Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Part 70 Administrative Operating Permit Renewal
OFFICE OF AIR QUALITY

TMS International, LLC
One North Broadway
Gary, Indiana 46404

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. 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 conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T089-36864-00132	
Issued by: Jenny Acker, Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary slag processing and metal recovery operation as a contractor at US Steel - Gary Works.

Source Address:	One North Broadway, Gary, Indiana 46404
General Source Phone Number:	(219) 881-5721
SIC Code:	7389, 3398 (Steel Works, Business Services)
County Location:	Lake
Source Location Status:	Nonattainment for 8-hour ozone standard Attainment for all other criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD and Emission Offset Rules Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

US Steel - Gary Works is an integrated steel mill that includes the primary operation, U.S. Steel – Gary Works (Source ID 089-00121), at One North Broadway, Gary, Indiana, collocated with on-site contractors:

	Company Name	Source ID	Operation Description
1	U.S. Steel - Gary Works	089-00121	integrated steel mill
	On-Site Contractors		
2	TMS International, LLC	089-00132	slag processing/metal recovery
3	South Shore Slag LLC	089-00133	slag crushing, screening and conveying
4	Tube City IMS, LLC	089-00170	iron ore screening operation
5	Central Teaming Company Inc	089-00172	material handling
6	Mid-Continent Coal & Coke	089-00173	coke screening operation
7	Tube City IMS LLC	089-00174	scrap metal processing
8	Fritz Enterprises, Inc.	089-00578	iron and slag processing operation

IDEM has determined that TMS International, LLC is under the common control of US Steel - Gary Works. These two plants are considered one (1) source due to contractual control. Therefore, the term “source” in the Part 70 documents refers to both US Steel - Gary Works and TMS International, LLC as one (1) source.

Separate Part 70 Operating permits have been issued to US Steel - Gary and TMS International, LLC, solely for administrative purposes.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

(a) One (1) kish iron crushing operation, identified as M029, constructed in October 1990, with a maximum capacity of 125 tons per hour, with emissions controlled by building enclosure and kish iron pre-watering or water sprays, consisting of the following:

(1) One (1) jaw crusher;

(2) One (1) hammer mill;

(3) Two (2) screens;

(4) Sixteen (16) conveyers;

(5) Storage piles, four-tenths (0.4) acre with storage capacity of 6,000 tons; and

(6) Unpaved haul road traffic.

(b) One (1) slag processing plant, identified as M057, constructed on October 6, 1995, with a maximum capacity of 1,000 tons per hour, with emissions controlled by slag pre-watering or water sprays, consisting of the following:

(1) Five (5) screen stations;

(2) Eighteen (18) conveyers;

(3) Storage piles, nine-tenths (0.9) acre with storage capacity of 16,000 tons;

(4) One (1) VSI crusher, constructed October 1997;

(5) Four (4) conveyers, constructed October 1997; and

(6) Unpaved haul road traffic; and

(7) Material transfers.

(c) One (1) steel slab scarfing plant, constructed in August 1991, with a maximum capacity of 180 tons per hour, controlled by a baghouse, ducted to the Scarfing Stack, using a 1.5 MMBtu per hour natural gas flame.

(d) Oxygen lancing of metal, with a maximum capacity of 50 tons per hour, controlled by building enclosure.

(e) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) Two (2) diesel fuel storage tanks, identified as 19A and 19B, with a maximum capacity of 8,000 gallons, each.

(2) One (1), low sulfur diesel fuel storage tank, identified as 21, with a maximum capacity of 500 gallons.

(3) One (1) diesel fuel storage tank, identified as 37, with a maximum capacity of 4,000 gallons.

(f) One (1) crushing and screening operation, constructed in 2014, with a bottlenecked capacity of 300 tons per hour (this is the quickest material can be physically loaded into the process), using wet suppression as control, and consisting of the following:

(1) One (1) crushing plant, with a maximum rated capacity of 441 tons per hour, consisting of the following:

(A) One (1) feed hopper, identified as FH1, with a maximum capacity of 441 tons per hour.

(B) One (1) crusher, identified as CR-1, with a maximum capacity of 441 tons per hour.

(C) One (1) conveyor, identified as C1, with a maximum capacity of 441 tons per hour.

(2) One screening plant, with a maximum capacity of 551 tons per hour, consisting of the following:

(A) One (1) feed hopper, identified as FH2, with a maximum capacity of 551 tons per hour.

(B) One (1) conveyor, identified as C2, with a maximum capacity of 551 tons per hour.

(C) One (1) double decker shaker screener, identified as S1, with a maximum capacity of 551 tons per hour.

(D) Three (3) conveyors, identified as C3, C4, and C5, with a combined maximum capacity of 551 tons per hour.

(3) Five (5) storage piles, identified as PA10+, PB5", P1 5" minus, P2 1/4"x5", and P3 1/4" minus.

(4) Unpaved roads.

(g) One (1) screening operation, constructed in 2014, identified as Field Screen, with a maximum capacity of 551 tons per hour, using wet suppression as control, and consisting of the following:

(1) One (1) screen.

(2) Two (2) storage piles.

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) Gasoline fuel transfer and dispensing operation, identified as tank 20, handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.

(1) One (1) storage tank, with a maximum capacity of 600 gallons, with an average monthly throughput of less than 10, 000 gallons.

A.5 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

(a) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) One (1) portable diesel fuel storage tank, identified as 71(a), with a maximum capacity of 1,615 gallons..

(2) One (1) portable diesel fuel storage tank, identified as 72(a), with a maximum capacity of 850 gallons.

A.6 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T089-36864-00132, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7][IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than April 15 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ or Northwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Northwest Regional Office phone: (219) 464-0233; fax: (219) 464-0553**.**

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T089-36864-00132 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-

5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if,

subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Open Burning [326 IAC 4-1][IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.3 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.5 Fugitive Particulate Matter Emissions [326 IAC 6.8-10-3]

Pursuant to 326 IAC 6.8-10-3 (formerly 326 IAC 6-1-11.1) (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements:

(a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

(b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).

(c) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

(d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

(e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.

(f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

(g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).

(h) Material processing facilities shall include the following:

(1) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.

(2) The PM_{10} emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(3) The PM_{10} stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(4) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.

(5) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).

(i) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

(j) Material transfer limits shall be as follows:

(1) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

(2) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.

(3) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:

(A) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.

(B) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in 326 IAC 6.8-10-3(9).

(k) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using ambient air quality modeling pursuant to 326 IAC 1-7-4. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on

pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)][40 CFR 64][326 IAC 3-8]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(d) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

C.11 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.12 Emergency Reduction Plans [326 IAC 1-5-2][326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(11)][40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [40 CFR 64][326 IAC 3-8][326 IAC 2-7-5][326 IAC 2-7-6]

(I) Upon detecting an excursion where a response step is required by the D Section, or an exceedance of a limitation, not subject to CAM, in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

(II)

(a) CAM *Response to excursions or exceedances.*

(1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed significant permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a Quality Improvement Plan (QIP). The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(d) Elements of a QIP:
The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).

(e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(c) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:

(1) Failed to address the cause of the control device performance problems; or

(2) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

(h) *CAM recordkeeping requirements.*

(1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(c) of this condition and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

(2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (33) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6][326 IAC 2-2][326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)][326 IAC 2-1.1-11][326 IAC 2-2][326 IAC 2-3][40 CFR 64][326 IAC 3-8]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted no later than sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) kish iron crushing operation, identified as M029, constructed in October 1990, with a maximum capacity of 125 tons per hour, with emissions controlled by building enclosure and kish iron pre-watering or water sprays, consisting of the following:

(1) One (1) jaw crusher;

(2) One (1) hammer mill;

(3) Two (2) screens;

(4) Sixteen (16) conveyers;

(5) Storage piles, four-tenths (0.4) acre with storage capacity of 6,000 tons; and

(6) Unpaved haul road traffic.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Prevention of Significant Deterioration (PSD) [326 IAC 2-2] Emission Offset [326 IAC 2-3]

(a) The nonfugitive particulate emissions from the one (1) kish iron crushing operation, identified as M029 shall be limited to the following pound per ton rates:

Emission Units	PM Emissions (lb/ton)	PM_{10} Emissions (lb/ton)
Each Crusher	0.0012	0.00054
Each Screen	0.0036	0.0022
Each conveyor transfer point	0.00014	0.000046

(b) The moisture content of the kish iron processed shall not be less than 0.55%.

Compliance with the above limits combined with the controlled potential emissions from the fugitive sources of the kish iron operation, shall limit the PM and PM_{10} from the kish iron operation to less than twenty-five (25) tons of PM and less than fifteen (15) tons of PM_{10} per twelve (12) consecutive month period and render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-3 (Emission Offset) not applicable to this modification.

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.1.3 Particulate Control

In order to assure compliance with Condition D.1.1, the Permittee shall apply an initial application of water or a mixture of water and wetting agent to control the PM and PM_{10} emissions from the crushers, screens, and the conveyors at Kish Iron Operation. The suppressant shall be applied in

a manner and at a frequency sufficient to assure compliance with Condition D.1.1. If weather conditions preclude the use of wet suppression, the Permittee shall perform gravimetric analysis on the metallurgical material to assure it has a moisture content of at least 0.55 percent of the process stream by weight or greater. The Permittee shall submit to IDEM, OAQ the method for moisture content analysis for approval.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

D.1.4 Visible Emission Notations

(a) Visible emission notations of the exhausts from the jaw crusher, hammer mill, screens, and conveyor transfer points shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C- Response to Excursions or Exceedances contains the Permittee's obligations with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

D.1.5 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1and D.1.3, the Permittee shall maintain records as needed of the gravimetric analysis of the metallurgical material.

(b) To document the compliance status with Condition D.1.4, the Permittee shall maintain records of visible emission notations of the crushing, screening, conveying operations once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation, (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) One (1) slag processing plant, identified as M057, constructed on October 6, 1995, with a maximum capacity of 1,000 tons per hour, with emissions controlled by slag pre-watering or water sprays, consisting of the following:

(1) Five (5) screen stations;

(2) Eighteen (18) conveyers;

(3) Storage piles, nine-tenths (0.9) acre with storage capacity of 16,000 tons;

(4) One (1) VSI crusher, constructed October 1997;

(5) Four (4) conveyers, constructed October 1997; and

(6) Unpaved haul road traffic; and

(7) Material transfers.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Emission Offset Minor Particulate Limit [326 IAC 2-3]

Pursuant to CP 089-4337-00132, issued on March 31, 1995, the input of raw material to the slag processing plant, identified as M057, shall be less than 2.3 million tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits shall limit the emissions of PM to less than twenty-five (25) tons and the emissions of PM_{10} to less than fifteen (15) tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-3 (Emission Offset) not applicable to the slag processing plant.

