

**STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT
UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS
FOR V and M STAR
YOUNGSTOWN, OHIO
PERMIT TO INSTALL (PTI) NUMBER 02-22398**

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are:

- 1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.
- 2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

- 1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.
- 2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.
- 3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

- 1) LAER - New major sources must install controls that represent the lowest emissions levels

(highest control efficiency) that has been achieved in practice.

- 2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

Site Description

The facility is in Youngstown, Ohio, located in Mahoning County. This area is classified as attainment for all of the criteria pollutants.

Facility Description

V and M Star is expanding its steel production operations at the current facility located in Youngstown, Ohio that manufactures seamless steel tubes mainly for the oil and gas industry and are referred to as oil country tubular goods (OCTG). The plant operations include an electric arc furnace (EAF), ladle refining station (LRS), and continuous caster producing round billets and a pipe mill with primary operations being the billet reheat furnace and seamless pipe manufacturing operation. The current production capacity and air permit limitation is 710,000 liquid steel tons per year. V and M Star is requesting to increase that amount to 830,000 and to install a new billet preheat furnace, pipe mill, plasma arc torch and cooling towers.

New Source Review (NSR)/PSD Applicability

This process will generate criteria pollutant emissions of particulate matter (PM) and particulate matter 10 microns and less in diameter (PM10), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), sulfur dioxide (SO₂) and lead (Pb). A PSD analysis is required for any increase in emissions of a pollutant exceeding the PSD threshold emission level, or the significance emission levels. Currently, the V and M Star facility is a major stationary source pursuant to the PSD rules. Therefore, with this requested increase in production of liquid steel, V and M Star will trigger PSD significant emission threshold levels for the following pollutants emitted, PM10, NO_x, and CO.

V and M Star has requested restricted operational limits for some emissions units in the project.

TABLE 1

PRELIMINARY POLLUTANT EMISSION RATES MODIFICATION TO INCREASE EMISSION RATES

Air Pollutant	PTI Increase (tpy)	PSD/NSR Threshold (tpy)
Particulate (PM)	32.93	25
PM10	32.93	15
Volatile Organic Compounds (VOC/OC)	18.98	40
Nitrogen Oxides (NO _x)	98.91	40
Carbon Monoxide (CO)	391.62	100
Sulfur Dioxide (SO ₂)	20.81	100

Lead	0.28	0.6
Mercury	0.17	NA

Control Technology Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology (BACT) will be employed by the source. The V and M Star facility is subject to PSD regulations which mandate a case-by-case BACT analysis be performed for PSD triggering pollutants. The application used a "top-down" approach to determine the latest demonstrated control techniques and select an appropriate control.

BACT Evaluation Steps:

Identify all available potential control options;
Eliminate technically infeasible options;
Rank remaining technologies by control effectiveness;
Evaluate the feasible controls by performance and cost analysis; and
Select the most effective control based on energy, environmental and economic impacts (generally, the feasible technology that is also considered to be cost effective).

Sources Existing:

Electric Arc Furnace (EAF) - Ohio EPA emissions unit P905 - - single shell 134 ton/hr with direct evacuation control (DEC) for capture and a baghouse for control of emissions;

Ladle refining station (LRS) - Ohio EPA emissions unit P906;

Continuous Caster - - Ohio EPA emissions unit F003;

Billet reheat furnace (natural gas fired);

Pipe mill venturi scrubbers (MPM and sizing mill scrubbers) - Ohio EPA emissions unit P002;

Alloy, additives, flux and lime system - - Ohio EPA emissions unit P907;

Cooling tower; and

Fugitive emissions from truck traffic.

Sources new:

New plasma arc torch - - Ohio EPA emissions unit P011; and

Billet preheat furnace (natural gas fired) - - Ohio EPA emissions unit P011.

Technologies Evaluated:

Particulate (PM/PM10)

The following feasible control technologies were evaluated. V and M Star is proposing BACT determinations without conducting a cost effectiveness analysis for each process, except for the billet preheat furnace (natural gas fired).

EAF, LRS Control	Description
Capture by direct furnace evacuation, hood exhaust, roof area exhausts which are combined and directed to a common baghouse.	This was the control option utilized by steel operations in the RBLC. The applicant proposes to increase size of current baghouse size to 1, 000,000 actual cubic feet per minute (acfm) design flow with an outlet grain loading of 0.0018 grains/dry standard cubic feet (dscf) for PM/PM10. Note due to high performance there is very little large particulate passing the filter material and it is assumed that total filterable particulate is equal to the PM10 emissions.
Continuous Caster Control	Description
No alternative control options	Annual PM/PM10 emissions are estimated to 1.45 tons.
Billet reheat furnace (natural gas fired) Control	Description
No change to unit, except to install upgraded low NOx burners	With the installation of the billet preheat furnace (natural gas fired), production of this emissions unit will be decreased by 30 percent. Annual PM/PM10 emissions are estimated to 6.65 tons.
Pipe mill venturi scrubbers (MPM and sizing mill scrubbers) Control	Description
Replace two scrubbers with one and increase the flow and increase the amount of captured emissions.	The two scrubbers had a 0.015 gr/dscf and the new scrubber will have a 0.004 gr/dscf loading value.
Alloy, additives, flux and lime system Control	Description
	PM/PM10 emissions are expected to be minimal from these sources.
Cooling tower Control	Description
	PM/PM10 emissions are expected to be minimal from these sources.
Fugitive emissions from truck traffic Control	PM/PM10 emissions are expected to be minimal from these sources.
New plasma arc torch Control	PM/PM10 emissions are expected to be minimal from these sources
Billet preheat furnace (natural gas fired) Control	Description

Electrostatic precipitator, high efficiency cyclones, high energy scrubber; fabric filter baghouse.	Cost effectiveness analysis of control options listed in the application resulted in \$100,000/ton value and based upon review no similar gas fired furnaces installed controls. Emissions are based upon AP-42 at 3.23 tons per year.
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Nitrogen Oxides (NOx)

The following control technologies were evaluated.

EAF, LRS Controls	Description
SCR, SNCR and flue gas recirculation (FGR)	No listed applicable control in RBLC and based upon numerous investigations with steel process engineers and control technology suppliers.
DEC	The proposed BACT for the EAF is DEC, monitoring of process variables, and good carbon injection foamy slag practices and proper oxy-fuel burner operation with a resulting limit of 0.40 lb of NOx/ton of steel. This is consistent with the most of the lower end RBLC limitations listed for which compliance has been demonstrated.
Continuous Caster Control	Description
No alternative control options	Project increase over current emission levels are estimated to 4.1 tons per year.
Billet reheat furnace (natural gas fired) Control	Description
No change to unit, except to install upgraded low NOx burners	With the installation of the billet preheat furnace (natural gas fired), production of this emissions unit will be decreased by 30 percent and the current performance is 0.15 pound per MMBtu to a guarantee emission performance value of 0.10 pound per MMBtu
Billet preheat furnace (natural gas fired) Control	Description
SCR not technological and economically feasible	BACT is proposed as ultra-low NOx burner technology at 0.07 pound of NOx per MMBtu which results in 30.35 tons per year.

CO

The following control technologies were evaluated.

EAF, LRS Controls	Description
DEC	This is the technology used by sources in the RBLC. The CO limit will be 4.0 pounds/ton of steel, which is the low end of the range of other similar units listed.

Incineration	Particulate fouling would result if installed prior to filtration. The technology is believed to be technically infeasible, due to wide fluctuations in CO levels and potential catalyst poisoning from the process (metal compounds). Incineration has not been applied or successfully demonstrated to reduce CO from EAFs. Due to lack of proven use, secondary NOx and CO from gas combustion and high dollars/ton cost, thermal and catalytic incineration were not considered to be economically feasible.
Billet reheat furnace (natural gas fired) Control	Description
	No alternative add-on controls were identified as effective or available. BACT is proposed as source design characteristic minimizing emissions to 73.5 tons per year. At 75 tons per year would not be cost effective.
Billet preheat furnace (natural gas fired) Control	Description
	Similar analysis to billet reheat furnace, except that resultant emissions are 35.7 tons per year.

Ambient Air Quality Monitoring Requirements

The V and M Star facility is located in AQCR 178 in Mahoning County in Youngstown, Ohio. The area is attainment for all criteria pollutants. U.S. EPA regulations require the establishment of baseline air quality in the vicinity of the proposed project. This is normally accomplished using representative air quality monitoring data. Air quality modeling can be utilized to demonstrate that the project will have less than a threshold impact. This threshold impact is identified as the PSD monitoring de minimus level. If the projected impact from the proposed project exceeds this level, ambient data must be collected or existing representative data must be identified which is representative of the area.

V and M Star has conducted ambient air quality modeling to determine the potential impact due to the proposed installation. Impacts from the proposed installation are below their respective PSD monitoring de minimus levels with the exception of PM10 and CO. Ohio EPA has identified representative PM10 data for use by V and M Star in this project. Therefore, V and M Star would not be required to perform preconstruction or postconstruction monitoring. The following are the projected impacts:

Pollutant	Averaging <u>Period</u>	Modeled Impact	Monitoring <u>De Minimus</u>
PM10	24-hour	23.5 ug/m3	10 ug/m3
CO	8-hour	464 ug/m3	575 ug/m3

Modeling

Air quality dispersion was conducted to assess the effect of this modification on the national ambient

air quality standards (NAAQS) and for the PSD increments. ISCST3 (version 02025) was used in the regulatory default, urban mode. Five years of representative meteorological data (Pittsburgh surface data, Buffalo upper air data, 1987-1991) were used. Building downwash was incorporated into the ISCST3 estimates.

Peak impacts of NOx, 1-hr CO, and 24- hour PM10 were above their respective PSD significant impact levels. Therefore, additional modeling to address NAAQS were necessary. A PSD analysis was conducted for PM10 and NOx.

PSD Increment

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Modeled Impact</u>	<u>PSD Increment</u>
PM10	24-hour	22.96 ug/m3	30 ug/m3
NOx	Annual	0.62 ug/m3	12.5 ug/m3

Ohio EPA’s policy is that no single project should consume more than 50% of the available PSD increment, except in situations where the impact is localized, temporary or as part of a brownfields project. In such cases, the peak constraining concentration can consume up to 83.3% of the PSD increment. In this case, V and M Star’s impact does exceed 50% of the available increment over a limited area but the constraining concentration is below 25 ug/m3.

NAAQS

Existing sources at the facility, existing sources above the PSD significant rates within the V and M Star significant impact area (SIA) and sources greater than 100 tons/yr outside of the SIA are modeled to determine the combined impact of existing and proposed sources. A background value was added to account for minor sources not explicitly included in the modeling.

<u>Pollutant</u>	<u>Averaging Period</u>	<u>Modeled Concentration</u>	<u>NAAQS Concentration</u>	<u>Concentration With Background</u>
NOx	Annual	0.62 ug/m3	100 ug/m3	32.20 ug/m3
PM10	24-hour	28.27 ug/m3	150 ug/m3	92.27 ug/m3
CO	8-hour	1153.55	10,000 ug/m3	3443.55 ug/m3

Toxics Analysis

The Ohio Air Toxics Policy requires evaluation of increases in air toxics above the one ton/year threshold. The applicant has indicated that air toxics will exceed one ton/year, therefore, modeling was conducted. Mercury emissions will be less than one ton/year, and this pollutant is being addressed through Ohio’s Best Available Technology (BAT) requirements.

Mercury

Mercury emissions are generated by any Mercury contained in the scrap steel, which would mainly come from mercury switches in the auto frag scrap. This scrap will only be a portion of the total scrap charged to the furnace, but a worst case assumption is being made for permitting purposes.

