



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

7/30/2013

Certified Mail

Daniel Lake
The Timken Company - Harrison Steel Plant
1835 Dueber Ave, S.W.
Canton, OH 44706-2798

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 1576222002
Permit Number: P0115030
Permit Type: Administrative Modification
County: Stark

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/dapc/pemitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Canton City Health Department at (330)489-3385 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA
Canton; Pennsylvania; West Virginia



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
The Timken Company - Harrison Steel Plant**

Facility ID: 1576222002
Permit Number: P0115030
Permit Type: Administrative Modification
Issued: 7/30/2013
Effective: 7/30/2013



Division of Air Pollution Control
Permit-to-Install
for
The Timken Company - Harrison Steel Plant

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Authorization

Facility ID:	1576222002
Facility Description:	Steel mill w/ EAFs
Application Number(s):	M0002269
Permit Number:	P0115030
Permit Description:	Agency-initiated Administrative Modification to correct typographical error on Pb emissions limit for P258, CO tpy limit for P292, added #/ton emissions limits to both EAFs, changed baghouse pressure drop from an operating restriction to a monitoring and record keeping requirement, added fan motor amperage as a MR&R requirement, and deleted testing terms for PM.
Permit Type:	Administrative Modification
Permit Fee:	\$0.00
Issue Date:	7/30/2013
Effective Date:	7/30/2013

This document constitutes issuance to:

The Timken Company - Harrison Steel Plant
1835 Dueber Avenue, S.W.
Canton, OH 44706

of a Permit-to-Install for the emissions unit(s) identified on the following page.

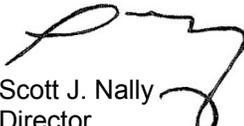
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section 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 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


Scott J. Nally
Director



Authorization (continued)

Permit Number: P0115030

Permit Description: Agency-initiated Administrative Modification to correct typographical error on Pb emissions limit for P258, CO tpy limit for P292, added #/ton emissions limits to both EAFs, changed baghouse pressure drop from an operating restriction to a monitoring and record keeping requirement, added fan motor amperage as a MR&R requirement, and deleted testing terms for PM.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Group Name: Electric Arc Furnaces

Emissions Unit ID:	P258
Company Equipment ID:	#9 EAF
Superseded Permit Number:	P0105790
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P292
Company Equipment ID:	#2 EAF
Superseded Permit Number:	P0105790
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
The Timken Company - Harrison Steel Plant
Permit Number: P0115030
Facility ID: 1576222002
Effective Date: 7/30/2013

A. Standard Terms and Conditions



1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of 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. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. 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.

4. Monitoring and Related Record Keeping 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:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) 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:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Canton City Health Department.



- (2) 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 Canton City Health Department. The written 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 A.15. below if no deviations occurred during the quarter.
 - (3) 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 Canton City Health Department 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.
 - (4) This permit is for an emissions unit located at a Title V facility. 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.

5. 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 Canton City Health Department 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).

6. Compliance Requirements

- a) 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.
- b) 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.



- c) 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:
 - (1) 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.
 - (2) 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.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) 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.
- d) The permittee shall submit progress reports to the Canton City Health Department 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 the Ohio EPA. Progress reports shall contain the following:
 - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) 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.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. 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.

9. 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 Canton City Health Department.
- 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 Canton City Health Department. 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.)

10. 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).

11. Construction of New Sources(s) and Authorization to Install

- a) 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.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

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).

13. Construction Compliance Certification

The applicant shall identify the following dates in the online facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. 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.



15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

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.

16. 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.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in Air Services once the transfer is legally completed. The change must be submitted through Air Services within thirty days of the ownership transfer date.

18. 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.

19. Title IV Provisions

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



Final Permit-to-Install
The Timken Company - Harrison Steel Plant
Permit Number: P0115030
Facility ID: 1576222002
Effective Date: 7/30/2013

B. Facility-Wide Terms and Conditions



1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

a) [OAC rule 3745-31-10(A)(3)]

The permittee shall calculate the NO_x, SO₂, PM, PM₁₀/PM_{2.5}, CO, VOC, and Pb emissions from the emissions units affected by the Project (i.e., emissions units: P258, P292, and P298) as identified in the permit to install application and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five years following resumption of regular operations after the change.

b) [OAC rule 3745-31-10(A)(5)]

The permittee shall submit a report to the director if the annual emissions, in tons per year as calculated pursuant to OAC rule 3745-31-10(A)(3), from the Project, exceed 40 tons per year of NO_x, VOC, or SO₂, 100 tons per year of CO, 25 tons per year of PM, 15 tons per year of PM₁₀/PM_{2.5}, or 0.6 tons of lead (Pb), (i.e., the baseline actual emissions increase by a significant amount) and if such emissions differ from the preconstruction projection as documented and maintained pursuant to OAC rule 3745-31-10(A)(1). Such reports shall be submitted to the director within sixty days after the end of such year. The report shall contain the following:

- (1) The name, address and telephone number of the major stationary source; and
- (2) The annual emissions as calculated pursuant to OAC rule 3745-31-10(A)(3).