D.2.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.2.3 Particulate Control [326 IAC 2-3]

In order to assure compliance with Condition D.2.1, the Permittee shall apply an initial application of water or a mixture of water and wetting agent to control the PM, PM_{10} emissions from the screens and the conveyors at slag processing plant, identified as M057. The suppressant shall be applied in a manner and at a frequency assure to the moisture content of the slag processed shall not be less than 0.55%.. If weather conditions preclude the use of wet suppression, the Permittee shall perform gravimetric analysis on the metallurgical material to ensure it has a moisture content of at least 0.55 percent of the process stream by weight or greater. The Permittee shall submit to IDEM, OAQ the method for moisture content analysis for approval.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.4 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.1(a), the Permittee shall maintain records of the raw material input for the slag processing plant identified as M057.

(b) To document the compliance status with Condition D.2.1(d) and D.2.3, the Permittee shall maintain records as needed of the gravimetric analysis of the metallurgical material.

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.2.5 Reporting Requirements

A quarterly report of raw material input to M057 and a quarterly summary of the information to document the compliance status with D.2.1 shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official," as defined by 326 IAC 2-7-1(35).

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) One (1) steel slab scarfing plant, constructed in August 1991, with a maximum capacity of 180 tons per hour, controlled by a baghouse, ducted to the Scarfing Stack, using a 1.5 MMBtu per hour natural gas flame.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Emission Offset Minor Particulate Limit [326 IAC 2-3]

Pursuant to CP 089-2092-00132 (issued September 13, 1991) , the particulate matter emissions from the scarfing operation shall not exceed 0.004 gr/dscf at an actual flow rate of 90,000 cfm.

Compliance with these limits shall limit the emissions of PM to less than twenty-five (25) tons and the emissions of PM_{10} to less than fifteen (15) tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-3 (Emission Offset) not applicable to the steel slab scarfing plant.

D.3.2 Particulate Limitations [326 IAC 6.8-1-2(a)]

Pursuant to 326 IAC 6.8-1-2(a), the particulate matter emissions from the scarfing operation shall be limited to three-hundredths (0.03) grain per dry standard cubic foot (dscf).

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.3.4 Particulate Matter Control [326 IAC 2-7-6(6)]

(a) In order to comply with Conditions D.3.1 and D.3.2, the baghouse for particulate control shall be in operation and control particulate emissions from the scarfing building at all times the scarfing process is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.5 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the scarfing operations stack shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C - Response to Excursions or Exceedances contains the Permittee's obligations with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.3.6 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouses controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the scarfer. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.5, the Permittee shall maintain records of daily visible emission notations of the scarfing stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(d) Oxygen lancing of metal, with a maximum capacity of 50 tons per hour, controlled by building enclosure.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 Particulate Limitations [326 IAC 6.8-1-2(a)]

Pursuant to 326 IAC 6.8-1-2(a), the particulate matter emissions from the oxygen lancing operation shall be limited to three-hundredths (0.03) grain per dry standard cubic foot (dscf).

D.4.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(e) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) Two (2) diesel fuel storage tanks, identified as 19A and 19B, with a maximum capacity of 8,000 gallons, each.

(2) One (1), low sulfur diesel fuel storage tank, identified as 21, with a maximum capacity of 500 gallons.

(3) One (1) diesel fuel storage tank, identified as 37, with a maximum capacity of 4,000 gallons.

Insignificant activities:

(a) Gasoline fuel transfer and dispensing operation, identified as tank 20, handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.

(1) One (1) storage tank, with a maximum capacity of 600 gallons, with an average monthly throughput of less than 10,000 gallons.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 Volatile Organic Liquid Storage Vessels [326 IAC 8-9-1]

Pursuant to 326 IAC 8-9-6(a) and (b), the owner or operator of each Volatile Organic Liquid Storage vessel to which 326 IAC 8-9-1 applies shall maintain the following records for the life of the vessel and submit a report to IDEM, OAQ containing the following for each vessel:

(a) The vessel identification number,

(b) The vessel dimensions, and

(c) The vessel capacity.

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(f) One (1) crushing and screening operation, constructed in 2014, with a bottlenecked capacity of 300 tons per hour (this is the quickest material can be physically loaded into the process), using wet suppression as control, and consisting of the following:

(1) One (1) crushing plant, with a maximum rated capacity of 441 tons per hour, consisting of the following:

(A) One (1) feed hopper, identified as FH1, with a maximum capacity of 441 tons per hour.

(B) One (1) crusher, identified as CR-1, with a maximum capacity of 441 tons per hour.

(C) One (1) conveyor, identified as C1, with a maximum capacity of 441 tons per hour.

(2) One screening plant, with a maximum capacity of 551 tons per hour, consisting of the following:

(A) One (1) feed hopper, identified as FH2, with a maximum capacity of 551 tons per hour.

(B) One (1) conveyor, identified as C2, with a maximum capacity of 551 tons per hour.

(C) One (1) double decker shaker screener, identified as S1, with a maximum capacity of 551 tons per hour.

(D) Three (3) conveyors, identified as C3, C4, and C5, with a combined maximum capacity of 551 tons per hour.

(3) Five (5) storage piles, identified as PA10+, PB5", P1 5" minus, P2 1/4"x5", and P3 1/4" minus.

(4) Unpaved roads.

(g) One (1) screening operation, constructed in 2014, identified as Field Screen, with a maximum capacity of 551 tons per hour, using wet suppression as control, and consisting of the following:

(1) One (1) screen.

(2) Two (2) storage piles.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

(a) The nonfugitive particulate emissions from the one (1) crushing and screening operation and the Field Screen shall be limited to the following pound per ton rates:

Emission Units	PM Emissions (lb/ton)	PM_{10} Emissions (lb/ton)	$PM_{2.5}$ Emissions (lb/ton)
Each Crusher	0.0012	0.00054	0.0001
Each Screen	0.0022	0.00074	0.00005
Each conveyor transfer point	0.00014	0.000046	0.000013

(b) The moisture content of the slag processed shall not be less than 0.55%.

(c) The fugitive dust control plan shall be implemented to reduce emissions from storage piles and unpaved roads by fifty (50) percent.

Compliance with these limits, combined with the potential to emit PM, PM10, and PM2.5 from the fugitive sources of the crushing and screening operation and the Field Screen, shall limit the potential to emit from the curushing and screening operation and Field Screen of PM to less than twenty-five (25) tons per twelve (12) consecutive month period, PM_{10} to less than fifteen (15) tons per twelve (12) consecutive month period, $PM_{2.5}$ to less than ten (10) tons per twelve (12) consecutive month period, and VOC to less than forty (40) tons per twelve (12) consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.6.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-5(1)]

D.6.3 Particulate Control [326 IAC 2-2][326 IAC 2-3]

In order to assure compliance with Condition D.6.1, the Permittee shall apply an initial application of water or a mixture of water and wetting agent to control the PM, PM_{10}, $PM_{2.5}$ emissions from the crushers, screens, and the conveyors at the crushing and screening operation and the Field Screen. The suppressant shall be applied in a manner and at a frequency sufficient to assure compliance with Condition D.6.1. If weather conditions preclude the use of wet suppression, the Permittee shall perform gravimetric analysis on the metallurgical material to assure it has a moisture content of at least 0.55 percent of the process stream by weight or greater. The Permittee shall submit to IDEM, OAQ the method for moisture content analysis for approval.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

D.6.4 Visible Emission Notations

(a) Visible emission notations of the exhausts from the crusher, screens, and conveyor transfer points shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C- Response to Excursions or Exceedances contains the Permittee's obligations with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.6.5 Record Keeping Requirements

(a) To document the compliance status with Conditions D.6.1(a) and (b) and D.6.3, the Permittee shall maintain records as needed of the gravimetric analysis of the metallurgical material.

(b) To document the compliance status with Condition D.6.4, the Permittee shall maintain records of visible emission notations of the crushing, screening, conveying operations once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation, (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: TMS International, LLC
Source Address: One North Broadway, Gary, Indiana 46404
Part 70 Permit No.: T089-36864-00132

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)

☐ Report (specify)

☐ Notification (specify)

☐ Affidavit (specify)

☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: TMS International, LLC
Source Address: One North Broadway, Gary, Indiana 46404
Part 70 Permit No.: T089-36864-00132

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)

- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: TMS International, LLC
Source Address: One North Broadway, Gary, Indiana 46404
Part 70 Permit No.: T089-36864-00132
Facility: Slag Processing Plant, identified as M057
Parameter: Slag Processed
Limit: 2.3 million tons of slag processed per twelve (12) consecutive month period

QUARTER : _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: TMS International, LLC
Source Address: One North Broadway, Gary, Indiana 46404
Part 70 Permit No.: T089-36864-00132

Months: _____ **to** _____ **Year:** _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

TMS INTERNATIONAL, LLC
USS GARY WORKS OPERATION
PM-10 COMPLIANCE PLANS

THIS VOLUME CONTAINS:

1) **FUGITIVE EMISSION CONTROL PLAN**
2) **CONTINUOUS COMPLIANCE PLAN**
3) **VISIBLE EMISSION EVALUATION PLAN**

Revision:
June 21, 2016

INDEX
PM10 Compliance Plan

FUGITIVE EMISSION CONTROL PLAN
INTRODUCTION

This Fugitive Emission Control Plan is prepared in accordance with the Indiana Department of Environmental Management (IDEM) promulgated Rule 10, 326 IAC 6.8-10, Lake County Fugitive Particulate Matter and 326 IAC 6.8-10-4, Control Plans. This rule requires that affected sources submit a fugitive particulate control plan to reduce emissions of PM-10 (particulate matter with an aerodynamic diameter of 10 microns or less) from nontraditional sources of fugitive emissions. This plan must include a description of each nontraditional source, measurements of the parameters needed to estimate emissions from these sources, control measures and other work practices to be employed to limit PM-10 emissions from these sources, and conditions (i.e. rain, snow, high wind speeds, freezing conditions, etc.) that may prevent or delay routine implementation of some control measures.

The following sections contain the plan developed to control fugitive particulate emissions from TMS International at USS Gary Works. This plan will be implemented on a year round basis except, when not required to do so under Subsection F – Conditions Preventing Use of Control Measures.

This Fugitive Emission Control Plan (Plan) is structured in the same form as the rule. An index for this Plan is included on the first page. The **bold font** in the body of the Plan below identifies the regulatory citations from 326 IAC 6.8-10-4 and associated requirements. Our responses follow in plain text.

THE PLAN

326 IAC 6.8-10-4 [Control plans]
Sec. 4.Control plans shall include the following:

(1) Within six (6) months of June 11, 1993, a source to which this rule applies shall submit a control plan that, when fully implemented, will achieve compliance with the applicable emission limitations stated in section 3 of this rule. Failure to submit a control plan in accordance with this rule shall be considered a violation of this article. A control plan shall also be included as part of a construction permit application under 326 IAC 2-5.1.

(2) A control plan, upon submittal to the department, shall become part of a source's operating permit or registration conditions.