It is only feasible to remove mercury switches from old vehicles prior to flattening them at the scrap yard. Some auto junk yards are taking steps to remove mercury switches. Automobile manufactures have

reportedly discontinued the use of mercury switches, so emissions from the EAF due to auto frag scrap are expected to decrease.

The permit will specify that the permittee is to work to obtain scrap with the mercury containing components already removed, whenever possible. The technology for mercury reduction is a combination of using the baghouse and scrap management. An efficient baghouse should remove some percent of the mercury as it does other particulate matter, however a large percent of the mercury emitted from EAFs may occur in vapor form.

In addition, V and M Star's project is subject to 40 CFR Part 63, Subpart YYYYYY which is the area MACT for EAFs.

Secondary Impact Analysis

V and M Star has demonstrated that the predicted pollutant concentrations throughout the study area are below the secondary NAAQS thresholds. The secondary NAAQS are designed to limit the amount of pollutants in the ambient air to levels below those which could have an adverse impact on human welfare, soils and vegetation. The modeling analyses demonstrate that no significant impacts on human welfare, soils or vegetation will occur from the proposed modification.

The V and M Star facility is located approximately 250 kilometers from the closest class I area which is the Dolly Sods Wilderness Area located in West Virginia.

Based on recent communication within the last year with the Federal Land Managers with regard to the Federal Land Managers Air Quality Related Values Workgroup (FLAG) and the following data: 98.91 tons per year of NOx, 32.93 tons per year of PM10, and 20.81 tons per year of SO2 which added together results in 152.65 tons per year of total emission increase over previous levels pursuant to OAC rule 3745-31-01 and the distance from this facility to the Dolly Sods Wilderness Area located in West Virginia would not trigger the need for Class I visibility analysis.

In addition, the primary or secondary pollutants associated with this project are not anticipated to affect local or Class I visibility.

Since this is a modification of an existing major stationary source and the proposed increase in emissions would be small compared to the emissions associated with the original installation and with this increase being below the NAAQS then it is assume that the proposed increase would not have an adverse effect on the area due to growth of the area from the modification.

Conclusions

Based upon the review of the permit to install application and the supporting documentation provided by the applicant (and their consultants), the Ohio EPA staff has determined the installation will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to V and M Star for the installation of the new steel production equipment.

Synthetic Minor Determination and/or Netting Determination

Permit To Install: "02-22398"

A. Source Description

V & M Star, which is located on 2669 Martin Luther King Jr. Blvd. in Youngstown, Ohio, submitted a permit-to-install application to increase the facility's liquid steel production from 710,000 tons per year to 830,000 tons. The proposed increase of liquid steel production will affect the short term and annual limit emissions from the electric arc furnace (P905), ladle refining station (P906), caster (F003), pipe mill (P002), and the alloy, additive and flux handling (P907). To support the liquid steel production increase, the facility will also install a new plasma arc torch (P010) and a natural gas fired billet preheat furnace (P011). The increase of liquid steel production will trigger Prevention of Significant Deterioration (PSD) review for nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter 10 microns in diameter and less (PM10).

B. Facility Emissions and Attainment Status

The facility's 120,000 tons per year increase (830,000 - 710,000 tons) will trigger PSD review for NOx, CO, and PM10. Other criteria pollutant emissions, however, will not trigger PSD review because of the annual liquid steel production limitation of 830,000 tons. The facility is located in Mahoning County. Mahoning County is attainment for particulate matter, PM10, sulfur dioxide, carbon monoxide, ozone, lead, and oxides of nitrogen.

C. Source Emissions

The potential annual emissions of CO, NOx, particulate matter and PM10 from the proposed liquid steel production increase exceed the PSD significant emission increase threshold levels of 100 tons per year, 40 tons per year, and 25 tons per year for the criteria pollutants CO, NOx, and PM10, respectively. The 830,000 tons of liquid steel production per year restriction will restrict the potential annual emissions of the criteria pollutants SO2, VOC (ozone), and Pb to less than applicable PSD emission threshold levels.

D. Conclusion

The proposed new potential emissions, based upon federally enforceable operating restrictions, from the proposed liquid steel production increase are less than the PSD significant emission levels for SO2, VOC, and lead. However, emissions of NOx, CO, particulate matter and PM10 are over the PSD significant emission threshold levels requiring PSD review.



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL
MAHONING COUNTY**

CERTIFIED MAIL

Street Address:

Mailing Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Lazarus Gov.
Center

Application No: 02-22398

Fac ID: 0250110625

DATE: 6/5/2008

V and M Star
Jeff Bindas
2669 Martin Luther King Jr Blvd
Youngstown, OH 44510

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43216-1049.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$9700** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

NEDO

EASTGATE DEV & TRANS STUDY

WV

PA

**PUBLIC NOTICE
OHIO ENVIRONMENTAL PROTECTION AGENCY
ISSUANCE OF DRAFT PERMIT TO INSTALL
SUBJECT TO
PREVENTION OF SIGNIFICANT DETERIORATION REVIEW
TO V and M Star**

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA) has issued, on June 5, 2008, a draft action of Permit to Install (PTI) application number 02-22398 to V and M Star, Youngstown, Ohio. This draft permit proposes to allow the expansion of existing operations and to install new operations in support of the expansion at the facility located at 2669 Martin Luther King, Jr. Boulevard, Youngstown, Ohio, 44510.

Air emissions of several pollutants will result. The proposed allowable criteria pollutant air emission rates which result from net increases at the facility are listed below, in tons per year.

Pollutant	Tons/yr
Particulate	117.34
PM10	117.34
NOx	306.50
CO	1771.00
VOC	74.70
SO2	103.75
Pb	0.87

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21) and the Ohio EPA permit to install requirements (OAC 3745-31).

The U.S. EPA allows sources to consume no more than the maximum available ambient PSD increments for each PSD pollutant. The Ohio EPA allows PSD sources to consume no more than one half the available increment, with some exceptions. The PM10 impact of this source is above one half of the increment, but the areal extent is localized. This facility has demonstrated that the impact from the new source is less than the available increment. Based on this analysis, the project complies with both the federal and state increment requirements for PM10.

There are no PSD increments for CO and Pb. For these pollutants, Ohio EPA only allows a source to have impacts up to one quarter of the National Ambient Air Quality Standards. Based on this analysis, the project complies with this requirement for CO and Pb.

A draft action (permit no. 02-22398) was issued on June 5, 2008. Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Ed Perez, Ohio Environmental Protection Agency, Northeast District Office, Division of Air Pollution Control, 2110 East Aurora Road Twinsburg, Ohio 44087.

Further information concerning this application, which is available for public inspection, may be secured from Ohio Environmental Protection Agency, Northeast District Office at the above address

during normal business hours. Telephone number: (330) 425-9171.



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 02-22398

Application Number: 02-22398
Facility ID: 0250110625
Permit Fee: **To be entered upon final issuance**
Name of Facility: V and M Star
Person to Contact: Jeff Bindas
Address: 2669 Martin Luther King Jr Blvd
Youngstown, OH 44510

Location of proposed air contaminant source(s) [emissions unit(s)]:
**2669 Martin Luther King Jr Blvd
Youngstown, Ohio**

Description of proposed emissions unit(s):
Modification to increase steel production.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski
Director

V and M Star

Facility ID: 0250110625

PTI Application: 02-22398

Issued: To be entered upon final issuance

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - i. The date, place (as defined in the permit), and time of sampling or measurements.
 - ii. The date(s) analyses were performed.
 - iii. The company or entity that performed the analyses.
 - iv. The analytical techniques or methods used.
 - v. The results of such analyses.
 - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
 - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written

V and M Star**Facility ID: 0250110625****PTI Application: 02-22398****Issued: To be entered upon final issuance**

reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain,

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the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

V and M Star**Facility ID: 0250110625****PTI Application: 02-22398****Issued: To be entered upon final issuance****7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

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Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of

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the Ohio EPA. Progress reports shall contain the following:

- i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
- ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit-To-Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

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The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of

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the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

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If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
NOx	306.5
CO	1771
PM/PM10	117.34
SO2	103.75
VOC	74.7
Pb	0.87

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Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

- 1. The following emissions units (EU) are also being installed as part of this project:

EU	BACT	Emissions
(2) multiple-cell wet mechanical draft cooling towers	drift eliminators	0.57 TPY of PM/PM10
Roadways	dust suppression	0.95 TPY of PM/PM10

- 2. The following emissions units contained in this permit are subject to MACT Subpart YYYYY: P905. The complete MACT requirements, including the MACT General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the appropriate Ohio EPA District office or local air agency.

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (F003) - Continuous caster (linked emissions unit with new steel production limitation 830,000 tons per year)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-17-07(B)(1)	See Section A.2.b below.
OAC rule 3745-17-08(B)	See Section A.2.c below.
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	PM/PM10 emissions shall not exceed 0.07 lb per ton of liquid steel production, 0.5 lbs/hour and 1.5 tons/year based upon a rolling 12-month summation. NOx emissions shall not exceed 0.05 lb per ton of liquid steel production, 6.7 lbs/hour and 20.8 tons/year based upon a rolling 12-month summation. See Section A.2.d below.
OAC rule 3745-31-05(C)	PE/PM10 emissions shall not exceed 1.5 tons/year. See term A.2.f.
OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru for 20 for NOx.

2. Additional Terms and Conditions

- 2.a The requirement of this Permit to Install supercedes the requirements of PTI No. 02-20393 issued on May 5, 2005.
- 2.b Visible particulate emissions of fugitive dust shall not exceed twenty percent opacity as a three-minute average. For purposes of verifying compliance with this requirement, the visible particulate emissions shall be observed at any non-stack egress point from the building housing this emissions unit. These egress points shall include, but not be limited to, doorways, windows, and roof monitors.
- 2.c The permittee shall minimize or eliminate visible fugitive particulate emissions

Emissions Unit ID: F003

through the employment of reasonably available control measures (RACM).

At a minimum, the permittee's employment of RACM shall include: the use of a ladle cover/mechanical shrouding between the ladle and the tundish and between the tundish and the mold.

- 2.d** Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the source design characteristics with shrouding of the liquid pour stream and continuous caster design constitute BACT for this emissions unit. No alternative add-on emission controls are identified for the continuous caster. The emission limitations based on the BACT requirements are listed under OAC rule 3745-31-(10) thru (20) above.
- 2.e** The hourly emission limitations listed in term A.1 are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting requirements of those limitations are necessary.
- 2.f** Permit to install 02-22398 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purposes of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(5);
 - i. the annual liquid steel production of 830,000 tons per year.

II. Operational Restrictions

- 1. The permittee shall restrict the annual liquid steel production to 830,000 tons per year, based upon a rolling 12-month summation of the production rates. This is an existing emissions unit which has existing records of the amount of liquid steel production and therefore does not need to be restricted on a monthly basis.

III. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall maintain monthly records of the following information:
 - a. the liquid steel production rate for each month;
 - b. the rolling, 12-month summation of the liquid steel production rates; and
 - c. the rolling, 12-month summation of the PM, PM10 and NOx.
- 2. The permittee shall perform monthly inspections on the mechanical shrouding between the ladle and the tundish and between the tundish and the mold to ensure that they are in good operating condition.

Emissions Unit ID: F003

3. The permittee shall perform daily checks when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from any egress point (e.g., windows, doors, roof monitors, etc.) associated with this emissions unit. The presence or absence of any visible fugitive particulate emissions shall be noted in an operations log. If visible fugitive particulate emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible fugitive particulate emission incident; and
 - e. any corrective actions taken to eliminate the visible fugitive particulate emissions.