Final Permit-to-Install
The Timken Company - Harrison Steel Plant
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C. Emissions Unit Terms and Conditions



1. Emissions Unit Group -Electric Arc Furnaces: P258,P292,

EU ID	Operations, Property and/or Equipment Description
P258	No. 9 EAF at Harrison Steel Mill rated at 63 tons steel per hour
P292	No. 2 EAF at Harrison Steel Mill rated at 63 tons steel per hour

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
- (1) None.
- b) Applicable Emissions Limitations and/or Control Requirements
- (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rules 3745-31-10 through OAC rule 3745-31-20 (Supersedes PTI P0105790 issued 12/29/2010) [Best Available Control Technology (BACT) Determinations]	CO emissions shall not exceed 4.8 lbs/ton, 302 lbs/hr, and 960 tons/yr. VOC emissions shall not exceed 0.37 lb/ton, 23.3 lbs/hr, and 74 tons/yr. See b)(2)f.
b.	OAC rule 3745-31-05(D) (Supersedes PTI P0105790 issued 12/29/2010) [Synthetic Minor Restrictions to Avoid Major Source New Source Review]	SO ₂ emissions from Emission Units P102, P258, and P292 combined shall not exceed 419 tons/yr as a rolling, 12-month summation. See c)(3) and c)(4).
c.	ORC 3704.03(T) (Supersedes PTI P0105790 issued 12/29/2010) [Best Available Technology (BAT) Determinations for NAAQS Pollutants > 10 TPY]	For P258: filterable PM ₁₀ /PM _{2.5} emissions shall not exceed 0.00032 gr/dscf and 0.043 lb/ton. For P292: filterable PM ₁₀ /PM _{2.5} emissions shall not exceed 0.00048 gr/dscf and 0.052 lb/ton. See b(2)a through b(2)c.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Visible particulate emissions from the baghouse shall not exceed 3% opacity as a 6-minute average.</p> <p>Visible particulate emissions of fugitive dust from the melt shop shall not exceed 6% opacity at any time.</p> <p>Visible particulate emissions from the meltshopbaghouse dust handling equipment shall not exceed 10% opacity as a 6-minute average.</p> <p>SO₂ emissions shall not exceed 0.44 lbs/ton.</p> <p>NO_x emissions shall not exceed 0.20 lbs/ton.</p>
d.	<p>OAC rule 3745-31-05(A)(3), as effective 11/30/2001</p> <p>(Supersedes PTI P0105790 issued 12/29/2010)</p> <p>[Best Available Technology (BAT) for pollutants less than 10 tpy]</p>	<p>For P258: Pb emissions shall not exceed 0.00027 lbs/ton, 0.017 lbs/hr, and 0.054 tons/yr.</p> <p>For P292: Pb emissions shall not exceed 0.00042 lbs/ton, 0.026 lbs/hr, and 0.084 tons/yr.</p> <p>See b)(2)d.</p>
e.	<p>OAC rule 3745-31-05(A)(3), as effective 12/01/2006</p> <p>(Supersedes PTI P0105790 issued 12/29/2010)</p> <p>[Less than 10 ton/yr BAT exemption]</p>	<p>See b)(2)e.</p>
f.	<p>OAC rule 3745-114</p>	<p>Mercury (Hg) emissions shall not exceed 0.00020 lbs/ton steel, 0.013 lbs/hr, and 0.04 tons/yr.</p> <p>See b)(2)h.</p>
g.	<p>OAC rule 3745-17-11</p>	<p>The particulate emission (PE) limitation specified by this rule is less stringent than the PM₁₀/PM_{2.5} emissions limitations established pursuant to ORC 3704.03(T).</p>
h.	<p>OAC rule 3745-17-07(A)(1)</p> <p>OAC rule 3745-17-07(B)(3)</p> <p>OAC rule 3745-17-08</p>	<p>The visible emission limitations specified by these rules are less stringent than the visible emission limitations established pursuant to 40 CFR Part 60, Subpart AA and ORC 3704.03(T).</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
i.	OAC rule 3745-18-06	The SO ₂ emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to ORC 3704.03(T).
j.	40 CFR Part 60, Subpart AA (40 CFR 60.271 - 60.276) Applicable to P258 only.	<p>The opacity limitations specified by this rule for visible particulate emissions from the baghouse are equal to or less stringent than the opacity limitations established pursuant to ORC 3704.03(T).</p> <p>The opacity limitations specified by this rule for fugitive dust from the melt shop are equal to or less stringent than the opacity limitations established pursuant to ORC 3704.03(T).</p> <p>The opacity limitations specified by this rule for visible particulate emissions from the meltshopbaghouse dust handling equipment are equal to or less stringent than the opacity limitations established pursuant to ORC 3704.03(T).</p> <p>The mass emissions limitations specified by this rule are equal to or less stringent than the mass emissions limitation established pursuant to ORC 3704.03(T).</p> <p>See c)(1)</p>
k.	40 CFR Part 63, Subpart YYYYY (40 CFR 63.10681 - 63.10692) [In accordance with 40 CFR 63.10680(a) and (b)(1), these emissions units are electric arc furnaces (EAFs) that are area sources of hazardous air pollutants (HAPs) and commenced construction on or before September 20, 2007.]	<p>The mass emissions limitations and opacity limitations specified by 63.10686(b)(1) and (b)(2) of this rule are equal to or less stringent than the emissions limitations established pursuant to 40 CFR Part 60, Subpart AA and ORC 3704.03(T).</p> <p>See b)(2)g., c)(7) and c)(8).</p>
l.	40 CFR 63.1-16 (40 CFR 63.10690)	Table 1 to Subpart YYYYY of 40 CFR Part 63 – Applicability of General Provisions to Subpart YYYYY shows which parts of the General Provisions in 40 CFR 63.1-16 apply.