LOCATION OF SOURCE

APPLICABLE REGULATION FOR PLAN CONTENT:
326 IAC 6.8-10-4-3 [Control plans] as follows:
(3) The Control Plan shall contain the following information:
(A) The name and address of the following:
(i) The source and location, if the source is located on another source's property.

REQUESTED INFORMATION:
[Section 3A(i)] The address of the source location is as follows:

TMS International at USS - Gary Works
One North Broadway
Gary, Indiana 46402

TMS International is responsible for specific areas within this facility, please refer to the maps in Section 3D(i).

ADDRESS OF OWNER

326 IAC 6.8-10-4-3 [Control plans] as follows:
(3) The Control Plan shall contain the following information:
(A) The name and address of the following:
(ii) If different from that of the source, the owner or operator responsible for the execution of the plan.

REQUESTED INFORMATION:
[Section 3A(ii)] The operator responsible for the facilities described in this Plan is:

TMS International, LLC
1155 Business Center Drive, Suite 200
Horsham, Pennsylvania 19044-3454

LIST OF FACILITIES

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-10-4-3 [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(B) Identification of the facilities or operations listed in section 1(a)(1) of this rule and those affected by 326 IAC 6.8-2 through 326 IAC 6.8-7 that exist at the source.

REQUESTED INFORMATION:
[Section 3B], TMS INTERNATIONAL FACILITIES WITHIN USS-GARY WORKS

1 Main Slag Processing
2 Iron Crushing
3 Ball Drop
4 Tundish Lancing
5 Slag Pit - #1 BOP
6 Slag Pit - #2 Q-BOP
7 Surface Conditioning
8 Slab Hauling
9 Paved Roads and Parking Lots
10 Unpaved Roads and Parking Lots
11 Material Transfer
12 Wind Erosion from Storage Piles and Exposed Areas
13 Material Transportation Activities

MAPS OF FACILITIES
APPLICABLE REGULATION FOR PLAN CONTENT:
326 IAC 6.8-10-4-3 [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(C) A map showing the location of all of the following:

(i) Unpaved roads.
(ii) Paved roads.
(iii) Parking lots.
(iv) Storage piles.
(v) Material processing facilities.
(vi) Dust handling equipment.
(vii) Material transfer points.
(viii) Waste disposal and reclamation sites.

REQUESTED INFORMATION:
[Section 3C]. The following is a list of maps provided to define the location of TMS International Facilities within USS - Gary Works. The various maps included in this section in a reduced size identify the approximate locations of unpaved and paved roads, parking areas, storage piles, material processing facilities and material transfer points.

- Drawing No. 5041-1, Slag Processing - Equipment Plan
- Drawing No. 5041-2, Slag Processing - Building Plan
- Drawing No. 5041-3, Iron Crushing - Equipment Plan
- Drawing No. 5041-4, Iron Crushing - Building Plan
- Drawing No. 5041-5, USS Gary Works - TMS INTERNATIONAL Site Plan (Sheet 1)
- Drawing No. 5041-6, USS Gary Works - TMS INTERNATIONAL Site Plan (Sheet 2)

All Maps are included in the Appendix.

ROADWAYS

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-10-4-3(D)(i) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(D) A full description of the facilities on the map, including the following information, where applicable:

(i) The road lengths and widths, average daily traffic, surface silt loading, classification of vehicle traffic, and other data necessary to estimate PM10 emissions from paved and unpaved roads and parking lots.

REQUESTED INFORMATION:
[Section 3D(i)], ROADWAY INDEX
Roadway at #1 BOP Shop Dump Station
Roadway at Slag Processing/#2 Q-BOP Shop Dump Station
Roadway at Ball Drop - Site "C"
Roadway in Slab Laydown Yards

Information about Roadways follows below.

ROADWAY AT #1 BOP SHOP DUMP STATION

Width:	20 Feet
Silt loading:	17% passing 200 mesh

Average Daily Traffic:

Type of veeicle:	Pot Hauler
Trips loaded (gross weight):	47 (191 Ton)
Trips Unloaded (net weight):	47 (116 Ton)
Number of wheels:	8
Travel Distance:	480 Feet

Type of vehicle:	Loader
Trips Loaded (gross weight):	30 (113 Ton)
Trips Unloaded (net weight):	42 (98 Ton)
Number of wheels:	4
Travel Distance:	90 Feet

Type of vehicle:	60 Ton Truck
Trips loaded (gross weight):	20 (132 Ton)
Trips unloaded (net weight):	20 (72 Ton)
Numer of wheels:	6
Travel Distance:	370 Feet

Type of vehicle:	50 Ton Truck
Trips loaded (gross weight):	20 (106 Ton)
Trips Unloaded (net weight):	20 (56 Ton)
Number of wheels:	6
Travel Distance:	370 Feet

Type of vehicle:	Scrap Hauler
Trips loaded (gross weight):	36 (135 ton)
Trips unloaded (gross weight):	36 (100 ton)
Number of wheels:	10
Travel distance:	3,675 feet

ROADWAY AT #1 BOP SHOP DUMP STATION

Width:	20 Feet
Silt loading:	12.7% passing 200 mesh

Average Daily Traffic:

Type of veeicle:	Pot Hauler
Trips loaded (gross weight):	47 (191 Ton)
Trips Unloaded (net weight):	47 (116 Ton)
Number of wheels:	4
Travel Distance:	960 Feet

Type of vehicle:	Loader
Trips Loaded (gross weight):	81(113 Ton)
Trips Unloaded (net weight):	95 (98 Ton)
Number of wheels:	4
Travel Distance:	560 Feet

Type of vehicle:	60 Ton Truck
Trips loaded (gross weight):	20 (132 Ton)
Trips unloaded (net weight):	20 (72 Ton)
Numer of wheels:	6
Travel Distance:	32600 Feet

Type of vehicle:	50 Ton Truck
Trips loaded (gross weight):	53 (106 Ton)
Trips Unloaded (net weight):	53(56 Ton)
Number of wheels:	6
Travel Distance:	3260 Feet

Type of vehicle:	Scrap Hauler
Trips loaded (gross weight):	44 (135 ton)
Trips unloaded (gross weight):	44 (100 ton)
Number of wheels:	10
Travel distance:	2,640 feet

ROADWAY AT #1 BOP SHOP DUMP STATION

Width:	20 Feet
Silt loading:	8.2% passing 200 mesh

Average Daily Traffic:

Type of vehicle:	Loader
Trips Loaded (gross weight):	60 (113 Ton)
Trips Unloaded (net weight):	60 (98 Ton)
Number of wheels:	4
Travel Distance:	750 Feet

Type of vehicle:	60 Ton Truck
Trips loaded (gross weight):	20 (132 Ton)
Trips unloaded (net weight):	20 (72 Ton)
Number of wheels:	6
Travel Distance:	750 Feet

Type of vehicle:	50 Ton Truck
Trips loaded (gross weight):	6 (106 Ton)
Trips Unloaded (net weight):	6 (56 Ton)
Number of wheels:	6
Travel Distance:	750 Feet

ROADWAY AT #1 BOP SHOP DUMP STATION

Width:	20 Feet
Silt loading:	9.1% passing 200 mesh

Average Daily Traffic in H Yard (includes CY, HY & RJ)

Type of veeicle:	Slab Hauler
Trips loaded (gross weight):	120 (121Ton)
Number of wheels:	6
Travel Distance:	1000 Feet

Avverage Daily Traffic in P Yard (includes PY)

Type of vehicle:	Slab Hauler
Trips Loaded (gross weight):	180(121 Ton)
Number of wheels:	6
Travel Distance:	1150 Feet

Average Daily Traffic in Yard 80 (includes 80)

Type of vehicle:	Slab Hauler
Trips loaded (gross weight):	60 (121 Ton)
Numer of wheels:	6
Travel Distance:	1150 Feet

Type of vehicle:	50 Ton Truck
Trips loaded (gross weight):	53 (106 Ton)
Trips Unloaded (net weight):	53(56 Ton)
Number of wheels:	6
Travel Distance:	3260 Feet

MATERIAL STORAGE PILES
APPLICABLE REGULATION FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(D)(ii) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(D) A full description of the facilities on the map, including the following information, where applicable:

(ii) A description of each storage pile, including the following:
(AA) The type of material in the pile.
(BB) Its moisture content.
(CC) The silt content.
(DD) The throughput.
(EE) The equipment used to load onto and load out of the storage piles.

REQUESTED INFORMATION:
[Section 3D(ii)] Information about Material Storage Piles follows below.

MATERIAL STORAGE PILES

AT MAIN SLAG PROCESSING

1) +10" Oversize

type of material	lumps of slag or iron
moisture content	too large to test *
silt content	too large to test*
throughput	not processed thru plant sent to Ball Drop
to pile	from grizzly screen
from pile	FEL (front end loader)

2) 10" x 6" "A" Scrap

type of material	10" x 6" metallic
moisture content	too large to test*
silt content	too large to test*
throughput	5 tph
to pile	from screen
from pile	FEL (front end loader)

3) 6" x 3" "A" Scrap

type of material	6" x 3" metallic
moisture content	0.1%
silt content	0.1% passing 200 mesh
throughput	9 tph
to pile	from screen
from pile	FEL (front end loader)

4) 3" x 1/2" "B" Mix

type of material	3" x 1/2" metallic/ slag mixture
moisture content	0.7%
silt content	0.3% passing 200 mesh
throughput	170 tph
to pile	from conveyor
from pile	FEL (front end loader)

* Items 1, 2 and 3 are initially screened togehter. They are subsequently screened into the sizes shown with three (3) being the "passing" fraction. All three should be considered identical for moisture and silt content.

MATERIAL STORAGE PILES

AT MAIN SLAG PROCESSING

5) 3" x 3/8" "B" Slag

type of material	3"x3/8"slag
moisture content	0.7% moisture
silt content	0.3% passing 200 mesh
throughput	28 tph
to pile	from conveyor
from pile	FEL (front end loader)

6) 1/2" x 1/4" "B" Scrap

type of material	1/2"x 1/4"metallic
moisture content	1.0% moisture
silt content	0.1% passing 200 mesh
throughput	17 tph
to pile	from conveyor
from pile	FEL (front end loader)

7) 1/2" x 0" "B" Slag

type of material	1/2" x 0" metallic/slag mix
moisture content	0.8%
silt content	0.2% passing 200 mesh
throughput	86 tph
to pile	from conveyor
from pile	FEL (front end loader)

8) 3/8" x 0" "C" Scrap

type of material	3/8" x 0" metallic
moisture content	3.8%
silt content	7.2% passing 200 mesh
throughput	43 tph
to pile	from conveyor
from pile	FEL (front end loader)

MATERIAL STORAGE PILES

AT MAIN SLAG PROCESSING

9) 3/8" x 0" "C" Slag

type of material	3/8"x 0"metallic
moisture content	3.8%
silt content	8.5% passing 200 mesh
throughput	75 tph
to pile	from conveyor
from pile	FEL (front end loader)

10) 1/4" x 0" ·"C" Scrap

type of material	1/4" x 0" metallic
moisture content	3.4%
silt content	16.4% passing 200 mesh
throughput	not produced
to pile	from conveyor
from pile	FEL (front end loader)

11) Crushed Slag

type of material	3" x 0" slag
moisture content	0.0% moisture
silt content	0.1% passing 200 mesh
throughput	63 tph
to pile	from conveyor
from pile	FEL (front end loader)

It should be noted that only the materials in Piles 8, 9 and 10, that is the "C" Size materials have a silt content above 0.5%. Therefore, they are the only materials in this list which meet the definition of "material" as stated in 326 IAC 6-1-11.1(c)(11) and are subject to fugitive emission regulations.