Notwithstanding the frequency of reporting requirements specified in section A.IV, the permittee may reduce the frequency of visual observations for this emissions unit from daily to weekly if the following conditions are met:

- f. for 1 full quarter this emissions unit's visual observations indicate no visible emissions; and
- g. the permittee continues to comply with all the record keeping and monitoring requirements specified above.

The permittee shall revert to daily readings for this emissions unit if visible emissions are observed. The permittee may again reduce the frequency of visible emissions observations from daily to weekly after obtaining 1 full quarter of observations with no visible emissions for this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month liquid steel production rate and the PM/PM10 and NOx emission limitations listed in term A.1 under 40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20.
2. The permittee shall submit deviation (excursion) reports that identify all monthly inspections of the mechanical shrouding between the ladle and the tundish and between the tundish and the mold that indicate they were not in good operating condition and summarize any corrective action taken.
3. The permittee shall submit semiannual written reports which:
 - a. identify all days during which any visible fugitive particulate emissions were

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observed from any egress point serving this emissions unit; and

- b. describe any corrective actions taken to eliminate the visible fugitive particulate emissions.

These reports shall be submitted by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

- 1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.5 pound per hour.

Applicable Compliance Method:

To determine the hourly particulate emission rate for the continuous caster the following equation may be used:

$$E = (A)(B)(1-C)$$

where:

E = particulate emissions (lb/hr)

A = 0.07 pound of PE/PM10/ton of steel emission produced factor (AP-42 Section 12.5, Table 12.5-1, Teeming Unleaded Steel, Iron and Steel Production, 10/86).

B = maximum hourly production, 134 tons/hr.

C = control efficiency for mechanical shrouding, 95%.

If required by the Ohio EPA, compliance with the particulate emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 5.

- 2. Emission Limitations:

PE/PM10 emissions shall not exceed 1.5 tons per year.

PM/PM10 emissions shall not exceed 1.5 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

Emissions Unit ID: F003

To determine the annual particulate emissions rate for the continuous caster the following equation shall be used:

$$E = (A)(B)(1-C)/D$$

where:

- A = annual liquid steel produced based upon the record keeping requirements specified in section A.III.1 above, in tons/year.
- B = 0.07 pound of PE/PM10/ton of steel produced emission factor (AP-42 Section 12.5, Table 12.5-1, Teeming Unleaded Steel, Iron and Steel Production, 10/86).

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C = control efficiency for mechanical shrouding, 95%.

D = 2000 lbs/ton.

3. Emission Limitation:

NOx shall not exceed 6.7 pounds per hour.

Applicable Compliance Method:

To determine the hourly NOx emission rate for the continuous caster the following equation may be used:

$$E = (A)(B)$$

$$E = (\text{tons of steel/hour}) (0.05 \text{ pound of NOx/ton steel})$$

where:

E = NOx emissions (lb/hr).

A = 0.05 pound of NOx/ton of steel produced emission factor (emission factor provided by permittee in PTI# 02-20393 application).

B = maximum hourly production, 134 tons/hr.

If required by the Ohio EPA, compliance with the NOx emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 7 or 7E.

4. Emission Limitations:

NOx emissions shall not exceed 20.75 tons per year.

NOx emissions shall not exceed 20.75 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual NOx emissions rate for the continuous caster the following equation shall be used:

$$E = (A)(B)/C$$

$$E = (\text{tons of steel/year}) (0.05 \text{ pound of NOx/ton steel}) (1 \text{ ton}/2000 \text{ pounds})$$

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where:

E = NO_x emissions (tons/yr).

A = 0.05 pound of NO_x/ton of steel produced emission factor (emission factor provided by permittee in PTI# 02-20393 application).

B = annual liquid steel produced based upon the record keeping requirements specified in section A.III.1. above, in tons/year.

C = 2000 lbs/ton.

5. Emission Limitation:

Fugitive visible emissions shall not exceed twenty percent opacity, as a three-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for the operation(s) identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (F003) - Continuous caster (linked emissions unit with new steel production limitation 830,000 tons per year)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P001) - natural gas fired billet reheat furnace rated at 350 MMBtu/hr with low NOx burner

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru for 20 for NOx and CO.
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM10 emissions shall not exceed 2.2 lbs/hour and 6.7 tons/year based upon a rolling 12-month summation.</p> <p>NOx emissions shall not exceed 0.10 lb/MMBtu, 29 lbs/hour, and 89.3 tons/year based upon a rolling 12-month summation.</p> <p>CO emissions shall not exceed 23.9 lbs/hour and 73.5 tons/yr based upon a rolling 12-month summation.</p> <p>See Section A.2.a below.</p>
OAC 3745-17-11	See Section A.2.b below.
OAC 3745-17-10	See Section A.2.c below.
OAC rule 3745-21-08	See Section A.2.d below.
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.e below.

2. Additional Terms and Conditions

- 2.a Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of natural gas as fuel, good combustion practices, new ultra-low NOx burner technology, acceptance of a PE/PM10 limitation of 7.6

Emissions Unit ID: P001

lb/MMcf, acceptance of CO limitation of 84 lb/MMcf, and acceptance of NOx limitation of 0.10 lb/MMBtu constitute BACT for this emissions unit. The emission limitations are based on the BACT requirements listed under OAC rule 3745-31-(10) thru (20) above.

- 2.b** The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not apply because the process weight, as defined in OAC rule 3745-17-01(B)(14), is equal to zero.
- 2.c** The burning of fuel in this unit is for the primary purpose of producing heat in which the products of combustion come into direct contact with materials being processed. It is, therefore, exempt from emission limitations and control requirements contained in OAC rule 3745-17-10.
- 2.d** The permittee shall satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the uncontrolled PE/PM10, SO2, and VOC emissions from this air contaminant source since the potential to emit for PE/PM10, SO2, and VOC is less than ten tons per year.
- 2.f** The hourly emission limitations listed in term A.1 are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting requirements of those limitations are necessary.

II. Operational Restrictions

1. The permittee shall use only natural gas as fuel for this emissions unit.
2. The permittee shall not exceed natural gas usage of 1750 MMcf per year, based upon a rolling 12-month summation. This is an existing emissions unit which has existing

Emissions Unit ID: P001

records of the amount of natural gas usage and therefore does not need to be restricted on a monthly basis.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type, quantity, and quality of fuel burned in this emissions unit.
2. The permittee shall maintain monthly records of the following information:
 - a. the quantity of natural gas burned in this emissions unit in MMcf for each calendar month; and
 - b. the rolling, 12-month summation of the natural gas usage in MMcf and PM/PM10, NOx, and CO emissions.
 - c. the rolling, 12-month summation of the PM/PM10, NOx, and CO emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of:
 - a. the rolling, 12-month natural gas usage limitation for this emissions unit in section A.II.2 of these terms and conditions.; and
 - b. the rolling, 12-month and PM/PM10, NOx, and CO emission limitations for this emissions unit in section A.I.1.

V. Testing Requirements

1. Emission Limitation:

NOx emissions shall not exceed 0.10 lb/MMBtu.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.8.

2. Emission Limitation:

NOx emissions shall not exceed 29 lbs/hour.

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Applicable Compliance Method:

Compliance with the NOx emission limitation shall be determined by multiplying the most recent compliance test result (lb/MMBtu) by the maximum heat input of 290 MMBtu/hr.

3. Emission Limitation:

NOx emissions shall not exceed 89.3 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual NOx emission rate from burning natural gas, the following equation shall be used:

$$E = (A)(B)(C) / D$$

where:

E = annual NOx emissions, in tons per year.

A = most recent compliance stack emissions test result (lb/MMBtu).

B = natural gas heat content, 1020 Btu/scf.

C = annual natural gas usage based upon the record keeping requirements specified in section A.III.2 of this permit, in MMcf/yr.

D = 2000 lbs/ton.

4. Emission Limitation:

CO emissions shall not exceed 23.9 lbs/hour.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 10.

5. Emission Limitation:

CO emissions shall not exceed 73.5 tons per year based upon a rolling 12-month summation.

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Applicable Compliance Method:

Compliance with the annual CO emission limitation shall be determined by multiplying the emission factor of 84 lbs/MMscf (from AP-42, Table 1.4-1, 7/98 version) by the annual natural gas fuel usage (MMscf), and dividing by 2,000 lbs/ton. The annual natural gas fuel usage should be based upon the record keeping requirements specified in section A.III.2 of this permit.

6. Emission Limitation:

PM/PM10 emissions shall not exceed 2.2 lbs per hour.

Applicable Compliance Method:

To determine the particulate emission rate from burning natural gas, the following equation shall be used:

$$E = (A)(B)$$

where:

E = particulate emission rate from burning natural gas, in lb/hr.

A = 7.6 lbs/MMscf, emission factor for total particulate material from burning natural gas from AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2, 7/98.

B = 0.284 MMscf/hr, the maximum natural gas used in this emissions unit in an hour.

7. Emission Limitation:

PM/PM10 emissions shall not exceed 6.7 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual particulate emission rate for this emissions unit, the following equation shall be used:

$$E = (A)(B)/C$$

where:

Emissions Unit ID: P001

- E = annual PM/PM10 emissions.
- A = annual natural gas usage based upon the record keeping requirements specified in section A.III.2 of this permit, MMcf/yr.
- B = 7.6 lbs/MMcf, natural gas combustion AP-42 emission factor (Section 1.4, Table 1.4-2, version 7/98).
- C = 2000 lbs/ton.

8. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emission testing shall be conducted within 3 months after startup of this emissions unit.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PM, NO_x, and CO.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):
 - PM - Method 5 of 40 CFR Part 60, Appendix A.
 - NO_x - Method 7, 7E of 40 CFR Part 60, Appendix A.
 - CO - Method 10 of 40 CFR Part 60, Appendix A.
 - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following

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completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P001) - natural gas fired billet reheat furnace rated at 350 MMBtu/hr with low NOx burner

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P002) - MPM and sizing seamless pipe mill with venturi scrubber

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru for 20, OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1), and OAC rule 3745-17-08(B).
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	PM/PM10 emissions shall not exceed 0.004 grains/dscf, 11.3 lbs/hour, and 49.4 tons/year based upon a rolling 12-month summation. See Section A.2.a and A.2.d below.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the stack shall not exceed twenty-percent opacity, as a six-minute average, except as provided by the rule.
OAC rule 3745-17-07(B)(1)	See Section A.2.b below.
OAC rule 3745-17-08(B)	See Section A.2.c below.
OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.

2. Additional Terms and Conditions

- 2.a Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of venturi scrubber with an emission limitation of 0.004 gr/dscf of exhaust gases constitute BACT for this emissions unit. The emission limitations based on the BACT requirements are listed under OAC rule

Emissions Unit ID: P002

3745-31-(10) thru (20) above.

- 2.b** Visible particulate emissions of fugitive dust shall not exceed 20% opacity as a three-minute average. For purposes of verifying compliance with this requirement, the visible particulate emissions shall be observed at any non-stack egress point from the building housing this emissions unit. These egress points shall include, but not be limited to, doorways, windows, and roof monitors.
- 2.c** The permittee shall minimize or eliminate visible fugitive particulate emissions through the employment of reasonably available control measures (RACM). These measures shall include, but not be limited to, the following:
- i. the installation and use of hoods, fan, and other equipment to adequately enclose, contain, capture, and vent the fugitive dust to the venturi scrubbers; and,
 - ii. maintaining a collection efficiency that is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.
- 2.d** The hourly and annual emission limitations are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting requirements of those limitations are necessary.

II. Operational Restrictions

1. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.

III. Monitoring and/or Recordkeeping Requirements

1. In order to maintain compliance with the applicable emission limitations contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the scrubber liquid flow rate, and amperage of the fan motor associated with the venturi scrubber shall be based upon the manufacturer's specifications until such time as any required emission testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
2. The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the amperage of the fan motor (in amps) during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's flow rate on a once per shift basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's

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recommendations, instructions, and operating manual(s).