(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under ORC 3704.03(T) for these emissions units shall be demonstrated by compliance with the terms and conditions of this permit.
- b. The particulate emissions from these emissions units shall be collected and controlled by the melt shop building evacuation system exhausting to baghouse #4 and baghouse #5. Emissions units P222, P288, P289, P201, P202, P264, and P282 also exhaust to Baghouses #4 and #5 through the building evacuation system and are typically in operation during the operation of the EAFs.

The melt shop evacuation system shall achieve and maintain a minimum capture efficiency that is sufficient to prevent violations of the six (6) percent opacity emission limitation for fugitive emissions from the melt shop at any time as required in b)(1)c.

- c. PM_{10} is used as a surrogate for $PM_{2.5}$. Compliance with PM_{10} emission limitations demonstrates compliance with the $PM_{2.5}$ limitations. The permittee has provided a demonstration that PM_{10} is a reasonable surrogate for $PM_{2.5}$.
- d. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.
- e. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the Pb emissions from this air contaminant source since the potential to emit, taking into account air pollution controls serving this unit, is less than ten tons per year of Pb emissions.

This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan

- f. The permittee shall employ "Best Available Control Technology" (BACT) for controlling emissions of CO and VOC. BACT for this emissions unit has been determined to be the following:
 - i. CO – Acceptance of an emissions limitation of 4.8 lbs/ton.



- ii. VOC – The development, maintenance, and process operations under a Scrap Management Plan (SMP) that achieves a maximum emissions rate of 0.37 lbs/ton of steel produced. Compliance with 40 CFR Part 63, Subpart YYYYYY.

The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-10 through OAC rule 3745-31-20 above.

- g. The scrap metals processed in this emissions unit are restricted to only those materials that comply with the Scrap Management Plan (SMP) described in c)(8).
- h. For scrap containing motor vehicle scrap, the permittee shall procure the scrap pursuant to one of the options identified in paragraphs (b)(1), (2), (3), or (4) of 40 CFR 63.10685.

c) Operational Restrictions

- (1) The building evacuation control system exhausting to Baghouse #4 and Baghouse #5 shall be in service at all times that the emissions units are in operation. Pursuant to 40 CFR 60.274(h), the capture system shall be designed and operated such that all emissions are captured and ducted to the baghouses.
- (2) The annual molten steel production of each of these emissions units shall not exceed 400,000 tons/yr as a rolling 12-month average.
- (3) The burning of used tires as a substitute for coke in the Electric Arc Furnaces is expected to increase SO₂ emissions. Accordingly, the annual combined quantity of used tires burned at the Faircrest Steel Plant (in P102) and the Harrison Steel Plant (in P258 and P292) shall not exceed 12,930 tons/yr based upon a rolling, 12-month summation of the weight of tires burned.
- (4) The rolling, 12-month summation of the combined SO₂ emissions from the EAF's at the Harrison Steel Plant (HSP) and the Faircrest Steel Plant (FSP) shall not exceed 419 tons as calculated from the combined monthly sums of items a.i.(a), a.ii.(a), b.i.(a), b.ii.(a), c.i.(a), and c.ii.(a) below

a. P258 at HSP

- i. SO₂ emissions without tire burning
 - (a) $0.07 \text{ lbs SO}_2 / \text{ ton steel} \times \text{ tons steel/month} \times 1 \text{ ton SO}_2 / 2000 \text{ lbs SO}_2$
- ii. SO₂ emissions with tire burning
 - (a) $0.44 \text{ lbs SO}_2 / \text{ ton steel} \times \text{ tons steel/month} \times 1 \text{ ton SO}_2 / 2000 \text{ lbs SO}_2$



- b. P292 at HSP
 - i. SO₂ emissions without tire burning
 - (a) 0.07 lbs SO₂/ ton steel x tons steel/month x 1ton SO₂/2000 lbs SO₂
 - ii. SO₂ emissions with tire burning
 - (a) 0.44 lbs SO₂/ ton steel x tons steel/month x 1ton SO₂/2000 lbs SO₂
 - c. P102 at FSP
 - i. SO₂ emissions without tire burning
 - (a) 0.15 lbs SO₂/ ton steel x tons steel/month x 1 ton SO₂/2000 lbs/S
 - ii. SO₂ emissions with tire burning
 - (a) 0.52 lbs SO₂/ ton steel x tons steel/month x 1ton SO₂/2000 lbs/S
- (5) Sulfur shall not be added to these Electric Arc Furnaces.
- (6) The emission factors in f)(1), expressed in lb/ton, are derived from emissions data obtained from stack testing during trial runs at the Faircrest Steel Plant while adding used tires to the EAF charge at the average rate of 2000 lbs tires/150 tons steel, or 13.3 lbs tires/ ton steel. Therefore the tire addition rate to each EAF at the Harrison Steel Plant shall not exceed 13.3 lbs tires/ ton steel x 63 tons steel hr* = 838 lbs tires/hr.
- * maximum rated hourly capacity of each EAF
- (7) For control of chlorinated plastic, lead, and free organic liquid contaminants in the metallic scrap utilized in the EAFs, the permittee shall comply with the following applicable requirements identified in 40 CFR 63 Subpart YYYYYY:

Applicable Rule	Requirement
63.10685(a)(1)	Implement and maintain a pollution prevention plan for metallic scrap selection and inspection, generally called a Scrap Management Plan (SMP)
63.10685(a)(2)	Restrictions on contaminants in metallic scrap charged to the EAFs



- (8) For control of mercury contaminants in the metallic scrap utilized in the EAFs, the permittee shall comply with the following applicable requirements identified in 40 CFR 63 Subpart YYYYYY:

Applicable Rule	Requirement
63.10685(b)(1)	Implement and maintain a site specific plan for the removal of mercury switches as part of the Scrap Management Plan (SMP)
63.10685(b)(2)	Participate in and purchase motor vehicle scrap only from providers who participate in an approved mercury removal program
63.10685(b)(3)	Documentation requirements for motor vehicle scrap materials recovered for their specialty alloy content only
63.10685(b)(4)	Documentation requirements for non-motor vehicle scrap

- (9) As part of the Scrap Management Plan (SMP), the permittee shall install a radionuclide detector which will be used to inspect all incoming scrap material into the facility. Radioactive scrap material shall not be used at this facility.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) Pursuant to 40 CFR 60.273(c) and ORC 3704.03(T), observations of the opacity of the visible emissions from Baghouses #4 and #5 shall be performed by a certified visible emission observer as follows:

Visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the meltdown and refining period. All visible emissions observations shall be conducted in accordance with Method 9. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the Method 9 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. The permittee shall maintain copies of all daily opacity observations.

- (2) As part of the BAT determination requiring the permittee to maintain a capture system which is designed and operated such that all emissions are captured and ducted to a control device, visible emission observations of all fugitive emissions points associated with the melt shop area shall be performed by a certified visible emission observer as follows:

- a. The company shall have at least two persons at the facility “certified” to conduct visible emission observations in accordance with Method 9 procedures at all times when either emissions unit is operating. Visible emission observations shall be conducted at least once per day when either furnace is operating in the melting and refining period. In addition, visible emissions observations shall be



conducted at least once per day during charging of the furnace. Shop opacity shall be determined as the arithmetic average of 24 or more 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 from the meltshop 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. The permittee shall maintain copies of all daily opacity observations.

- (3) The permittee shall maintain records to identify the persons responsible for conducting the opacity readings and to verify that their Method 9 certifications are valid.
- (4) In order to maintain compliance with the applicable emissions limitations contained in this permit, the acceptable range established for the pressure drop across baghouse #4 and #5 is 3.0 to 13.0 inches of water.
- (5) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouse when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the baghouse on a once per shift basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee subject to prior approval by the Canton City Health Department, Air Pollution Control Division.

Whenever the monitored value deviates from the limit or range established in accordance with 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 operation of the control equipment within the acceptable range 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 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 monitored parameter value 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.

The range or limit of the monitored parameters are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Canton City Health Department, Air Pollution Control Division. The permittee may request revisions to the permitted limit or range for the parameter based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). 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 means of an administrative modification to this PTI or a minor permit modification to the TV permit.

- (6) The permittee shall maintain daily records of:
 - a. the time, duration, and weight of each charge;
 - b. the time, duration, and weight of each tap in tons;
 - c. the time interval for tap to tap cycle; and
 - d. the hourly tap to tap (tons/hr) for each tap.
- (7) The permittee shall calculate and record daily the total weight of tires added per ton of steel for each EAF tap to tap cycle and the total weight of tires added per hour.
- (8) The permittee shall maintain monthly records of the following information:
 - a. the molten steel production rate for each month without tire burning;
 - b. the molten steel production rate for each month with tire burning;
 - c. the rolling, 12-month summation of the molten steel production rates;
 - d. the combined weight of tires burned in P102, P258, and P292 for each month;
 - e. the rolling, 12-month summation of the tires burned in P102, P258, and P292;



- f. the combined SO₂ emissions from P102, P258, and P292 for each month; and
 - g. the rolling, 12-month summation of the combined SO₂ emissions from P102, P258, and P292.
- (9) The permittee shall comply with the recordkeeping requirements for the control of contaminants from scrap pursuant to 40 CFR 63 Subpart YYYYYY, Section 63.10685(c); 63.10685(c)(1)(i); and 63.10685(c)(2).
- e) Reporting Requirements
- (1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
 - (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. each period of time (start time and date, and end time and date) when the pressure drop across baghouses #4 and/or #5 was outside of the acceptable range specified in d)(4);
 - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the baghouse;
 - c. alleceedances 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;
 - d. alleceedances of the fugitive visible particulate emission limit for the melt shop. For the purpose of these reports, an exceedance is defined as any six-minute period during which the opacity is six percent or greater;
 - e. alleceedances of the visible particulate emission limit for the melt shop baghouse dust handling equipment. For the purpose of these reports, an exceedance is defined as any six-minute period during which the average opacity is ten percent or greater;
 - f. each incident of deviation described in "a", "b", "c", "d", and/or "e" (above) where a prompt investigation was not conducted;
 - g. each incident of deviation described in "a" where prompt corrective action, that would bring the specified parameters into compliance with the acceptable range, was determined to be necessary and was not taken;
 - h. each incident of deviation described in "a" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit;



- i. all exceedances of the rolling 12-month summation of the molten steel production rate;
- j. all exceedances of the rolling 12-month summation of the weight of tires burned;
- k. all exceedances of the rolling 12-month summation of the combined SO₂ emissions from P258, P292, and P102; and
- l. all deviations from the Scrap Management Plan.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Part A: Standard Terms and Conditions of this permit.