MATERIAL STORAGE PILES
AT IRON CRUSHING

1) +6" Iron

type of material	+6" metallic
moisture content	0.1%
silt content	0.0% passing 200 mesh
throughput	8 tph
to pile	from screen
from pile	FEL (front end loader)

2) 6" x 1/4" Iron

type of material	6" x 1/4" metallic
moisture content	0.1%
silt content	0.0% passing 200 mesh
throughput	56 tph
to pile	from conveyor
from pile	FEL (front end loader)

3) 1/4" x 0" Iron

type of material	1/4" x 0" metallic
moisture content	4.5%
silt content	7.4% passing 200 mesh
throughput	47 tph
to pile	from conveyor
from pile	FEL (front end loader)

4) 1/4" x 0" "C" Slag

type of material	1/4" x 0" slag
moisture content	1.6%
silt content	0.4% passing 200 mesh
throughput	4 tph
to pile	from conveyor
from pile	FEL (front end loader)

It should be noted that only the materials in Piles 3 and 4 indicate a silt content above or close to 0.5%. Therefore, these are the only materials in this list which meet the definition of "material" as stated in 326 IAC 6-1-11.1(c)(11) and are subject to fugitive emission regulations.

MATERIAL PROCESSING FACILITIES
APPLICABLE REGULATIONS FOR PLAN CONTENT:

326 IAC 6.8-10-4-3(D)(iii) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(D) A full description of the facilities on the map, including the following information, where applicable:

(iii) A complete description of the material processing facilities on the plant property, including the following:
(AA) A material flow diagram of the processing lines.
(BB) The rated capacity of each piece of equipment.
(CC) The existing control equipment and their efficiencies, including the process equipment served.

REQUESTED INFORMATION:
[Section 3D(iii)] MATERIAL PROCESSING FACILITIES INDEX (DESCRIPTION FOLLOWS)
1. Main Slag Processing
2. Iron Crushing
3. Tundish Lancing
4. Slag Pits at #1 BOP Shop and #2 Q-BOP Shop
5. Ball Drop
6. Surface Conditioning

MATERIAL PROCESSING FACILITIES
1. MAIN SLAG PROCESSING
DESCRIPTION:
This area processes slag from steelmaking operations. Slag is delivered by truck to a feed hopper station. The material travels across a grizzly which removes + 10" material. This material is sent to the ball drop area for further processing. The remaining material is elevated by conveyor belt to the screening station. The screening station consists of two multi-deck screens operating in parallel. The screens separate the material into three sizes: "A" - +3", "B" - 3" x 3/8", and "C" - 3/8" x 0". It is important to limit the moisture content of this material for proper screening. The sized material travels on a series of conveyor belts equipped with magnetic head pulleys which separate each size into magnetic material (scrap) and non-magnetic material (slag). The "B" material is rescreened to further eliminate fine material. The finished products are discharged to stock piles. When a sufficient amount is accumulated it is loaded into trucks for delivery to be reused in production operations.

See Map of Facilities included; see Drawing No. 5041-1, Slag Processing - Equipment Plan

EQUIPMENT CAPACITIES:

1) Simplicity Feeder	600 tph
2) 6' x 20' - 3 deck screens	300 tph ea.
3) 6' x 16' - 2 deck screens	300 tph
4) 4' x 16' - 2 deck screens	100 tph
5) 5' x 10' - 1 deck screen	150 tph
6) 8’ x 20’ - 2 deck screen	600 tph

APPLICABLE REGULATIONS:
326 IAC 6.8-8-5(3)(F)(i) as follows:

(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:
(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9. The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.

EMISSION LIMIT:
20% opacity - 3 minute average

MATERIAL PROCESSING FACILITIES
2. IRON CRUSHING
DESCRIPTION:
The Iron Crushing Operation processes high iron content slags and spills from steelmaking operations so that the material is of acceptable size to be recycled into the steelmaking operation. This material consists mostly of iron and steel with a small amount of slag mixed into it. This operation is housed in a building. The Iron Crushing operation consists of the following steps. Material is recovered from outdoor storage piles by front end loaders and dumped into a feed hopper inside the building. The material passes over a grizzly to separate oversize material. The oversize material passes through a jaw crusher which achieves primary. size reduction, then rejoins the balance of the feed material. The material then passes through a screening station. Oversize material is separated and piled. Material which passes through the first screening station, is conveyed to a hammermill and then to a second screening station. Larger material from this screening station is conveyed across a magnetic head pulley. The magnetic (metallic) portion of the material is stockpiled outdoors by conveyor. This is the primary finished product of the process, 6" x 1/4" Iron. Material which is not magnetically separated is returned to the hammermill for further processing. The material which passes through the second screening station is magnetically separated and stockpiled indoors as 1/4" x 0" Iron (metallic) or 1/4" x 011slag. The oversize material from the first screening operation is removed to outdoor storage piles. All of this material is +6" in size and has been screened so that it contains no dust. The outdoor piles are managed by a crane equipped with an electromagnet. The crane uses an Iron Screening Grate to further separate the material into 6" x 8" and +8" sizes. Oversize material is returned to the initial feed hopper for further crushing. This process is repeated until all of the material is an acceptable maximum size for recycling.

See Map of Facilities included; see Drawing No. 5041-3, Iron Crushing - Equipment Plan

EQUIPMENT CAPACITY:
The capacities of the equipment in this operation are as follow:

1) Simplicity Grizzly Feeder	400 tph
2) A-C Jaw Crusher	150 tph
3) Simplicity 6'x20'-3 deck screens	250 tph
4) Simplicity 5'x16'-2 deck screens	150 tph
5) Pennsylvania Hammermill	75 tph
6) Iron Screening Grate	12.5 tph

APPLICABLE REGULATIONS:

326 IAC 6.8-8-5(3)(F)(i) as follows:
(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:
(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9. The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.

EMISSION LIMIT:
20% opacity - 3 minute average

MATERIAL PROCESSING FACILITIES
3. TUNDISH LANCING
DESCRIPTION:
TMS International is responsible for recycling of the skulls which form in the tundishes during steel casting operations. Skulls are solid masses of steel weighing several tons. To be recycled they must be reduced to pieces of approximately 24 inches or less. This reduction is done in stages. Lancing is the first step. In the lancing step, each Tundish skull has notches cut in several places. The lancing is done using conventional oxygen lances. It is followed by Ball Drop to break the pieces and delivered to Melt Shop.From a regulatory viewpoint, this operation is covered by both 326 IAC 6-1-10.1 and11.1. Lancing operations are specifically listed in 10.1(p)(3)(F)(iii). As presently practiced the operation also meets the definition of "fugitive particulate matter" under 11.1(b)(9). The allowable limit in both cases is 20% opacity on a three (3) minute average.

EQUIPMENT CAPACITY:
(3) Lancing Stations

APPLICABLE REGULATIONS:
326 IAC 6.8-8-5(3)(F)(i) as follows:
(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:
(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9. The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.

Also, 326 IAC 6.8-10-2(9) and 6.8-10-(3)(9) as follows:
Section (*2) The following definitions apply throughout this rule:*
(9) "Fugitive particulate matter" means any particulate matter emitted into the atmosphere other than through a stack.

Also, 326 IAC 6.8-10-3(9)
Section (3) The following are particulate matter emission limitations:
(9) Any facility or operation not specified in this subsection shall meet a twenty percent (20%), three (3) *minute opacity standard. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9*** except that the opacity standard shall be determined as an average of twelve* (12) *consecutive observations recorded at*

fifteen (15) *second intervals. Compliance of any operation lasting less than three* (3) *minutes shall be determined as an average of consecutive observations recorded in fifteen* (15) *second intervals for the duration of the operation.*

EMISSION LIMIT:
20% opacity - 3 minute average

MATERIAL PROCESSING FACIUTIES
4. SLAG PITS #1 BOP SHOP AND #2 Q-BOP SHOP
DESCRIPTION:
Molten slag from steelmaking is collected by US Steel in slag pots. TMS International is responsible for recovering these pots and transports then using special rubber-tired vehicles to the adjacent slag pot operations where they are dumped into the pits. In the pits the molten slag is allowed to cool and solidify. Water sprays are used to enhance cooling and to control dusting. Once solidified the slag, which is still quite hot, is removed from the pits for further cooling by front end loaders. Once the slag is sufficiently cooled it is loaded into the slag processing plant conveyor system by front end loader(s).

EQUIPMENT CAPACITY:
The capacities of the equipment in this operation are as follow:
Front End Loaders 12 cu. yd. bucket

APPLICABLE REGULATIONS:
326 IAC 6-1-11.1(d)(3)(c)(i) and (ii) and (d)(9) as follows:
(d) The following are particulate matter emission limitations:
(3) Material transfer limits shall be as follows:
(C) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:
(i) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.
(ii) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in subdivision (9).

Also 326 IAC 6-1-11.1(d)(9) as follows:
(d)(9) Any facility or operation not specified in this subsection shall meet a twenty percent (20%), three (3) *minute opacity standard. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9 except that the opacity standard shall be determined as an average of twelve* (12) *consecutive observations recorded at fifteen* (15) *second intervals. Compliance of any operation lasting less than three* (3) *minutes shall be determined as an average of consecutive observations recorded a fifteen* (15) *second intervals for the duration of the operation.*

EMISSION LIMITS:
From pots into pits - 20% opacity - six minute average.
From pits into trucks - 20% opacity - three minute average.

MATERIAL PROCESSING FACILITIES

5. BALL DROP

DESCRIPTION:

The function of the Ball Drop facility is to reduce the size of materials that are too large to be processed through conventional screening/crushing equipment. The process consists of dropping a large steel ball on the material to crack and break it. The process continues until the desired degree of size reduction is achieved. Material is delivered to the site by truck. Cranes fitted with electro-magnets are used to lift and drop the steel balls. The cranes are also used to load magnetic material into trucks for shipment to the Melt Shop.

EQUIPMENT CAPACITY:

(7) Ball Drop Stations

APPLICABLE REGULATIONS:

326 IAC 6.8-8-5(3)(F)(i) as follows:
(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:
(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9. The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.