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) specified in this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop and flow rate readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These range(s) and/or limit(s) for the pressure drop and liquid flow rate are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA, Northeast District Office. The permittee may request revisions to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by

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means of a once per shift.

3. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

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- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

- 4. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from any egress point (e.g., windows, doors, roof monitors, etc.) associated with this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

Emissions Unit ID: P002

1. The permittee shall submit quarterly reports that identify the following information concerning the operation of the wet scrubber during the operation of the controlled emissions unit(s):
 - a. each period of time when the pressure drop across the scrubber, liquid flow rate, and/or the fan motor amps was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
 - b. an identification of each incident of deviation described in "a" (above) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in "a" where prompt corrective action, that would bring the pressure drop, liquid flow rate, and/or the fan motor amps into compliance with the acceptable range or limit, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in "a" where proper records were not maintained for the investigation and/or the corrective action(s).

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit semiannual written reports that (a) identify all weeks during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate any visible particulate emissions. These reports shall be submitted to the Ohio EPA, Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit semiannual written reports that (a) identify all weeks during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible fugitive particulate emissions. These reports shall be submitted to the Ohio EPA, Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.004 grains per dry standard cubic foot of exhaust gases.

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Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.5.

2. Emission Limitation:

PM/PM10 emissions shall not exceed 11.3 pounds per hour.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.5.

3. Emission Limitation:

PM/PM10 emissions shall not exceed 49.4 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

The annual PM/PM10 emission limitation was developed by multiplying the short-term allowable PM/PM10 emission limitation (11.3 lbs/hour) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance shall also be shown with the annual emission limitation.

4. Emission Limitation:

20% opacity of visible emissions as a 6-minute average

Applicable Compliance Method:

Compliance with the visible emission limitation shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(1) of OAC rule 3745-17-03.

5. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted within 3 months after startup of this emissions unit.

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- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for particulates.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

PM - Method 5 of 40 CFR Part 60, Appendix A
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P002) - MPM and sizing seamless pipe mill with venturi scrubber

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P010) - Plasma arc torch equipped with a pulse jet fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	See Section A.2.c below.
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	PM/PM10 emissions shall not exceed 0.01 gr/dscf, 0.16 lb/hour and 0.71 ton per year based upon a 12-month rolling summation. See Sections A.2.a and 2.d below.
OAC rule 3745-17-07(A)(1)	Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a three-minute average, except as provided by rule.
OAC rule 3745-17-08(B)	See Section A.2.b below.
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.

2. Additional Terms and Conditions

- 2.a Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of fabric filter baghouse with a guaranteed maximum outlet gain loading of 0.01 gr/dscf constitutes BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-(10) thru (20) above.
- 2.b The collection efficiency must be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent

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possible with good engineering design.

- 2.c** Permit to install 02-22398 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purposes of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(5);
- i. the annual liquid steel production of 830,000 tons per year; and
 - ii. fabric filter baghouse for PM/PM10.
- 2.d** The hourly and annual emission limitations are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting requirements of those limitations are necessary.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the pressure drop across the plasma arc torch baghouse while the emissions unit is in operation. The monitoring equipment shall be installed calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse once per week.

A pressure drop of 8 to 13 inches of water shall be maintained while the emissions unit is in operation.

This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

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- a. the color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emission incident; and
- e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from any egress point (e.g., windows, doors, roof monitors, etc.) associated with this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the

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emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly reports to the Ohio EPA, Northeast District Office that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pressure drop across the baghouse was outside of the range specified by the permit;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

2. The permittee shall submit semiannual written reports that (a) identify all weeks during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate any visible particulate emissions. These reports shall be submitted to the Ohio EPA, Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit semiannual written reports that (a) identify all weeks during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible fugitive particulate emissions. These reports shall be submitted to the Ohio EPA, Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.01 grain per dry standard cubic foot of exhaust gases

Applicable Compliance Method:

If required, emission tests shall be performed in accordance with 40 CFR Part 60, Appendix A, Method 1-5 and the procedures specified in OAC rule 3745-17-03 (B)(1).

2. Emission Limitation:

PM/PM10 emissions shall not exceed 0.16 lb per hour.

Applicable Compliance Method:

Compliance shall be determined by using the following equation:

$$E = (A)(B)(C)/(D)$$

where:

- E= PM/PM10 hourly emission rate, in pounds.
- A= maximum outlet grain loading, 0.01 gr/dscf.
- B= maximum baghouse flow rate, 1,900 dcsfm
- C= 60 minutes/hr
- D = 7000 grains/lb

3. Emission Limitation:

PM/PM10 emissions shall not exceed 0.71 ton per year based upon a rolling 12-month summation.

Applicable Compliance Method:

The annual PM/PM10 emission limitation was developed by multiplying the short-term allowable PM/PM10 emission limitation (0.16 lb/hour) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance shall also be shown with the annual emission limitation.

4. Emission Limitation:

20% opacity of visible emissions as a 6-minute average

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Applicable Compliance Method:

Compliance with the visible emission limitation shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(1) of OAC rule 3745-17-03.

5. Emission Limitation:

Visible emissions of fugitive dust shall not exceed 20% opacity as a three-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P010) - Plasma arc torch equipped with a pulse jet fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P011) - natural gas fired billet preheat furnace rated at 190MMBtu/hr with low-NOx burner

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru for 20 for NOx and CO and OAC rule 3745-21-08.
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM10 emissions shall not exceed 1.3 lbs/hour and 3.2 tons/year based upon a rolling 12-month summation.</p> <p>NOx emissions shall not exceed 0.07 lb/MMBtu, 12.6 lbs/hour, and 30.4 tons/year based upon 12-month rolling summation.</p> <p>CO emissions shall not exceed 14.8 lbs/hour and 37.5 tons/yr based upon a rolling 12-month summation.</p> <p>See Section A.2.a and A.2.f below.</p>
OAC 3745-17-11	See Section A.2.b below.
OAC 3745-17-10	See Section A.2.c below.
OAC rule 3745-21-08	See Section A.2.d below.
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.e below.

2. Additional Terms and Conditions

- 2.a Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of natural gas as fuel, good combustion practices, new ultra-low NOx burner technology, acceptance of a PM/PM10 limitation of 7.6

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lb/MMcf, acceptance of CO limitation of 84 lb/MMcf, and acceptance of NOx limitation of 0.07 lb/MMBtu constitute BACT for this emission unit. The emission limitations based on the BACT requirements are listed under OAC rule 3745-31-(10) thru (20) above.

- 2.b** The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not apply because the process weight, as defined in OAC rule 3745-17-01(B)(14), is equal to zero.
- 2.c** The burning of fuel in this unit is for the primary purpose of producing heat in which the products of combustion come into direct contact with materials being processed. It is, therefore, exempt from emissions limitations and control requirements contained in OAC rule 3745-17-10.
- 2.d** The permittee shall satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.
- On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the uncontrolled PM/PM10, SO2, and VOC emissions from this air contaminant source since the potential to emit for PE/PM10, SO2, and VOC is less than ten tons per year.
- 2.f** The hourly emission limitations are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting requirements of those limitations are necessary.

II. Operational Restrictions

1. The permittee shall use only natural gas as fuel for this emissions unit.
2. To ensure enforceability during the first twelve months of operation following start-up, the permittee shall not exceed the following natural gas fuel usage limitations.

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Month	Natural Gas Usage in MMcf/month
1	70.83
1-2	141.67
1-3	212.50
1-4	283.33
1-5	354.17
1-6	425
1-7	495.83
1-8	566.67
1-9	637.50
1-10	708.33
1-11	779.16
1-12	850

After the first twelve months of operation following start-up, the permittee shall restrict the natural gas fuel usage to 850 MMcf per year, based upon a rolling 12-month summation.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type, quantity, and quality of fuel burned in this emissions unit.
2. The permittee shall maintain monthly records of the following information:
 - a. the quantity of natural gas burned in this emissions unit for each calendar month;
 - b. beginning after the first twelve calendar months of operation following start-up, the rolling, 12-month summation of the natural gas usage in MMcf and PM/PM10, NOx, and CO emissions; and
 - d. beginning after the first twelve calendar months of operation following start-up, the rolling, 12-month summation of the natural gas usage.

Also, during the first twelve calendar months of operation following start-up, the permittee shall record the cumulative natural gas usage for each calendar month.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage and PM/PM10, NOx, and CO emissions and, for the first 12 calendar months following start-up, all exceedances of the allowable cumulative natural gas usage for this emissions unit in section A.II.2 of these terms and conditions.

V. Testing Requirements

1. Emission Limitation:

NOx emissions shall not exceed 0.07 lb/MMBtu.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.8.

2. Emission Limitation:

NOx emissions shall not exceed 12.6 lbs/hour.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.8.

3. Emission Limitation:

NOx emissions shall not exceed 30.4 tons per year based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual NOx emission rate from burning natural gas, the following equation shall be used:

$$E = (A)(B)(C)/2000 \text{ lbs}$$

where:

E = annual NOx emissions, in tons per year.

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- A = emission factor based on the most recent compliance stack emissions test result (lb/MMBtu).
- B = natural gas heat content, 1020 Btu/scf.
- C = annual natural gas usage based upon the record keeping requirements specified in section A.III.2 of this permit, in MMcf/year.

4. Emission Limitation:

CO emissions shall not exceed 14.8 lbs/hour.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 10.

5. Emission Limitation:

CO emissions shall not exceed 37.5 tons per year.

Applicable Compliance Method:

Compliance with the annual CO emission limitation shall be determined by multiplying the emission factor of 84 lbs/MMscf (from AP-42, Table 1.4-1, 7/98 version) by the annual natural gas fuel usage (MMscf), and dividing by 2,000 lbs/ton. The annual natural gas fuel usage should be based upon the record keeping requirements specified in section A.III.2 of this permit.

6. Emission Limitation:

PM/PM10 emissions shall not exceed 1.3 lbs per hour.

Applicable Compliance Method:

To determine the particulate emission rate from burning natural gas, the following equation shall be used:

$$E = (A)(B)$$

where:

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- E = particulate emission rate from burning natural gas, in lb/hr;
- A = 7.6 lbs/MMscf, emission factor for total particulate material from burning natural gas from AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2, 7/98.
- B = 0.176 MMscf/hr, the maximum usage rate of natural gas in this emissions unit.

7. Emission Limitation:

PM/PM10 emissions shall not exceed 3.2 tons per year.

Applicable Compliance Method:

To determine the annual particulate emission rate for this emissions unit, the following equation shall be used:

$$E = (A)(B)/C$$

where:

- E = annual PE/PM10 emissions.
- A = annual natural gas usage based upon the record keeping requirements specified in section A.III.2 of this permit, MMcf/year.
- B = 7.6 lb/MMcf, Natural gas combustion AP-42 emissions factor (Section 1.4, Table 1.4-2, version 7/98).
- C = 2000 lbs/ton.

8. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted within 3 months after startup of this emissions unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PM, NO_x, & CO.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

PM - Method 5 of 40 CFR Part 60, Appendix A

NO_x - Method 7 , 7E of 40 CFR Part 60, Appendix A

CO - Method 10 of 40 CFR Part 60, Appendix A

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- d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P011) - natural gas fired billet preheat furnace rated at 190MMBtu/hr with low-NOx burner

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P905) - Single shell AC electric arc furnace (EAF) with roof canopy hood fume collection/direct evacuation control system and a 820,000 dscfm fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>SO₂ emissions shall not exceed 33.5 lbs/hour for emissions units P905 and P906 combined.</p> <p>VOC emissions shall not exceed 24.12 lbs/hour for emissions units P905 and P906 combined .</p> <p>See Section A.I.2.d, A.I.2.e, and A.I.i below.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07 and the VE limitations specified in 40 CFR Part 60, Subpart AAa.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru 20 for PM/PM₁₀, NO_x, and CO and OAC rule 3745-31-05 (C) for SO₂ and VOC.</p>
OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.
OAC rule 3745-17-07(A)(1) & (B)(3)	The visible emission limitations specified by these rules are less stringent than the visible emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.
OAC rule 3745-17-08	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

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OAC rule 3745-18-06	The SO ₂ emission limitation specified by this rule is less stringent than the SO ₂ emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-07	See Section A.2.b below.
OAC rule 3745-21-08	See Section A.2.b below.
40 CFR Part 60, Subpart AAa	<p>Visible particulate emissions from the baghouse shall not exhibit three (3) per cent opacity or greater as a six-minute average.</p> <p>Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) per cent opacity or greater as a six-minute average.</p> <p>The mass emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20</p>
OAC rule 3745-31-05 (C)	<p>SO₂ emissions shall not exceed 103.8 tons per rolling 12-month period for emissions units P905 and P906 combined.</p> <p>VOC emissions shall not exceed 74.7 tons per rolling 12-month for emissions units P905 and P906 combined period.</p> <p>Pb emissions shall not exceed 0.97 ton per rolling 12-month for emissions units P905 and P906 combined period.</p>
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM₁₀ emissions shall not exceed 0.0018 gr/dscf, 14.10 lbs/hr and 55.5 tons per year for emissions units P905 and P906 combined (includes stack and fugitive emissions) based upon a rolling 12-month summation.</p> <p>NO_x emissions shall not exceed 53.6 lbs/hr and 166 tons per year for emissions units P905 and P906 combined based upon a rolling 12-month summation.</p> <p>CO emissions shall not exceed 536 lbs/hr and 1660 tons per year for emissions units P905 and P906 combined based upon a rolling 12-month summation.</p> <p>See Section A.2.c below.</p>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.h below.

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<p>40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 -10692)</p> <p>[In accordance with 40 CFR 63.10680(a) and (b)(1), this emissions unit is an electric arc furnace (EAF) that is an area source of hazardous air pollutants (HAPs) and commenced construction on or before September 30, 2008.]</p>	<p>You must achieve compliance with the applicable provisions of 40 CFR Part 63, Subpart YYYYYY by no later than June 30, 2008.</p> <p>You must achieve compliance with opacity limit in 40 CFR Part 63.10686(b)(2) or (c)(2) by no later than December 28, 2010.</p>
<p>40 CFR 63.1-16 (40 CFR 63.10690)</p>	<p>Table 1 to Subpart YYYYYY of 40 CFR Part 63 - Applicability of General Provisions to Subpart YYYYYY shows which parts of the General Provisions in 40 CFR 63.1-16 apply.</p>

2. Additional Terms and Conditions

- 2.a** The requirement of this Permit to Install supercedes the requirements of PTI No. 02-20393 issued on May 5, 2005.
- 2.b** The permit has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-07 and 3745-21-08, respectively, by committing to comply with the best available technology requirements established in permit to install 02-22398.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

- 2.c** Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of direct-shell evacuation control system (DEC system), good furnace melting practices and proper operation of the EAC oxy-fuel burners, acceptance of a PE limitation of 0.0018 gr/dscf, acceptance of a NOx limitation of 0.40 lb/ton of steel, and acceptance of a CO limitation of 4.0

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lbs/ton of steel produced constitute BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-(10) thru (20) above.

- 2.d** The electric arc furnace shall be installed with a roof canopy hood fume collection system in addition to a direct evacuation control (DEC) system. These systems shall be capable of capturing a minimum of 99 percent of the generated emissions of particulate from the air contaminant source operation including charging, melting, refining, and tapping periods in the steel making cycle.
- 2.e** Particulate emissions captured by the fume collection systems for the electric arc furnace shall be exhausted to the existing EAF/LTS fabric filter control device.
- 2.f** The permittee shall follow the "Scrap Management Program" that was submitted to Ohio EPA, Northeast District Office (NEDO) and that was developed to minimize the use of scrap that contains extraneous materials such as oiled steel, pipes with residues and coatings, enameled materials, transmissions, shock absorbers, tinned materials, rubber, concrete, dirt, or wood that may contaminate the scrap charged into the EAF. The "Scrap Management Program" shall be viewed as part of the operational requirements for the EAF permit. Any change to the "Scrap Management Program" that would increase the amounts of these compounds in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by the NEDO.
- 2.g** The values for either the fan motor amperes and damper position for each operating fan or the volumetric flow rate through each separately ducted hood, as determined during the most recent visible particulate emission compliance demonstration, shall be maintained at all times when the EAF is operating (40 CFR Part 60.274a(c)).
- 2.h** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead (Pb) emissions from emissions units P905 and P906, combined, since the uncontrolled potential to emit for Pb is less than ten tons per year.
- 2.i** The scrap metals processed in this emissions unit is restricted to only those materials that comply with the scrap acquisition and inspection plan described in term A.III.7.

II. Operational Restrictions

1. The permittee shall restrict the annual liquid steel production to 830,000 tons per year, based upon a rolling 12-month summation of the production rates. This is an existing emissions unit which has existing records of the amount liquid steel production and therefore does not need to be restricted on a monthly basis.

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2. See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 -10692).

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:
 - a. the hours of operation for each calendar month;
 - b. the liquid steel production rate for each calendar month;
 - c. the rolling, 12-month summation of the hours of operation; and
 - d. the rolling, 12-month summation of the liquid steel production rates.
 - e. the rolling, 12-month summation of the PM, PM10, VOC, CO, SO₂, NO_x and Pb emissions.
2. Visible particulate emissions observations of the EAF/LRS multiple-stack positive-pressure fabric filter shall occur at least once per day of operation. Observations shall occur when the EAF is operating in the melting and refining phase of a heat cycle. Additional observations shall be made during the electric arc heating phase of the LRS processing cycle. These observations shall be taken in accordance with Method 9 of 40 CFR Part 60, Appendix A, and shall include at least three six-minute periods during EAF melting and refining and at least one six-minute period of the LRS electric arc heating phase in the processing cycle. The opacity shall be recorded for the stack(s) where the greatest opacity of the visible emissions are observed in accordance with the procedures listed in Method 9 of 40 CFR Part 60, Appendix A. Records shall be maintained of all the visible particulate emissions observed. (40 CFR Part 60 Subpart AAa requires these opacity observations.)
3. The permittee shall perform observations of shop opacity by a certified visible emission observer in lieu of installing and maintaining a furnace static pressure monitoring device on the DEC equipped EAF. Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period (40 CFR Part 60.273a (d)).
4. The permittee shall either (a) check and record the fabric filter control system fan motor amperes and damper position for each of the operating fans on a once-per-shift basis ; (b) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or (c) install, calibrate, and

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maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check record damper positions on a once-per-shift basis. The monitoring device(s) shall be installed in a location in the exhaust duct such that reproducible flow rate data may be obtained. The flow rate monitoring device(s) shall have an accuracy of +/- 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The permittee may be required to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR, Part 60. The values of these parameters as determined during the most recent visible particulate emission compliance demonstration shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values may be considered unacceptable operation and maintenance of the control system. The permittee may petition for reestablishment of these parameters whenever the permittee can demonstrate satisfactorily that the operating conditions upon which the parameters were previously established are no longer applicable.

Checking and recording of the pressure drop readings across the baghouse will not be required due to additional installation requirements of monitoring device(s), as specified in this section. OEPA, however, reserves the right to request pressure drop readings, if problems arise.

5. The permittee shall perform monthly operational status inspections of the equipment that are important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition for the approval of an alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
6. Shop opacity observations shall be conducted at least once per day for thirty minutes when the furnace is operating in the meltdown and refining period. (The "shop" is the building that houses the EAF.) Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. (40 CFR Part 60 Subpart AAa requires these shop opacity observations.) The shop opacity observations shall be taken at the shop roofline.
7. The permittee shall develop and write a Scrap Management Plan (Plan) for the selection and inspection of iron and steel scrap received for charge in the EAF. This plan shall provide for and define effective procedures to eliminate or minimize, to the

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extent practicable, mercury and organics charged to the electric arc furnace. The Plan is subject to approval by Ohio EPA and must be submitted to Ohio EPA, Northeast District Office, within 90 days of permit issuance. A copy of the plan must be maintained onsite and made readily available to all plant personnel having materials acquisition or inspection duties. A copy of the material specifications must be provided to all scrap suppliers. The Plan, at a minimum, shall include the following components:

i. A materials acquisition program which shall include:

- (a) Specifications for the supplier/marketer of the scrap metals that will minimize organic contaminants and mercury from the scrap received for charge to the electric arc furnace. The plan, at a minimum, shall call for the identification and removal of the following materials:

used oil filters,
plastic parts,
organic liquids (transmission fluid, motor oil, etc.),
metal containers with residual organic liquids, and
free liquids

This program shall be applicable for scrap charged to this emissions unit.

- (b) Specifications for the supplier/marketer of automotive bodies requiring the removal of readily accessible mercury-containing devices from under the trunks and hoods and removal of lead components such as batteries and wheel weights.

A copy of the procedures used by the scrap supplier must be obtained and maintained onsite for either removing accessible mercury switches or for purchasing automobile bodies that have had readily accessible mercury switches removed, as applicable.

ii. Procedures for visual inspection of scrap metals which shall include:

- (a) procedures to document the amount (by weight) of each shipment of scrap received and the estimated percent of each shipment inspected; a representative portion of not less than 10 percent of each shipment of scrap metal received for charge into any scrap preheater and the electric arc furnace shall be inspected for the specifications contained in "i." above;
- (b) identification of the location(s) where inspections are to be performed for each type of shipment, which shall provide a reasonable vantage point for visual inspections, with the consideration of worker safety; and
- (c) provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and, unless satisfactory corrective measures are taken, limiting purchases whose shipments fail to meet specifications.

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The Plan shall describe what corrective actions are acceptable and when purchases will be limited.

- iii. Record keeping requirements which shall include the following for each shipment:
 - (a) the amount, date received, type of scrap, and the supplier/marketer or each shipment of scrap metal received;
 - (b) the amount of material inspected, the date of inspection, and the inspector's name;
 - (c) the results of the inspection on a shipment-by-shipment basis, to include a description and estimated amount of any material not meeting the specifications in "i" above and the marketer/supplier of the rejected scrap metals;
 - (d) documentation of the return or disposal of the material rejected during each inspection;
 - (e) certification, in writing, that each supplier/marketer of any scrap metals charged to this emissions unit has received the specifications of the Plan and agrees to these requirements; and
 - (f) documentation that each supplier/marketer of scrap metals charged to this emissions unit has removed required materials in i.(a) and i.(b) above; or if the materials are not readily accessible, a description as to why the material could not be removed.

Note that this term shall not supersede the provisions and compliance dates listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692). The permittee is required to comply with the most stringent of the terms and sections of the term and the provisions of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) whichever the case maybe after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit.

The permittee shall update their Plan after the compliance dates of 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit to include which terms are the most stringent, but no later than the compliance date listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692) for this emissions unit for submitting the Scrap Management Plan listed in 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692).

- 8. The permit to install for emissions units P905 and P906 was evaluated based on the

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actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee in the permit application. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Zinc Oxide.

Emissions Unit ID: P905

TLV (mg/m³): 10

Maximum Hourly Emission Rate (lbs/hr): 2.38

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 7.59MAGLC (ug/m³): 238.095

The permittee, has demonstrated that emissions of zinc oxide, from emissions unit(s) P905 and P906, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

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The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
9. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
10. See 40 CFR Part 63, Subpart YYYYY (40 CFR Part 63.10681 -10692).