- (3) The permittee shall comply with the reporting requirements for the control of contaminants from scrap pursuant to 40 CFR 63 Subpart YYYYYY, Section 63.10685(c)(1)(ii) and 63.10685(c)(3).

f) Testing Requirements

- (1) Compliance with the emission limitations and/or control requirements specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation (for P258 only):

Filterable PM₁₀/PM_{2.5} emissions shall not exceed 0.00032 gr/dscf and 0.043 lb/ton

Applicable Compliance Method:

Two stack tests at FSP were compared: one test while burning tires, another without tires. An increase in PM emissions was seen in the tire-burn test. It was assumed that an equal increase in PM (in lbs/ton) would be seen at HSP for tire burning in the EAF's there. This Δ PM from FSP was added to the allowable PM permitted in PTI 15-01475 to determine the new allowable EF for tire burning in the HSP EAFs in PTI P0105790 as follows:

PM from April 2006 tire test-burn at FSP, Table 3, Run 2, (highest PM with tires)	0.042 lb/ton
PM from May 2008 stack test at FSP, Table 1, Run 3, (lowest value, no tires)	<u>- 0.007 lb/ton</u>
Δ PM (worst case)	0.035 lb/ton
PM allowable from PTI 15-01475	0.022 lb/ton
Δ PM (worst case)	<u>+ 0.035 lb/ton</u>
Post Project Allowable EF for PM with tires	0.057 lb/ton



Post Project Allowable PM grain loading with tires:

$$0.057 \text{ lb PM/ton} \times 7000 \text{ gr / lb} \times 1 \text{ min/} 1,000,000 \text{ dscf} \times 63 \text{ ton/hr} \times 1 \text{ hr/} 60 \text{ min} = 0.00042 \text{ gr/dscf}$$

where 63 ton/hr is the maximum capacity of the EAF, and 1,000,000 dscf is the nominal exhaust gas flow rate of baghouse #5.

PM₁₀ is assumed to be 76% of PM from AP-42, Table 12.5-2, pg. 12.5-19.

Post Project Allowable PM₁₀ with tires is therefore:

$$\text{PM}_{10} = \text{PM} \times 0.76 = 0.057 \text{ lb/ton} \times 0.76 = 0.043 \text{ lb/ton}$$

Post Project Allowable PM₁₀ grain loading with tires:

$$\text{PM}_{10} = 0.00042 \text{ gr/dscf} \times 0.76 = 0.00032 \text{ gr/dscf}$$

PM₁₀ is used as a surrogate for PM_{2.5}. Compliance with PM₁₀ emissions limitations demonstrates compliance with the PM_{2.5} limitations. The permittee has provided a demonstration that PM₁₀ is a reasonable surrogate for PM_{2.5}.

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

b. Emission Limitation (for P292 only):

Filterable PM₁₀/PM_{2.5} emissions shall not exceed 0.00048 gr/dscf and 0.052 lb/ton

Applicable Compliance Method:

Two stack tests at FSP were compared: one test while burning tires, another without tires. An increase in PM emissions was seen in the tire-burn test. It was assumed that an equal increase in PM (in lb/ton) would be seen at HSP for tire burning in the EAF's there. This Δ PM from FSP was added to the allowable PM permitted in PTI 15-01475 to determine the new allowable EF for tire burning in the HSP EAFs in PTI P0105790 as follows:

PM from April 2006 tire test-burn at FSP, Table 3, Run 2, (highest PM with tires)	0.042 lb/ton
PM from May 2008 stack test at FSP, Table 1, Run 3, (lowest value, no tires)	- <u>0.007 lb/ton</u>
Δ PM (worst case)	0.035 lb/ton
PM allowable from PTI 15-01475	0.034 lb/ton
Δ PM (worst case)	<u>+ 0.035 lb/ton</u>



Post Project Allowable EF for PM with tires 0.069 lb/ton

Post Project Allowable PM grain loading with tires:

$$0.069 \text{ lb PM/ton} \times 7000 \text{ gr / lb} \times 1 \text{ min/} 800,000 \text{ dscf} \times 63 \text{ ton/hr} \times 1 \text{ hr/} 60 \text{ min} = 0.00063 \text{ gr/dscf}$$

where 63 ton/hr is the maximum capacity of the EAF, and 800,000 dscf is the nominal exhaust gas flow rate of baghouse #4.

PM₁₀ is assumed to be 76% of PM from AP-42, Table 12.5-2, pg. 12.5-19.

Post Project Allowable PM₁₀ with tires is therefore:

$$\text{PM}_{10} = \text{PM} \times 0.76 = 0.069 \text{ lb/ton} \times 0.76 = 0.052 \text{ Lb/ton}$$

Post Project Allowable PM₁₀ grain loading with tires:

$$\text{PM}_{10} = 0.00063 \text{ gr/dscf} \times 0.76 = 0.00048 \text{ gr/dscf}$$

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

c. Emission Limitation:

0.20 lbNOx ton steel

Applicable Compliance Method:

Stack test results from a test-burn at FSP in April 2006 with and without tires showed a NOx increase when burning tires. It was assumed that an equal increase in NOx (in lb/ton) would be seen at HSP for tire burning in the EAF's there. This Δ NOx from FSP was added to the allowable NOx permitted in PTI 15-01475 to determine the new allowable EF for tire burning in the HSP EAFs in PTI P0105790 as follows:

NOx from April 2006 tire test burn at FSP, Table 2, Run1 (highest NOx with tires) 0.15 lb/ton

NOx from April 2006 tire test burn at FSP, Table 2, Run 3 (no tires) - 0.12lb/ton

Δ NOx (worst case) 0.03 lb/ton

NOx allowable from PTI 15-01475 0.20 lb/ton

Δ NOx (worst case) + 0.03 lb/ton

Post Project Allowable NOx with tires: 0.23 lb/ton



Because both test runs show NOx emissions close to, but not exceeding, the permitted allowable of 0.20 lb/ton, the post project allowable NOx emissions will be kept the same as the current PTI 15-01475 allowable:

0.20 lb/ton

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

d. Emission Limitation:

4.8 lb CO/ ton steel

Applicable Compliance Method:

Testing done at the HSP in April 2006 while burning tires showed CO emissions of 2.5 lb/ton and 1.79 lb/ton (Runs 1 and 2, Table 2 of test report). However, the EAF at the FSP is equipped with a Direct Shell Evacuation (DSE) control system, while the EAFs at HSP are equipped only with a fourth-hole evacuation system venting to a canopy hood.