EMISSION LIMIT:

20% opacity - 3 minute average

MATERIAL PROCESSING FACILITIES

6. SURFACE CONDITIONING

DESCRIPTION:

The surface conditioning facility removes surface defects from steel slabs before they are rolled to finished size. The conditioning equipment consists of a scarfing torch mounted on a robotic arm. The slab being conditioned is carried on a rail mounted car. The operation is housed in an enclosed area with a capture system connected to a dust collection system. The dust is collected in an adjacent baghouse. A series of screw conveyors carries the dust to tote bins. The tote bins are removed by others. The material removed by the scarfing torch (swart) falls into a water-filled trench where it solidifies. Periodically, it is removed to a pile outside of the building. This material consists of small pellets formed by cooling of the molten steel and contains no dust. Surface conditioning operations are not specifically covered under Section 6-1-10.1 of the regulations. A continuous compliance plan has been prepared for the associated baghouse. Surface conditioning is included in Section 6-1-11.1 because the dust collected in the baghouse falls under that regulation.

EQUIPMENT CAPACITY:

Baghouse 90,000 ACFM @ 150 degree F

APPLICABLE REGULATIONS:

326 IAC 5-1-2(2)(B) as follows:

Section (2) Visible emissions from a source or facility shall not exceed any of the following limitations, and unless otherwise stated, all visible emissions shall be observed in accordance with the procedures set forth in Section 4 *of this rule:*
(2) Sources or facilities of visible emissions located in the areas listed in section 1 *(c) of this rule shall meet the following limitations:*
(B) Visible emissions from a facility located in Lake County shall not exceed an average of twenty percent (20%) opacity in twenty-four (24) *consecutive readings unless otherwise specified in* 326 *IAC 6-1-10.1.* This *visible emission limit shall supercede (sic) the visible emissions limit contained in clause (A).*

Also 326 IAC 6-1-11.1(c)(7) as follows:
(c) The following definitions apply throughout this section:
(7) "Dust handling equipment" means the equipment used to handle dust collected by control equipment, such as, but not limited to, a conveyor used to transfer dust from a control equipment hopper to a temporary storage c01J,tainer. A truck is an example of a temporary storage container. Both a conveyor and temporary storage container, in this case, are dust handling equipment.

Also 326 IAC 6-1-11.1(d)(8) as follows:
(d) The following are particulate emission limitations:
(8) Dust handling equipment. The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%). Compliance with this standard shall be determined by 40 CFR 60, Appendix A, Method 9.

EMISSION LIMIT:
Stack - 20% opacity - 3 minute average
Dust handling equipment - 10% opacity - 3 minute average

MATERIAL TRANSFER & INPLANT TRANSPORTATION
APPLICABLE REGULATIONS FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(D)(iv) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(D) A full description of the facilities on the map, including the following information, where applicable:
(iv) A complete description of the material transfer, inplant transportation, and dust handling equipment. Material transfer operations shall include, at a minimum, those operations contained in section 2(13) of this rule.

Also definition from 326 IAC 6.8-10-2(10)
(10) "Inplant transportation" means transportation of material on plant transportation routes, such as railroads and plant roads, in equipment such as trucks, railroad cars, front end loaders, conveyors, and skip hoists. The inplant transportation might be from:
(A) one (1) process to another;
(B) process equipment to waste disposal and reclamation sites; or
(C) one (1) storage pile to another.
This includes, for example, hauling of slag from slag pits to the slag processing facility on the plant property.

Also definition from 326 IAC 6.8-10-2(13)
(13) "Material transfer" means the transfer of material:
(A) from process equipment onto the ground;
(B) from the ground into hauling equipment;
(C) from hauling equipment onto a storage pile;
(D) from a storage pile into hauling equipment for transport; or
(E) into an initial hopper for further processing.
Dumping of slag from blast furnaces or basic oxygen furnaces into the slag pits and subsequent transfer to the hauling vehicle and initial hopper at the slag processing facility is an example of material transfer.

REQUESTED INFORMATION:
[Section 3D(iv)] MATERIAL TRANSFER & INPLANT TRANSPORTATION
INDEX (DESCRIPTION FOLLOWS)

MATERIAL TRANSFER INDEX
1. Main Slag Processing
2. Iron Crushing
3. Ball Drop
4. Slag Pits for #1 BOP Shop and #2 Q-BOP Shop
5. Surface Conditioning

MATERIAL TRANSFER & INPLANT TRANSPORTATION
1. MAIN SLAG PROCESSING
DESCRIPTION:
All materials in the Main Slag Processing area are recovered from stockpiles by front end loaders and loaded into trucks for delivery. The trucks carrying finished materials are operated by US Steel and the materials become their responsibility at that point. Material recovered from the grizzly is sent by TMS International truck to the Ball Drop area for further size reduction. The primary feed to the system is TMS International front end loaders which are loaded in the slag pot dumping stations.

OPERATIONS COVERED:
The following facets of this operation fall under the classification of material transfer:
1) Loading of "C" Slag· into trucks
2) Loading of "C" Scrap into trucks
3) Loading of unscreened material into trucks
4) Front end loaders into the feed hopper

The following facets of this operation fall under the classification of in-plant transportation:
1) Trucking of unscreened material to the Ball Drop area.
As shown in the data presented in the section on Material Storage Piles, only the above materials meet the definition of a "material" under the fugitive emission regulations.

APPLICABLE REGULATIONS:
326 lAC 6.8-10-2(11) and 6.8-10-(3)(3)(B) and 6.8-10-(3)(6)(A) as follows:

Section (2) The following definitions apply throughout this rule:
(11) "Material" means raw process material, byproduct, intermediate product, waste product, final product, and dust collected by control equipment, having proportion of loose, dry dust equal to or greater than five-tenths percent (0.5%) as measured by the ASTM C-136 method, having potential to emit particulate emissions when disturbed by transfer, processing, and transportation activities defined in this rule. Material may include the following: (E) Slag.*

326 IAC 6.8-10-3(3)(B)
Section (3)The following are particulate matter emission limitations:
(3) Material transfer limits shall be as follows:
(B) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average. This includes material transfer to the initial hopper of a material processing facility as defined in section 2 of this rule or material transfer for transportation within or outside the source property including, but not limited to, the following:

326 IAC 6.8-10-3(6)(A)
Section (3)The following are particulate matter emission limitations:
(6) Material transportation activities shall include the following:
(A) There shall be a zero percent (0%) frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 22, except that the observation shall be taken at approximately right angles to the prevailing wind from the leeward side of the truck or railroad car.

EMISSION LIMITS:
Material Transfer - 10% opacity - 3 minute average, or duration of operation
In-plant Transportation - 0% opacity

MATERIAL TRANSFER & INPLANT TRANSPORTATION
2. IRON CRUSHING
DESCRIPTION:
Material is delivered to the Iron Crushing Operation in trucks and dumped in piles outside of the building. All intermediate moves during processing are done by front end loader. Large pieces of iron pass through the process several times during which they are reduced in size by a crusher, and then screened. Since they are screened last, this material is dust free. Loading of finished products into trucks is done by front end loader including the 1/4" x 0" slag and 1/4" x 0" iron.

OPERATIONS COVERED:
The following facets of this operation fall under the classification of material transfer:
1) Dumping of new material on-site.
2) Loading of new material into feed hopper by front end loader.
3) Loading of trucks by front end loader with 1/4" x 0" slag and iron. As shown in the data presented in the section on Material Storage Piles, only the above materials meet the definition of a "material" under the fugitive emission regulations.

APPLICABLE REGULATIONS:

326 IAC 6.8-10-2(11)(E) and 6.8-10-(3)(3)(B) and (3)(6)(A) as follows:
Section (2) The following definitions apply throughout this rule:
(11) "Material" means raw process material, byproduct, intermediate product, waste product, final product, and dust collected by control equipment, having proportion of loose, dry dust equal to or greater than five-tenths percent (0.5%) as measured by the ASTM C-136 method, having potential to emit particulate emissions when disturbed by transfer, processing, and transportation activities defined in this rule. Material may include the following:(E) Slag*

326 IAC 6.8-10-3(3)(B)
(3)The following are particulate matter emission limitations:
(3) Material transfer limits shall be as follows:
(B) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average. This includes material transfer to the initial hopper of a material processing facility as defined in section 2 of this rule or material transfer for transportation within or outside the source property including, but not limited to, the following:

Compliance with any operation lasting less than three (3) *minutes shall be determined as an average of consecutive observations recorded at fifteen (15) second intervals for the duration of the operation.*

326 IAC 6.8-10-3(6)(A)
(3)The following are particulate matter emission limitations:
(6) Material transportation activities shall include the following:
(A) There shall be a zero percent (0%) frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 22, except that the observation shall be taken at approximately right angles to the prevailing wind from the leeward side of the truck or railroad car.

EMISSION LIMITS:

Material Transfer - 10% opacity - 3 minute average, or duration of operation
Inplant Transportation - 0% opacity

MATERIAL TRANSFER & INPLANT TRANSPORTATION
3. BALL DROP
DESCRIPTION:

All material processed in the Ball Drop area is delivered and removed by trucks or Kress Scrap Haulers. The trucks are loaded in two ways. Magnetic material is picked up by the electromagnets on the cranes and loaded into trucks. Non-magnetic material is loaded into trucks by front end loader.

OPERATIONS COVERED:

The following facets of this operation fall under the classification of material transfer:
1) Dumping of material to be processed from trucks.

2) Loading of material into trucks by electromagnet.
3) Loading of material into trucks by front end loader.

The following facets of this operation fall under the classification of inplant transportation:
1) Trucking of oversized materials from various points in the plant.
2) Trucking of metallic material to the iron crushing operation.
3) Trucking of material to the slag processing operation.

APPLICABLE REGULATIONS:

326 IAC 6.8-10-2(11)(E) and 6.8-10-(3)(3)(B) and (3)(6)(A) as follows:
Section (2) The following definitions apply throughout this rule:
(11) "Material" means raw process material, byproduct, intermediate product, waste product, final product, and dust collected by control equipment, having proportion of loose, dry dust equal to or greater than five-tenths percent (0.5%) as measured by the ASTM C-136 method, having potential to emit particulate emissions when disturbed by transfer, processing, and transportation activities defined in this rule. Material may include the following: (E) Sla*

326 IAC 6.8-10-3(3)(B)
(3)The following are particulate matter emission limitations:
(3) Material transfer limits shall be as follows:
(B) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average. This includes material transfer to the initial hopper of a material processing facility as defined in section 2 of this rule or material transfer for transportation within or outside the source property including, but not limited to, the following:

Compliance with any operation lasting less than three (3) *minutes shall be determined as an average of consecutive observations recorded at fifteen (15) second intervals for the duration of the operation.*

326 IAC 6.8-10-3(6)(A)
(3)The following are particulate matter emission limitations:
(6) Material transportation activities shall include the following:
(A) There shall be a zero percent (0%) frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 22, except that the observation shall be taken at approximately right angles to the prevailing wind from the leeward side of the truck or railroad car.