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month liquid steel production rate limitation and, for the first 12 calendar months of operation following start-up, all exceedances of the allowable cumulative liquid steel production levels for this emissions unit.
2. The permittee shall submit deviation (excursion) reports that identify all exceedances of the visible particulate emission limit for the fabric filter control device. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is three percent or greater.
3. The permittee shall submit deviation (excursion) reports that identify all exceedances of

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the fugitive visible particulate emission limit for the electric arc furnace shop. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is six percent or greater.

4. The permittee shall submit deviation (excursion) reports that identify either operation of control system fan motor amperes at values exceeding + or - 15 percent of the value established during the most recent demonstration of compliance or operation at volumetric flow rates lower than those established during the compliance demonstration, when the EAF was operating (40 CFR Part 60.276a(c)).
5. The permittee shall submit deviation (excursion) reports that identify all instances when any portion of the Scrap Management Plan was not followed or the information required to be documented was not recorded.
6. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month summation of the PM, PM10, VOC, CO, SO₂, NO_x and Pb emissions.
7. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.
8. See 40 CFR Part 63, Subpart YYYYYY (40 CFR Part 63.10681 -10692).

V. Testing Requirements

1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.0018 grains per dry standard cubic foot for emissions units P905 and P906, combined.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.16.

2. Emission Limitation:

PM/PM10 emissions shall not exceed 14.10 pounds per hour (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

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To determine the hourly particulate emission rate for P905 and P906 (combined), the following equations shall be used:

a. $E1(\text{stack emissions}) = (820,000 \text{ scfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes/hr})$

where:

E1 = particulate emissions from baghouse (lbs/hour).

820,000 SCFM = maximum baghouse flow rate

b. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced/hour}) (1.4 \text{ pounds PE/ton of steel}) (1-0.99)(0.76)$

where:

E2 = fugitive particulate emissions (lbs/hour)

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86)

0.99 = capture efficiency for direct evacuation fume collection system

0.76 = fraction of total PM emissions assumed to be PM10 (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC)

c. $E \text{ total} = E1 + E2$

where:

E total = total hourly PM10 emissions from P905 and P906, combined (lbs/hour)

E1 = particulate emissions from baghouse (lbs/hour)

E2 = fugitive particulate emissions (lbs/hour).

If required by the Ohio EPA, compliance with the PM/PM10 emission rate shall be determined in accordance with 40 CFR Part 51, Appendix M, Methods 201 or 201A.

3. Emission Limitation:

PM/PM10 emissions shall not exceed 55.5 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

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To determine the annual particulate emission rate for P905 and P906 (combined), the following equations shall be used:

- a. $E1(\text{stack emissions}) = (820,000 \text{ scfm}) (\text{tested emission rate in gr/scf}) (1 \text{ pound}/7000 \text{ grains}) (60 \text{ minutes/hr}) (\text{actual hours of operation/year}) (1 \text{ ton}/2000 \text{ pounds})$

where:

$E1$ = particulate emissions from baghouse (tons/year)

820,000 SCFM = maximum baghouse flow rate

- b. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced/year}) (1.4 \text{ pounds PE/ton of steel})(1-0.99) (1\text{ton}/2000 \text{ pounds})(0.76)$

where:

$E2$ = fugitive particulate emissions (tons/year)

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86)

0.99 = capture efficiency for direct evacuation fume collection system

0.76 = fraction of total PE emissions assumed to be PM10 (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

- c. $E \text{ total} = E1 + E2$

where:

$E \text{ total}$ = total annual PM/PM10 emissions from P905 and P906, combined (tons/year)

$E1$ = particulate emissions from baghouse (tons/year)

$E2$ = fugitive particulate emissions (tons/year).

4. Emission Limitation:

NOx emissions shall not exceed 53.6 pounds per hour and 0.40 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the NOx emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 7 or 7E.

5. Emission Limitation:

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NOx emissions shall not exceed 166 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

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Applicable Compliance Method:

To determine the yearly NO_x emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (0.40 \text{ pound NO}_x/\text{ton of steel}) (\text{tons of steel produced/yr}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = NO_x emissions (tons/yr)

0.40 pound NO_x/ton of steel = permit allowable emission rate for NO_x

6. Emission Limitation:

CO emissions shall not exceed 536 pounds per hour and 4.0 pounds per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 10.

7. Emission Limitation:

CO emissions shall not exceed 1660 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual CO emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (4.0 \text{ pounds CO/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = CO emissions (tons/yr)

4.0 pounds CO/ton of steel = permit allowable emission rate for CO

8. Emission Limitation:

SO₂ emissions shall not exceed 33.5 pounds per hour and 0.25 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

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Applicable Compliance Method:

If required by the Ohio EPA, compliance with the SO₂ emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 6 or 6C.

9. Emission Limitation:

SO₂ emissions shall not exceed 103.8 tons per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual SO₂ emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (0.25 \text{ pound SO}_2/\text{ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = SO₂ emissions (tons/yr)

0.25 pound SO₂/ton of steel = permit allowable emission rate for SO₂

10. Emission Limitation:

VOC emissions shall not exceed 24.12 pounds per hour and 0.18 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the VOC emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 18, 25, or 25A.

11. Emission Limitation:

VOC emissions shall not exceed 74.7 tons per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual VOC emission rate for P905 and P906 (combined), the

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following equation shall be used:

$$E = (0.18 \text{ pound VOC/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = VOC emissions (ton/yr)

0.18 pound VOC/ton of steel = permit allowable emission rate for VOC

12. Emission Limitation:

Pb emissions shall not exceed 0.24 pound per hour (includes stack and fugitive emissions)

Applicable Compliance Method:

To determine the hourly Pb emission rate for the EAF the following equation shall be used:

$$E = (E \text{ total}) (0.017)$$

where:

E = Pb per year emissions (lb/hr)

E total = total hourly PM/PM10 emissions from EAF, as determined in Section A.V.2

0.017 = the average Pb content of the baghouse dust, as a weight fraction

If required by the Ohio EPA, compliance with the Pb emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 29.

13. Emission Limitation:

Pb emissions shall not exceed 0.97 tons per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual Pb emission rate for the EAF the following equation shall be used:

$$E = (E \text{ total /yr}) (0.017)$$

where:

E = Pb emissions (tons/yr)

E total /yr = total annual PM/PM10 emissions from EAF, as determined in Section A.V.3

0.017 = the average Pb content of the baghouse dust, as a weight fraction

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14. Emission Limitation:

Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emissions limitations shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03.

15. Emission Limitation:

Visible particulate emissions from the baghouse shall not exhibit three (3) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for the operation(s) identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

16. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted within 3 months after startup of this emissions unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PE, NO_x, CO, VOC, and SO₂.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

PE - Method 5 of 40 CFR Part 60, Appendix A

NO_x - Method 7 , 7E of 40 CFR Part 60, Appendix A

CO - Method 10 of 40 CFR Part 60, Appendix A

VOC - Method 18, 25, or 25A of 40 CFR Part 60, Appendix A

SO₂ - Method 6A of 40 CFR Part 60, Appendix A

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- d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P905) - Single shell AC electric arc furnace (EAF) with roof canopy hood fume collection/direct evacuation control system and a 820,000 dscfm fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	Limit(s)

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P906) - Ladle Refining Station (LRS) equipped with a 820,000 dscfm fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>SO₂ emissions shall not exceed 33.5 lbs/hr for emissions units P905 and P906 combined.</p> <p>VOC emissions shall not exceed 24.12 lbs/hr for emissions units P905 and P906 combined.</p> <p>See Section A.I.2.d. and A.I.2.e below.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07 and the VE limitations specified in 40 CFR Part 60, Subpart AAa.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 thru 20 for PM/PM₁₀, NO_x, and CO.</p>
OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.
OAC rule 3745-17-07(A)(1) & (B)(3)	The visible emission limitations specified by these rules are less stringent than the visible emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.
OAC rule 3745-17-08	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

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OAC rule 3745-18-06	The SO ₂ emission limitation specified by this rule is less stringent than the SO ₂ emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-21-07	See Section A.2.b below.
OAC rule 3745-21-08	See Section A.2.b below.
40 CFR Part 60, Subpart AAa	<p>Visible particulate emissions from the baghouse shall not exhibit three (3) per cent opacity or greater as a six-minute average.</p> <p>Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) per cent opacity or greater as a six-minute average.</p> <p>The mass emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through OAC rule 3745-31-20.</p>
OAC rule 3745-31-05 (C)	<p>SO₂ emissions shall not exceed 103.75 tons per rolling 12-month period for emissions units P905 and P906 combined.</p> <p>VOC emissions shall not exceed 74.7 tons per rolling 12-month for emissions units P905 and P906 combined period.</p> <p>Pb emissions shall not exceed 0.87 ton per rolling 12-month for emissions units P905 and P906 combined period.</p>
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	<p>PM/PM₁₀ emissions shall not exceed 0.0018 gr/dscf, 14.10 lbs/hr and 55.5 tons per year for emissions units P905 and P906 combined (includes stack and fugitive emissions) based upon a rolling 12-month summation.</p> <p>NO_x emissions shall not exceed 53.6 lbs/hr and 166 tons year for emissions units P905 and P906 combined.</p> <p>CO emissions shall not exceed 536 lbs/hr and 1660 tons per year for emissions units P905 and P906 combined.</p> <p>See Section A.2.c below.</p>
OAC rule 3745-31-05(A)(3)(b)	See Section A.2.f below.

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2. Additional Terms and Conditions

2.a The requirement of this Permit to Install supercedes the requirements of PTI No. 02-20393 issued on May 5, 2005.

2.b The permit has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-07 and 3745-21-08, respectively, by committing to comply with the best available technology requirements established in permit to install 02-22398.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.c Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of direct-shell evacuation control system (DEC system), good furnace melting practices and proper operation of the EAC oxy-fuel burners, acceptance of a PE limitation of 0.0018 gr/dscf, acceptance of a NOx limitation of 0.40 lb/ton, and acceptance of a CO limitation of 4.0 lbs/ton of steel produced constitutes BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-(10) thru (20) above.

2.d The ladle refining furnace shall be installed with a roof canopy hood fume collection system in addition to a direct evacuation control (DEC) system. These systems shall be capable of capturing a minimum of 99% of the generated emissions of particulate from the air contaminant source operation including electric arc heating, melting, charging, tapping, argon stirring, bulk alloy additions, alloy wire feed, manual door emissions, and steel processing in the ladle refining station.

2.e Particulate emissions captured by the fume collection systems for the electric arc furnace shall be exhausted to the existing EAF/ LRS fabric filter control device.

2.f The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the lead (Pb) emissions from emissions units P905 and P906, combined, since the uncontrolled potential to emit for Pb is less than ten tons per year.

2.g The hourly emission limitations in term A.1 are based upon the potential to emit of this emissions unit and therefore no record keeping and reporting

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requirements of those limitations are necessary.