At the HSP, upgrading of the fourth-hole evacuation system on the EAF's to a DSE control system is not cost effective as demonstrated in the Permittee's BACT Analysis for CO included with the PTI Application. Therefore no reduction in CO emissions are expected and the CO limitation has been maintained at the currently permitted limit of 4.8 lb CO/ton.

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

e. Emission Limitation:

0.44 lb SO₂/ ton steel

Applicable Compliance Method:

Stack test results from a test-burn at FSP in April 2006 with and without tires showed an SO₂ increase when burning tires. It was assumed that an equal increase in SO₂ (in lb/ton) would be seen at HSP for tire burning in the EAF's there. This Δ SO₂ from FSP was added to the allowable SO₂ permitted in PTI 15-01475 to determine the new allowable EF for tire burning in the HSP EAF's.

SO₂ from April 2006 tire test burn at FSP, Table 2, Run1 (highest SO₂ with tires) 0.51 lb/ton

SO₂ from April 2006 tire test burn at FSP, Table 2, Run 3 (no tires) - 0.14 lb/ton

Δ SO₂ (worst case) 0.37 lb/ton

SO₂ allowable from PTI 15-01475 0.07 lb/ton

Δ SO₂ (worst case) + 0.37 lb/ton



Post Project Allowable SO₂ with tires: 0.44 lb/ton

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

f. Emission Limitation:

0.37 lb VOC/ ton steel

Applicable Compliance Method:

Stack test results from a test-burn at FSP in April 2006 with and without tires showed a VOC increase when burning tires. This Δ in VOC was added to average VOC emissions measured in a 7-2001 stack test at HSP to derive the post project EF with tire burning.

VOC from April 2006 tire test burn at FSP, Table 2, Run1 (highest VOC with tires) 0.09 lb/ton

VOC from April 2006 tire test burn at FSP, Table 2, Run 3 (no tires) - 0.02 lb/ton

Δ VOC (worst case) 0.07 lb/ton

VOC allowable from current PTI 15-01475 0.30 lb/ton

Δ VOC (worst case) + 0.07 lb/ton

Post Project Allowable VOC with tires: 0.37 lb/ton

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

g. Emission Limitation (for P258 only):

Pb emissions shall not exceed 0.00027 lb/ton steel

Applicable Compliance Method:

Pb content in the baghouse dust is 1.24% based on a 2005 baghouse dust analysis. Burning tires is not expected to increase Pb emissions. Therefore the post project Pb emissions factor is based on using the emissions factor for PM of 0.022 lb/ton from PTI 15-01475 for the EAF and the following calculation:

$$0.022 \text{ lb PM /ton steel} \times 0.0124 \text{ lbPb / lb PM} = 0.00027 \text{ lbPb /ton steel}$$

Compliance shall be demonstrated by conducting the testing required in f)(2) below.



h. Emission Limitation (for P292 only):

Pb emissions shall not exceed 0.00042 lb/ton steel

Applicable Compliance Method:

Pb content in the baghouse dust is 1.24% based on a 2005 baghouse dust analysis. Burning tires is not expected to increase Pb emissions. Therefore the post project Pb emissions factor is based on using the emissions factor for PM of 0.034 lb/ton from PTI 15-01475 for the EAF and the following calculation:

$$0.034 \text{ lb PM /ton steel} \times 0.0124 \text{ lbPb / lb PM} = 0.00042 \text{ lbPb /ton steel}$$

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

i. Emission Limitation:

Mercury (Hg) emissions shall not exceed 0.0002 lb/ton

Applicable Compliance Method:

The allowable emissions factor is the same as used in the previous PTI 15-01475. The proposed used tire feedstock contains no Hg, and consequently the burning of tires is not expected to affect the emissions factor. The permittee shall control mercury in the scrap in accordance with the requirements in c)(8) and d)(13).

Compliance shall be demonstrated by conducting the testing required in f)(2) below.

j. Emission Limitation:

CO emissions shall not exceed 302 lbs/hr, and 960 tons per year

VOC emissions shall not exceed 23.3 lbs/hr, and 74 tons per year

For P258 only: Pb emissions shall not exceed 0.017 lbs/hr, and 0.054 tons per year

For P292 only: Pb emissions shall not exceed 0.026 lbs/hr, and 0.084 tons per year

Mercury (Hg) emissions shall not exceed 0.013 lb/hr and 0.04 tons per year

Applicable Compliance Method:

Each hourly emission limitation was established by multiplying the applicable allowable emissions factor from f)(1)a. through f)(1)i., in lb/ton steel, by the maximum capacity of the EAF (63 tons steel/hr). Therefore, compliance with the



applicable allowable emission factors from f)(1)a. through f)(1)i. demonstrates compliance with the corresponding hourly emission limitations.