EMISSION LIMITS:

Material Transfer - 10% opacity - 3 minute average, or duration of operation
Inplant Transportation - 0% opacity

MATERIAL TRANSFER & INPLANT TRANSPORTATION
4. SLAG PITS FOR #1 BOP SHOP AND #2 Q-BOP SHOP
DESCRIPTION:

Slag pots are picked up by special carrier vehicles and transported to the respective slag pits. The pots are dumped into the pits. The empty pots are returned to the steel shops for reuse. When the molten slag in the pits has cooled enough to solidify, it is removed from the pits by front end loader and stacked in an adjacent area to allow it to cool further. Once the slag has solidified it is removed from the pit to further cool. The material is then loaded into water cooling pits to sufficiently cool the material for the slag processing plant. The material is transported to a surge pile where it will then be loaded into the slag processing plant by loader.

OPERATIONS COVERED:

The following facets of this operation fall under the classification 6f material transfer:
1) Dumping of slag pots into pits
2) Piling of slag by front end loaders
3) Loading of trucks by front end loaders

The following facets of this operation fall under the classification of inplant transportation:
1) Hauling of slag pots to slag pits.
2) Trucking of slag to processing facility.

APPLICABLE REGULATIONS:

326 IAC 6.8-10-(3)(C)(i), and (C)(ii) and (d)(6)(A) and (d)(9) as follows:
Section (3)The following are particulate matter emission limitations:
(3) Material transfer limits shall be as follows:
(C) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:
(i) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.
(ii) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in subdivision (9).

Also 326 IAC 6.8-10-(3)(6)(A)
(6) Material transportation activities shall include the following:
(A) There shall be a zero percent (0%) frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 22, except that the observation shall be taken at approximately right angles to the prevailing wind from the leeward side of the truck or railroad car.

Also 326 IAC 6.8-10-(3)(9)
(9) Any facility or operation not specified in this section shall meet a twenty percent (20%), three (3) minute opacity standard. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9, except that the opacity standard shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals. Compliance of any operation lasting less than three (3) minutes shall be determined as an average of consecutive observations recorded at fifteen (15) second intervals for the duration of the operation.

EMISSION LIMITS:
Pots to Pits - 20% opacity - 6 minute average
Pits to Trucks - 20% opacity - 3 minute average
Inplant Transportation - 0% opacity

MATERIAL TRANSFER & INPLANT TRANSPORTATION
5. SURFACE CONDITIONING
DESCRIPTION:
The Surface Conditioning operation includes a dust collection system with a baghouse. Dust collected in the baghouse is placed in totes.

OPERATIONS COVERED:
There are no activities in this operation that fall under the classification of material transfer.

The inplant transportation of the material is performed by others.

APPLICABLE REGULATIONS:
NONE. See the Continuous Compliance Plan

EMISSION LIMITS:
NOT APPLICABLE

OTHER MATERIAL PROCESSING FACILITIES
APPLICABLE REGULATIONS FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(D)(v) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(D) A full description of the facilities on the map, including the following information, where applicable:
(v) A complete description of all other fugitive particulate matter emitting facilities not covered in this clause.

REQUESTED INFORMATION:
[Section 3D(v)] There are no other fugitive particulate matter emitting facilities not covered in this clause.

PROPOSED CONTROL MEASURES AND PRACTICES
APPLICABLE REGULATIONS FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(E) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(E) The description of the proposed control measures and practices that the source will employ to achieve compliance with the emission limitations and data that prove its effectiveness.

REQUESTED INFORMATION:
[Section 3(E)] PROPOSED CONTROL MEASURE INDEX (DESCRIPTION FOLLOWS)
1. Main Slag Processing
2. Iron Crushing
3. Ball Drop
4. Tundish Lancing
5. Slag Pits #1 BOP Shop and #2 Q-BOP Shop
6. Surface Conditioning
7. Roadways

PROPOSED CONTROL MEASURES AND PRACTICES
1. MAIN SLAG PROCESSING
DESCRIPTION:
The material processed through this facility has a moisture content which helps in controlling the amount of fugitive emissions during processing. However, if the moisture level gets too high the material cannot be screened properly. Control measures in this area are based on material being pre-watered. Additional sprays may also be operated as needed to wet the material and agglomerate the dust particles so they settle more quickly.

PROPOSED CONTROL MEASURES AND PRACTICES
2. IRON CRUSHING
DESCRIPTION:
The material processed through this facility has a significant moisture content which helps in controlling the amount of fugitive emissions during processing. However, if the moisture level gets too high the material cannot be screened properly. Control measures in this area are based on material being pre-watered. Additional sprays may also be operated as needed to wet the material and agglomerate the dust particles so they settle more quickly.

PROPOSED CONTROL MEASURES AND PRACTICES
3. BALL DROP
DESCRIPTION:
Dust suppression in the Ball Drop area will be accomplished by applying water to the material being processed. Because this operation is totally outdoors, conditions will vary widely. Operating personnel will be trained to recognize unacceptably high dust levels and will react by applying water using hoses.

PROPOSED CONTROL MEASURES AND PRACTICES
4. TUNDISH LANCING
DESCRIPTION:
TMS International relocated Tundish Lancing to the 40 Spared Building to control emissions from operations. Since potential emissions are under roof, emissions are controlled and contained within the enclosure.

PROPOSED CONTROL MEASURES AND PRACTICES
5. ROADWAYS
DESCRIPTION:
The roadways for which TMS International is responsible are limited to those which are within their operating areas. All of these roads are unpaved. Dust control is accomplished through the service of a subcontractor who applies water using sprays mounted on tank trucks.

This program has been in place for over five years. Historically, TMS International has learned that the use of dust suppressant chemicals does not benefit this process. The weight of the large vehicles used in their operations negates the agglomeration of fine particles which the chemicals application is designed to effect within the road surface.

PROPOSED CONTROL MEASURES AND PRACTICES
6. SLAG PITS #1 BOP SHOP AND #2 Q-BOP SHOP
DESCRIPTION:
Visual readings of these activities are within the limits allowed in the regulations.

PROPOSED CONTROL MEASURES AND PRACTICES
6. SURFACE CONDTIONING
DESCRIPTION:
Surface conditioning activities do not generate any fugitive emissions. All emissions are captured and processed through a baghouse. A detailed CCP for operation and maintenance of the baghouse has been prepared and is contained in this document.

PROPOSED CONTROL MEASURES AND PRACTICES
7. ROADWAYS
DESCRIPTION:

Roadways are inspected daily and a determination is made if control measures are required to prevent emissions from roadways. Use of dust suppressant such as water or chemicals will be used as a control measure. Daily records are available describing whether control measures are employed and whether they are effective in controlling air emissions.

CONDITIONS WHICH PREVENT CONTROL
APPLICABLE REGULATIONS FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(F) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(F) A list of the conditions that will prevent control measures and practices from being applied and alternative control practices and measures that will achieve compliance with the emission limitations.

REQUESTED INFORMATION:
[Section 3F] CONDITIONS WHICH PREVENT CONTROL INDEX (DESCRIPTION FOLLOWS)

CONDITIONS INDEX
1. Main Slag Processing
2. Iron Crushing
3. Ball Drop
4. Roadways

CONDITIONS WHICH PREVENT CONTROL
1. MAIN SLAG PROCESSING
DESCRIPTION:
The moisture content of this material directly affects the amount of dust which it produces. Rainy weather will cause the material to hold more moisture; therefore less water will be needed to achieve control. The net effect will be a change in control practices, but no change in achieving compliance. The addition of water to the material during extremely cold weather may lead to icing of the material which will interfere with processing. It may also lead to icing on the equipment and work area which would be a safety hazard. For these reasons it may be necessary to curtail the use of water for dust control under these conditions. However, the propensity of the material to dust under these conditions is reduced. No problem in achieving compliance is anticipated.

CONDITIONS WHICH PREVENT CONTROL
2. IRON CRUSHING
DESCRIPTION:
The moisture content of this material directly affects the amount of dust which it produces. Rainy weather will cause the material to hold more moisture; therefore less water will be needed to achieve control. The net effect will be a change in control practices, but no change in achieving compliance.

The addition of water to the material during extremely cold weather may lead to icing of the material which will interfere with processing. It may also lead to icing on the equipment and work area which would be a safety hazard. For these reasons it may be necessary to curtail the use of water for dust control under these conditions. However, the propensity of the material to dust under these conditions is reduced. No problem in achieving compliance is anticipated.

CONDITIONS WHICH PREVENT CONTROL
3. BALL DROP
DESCRIPTION:
The moisture content of this material directly affects the amount of dust which it produces. Rainy weather will cause the material to hold more moisture; therefore less water will be needed to achieve control. The net effect will be a change in control practices, but no change in achieving compliance.

The addition of water to the material during extremely cold weather may lead to icing of the material which will interfere with processing. It may also lead to icing on the

equipment and work area which would be a safety hazard. For these reasons it may be necessary to curtail the use of water for dust control under these conditions. However, the propensity of the material to dust under these conditions is reduced. No problem in achieving compliance is anticipated.

CONDITIONS WHICH PREVENT CONTROL
4. ROADWAYS
DESCRIPTION:
The moisture content of roadways directly affects the amount of dust which is produced. Rainy weather will cause the roads to hold more moisture; therefore less water will be needed to achieve control. The net effect will be a change in control practices, but no change in achieving compliance.

The application of water to the roadways during extremely cold weather may lead to icing of the roadways which would be a safety problem. It may also lead to icing on the equipment which would be a safety hazard. For these reasons it may be necessary to curtail the use of water for dust control under these conditions. However, the propensity of the roadways to dust under these conditions is reduced. No problem in achieving compliance is anticipated.

PROPOSED SCHEDULE
APPLICABLE REGULATIONS FOR PLAN CONTENT:
326 IAC 6.8-10-4-3(G) [Control plans] as follows:
Section (3) The Control Plan shall contain the following information:
(G) A schedule for achieving compliance with the provisions of the control plan. The schedule shall specify the time required to:
(i) award necessary contracts; and
(ii) begin and complete construction and installation.
Final compliance shall be achieved no later than December 10, 1993.

REQUESTED INFORMATION:
[Section 3(G)] PROPOSED SCHEDULE

None. Fugitive dust control measures as described have all been initiated and are on-going. The Plan was submitted coinciding with the compliance date of this Plan.

APPLICABLE REGULATION FOR PLAN CONTENT:
326 IAC 6.8-10-4-4
Section (4) Control plans shall include the following:
(4) The source shall keep the following documentation to show compliance with each of its control measures and control practices:
(A) A map or diagram showing the location of all emission sources controlled, including the:
(i) location;
(ii) identification;
(iii) length; and
(iv) width of roadways.

(B) For each application of water or chemical solution to roadways, the following shall be recorded:

(i) The name and location of the roadway controlled.

(ii) Application rate.

(iii) The time of each application.

(iv) The width of each application.

(v) The identification of each method of application.

(vi) The total quantity of water or chemical used for each application.

(vii) For each application of chemical solution, the concentration and identity of the chemical.