II. Operational Restrictions

1. The permittee shall restrict the annual liquid steel production to 830,000 tons per year, based upon a rolling 12-month summation of the production rates. This is an existing emissions unit which has existing records of the amount liquid steel production and therefore does not need to be restricted on monthly basis during the operation.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:
 - a. the liquid steel production rate for each month;
 - b. the rolling, 12-month summation of the liquid steel production rates; and
 - c. the rolling, 12-month summation of the PM, PM10, CO, NO_x, VOC, SO₂ and Pb emissions.
2. Visible particulate emissions observations of the ladle refining station (LRS) multiple-stack positive-pressure fabric filter shall occur at least once per day of operation. Observations shall be made during the electric arc heating phase of the LRS processing cycle. These observations shall be taken in accordance with Method 9 of 40 CFR Part 60, Appendix A, and shall include at least one six-minute period of the LRS electric arc heating phase in the processing cycle. The opacity shall be recorded for the stack(s) where the greatest opacity of the visible emissions are observed in accordance with the procedures listed in Method 9 of 40 CFR Part 60, Appendix A. Records shall be maintained of all the visible particulate emissions observed. (40 CFR Part 60 Subpart AAa requires these opacity observations).
3. The permittee shall either (a) check and record the fabric filter control system fan motor amperes and damper position for each of the operating fans on a once-per-shift basis; (b) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or (c) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check record damper positions on a once-per-shift basis. The monitoring device(s) shall be installed in a location in the exhaust duct such that reproducible flow rate data may be obtained. The flow rate monitoring device(s) shall have an accuracy of +/- 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The permittee may be required

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to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR, Part 60. The values of these parameters as determined during the most recent visible particulate emission compliance demonstration shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values may be considered unacceptable operation and maintenance of the control system. The permittee may petition for reestablishment of these parameters whenever the permittee can demonstrate satisfactorily that the operating conditions upon which the parameters were previously established are no longer applicable.

Checking and recording of the pressure drop readings across the baghouse will not be required due to additional installation requirements of monitoring device(s), as specified in this section. OEPA, however, reserves the right to request pressure drop readings, if problems arise.

4. The permit to install for emissions units P905 and P906 was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee in the permit application. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
 - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices";
or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - b. The TLV is divided by ten to adjust the standard from the working population to

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the general public (TLV/10).

- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$\text{TLV}/10 \times 8/\text{X} \times 5/\text{Y} = 4 \text{ TLV}/\text{XY} = \text{MAGLC}$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Zinc Oxide.

TLV (mg/m³): 10

Maximum Hourly Emission Rate (lbs/hr): 2.38

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 7.59

MAGLC (ug/m³): 238.095

The permittee, has demonstrated that emissions of zinc oxide, from emissions unit(s) P905 and P906, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g.,

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increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
5. The permittee shall maintain a record of any change made to a parameter or value

Emissions Unit ID: P906

used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month liquid steel production rate limitation and, for the first 12 calendar months of operation following start-up, all exceedances of the allowable cumulative liquid steel production levels for this emissions unit.
2. The permittee shall submit deviation (excursion) reports that identify all exceedances of the visible particulate emission limit for the fabric filter control device. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is three percent or greater.
3. The permittee shall submit deviation (excursion) reports that identify either operation of control system fan motor amperes at values exceeding + or - 15 percent of the value established during the most recent demonstration of compliance or operation at volumetric flow rates lower than those established during the compliance demonstration, when the LRS was operating.
4. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month summation of the PM, PM10, CO, NOx, VOC, SO2 and Pb emissions.
5. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

V. Testing Requirements

1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.0018 grains per dry standard cubic foot for emissions units P905 and P906, combined.

Applicable Compliance Method:

Compliance shall be determined by emission testing as specified in Section A.V.16.

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2. Emission Limitation:

PM/PM10 emissions shall not exceed 14.08 pounds per hour (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the hourly particulate emission rate for P905 and P906 (combined), the following equations shall be used:

a. $E1(\text{stack emissions}) = (820,000 \text{ scfm}) \times (\text{tested emission rate in gr/scf}) \times (1 \text{ pound}/7000 \text{ grains}) \times (60 \text{ minutes}/\text{hr})$

where:

E1 = particulate emissions from baghouse (lbs/hour).

820,000 SCFM = maximum baghouse flow rate.

b. $E2 (\text{fugitive emissions}) = (\text{tons of steel produced}/\text{hour}) \times (1.4 \text{ pounds PE}/\text{ton of steel}) \times (1-0.99)(0.76)$

where:

E2 = fugitive particulate emissions (lbs/hour).

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86).

0.99 = capture efficiency for direct evacuation fume collection system.

0.76 = fraction of total PE emissions assumed to be PM10 (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

c. $E \text{ total} = E1 + E2$

where:

E total = total hourly PM10 emissions from P905 and P906, combined (lbs/hour).

E1 = particulate emissions from baghouse (lbs/hour).

E2 = fugitive particulate emissions (lbs/hour).

If required by the Ohio EPA, compliance with the PM/PM10 emission rate shall be determined in accordance with 40 CFR Part 51, Appendix M, Methods 201 or 201A.

Emissions Unit ID: P906

3. Emission Limitation:

PM/PM10 emissions shall not exceed 55 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual particulate emission rate for P905 and P906 (combined), the following equations shall be used:

a. $E1Y(\text{stack emissions}) = (820,000 \text{ scfm}) \times (\text{tested emission rate in gr/scf}) \times (1 \text{ pound}/7000 \text{ grains}) \times (60 \text{ minutes}/\text{hr}) \times (\text{actual hours of operation}/\text{year}) \times (1 \text{ ton}/2000 \text{ pounds})$

where:

$E1Y$ = particulate emissions from baghouse (tons/year)

820,000 SCFM = maximum baghouse flow rate

b. $E2Y(\text{fugitive emissions}) = (\text{tons of steel produced}/\text{year}) \times (1.4 \text{ pounds PE}/\text{ton of steel}) \times (1-0.99) \times (1\text{ton}/2000 \text{ pounds}) \times (0.76)$

where:

$E2Y$ = fugitive particulate emissions (tons/year).

1.4 pounds PE/ton steel = emission factor (AP-42 Section 12.5, Table 12.5-1, electric arc furnace charging, tapping, and slagging, Iron and Steel Production, 10/86).

0.99 = capture efficiency for direct evacuation fume collection system.

0.76 = fraction of total PE emissions assumed to be PM10 (factor supplied by the company in the application for PTI 02-22398 and is based upon a test of a similar EAF at CSC).

c. $E \text{ total } Y = E1Y + E2Y$

where:

$E \text{ total } Y$ = total annual PM/PM10 emissions from P905 and P906, combined (tons/year).

$E1Y$ = particulate emissions from baghouse (tons/year).

$E2Y$ = fugitive particulate emissions (tons/year).

4. Emission Limitation:

NOx: 53.6 pounds per hour and 0.40 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

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If required by the Ohio EPA, compliance with the NOx emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 7 or 7E.

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5. Emission Limitation:

NO_x emissions shall not exceed 166 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the hourly NO_x emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (0.40 \text{ pound NO}_x/\text{ton of steel}) \times (\text{tons of steel produced/yr}) \times (1 \text{ ton}/2000 \text{ pound})$$

where:

E = NO_x emissions (tons/yr).

0.40 pound NO_x/ton of steel = permit allowable emission rate for NO_x.

6. Emission Limitation:

CO emissions shall not exceed 536 pounds per hour and 4.0 pounds per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the CO emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 10.

7. Emission Limitation:

CO emissions shall not exceed 1660 tons per year (includes stack and fugitive emissions) for emissions units P905 and P906, combined based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual CO emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (4.0 \text{ pounds CO/ton of steel}) (\text{tons of steel produced/year}) (1 \text{ ton}/2000 \text{ pounds})$$

where:

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E = CO emissions (tons/yr)

4.0 pounds of CO/ton of steel = permit allowable emission rate for CO.

8. Emission Limitation:

SO₂ emissions shall not exceed 33.5 pounds per hour and 0.25 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the SO₂ emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 6 or 6C.

9. Emission Limitation:

SO₂ emissions shall not exceed 103.8 tons per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined based upon a rolling 12-month summation.

Applicable Compliance Method:

To determine the annual SO₂ emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (0.25 \text{ pound of SO}_2\text{/ton of steel}) \times (\text{tons of steel produced/year}) \times (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = SO₂ emissions (tons/yr).0.25 pound of SO₂/ton of steel = permit allowable emission rate for SO₂.

10. Emission Limitation:

VOC emissions shall not exceed 24.1 pounds per hour and 0.18 pound per ton of steel (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the VOC emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 18, 25, or 25A.

11. Emission Limitation:

VOC emissions shall not exceed 74.7 tons per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

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Applicable Compliance Method:

To determine the annual VOC emission rate for P905 and P906 (combined), the following equation shall be used:

$$E = (0.18 \text{ pound VOC/ton of steel}) \times (\text{tons of steel produced/year}) \times (1 \text{ ton}/2000 \text{ pounds})$$

where:

E = VOC emissions (ton/yr).

0.18 pound of VOC/ton of steel = permit allowable emission rate for VOC.

12. Emission Limitation:

Pb emissions shall not exceed 0.24 pound per hour (includes stack and fugitive emissions)

Applicable Compliance Method:

To determine the hourly Pb emission rate for the EAF the following equation shall be used:

$$E = (E \text{ total}) (0.017)$$

where:

E = Pb emissions (lb/hr)

E total = total hourly PM/PM10 emissions from EAF, as determined in Section A.V.2

0.017 = the average Pb content of the baghouse dust, as a weight fraction.

If required by the Ohio EPA, compliance with the Pb emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 29.

13. Emission Limitation:

Pb emissions shall not exceed 0.95 ton per rolling 12-month period (includes stack and fugitive emissions) for emissions units P905 and P906, combined.

Applicable Compliance Method:

To determine the annual Pb emission rate for the EAF the following equation shall be used:

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$$E = (E \text{ total}) (0.017)$$

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where:

E = Pb emissions (tons/yr).

E total = total annual PM/PM10 emissions from EAF, as determined in Section A.V.3.

0.017 = the average Pb content of the baghouse dust, as a weight fraction.

14. Emission Limitation:

Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emissions limitations shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03.

15. Emission Limitation:

Visible particulate emissions from the baghouse shall not exhibit three (3) percent opacity or greater as a six-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for the operation(s) identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

16. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. The emission testing shall be conducted within 3 months after startup of this emissions unit.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PE, NO_x, CO, VOC, and SO₂.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

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PM - Method 5 of 40 CFR Part 60, Appendix A
NO_x - Method 7 , 7E of 40 CFR Part 60, Appendix A
CO - Method 10 of 40 CFR Part 60, Appendix A
VOC - Method 18, 25, or 25A of 40 CFR Part 60, Appendix A
SO₂ - Method 6A of 40 CFR Part 60, Appendix A

- d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

VI. Miscellaneous Requirements

None

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B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P906) - Ladle Refining Station (LRS) equipped with a 820,000 dscfm fabric filter baghouse

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P907) - Alloy, additives, and flux handling system (with three storage silos [for flux and ladle carbon] equipped with bin vents, six alloy trim vents, and five alloy batch holding bins)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	See Section A.2.h below.
40 CFR Part 52, Section 52.21, and OAC rule 3745-31-10 through OAC rule 3745-31-20	PM/PM10 emissions shall not exceed 0.01 gr/dscf, 0.11 pound per hour, and 0.33 ton per year (includes stack and fugitive emissions) based upon a rolling 12-month summation. See Section A.2.b below.
OAC rule 3745-17-07(A)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.
OAC rule 3745-17-07(B)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to 40 CFR Part 60, Subpart AAa.
OAC rule 3745-17-08	See Section A.2.c thru f below.
OAC rule 3745-17-11	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 thru 20.

