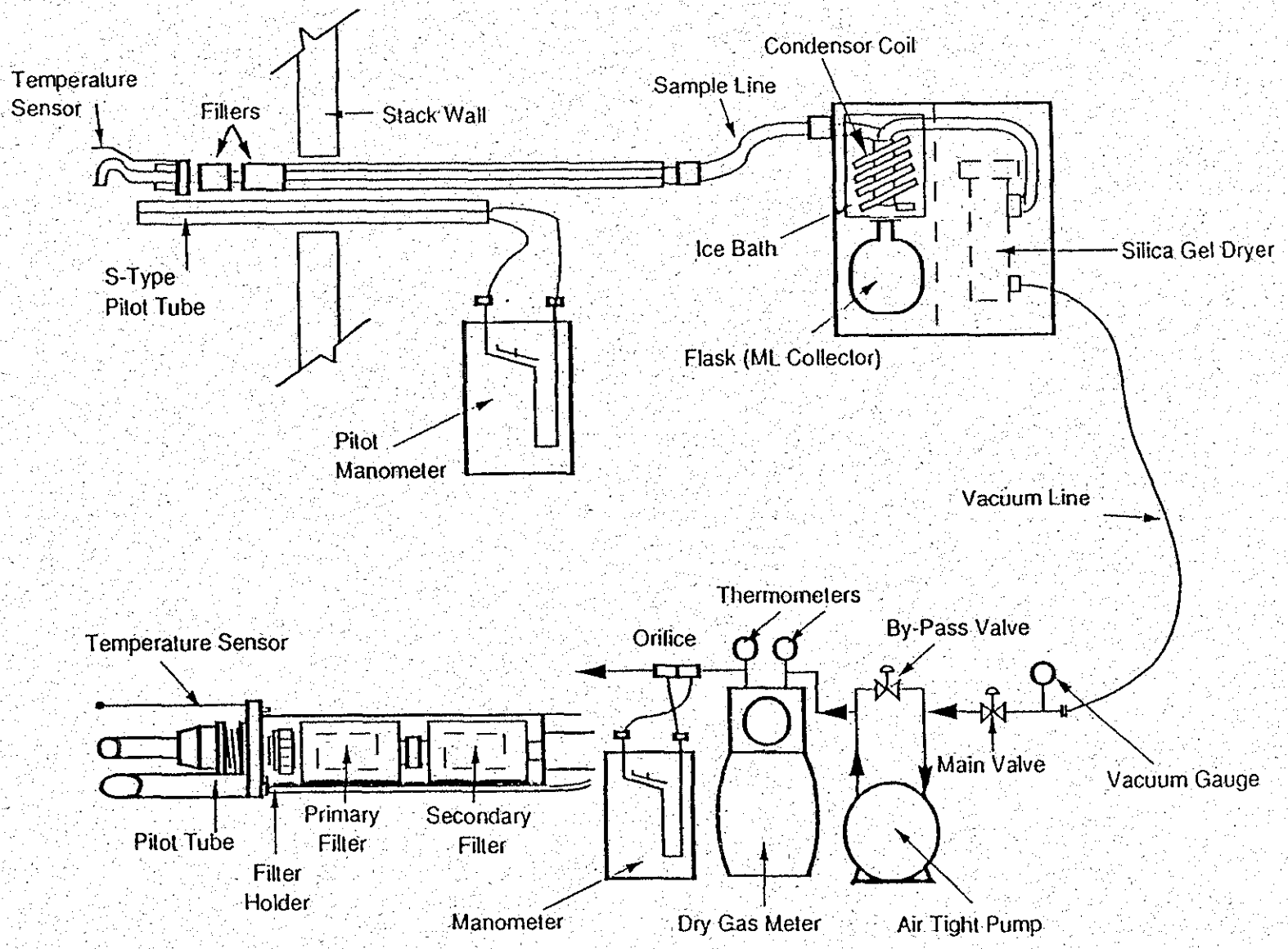
Bags were collected from each sampling train and analyzed for O<sub>2</sub> and CO<sub>2</sub> content by the Orsat method. The moisture was determined from the isokinetic sampling trains. All the quality assurance and quality control procedures listed in the methods were incorporated in the sampling and analysis.

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**Figure 1**  
**Particulate Sampling Train**