(viii) The material data safety sheets for each chemical.

(C) For application of physical or chemical control agents not covered by clause (B), the following:

(i) The name of the agent.

(ii) The location of application.

(iii) The application rate.

(iv) The total quantity of agent used.

(v) If diluted, the percent of concentration.

(vi) The material data safety sheets for each chemical.

(D) A log recording incidents when control measures were not used and a statement of explanation.

(E) Copies of all records required by this rule shall be submitted to IDEM within twenty (20) working days of a written request by IDEM.

(F) The records required under this subdivision shall be:

(i) kept and maintained for at least three (3) years; and

(ii) available for inspection and copying by IDEM representatives during working hours.

(G) A quarterly report shall be submitted to IDEM stating the following:

(i) The dates any required control measures were not implemented.

(ii) A listing of those control measures.

(iii) The reasons that the control measures were not implemented.

(iv) Any corrective action taken.

REQUESTED INFORMATION:
[Section 4(4)] See attached example for Control Measures Report and sample quarterly report cover page.

TMS International is complying with the above regulation regarding record keeping and reporting concerning dust suppression measures for roadways under TMS International control. Associated road maps are also provided.

To: Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, In 46206-6015

January 13, 2010

Re: Operating Permit No. T089-5630-00132
Fugitive Emission Control Plan
TMS International
At USS Gary Works
Gary, In 46401

This report is submitted in accordance with the Lake County: Fugitive Particulate Matter Control Plan requirements specified in accordance with 326 IAC 6.8-10-4(4)(G) regarding submittal of quarterly reports. These requirements replace the previous requirements specified in 326 IAC 6-1-11.1(e)(4)(g) which is now repealed. TMS International has implemented the required control measures at all locations for the fourth quarter ending December 31, 2009. Control measures for the dates listed on the attached charts were not implemented, as outlined in 326 IAC 6.8-10-4(4)(G) regarding conditions which prevent use of control measures and as specified in the TMS PM-10 Compliance Plans submitted on December 9, 1993.

If you have any questions or require additional information, please contact me at (219) 881-5700 or (219) 746-1282.

Sincerely

Michael J. Connolly
TMS International
Director, Environmental Engineering

Attachments

Cc: K. Mikalof
K. Davis
USS Gary Works – Environmental Department

Tube City IMS

IMS DIVISION, TUBE CITY IMS
AT U.S. STEEL, GARY WORKS

CONTROL MEASURE REPORT
[326 IAC 6.8-10-4(4) (G)]

LOCATION: MO-57 Slag Plant Date Ending: _____

SUBMITTED BY: S. Kupsik

Date (must be completed each day) [4(G)(i)]		Control Measure Applied [4(D)]		Type of Control Measure (e.g. water spray, water truck, truck w/CaCl) [4(G)(ii)]	If no, reason NOT applied (e.g. weather, plant not operating) [4(G)(iii)]	Corrective Action Taken [4(G)(iv)]	Total Gallons Applied	Is Control Measure Effective?	
		Yes	No					Yes	No

USS Gary Air Control Measure Report 1-15-10.doc

TMS INTERNATIONAL AT US STEEL GARY INDIANA
CONTINUOUS COMPLIANCE PLAN

INTRODUCTION

This Compliance Plan has been prepared to comply with Rule 8 under Article 6.8 of 326 IAC Lake County: Continuous Compliance Plan. The Plan covers the operations of TMS International which occur within the facility listed as US Steel Gary. The regulations defining the required contents of this plan are listed as follows:

326 IAC 6.8-8-2 [Documentation of operation and maintenance practices]

Sec. 2.

The continuous compliance plan CCP shall contain, for the facilities specified in section 1 of this rule, documentation of operation and maintenance practices of process operations and any particulate matter control equipment existing or required to be installed, replaced, or improved by 326 IAC 6.8-7 that are essential to maintaining compliance with the mass and opacity limits specified in 326 IAC 5-1, 326 IAC 6.8-2, and 326 IAC 6.8-3.

326 IAC 6.8-8-3 [Required contents]

Sec. 3.

The continuous compliance plan (CCP) shall include the following:

(1) A list of the processes and facilities at the source.

(2) A list of the particulate matter control equipment associated with the processes and facilities listed in section 1 of this rule.

(3) The process operating parameters critical to continuous compliance with the applicable PM10 or TSP mass and opacity limits, including applicable specific requirements listed in section 5 of this rule.

(4) The particulate matter control equipment operating parameters critical to continuous compliance with the applicable PM10 or TSP mass and opacity including applicable requirements listed in section 6 of this rule.

(5) The specific monitoring, recording, and record keeping procedures for process and control equipment for each facility in the CCP specified in subdivisions (1) and (2).

(6) The procedure used to assure that adequate exhaust ventilation is maintained through each duct at facilities where emissions are captured by a collection hood and transported to a control device.
326 IAC 6.8-8-5 [Required information, procedures, or actions]

Sec. 5.

A source or facility to which section 1 of this rule applies, which belongs to any source category listed in this section, shall include the following information, applicable procedures, or commit to the following actions in its continuous compliance plan (CCP):

(3) Steel mill CCPs shall include, at a minimum, the following:
(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:

(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.
(ii) Maintenance of process vessels, for example, pugh ladles, shall be performed in enclosed structures. The visible emissions from such structures shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.
(iii) Emissions from all steel scrap burning or cutting and oxygen lancing operations shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.
(G) Visible emission evaluation plans shall comply with the following:
(i) Within sixty (60) days of June 11, 1993, each steel mill shall submit a plan to conduct visible emissions evaluations per the approved test method or procedures to determine compliance with the applicable opacity standard. The plan shall specify the frequency of visible emissions evaluations at the operations included in clauses (A) through (F). The plan shall include charging, pushing, lids and offtakes, doors, standpipes, and gas collector mains at coke production operations and lime plants.
(ii) If the plan specifies that the duration of readings is less than one (1) hour per day at each facility, the plan shall include the basis for less frequent evaluations.
(iii) The department shall disapprove the plan if:
(AA) it does not include all facilities; or
(BB) the proposed duration and frequency will not provide for a reasonable assessment of compliance.
(iv) Upon approval of a steel mill's plan by the department, the visible emissions evaluations shall commence and the data submitted to the department within one (1) month of the end of the calendar quarter.
(v) The plan may be revised with department approval at any time.

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

Sec. 6.

This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:

(1) Startup, shutdown, and emergency shutdown procedures.
(2) Sources shall notify the department fifteen (15) days in advance of startup of either new control equipment or control equipment to which major modifications have been made.
(3) Manufacturer's recommended inspection procedures, preventive and corrective maintenance procedures, and safety devices and procedures, such as sensors, alarm systems, and bypass systems. If manufacturer's recommendations are not available, procedures shall be developed by the source.
(4) Contents of the operator's training program and the frequency with which the training is held.
(5) A list of spare parts available at the facility.
(6) A list of control equipment safety devices, for example:
(A) high temperature sensors and alarm systems;
(B) exhaust gas stream bypass system; or
(C) safety interlock system.
(7) Monitoring and recording devices or instruments, or both, to monitor and record control equipment operating parameters specified in section 3(4) of this rule.

326 IAC 6.8-8-7 [Particulate matter control equipment operation, recording, and inspection procedure requirements]

Sec. 7.

Particulate matter control equipment operation, recording, and inspection procedure requirements shall be as follows:

(1) A continuous compliance plan (CCP) for a facility controlled with a baghouse shall include the recording, inspection, and maintenance procedures to be consistent with the requirements of section 2 of this rule such as the following:
(A) Operating parameters, such as the following:
(i) Pressure drop across the baghouse.
(ii) Gas flow rate at baghouse inlet.
(iii) Gas temperatures at inlet.

A CCP shall identify the monitors and instrumentation and their location, accuracy, precision, and calibration frequency. A CCP shall also include a description of any visible emission evaluation program.
(B) Baghouse cleaning system. A complete description of the cleaning system, including such information as the following:

(i) Intensity.
(ii) Duration.
(iii) Frequency.
(iv) Method of activation.

(C) Baghouse inspection and maintenance schedule. The inspection schedule logs or records shall be available for inspection by the department for up to one (1) year after the date of inspection. The inspection shall include the activities and frequency of the activities. A source may request an alternative schedule based on manufacturer's recommendations or alternatives documented by the company. The revised schedule must be approved by the department. Inspections shall include the following:

(i) Daily inspections shall include the following:
(AA) Pressure drop.
(BB) Fan amperage.
(CC) Cleaning cycle.
(DD) Compressed air on pulse jet baghouses for values outside of the operating ranges.
(EE) Dust discharge equipment for proper operation.
(FF) General check for abnormal audible and visual conditions.
(ii) Weekly inspections of the following:
(AA) Moving parts on discharge system.
(BB) Bypass and isolation damper operation.
(CC) Bag tension.
(DD) Compressed air lines, oilers, and filters.
(EE) Manometer lines.
(FF) Temperature indicating equipment.
(GG) Bag cleaning sequence.
(HH) Drive components on fans.
(iii) Monthly inspections of the following:
(AA) Bag seating condition.
(BB) Moving parts on shaker baghouses.
(CC) Fan corrosion and blade wear.
(DD) Hoses and clamps.
(EE) Bags for leaks and holes.
(FF) Bag housing for corrosion.
(iv) Quarterly inspections of the following:
(AA) Bags.
(BB) Ducts for dust build-up.

(CC) Damper valves for proper setting.
(DD) Door gaskets.
(EE) Baffle plate for wear.
(v) Annual inspection of the following:
(AA) Welds and bolts.
(BB) Hoppers for wear.
(CC) Cleaning parts for wear.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-2 [Documentation of operation and maintenance practices]

The continuous compliance plan CCP shall contain, for the facilities specified in section 1 of this rule, documentation of operation and maintenance practices of process operations and any particulate matter control equipment existing or required to be installed, replaced, or improved by 326 IAC 6.8-7 that are essential to maintaining compliance with the mass and opacity limits specified in 326 IAC 5-1, 326 IAC 6.8-2, and 326 IAC 6.8-3.

REQUESTED INFORMATION

Operating practices to control emissions consist of the addition of water to control dusting or on limited cases the use of a baghouse. A detailed discussion of these practices on an operation by operation basis is included in the Fugitive Emissions Control Plan.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(1) A list of the processes and facilities at the source.

REQUESTED INFORMATION

A detailed discussion of the processes is included in the Fugitive Emissions Control Plan.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(2) A list of the particulate matter control equipment associated with the processes and facilities listed in section 1 of this rule.

REQUESTED INFORMATION

A detailed discussion of the processes and control equipment is included in the Fugitive Emissions Control Plan.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(3) The process operating parameters critical to continuous compliance with the applicable PM10 or TSP mass and opacity limits, including applicable specific requirements listed in section 5 of this rule.

REQUESTED INFORMATION

Baghouse is over sized therefore no parameters affect continuous compliace.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(4) The particulate matter control equipment operating parameters critical to continuous compliance with the applicable PM10 or TSP mass and opacity including applicable requirements listed in section 6 of this rule.