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40 CFR Part 60, Subpart AAa	<p>Visible particulate emissions from the storage silo bin vent exhausts shall not exceed six percent opacity, as a six-minute average.</p> <p>Visible emissions of fugitive dust from the dumping of alloy and charge carbon into the receiving hopper shall not exceed six percent opacity, as a six-minute average.</p> <p>Visible emissions of fugitive dust from the alloy handling operations (i.e., the storage bins, trim bins, and batch holding bins) shall not exceed six percent opacity, as a six-minute average.</p>
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2. Additional Terms and Conditions

- 2.a** The requirement of this Permit to Install supercedes the requirements of PTI No. 02-20393 issued on May 5, 2005.
- 2.b** Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that the use of a silo bin vent filter with an emission limitation of 0.01 gr/dscf of exhaust gases constitutes BACT for this emissions unit. The emission limitations based on the BACT requirements are listed under OAC rule 3745-31-10 thru 20 above.
- 2.c** The flux and ladle carbon are transferred pneumatically to storage. The pneumatic system shall be adequately enclosed so as to eliminate, at all times, visible emissions of fugitive dust. Any visible emissions of dust emanating from the delivery vehicle shall be cause for the immediate halt of the unloading process and the refusal of the material load until the situation is corrected.
- 2.d** The flux and ladle carbon silos shall be adequately enclosed and vented to bin vent fabric filters. The enclosures shall be sufficient to eliminate, at all times, any visible emissions of fugitive dust from the enclosure.
- 2.e** Alloys, additives, and charge carbon are dumped into a receiving hopper. The receiving hopper shall be enclosed on all sides with an opening for the truck. At the opening, overlapping plastic sheets shall be draped to allow for passage of the truck while maintaining the enclosure.
- 2.f** The six alloy storage bins shall be loaded by an enclosed conveyor. The six alloy trim bins shall be loaded by means of an enclosed conveyor and a movable hopper. The five alloy batch holding bins shall be loaded by means of an enclosed conveyor and a rotary loading spout. After loading, the storage bins, trim bins, and batch holding bins shall be covered. The enclosures shall be sufficient to minimize, at all times, visible emissions of fugitive dust at all transfer

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points.

- 2.g** The permittee shall make certain that all emissions from the silos shall be vented to the respective silo bin vent control devices.
- 2.h** Permit to install 02-22398 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purposes of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(5);
 - i. the annual liquid steel production of 830,000 tons per year; and
 - ii. silo bin vent filter(s) for PM/PM10.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

- 1. The permittee shall maintain records of the quantities of all alloys, additives, and flux materials received during each calendar year. The records may be maintained in computerized form.
- 2. The permittee shall maintain records of all the time periods when the silos were not vented to the silo bin vent control devices.
- 3. The permittee shall perform weekly checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from any non-stack egress point (e.g., windows, doors, roof monitors, conveyors, hopper, etc.) and/or from the storage silo bin vents associated with this emissions unit. The presence or absence of any visible particulate emissions shall be noted in an operations log. If visible particulate emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible particulate emission incident; and

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- e. any corrective actions taken to eliminate the visible particulate emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which identify all time periods when the silos were not vented to the silo bin vent control devices. These reports shall be submitted by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit semiannual written reports which:
 - a. identify all days during which any visible particulate emissions were observed from any non-stack egress point and/or the storage silo bin vents associated with this emissions unit; and
 - b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:

PM/PM10 emissions shall not exceed 0.01 grain per dry standard cubic foot of exhaust gases from the storage silo bin vents.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the particulate emission rate shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures in OAC rule 3745-17-03.

2. Emission Limitation:

PM/PM10 emissions shall not exceed 0.33 ton per year based upon a rolling 12-month summation.

Applicable Compliance Method:

Compliance shall be determined by multiplying the alloy, additives, and flux handling system's emission factor of 8.0×10^{-4} lb/ton of PM/PM10 by the maximum material throughput per year of 830,000 tons, and dividing by 2000 lbs/ton.

3. Emission Limitation:

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Visible particulate emissions from the storage silo bin vent exhausts shall not exceed six percent opacity, as a six-minute average.

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Applicable Compliance Method:

Compliance with the allowable visible emissions limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03 (B)(1).

4. Emission Limitation:
Visible emissions of fugitive dust from the dumping of alloy and charge carbon into the receiving hopper shall not exceed six percent opacity, as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emissions limitation shall be determined in accordance with 40CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03 (B)(3).

5. Emission Limitation:
Visible emissions of fugitive dust from the alloy handling operations (i.e., the storage bins, trim bins, and batch holding bins) shall not exceed six percent opacity, as a six-minute average.

Applicable Compliance Method:

Compliance with the allowable visible emissions limitation shall be determined in accordance with 40CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03 (B)(3).

6. Emission Limitation:
PM/PM10 emissions shall not exceed 0.11 pound per hour.

Applicable Compliance Method:

Compliance shall be determined by using company supplied emission factor of 8.0 E-04 lb per ton of liquid steel produced by 134 tons per hour of liquid steel produced.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment - (P907) - Alloy, additives, and flux handling system (with three storage silos [for flux and ladle carbon] equipped with bin vents, six alloy trim vents, and five alloy batch holding bins)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

2. **Additional Terms and Conditions**

- 2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398 Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel production. CITY/TWP Youngstown

SIC CODE 3312 SCC CODE 3-03-009-22 EMISSIONS UNIT ID F003

EMISSIONS UNIT DESCRIPTION Continuous caster (linked emissions unit with new steel production limitation 830,000 tons per year)

DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀		0.4	1.2	0.5	1.5
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides		5.5	16.7	6.7	20.8
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? 40 CFR 60 PSD? Y OFFSET POLICY?
Subpart AAa

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES X NO

IDENTIFY THE AIR CONTAMINANTS: _____

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398 Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel CITY/TWP Younastown

Emissions Unit ID: P907

SIC CODE 3312 SCC CODE 3-03-009-33 EMISSIONS UNIT ID P001

EMISSIONS UNIT DESCRIPTION Natural gas fired Billet reheat furnace rated at 350 MMBtu/hr with low NOx burner

DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀		1.2	3.9	2.2 lbs/hr	6.7
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides		18.2	57.3	0.1lb/MMBtu, 29 lbs/hr	89.3
Carbon Monoxide		13.6	42.9	23.9 lbs/hr	73.5
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:
OFFSET POLICY?

NSPS? NESHAP? 40 CFR 60 PSD? Y
Subpart AAa

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?
Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no
OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? YES x NO

IDENTIFY THE AIR CONTAMINANTS:

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398 Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel CITY/TWP Youngstown

Emissions Unit ID: P907

SIC CODE 3312 SCC CODE 3-03-009-31 EMISSIONS UNIT ID P002

EMISSIONS UNIT DESCRIPTION MPM and Sizing seamless pipe mill with venturi scrubber

DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀		10.7	41.5	11.3 lbs/hr	49.4
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:
OFFSET POLICY?

NSPS? NESHAP? 40 CFR 60 Subpart AAa PSD? Y

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?
Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no
OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? YES x NO

IDENTIFY THE AIR CONTAMINANTS:

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398 Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel CITY/TWP Younastown

Emissions Unit ID: P907

SIC CODE 3312 SCC CODE 3-03-009-98 EMISSIONS UNIT ID P010

EMISSIONS UNIT DESCRIPTION Plasma arc torch equipped with a pulse jet fabric filter baghouse

DATE INSTALLED 12/07

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀				0.01 gr/dscf, 0.16 lb/hr	0.71
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:
OFFSET POLICY?

NSPS? NESHAP? 40 CFR 60 PSD? Y
Subpart AAa

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES x NO

IDENTIFY THE AIR CONTAMINANTS: _____

NE
P1
FA

Emissions Unit ID: P907

FACILITY DESCRIPTION Modification to increase steel production.

CITY/TWP Youngstown

SIC CODE 3312 SCC CODE 3-03-009-33 EMISSIONS UNIT ID P011

EMISSIONS UNIT DESCRIPTION Natural gas fired billet preheat furnace rated at 190MMBtu/hr with low-NOx burner

DATE INSTALLED 07/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀				1.3lb/hr	3.2
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides				12.6 lbs/hr	30.4
Carbon Monoxide				14.8 lbs/hr	35.7
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? 40 CFR 60 PSD? Y
Subpart AAa

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES x NO

IDENTIFY THE AIR CONTAMINANTS: _____

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398

Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel

CITY/TWP Younastown

Emissions Unit ID: P907

NE
P1
FA

Emissions Unit ID: P907

FACILITY DESCRIPTION Modification to increase steel production.

CITY/TWP Youngstown

SIC CODE 3312 SCC CODE 3-03-009-06 EMISSIONS UNIT ID P905

EMISSIONS UNIT DESCRIPTION Single shell AC electric arc furnace (EAF) with roof canopy hood fume collection/direct evacuation control system and a 820,000 dscfm fabric filter baghouse

DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀		10.6 lbs/hr	38	0.0018 gr/dscf, 14.10 lbs/hr	55.5
Sulfur Dioxide		16.5 lbs/hr	50.1	33.5 lbs/hr	103.8
Organic Compounds		19.8 lbs/hr	60.1	24.12 lbs/hr	74.7
Nitrogen Oxides		38.5 lbs/hr	116.8	53.6 lbs/hr	166
Carbon Monoxide		385 lbs/hr	1168	536 lbs/hr	1660
Lead				0.24 lb/hr	0.97
Other: Air Toxics					

APPLICABLE FEDERAL RULES:
OFFSET POLICY?

NSPS? NESHAP? 40 CFR 60 Subpart AAa PSD? Y

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?
Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no
OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES x NO

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398

Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel

CITY/TWP Younastown

Emissions Unit ID: P907

IDENTIFY THE AIR CONTAMINANTS: _____

NE
P1
FA

Emissions Unit ID: P907

FACILITY DESCRIPTION Modification to increase steel production.

CITY/TWP Youngstown

SIC CODE 3312 SCC CODE 3-03-009-06 EMISSIONS UNIT ID P906
 EMISSIONS UNIT DESCRIPTION Ladle Refining Station (LRS) equipped with a 820,000 dscfm fabric filter baghouse
 DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀		10.6 lbs/hr	38	0.0018 gr/dscf, 14.10 lbs/hr	55.5
Sulfur Dioxide		16.5 lbs/hr	50.1	33.5 lbs/hr	103.8
Organic Compounds		19.8 lbs/hr	60.1	24.12 lbs/hr	74.7
Nitrogen Oxides		38.5 lbs/hr	116.8	53.6 lbs/hr	166
Carbon Monoxide		385 lbs/hr	1168	536 lbs/hr	1660
Lead				0.24 lb/hr	0.97
Other: Air Toxics					

APPLICABLE FEDERAL RULES:
 OFFSET POLICY?

NSPS? NESHAP? 40 CFR 60 PSD? Y
 Subpart AAa

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?
 Enter Determination State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no
 OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES x NO

NEW SOURCE REVIEW FORM B

PTI Number: 02-22398

Facility ID: 0250110625

FACILITY NAME V and M Star

FACILITY DESCRIPTION Modification to increase steel

CITY/TWP Younastown

Emissions Unit ID: P907

IDENTIFY THE AIR CONTAMINANTS: _____

1 ~~NE~~
P1
FA

Emissions Unit ID: P907

FACILITY DESCRIPTION Modification to increase steel production.

CITY/TWP Youngstown

SIC CODE 3312 SCC CODE 3-03-009-99 EMISSIONS UNIT ID P907

EMISSIONS UNIT DESCRIPTION Alloy, additives, and flux handling system (with three storage silos [for flux and ladle carbon] equipped with bin vents, six alloy trim vents, and five alloy batch holding bins)

DATE INSTALLED 04/08

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
PE/PM ₁₀			0.27	0.01 gr/dscf	0.33
Sulfur Dioxide					
Organic Compounds					
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics					

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? 40 CFR 60 PSD? Y
Subpart AAa

OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination: State regulations, similar sources

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? no

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? _____ YES X NO

IDENTIFY THE AIR CONTAMINANTS: _____