Each annual limitation was established by multiplying the applicable allowable emissions factor, in lb/ton steel, by the maximum annual production capacity of the EAF (400,000 tons steel/yr) from c)(2) and dividing by a conversion factor of 2000 lb/ton. Therefore, compliance with the applicable allowable emission factors from f)(1)a. through f)(1)i. demonstrates compliance with the corresponding annual emission limitations.

k. Emission Limitation:

SO₂ emissions from Emission Units P102, P258, and P292 combined shall not exceed 419 tons/yr as a rolling, 12-month summation.

Applicable Compliance Method:

The tons/yr was established as a synthetic minor limitation based on the permittee's netting analysis to avoid exceeding New Source Review/Prevention of Significant Deterioration (NSR/PSD) significance levels for SO₂ emissions.

Compliance with the annual combined SO₂ limitation shall be demonstrated by the records required in section d)(12)f. and d)(12)g.

l. Emission Limitation:

Visible particulate emissions from the baghouse shall not exceed 3% opacity. Visible particulate emissions of fugitive dust shall not exceed 6% opacity from the melt shop area and 10% opacity from the associated dust handling equipment.

Applicable Compliance Method:

Compliance with the allowable visible emissions limitations shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9. The points of observation for visible emissions of fugitive dust determination shall include all non-stack egress points from the building housing the emissions units. Such points include, but are not limited to, doorways, windows, and roof monitors.

(2) 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 6 months prior to the permit expiration.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable emission factors in lbs/ton identified in f)(2)f. below for emissions of filterable PM₁₀/PM_{2.5}, NO_x, CO, SO₂, VOC, Pb, and Hg, to demonstrate compliance with the visible emission limitations in b)(1), and to demonstrate the exhaust gas flow rate of Baghouse #4 and Baghouse #5 in dscfm.



c. The following test methods found in 40 CFR Part 60, Appendix A shall be employed (alternative U.S. EPA approved test methods may be used with prior approval from the Canton City Health Department, Air Pollution Control Division):

- i. Filterable PM₁₀: Method 201 or 201A
- ii. Filterable PM_{2.5}: Filterable PM₁₀ is used as a surrogate
- iii. NO_x: Method 7 or 7A
- iv. CO: Method 10
- v. SO₂: Method 6 or 6A
- vi. VOC: Method 18, 25, or 25A
- vii. Pb: Method 12 or 29
- viii. Hg: Method 29
- ix. Visible Emissions: Method 9

d. The tests shall be conducted at each baghouse outlet while the appropriate EAF (P292 when testing at Baghouse #4, and P258 when testing at Baghouse #5) is operating at or near its maximum steel production capacity of 63 tph with the maximum allowable amount of tires included in the furnace charge (13.3 lb tires/ton steel), unless otherwise specified or approved by the Canton City Health Department, Air Pollution Control Division.

The sampling time shall include an integral number of heats.

Compliance demonstration results shall be based on the arithmetical average of (3) back-to-back test runs.

e. Emissions from the EAF's (P292 and P258) are controlled by the Meltshop building evacuation system which is serviced by Baghouse #4 and Baghouse #5 combined. The following EU's also contribute emissions to the Meltshop and are exhausted to the same baghouses:

P282 (#1 Ladle Furnace)

P264 (Ladle Refiner)

P222 (Continuous Caster),

P288 and P289, (Tundish Preheaters),

P201 (Slag Processing), and

P202 (Hot Metal Transfer)



The emissions from these EU's are captured by both baghouses in undetermined proportions. Since it is not practical to operate both EAF's simultaneously at their maximum ratings, the testing to demonstrate compliance for P292 and/or P258 shall be conducted such that test results from testing at each baghouse individually are summed to determine a combined limit. Compliance of P292 and/or P258 is presumed if compliance with the combined limit is demonstrated.

If the combined limit for any pollutant is exceeded, then all emissions units which contribute to that pollutant's emissions factor identified in f)(2)f. below shall be considered out of compliance.

Compliance testing done at Baghouse #4 shall be performed while P292 is operating at or near its maximum steel production capacity, and sulfur is being added to P282 at or near to its maximum permitted rate of 500 lb/hr. (This maximum sulfur feed rate has been established by the Permittee as the maximum hourly sulfur feed rate for steel grades produced).

Compliance testing done at Baghouse #5 shall be performed while P258 is operating at or near its maximum steel production capacity.

- f. The combined limits, for the purpose of compliance demonstration by stack testing, are derived as follows:
 - i. for SO₂ compliance demonstration: 19.753 lb/ton

EU #	Emissions Contribution Lb SO ₂ /ton steel	Basis for Contribution
P292 (EAF #2)	0.44	PTI P0105790
P282 (#1 Ladle Furnace)	$\frac{65 \text{ lb SO}_2/\text{hr}}{\text{tph steel}} = 0.103$	PTI 15-575
P264 (Ladle Refiner)	$\frac{457.84 \text{ lb SO}_2/\text{hr}}{63 \text{ tph steel}} = 7.27$	OAC rule 3745-18-06(E)(1) using 107 tph maximum molten steel refining rate
P201 (Slag Processing)	0.0	Negligible
P202 (Hot Metal Transfer)	0.0	Negligible
P258 (EAF #9)	0.44	PTI P0105790
P222 (Caster)	0.0	Negligible
P288 (Tundish Preheater)	$\frac{362.5 \text{ lb SO}_2/\text{hr}}{63 \text{ tph steel}} = 5.75$	OAC rule 3745-18-06(E)(1) using 75.5 tph maximum molten steel handling capacity
P289 Tundish Preheater)	$\frac{362.5 \text{ lb SO}_2/\text{hr}}{63 \text{ tph steel}} = 5.75$	OAC rule 3745-18-06(E)(1) using 75.5 tph maximum molten steel handling capacity



EU #	Emissions Contribution Lb SO ₂ /ton steel	Basis for Contribution
Total SO ₂ emissions not to be exceeded for stack testing compliance	19.753	Sum of Baghouses #4 and #5

ii. for PM₁₀/PM_{2.5} compliance demonstration: 0.095 lb/ton steel

EU #	Emissions Contribution Lb PM ₁₀ /PM _{2.5} /ton steel	Basis for Contribution
P292 (EAF #2)	0.052	PTI P0105790
P282 (#1 Ladle Furnace)	0.0034x0.076 = 0.00003	AP-42 Table 12.5.1-1 for PM x 76% of PM assumed as PM ₁₀
P264 (Ladle Refiner)	0.0000	Included with P282
P201 (Slag Processing)	0.0	Negligible
P202 (Hot Metal Transfer)	0.0	Included in P222
P258 (EAF #9)	0.043	PTI P0105790
P222 (Caster)	0.00012x0.76 = 0.00009	AP-42 Table 12.5.1-1 for PM x 76% of PM assumed as PM ₁₀ . Baghouse efficiency of 99.9% assumed
P288 (Tundish Preheater)	0.0	Negligible PM ₁₀ , gas fired
P289 Tundish Preheater)	0.0	Negligible PM ₁₀ , gas fired
Total PM ₁₀ /PM _{2.5} emissions not to be exceeded for stack testing compliance	0.095	Sum of Baghouses #4 and #5

iii. For CO compliance demonstration: 9.84 lb/ton steel

Only P282 (#1 Ladle Furnace), and P222 (Caster) contribute any relevant additional CO emissions to the EAF emissions leaving the baghouses

P282 is permitted at 11.75 lb/hr CO. The maximum CO emissions contributed by P282 in lb/ton is



$$11.75 \text{ lb/hr} \div 63 \text{ ton/hr} = 0.20 \text{ lb CO/ton}$$

P222 (Caster) is rated at 30 mmBtu/hr of natural gas heat input/hr, or 0.030 mmscf/hr of nat. gas. Applying an emissions factor taken from AP-42 gives the following contribution of NOx from P222:

$$\frac{0.03 \text{ mmscf/hr} \times 84 \text{ lb CO/mmscf}}{63 \text{ tph steel}} = 0.04 \text{ lb CO/ton}$$

The maximum permit allowable CO for P292 is 4.8 lb CO/ton

The maximum permit allowable CO for P258 is 4.8 lb CO/ton

Total CO emissions limit for demonstrating compliance

by stack testing (summation of above) **9.84 lb CO/ton**

iv. For NOx compliance demonstration: 0.42 lb/ton steel

Only P222 (Caster), contributes any relevant additional NOx emissions to the EAF emissions leaving the baghouses. It is rated at 30 mmBtu/hr of natural gas heat input/hr, or 0.030 mmscf/hr of nat. gas. Applying an emissions factor taken from AP-42 gives the following contribution of NOx from P222:

$$\frac{0.03 \text{ mmscf/hr} \times 50 \text{ lbNOx/mmscf}}{63 \text{ tph steel}} = 0.02 \text{ lbNOx/ton}$$

The maximum permit allowable NOx for P292 is 0.20 lbNOx/ton

The maximum permit allowable NOx for P258 is 0.20 lbNOx/ton

Total NOx emissions limit for demonstrating compliance

by stack testing (summation of above) **0.42 lbNOx/ton**

v. For VOC, Pb, and Hg:

(a) Emissions of these pollutants from EU's other than the EAF's are negligible. Therefore no adjustment to the stack test results for emissions of these pollutants from other EU's shall be required.

(b) For VOC compliance demonstration: 0.74 lb/ton steel

Maximum permitted VOC from P292 is 0.37 lb VOC/ton

Maximum permitted VOC from P258 is 0.37 lb VOC /ton

Total VOC emissions limit for demonstrating compliance

by stack testing (summation of above) **0.74 lb VOC /ton**



- (c) For Pb compliance demonstration: 0.00069 lb/ton steel
 - Maximum permitted Pb from P292 is 0.00042 lbPb/ton
 - Maximum permitted Pb from P258 is 0.00027 lbPb/ton
 - Total Pb emissions limit for demonstrating compliance by stack testing (summation of above) **0.00069 lbPb/ton**
- (d) For Hg compliance demonstration:
 - Maximum permitted Hg from P292 is 0.00020 lb Hg/ton
 - Maximum permitted Hg from P258 is 0.00020 lb Hg/ton
 - Total Hg emissions limit for demonstrating compliance by stack testing (summation of above) **0.00040 lb Hg/ton**
- g. Monitoring and recording of the operating parameters of the baghouses specified in terms d)(4) above shall be conducted at 15 minute intervals during the duration of the test(s). Hourly averages of the readings shall be used to establish and/or re-verify the parameter ranges or minimum limits specified in those terms.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Canton City Health Department, Air Pollution Control Division. 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 Canton City Health Department, Air Pollution Control Division's refusal to accept the results of the emission test(s).
- i. Personnel from the Canton City Health Department, Air Pollution Control Division, 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.
- j. 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 Canton City Health Department, Air Pollution Control Division, 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 Canton City Health Department, Air Pollution Control Division.



Final Permit-to-Install
The Timken Company - Harrison Steel Plant
Permit Number: P0115030
Facility ID: 1576222002
Effective Date: 7/30/2013

g) Miscellaneous Requirements

(1) None.