REQUESTED INFORMATION

To ensure proper operation, baghouse air pressure must be maintained at 80 psi minimum not to exceed 130 psi.

In the event that an interruption in air supply should occur, TMS International will shut down until air supply is restored.

The pressure drop across the baghouse, that is from the inlet and outlet ducts, also called the differential pressure photohelic, located at the control cabinet, should remain in the 3 psig to 10 psig range for the baghouse to be properly operating.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(5) The specific monitoring, recording, and record keeping procedures for process and control equipment for each facility in the CCP specified in subdivisions (1) and (2).

REQUESTED INFORMATION

None of the TMS International operations include any monitoring or recording devices for emissions. The CCP for the baghouse includes monitoring and recording of operating parameters and maintenance activity. Please refer to that section for details.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-3 [Required contents]

The continuous compliance plan (CCP) shall include the following:

(6) The procedure used to assure that adequate exhaust ventilation is maintained through each duct at facilities where emissions are captured by a collection hood and transported to a control device.

REQUESTED INFORMATION

The only exhaust ductwork in the TMS International facilities is to be found in the baghouse at the Scarfing Facility (surface conditioning) that is utilized in removing imperfections from the surface of steel slabs. By monitoring fan amps and the Photohelic gauge on a daily basis, any plugging of the ductwork can be detected. Additionally the CCP includes an annual inspection of the ductwork to determine whether there is a build up of solids.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-5 [Required information, procedures, or actions]

A source or facility to which section 1 of this rule applies, which belongs to any source category listed in this section, shall include the following information, applicable procedures, or commit to the following actions in its continuous compliance plan (CCP):

(3) Steel mill CCPs shall include, at a minimum, the following:
(F) Waste disposal and recycling practices of iron and steel scrap and other metallic scrap shall comply with the following:

(i) Provide a description of the routine activities involving disposal and reclamation of iron and steel. The visible emissions from such activities shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.
(ii) Maintenance of process vessels, for example, pugh ladles, shall be performed in enclosed structures. The visible emissions from such structures shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.
(iii) Emissions from all steel scrap burning or cutting and oxygen lancing operations shall not exceed twenty percent (20%) opacity on a three (3) minute average as measured by 40 CFR 60, Appendix A, Method 9* . The opacity shall be determined as an average of twelve (12) consecutive observations recorded at fifteen (15) second intervals.

REQUESTED INFORMATION

TMS International will comply with these requirements

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-5 [Required information, procedures, or actions]

A source or facility to which section 1 of this rule applies, which belongs to any source category listed in this section, shall include the following information, applicable procedures, or commit to the following actions in its continuous compliance plan (CCP):

(3) Steel mill CCPs shall include, at a minimum, the following:

(G) Visible emission evaluation plans shall comply with the following:

(i) Within sixty (60) days of June 11, 1993, each steel mill shall submit a plan to conduct visible emissions evaluations per the approved test method or procedures to determine compliance with the applicable opacity standard. The plan shall specify the frequency of visible emissions evaluations at the operations included in clauses (A) through (F). The plan shall include charging, pushing, lids and offtakes, doors, standpipes, and gas collector mains at coke production operations and lime plants.

(ii) If the plan specifies that the duration of readings is less than one (1) hour per day at each facility, the plan shall include the basis for less frequent evaluations.

(iii) The department shall disapprove the plan if:

(AA) it does not include all facilities; or

(BB) the proposed duration and frequency will not provide for a reasonable assessment of compliance.

(iv) Upon approval of a steel mill's plan by the department, the visible emissions evaluations shall commence and the data submitted to the department within one (1) month of the end of the calendar quarter.

(v) The plan may be revised with department approval at any time.

REQUESTED INFORMATION

The Visible Emission Evaluation Plan was previously submitted to IDEM prior to the deadline.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(1) Startup, shutdown, and emergency shutdown procedures.***

REQUESTED INFORMATION

The systems which TMS International uses to control particulate emissions either operate continuously or start and stop with the processing function which they service. The only process that requires specific procedures are the baghouse operation utilized during the cutting of scrap, and is described as follows:

Start Up Procedure

1. Verify that Motor Control Center is energized.
2. Turn on the compressed air.
3. Turn on "Baghouse" Control.
4. Verify that fan breaker is on at MCC
5. Verify that screw conveyor breakers are on at MCC
6. Check that the main stack damper is closed if not **CLOSE IT.** The fan will not start with the damper open
7. Push the fan start button
8. After the fan reaches nominal speed open the main damper.
9. Start both screw conveyors.

During Operation

1. Check the reading of the photohelic gauge
2. Check if the cleaning cycle is off line
3. Follow the closure of each module during the cleaning cycle.

Shut Down

1. Push the fan stop button
2. Turn the screw conveyors off.
3. Turn the fan breaker off (*for maintenance or repair*).
4. Turn the screw conveyor breakers off (*for maintenance or repair*).
5. Turn the baghouse control panel off (*for maintenance or repair*).
6. Close the main damper

7. Turn off all compressed air. (*for maintenance or repair*).

Emergency Shut Down

1. Push the emergency stop button located on the face of the baghouse control panel.
2. Turn off the fan breakers.
3. Turn off the conveyor breakers.
4. If necessary turn off the MCC.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(2) Sources shall notify the department fifteen (15) days in advance of startup of either new control equipment or control equipment to which major modifications have been made.***

REQUESTED INFORMATION

TMS International will comply with the above requirement.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(3) Manufacturer's recommended inspection procedures, preventive and corrective maintenance procedures, and safety devices and procedures, such as sensors, alarm systems, and bypass systems. If manufacturer's recommendations are not available, procedures shall be developed by the source.***

REQUESTED INFORMATION

These requirements are set forth for the scarfing baghouse in the specific CCP for that system.

See baghouse manufacturer's recommendations that can be found in the Appendix of the TMS International at US Steel Gary PM10 Compliance Plan consisting of 1) Fugitive Emission Control Plan, 2) CCP and 3) VEEP.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(4) Contents of the operator's training program and the frequency with which the training is held.***

REQUESTED INFORMATION

The systems which are employed are not sophisticated, specialized training is not required. Operators are trained to operate the systems as part of their overall training program. The weekly system checks provide a cross check on operator effectiveness in operating these systems. If indicated, operators are retrained based on this feedback.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(5) A list of spare parts available at the facility.***

REQUESTED INFORMATION

RECOMMENDED SPARE PARTS FOR # 1515 JET III DUST COLLECTOR JOB NO.20-4547

QUANTITY	PART NO.	DESCRIPTION
	N/A	Filters
	N/A	Cages
	N/A	Venturis
5	455935	Compression Fitting – 90 Deg.
20 ft	437704	Nylon Tubing
1	620325	Solenoid Valve
2	620326	Solenoid Valve Kit
1	620337	Diaphragm Valve
2	620528	Diaphragm Valve Kit
1	669400	Timer

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(6) A list of control equipment safety devices, for example:***

REQUESTED INFORMATION

The control equipment which TMS International operates does not have safety devices other than a safety interlock system on the Baghouse Damper which is a limit. This switch must be closed to start the Baghouse.

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-6 [Particulate matter control equipment operation and maintenance requirements]

> ***This section concerns particulate matter control equipment operation and maintenance requirements. A continuous compliance plan shall provide that the following control equipment related information will be maintained at the source's property and will be available for inspection by department personnel:***
>
> ***(7) Monitoring and recording devices or instruments, or both, to monitor and record control equipment operating parameters specified in section 3(4) of this rule.***

REQUESTED INFORMATION

TMS International personnel routinely monitor and manually record readings of the following devices critical to scrap cutting while utilizing the baghouse.

1. Photohelic Pressure Gauge
2. Amp Meter

CONTINUOUS COMPLIANCE PLAN

APPLICABLE REGULATION FOR PLAN CONTENT:

326 IAC 6.8-8-7 [Particulate matter control equipment operation, recording, and inspection procedure requirements]

Particulate matter control equipment operation, recording, and inspection procedure requirements shall be as follows:

(1) A continuous compliance plan (CCP) for a facility controlled with a baghouse shall include the recording, inspection, and maintenance procedures to be consistent with the requirements of section 2 of this rule such as the following:

(A) Operating parameters, such as the following:
(i) Pressure drop across the baghouse.
(ii) Gas flow rate at baghouse inlet.
(iii) Gas temperatures at inlet.
A CCP shall identify the monitors and instrumentation and their location, accuracy, precision, and calibration frequency. A CCP shall also include a description of any visible emission evaluation program.

(B) Baghouse cleaning system. A complete description of the cleaning system, including such information as the following:

(i) Intensity.
(ii) Duration.
(iii) Frequency.
(iv) Method of activation.

(C) Baghouse inspection and maintenance schedule. The inspection schedule logs or records shall be available for inspection by the department for up to one (1) year after the date of inspection. The inspection shall include the activities and frequency of the activities. A source may request an alternative schedule based on manufacturer's recommendations or alternatives documented by the company. The revised schedule must be approved by the department. Inspections shall include the following:

(i) Daily inspections shall include the following:
(AA) Pressure drop.
(BB) Fan amperage.
(CC) Cleaning cycle.
(DD) Compressed air on pulse jet baghouses for values outside of the operating ranges.
(EE) Dust discharge equipment for proper operation.
(FF) General check for abnormal audible and visual conditions.
(ii) Weekly inspections of the following:

(AA) Moving parts on discharge system.
(BB) Bypass and isolation damper operation.
(CC) Bag tension.
(DD) Compressed air lines, oilers, and filters.
(EE) Manometer lines.
(FF) Temperature indicating equipment.
(GG) Bag cleaning sequence.
(HH) Drive components on fans.
(iii) Monthly inspections of the following:
(AA) Bag seating condition.
(BB) Moving parts on shaker baghouses.
(CC) Fan corrosion and blade wear.
(DD) Hoses and clamps.
(EE) Bags for leaks and holes.
(FF) Bag housing for corrosion.
(iv) Quarterly inspections of the following:
(AA) Bags.
(BB) Ducts for dust build-up.
(CC) Damper valves for proper setting.
(DD) Door gaskets.
(EE) Baffle plate for wear.
(v) Annual inspection of the following:
(AA) Welds and bolts.
(BB) Hoppers for wear.
(CC) Cleaning parts for wear.

REQUESTED INFORMATION

TMS International operates a scarfing operation at US Steel Gary. The scarfing operation consists of a burning torch mounted on a robotic arm and two (2) cars which carry slabs past the torch. The purpose of this operation is to remove surface defects from the slab before it is rolled into sheets and coils. The process occurs within an enclosed room. The fume which is generated is captured in fixed hoods built into the roof of the enclosure. The particulate in the fume is collected in a baghouse.

The baghouse is a pulse jet type manufactured by Wheelabrator. It consists of six (6) modules. Each module has 225 bags in a 15 by 15 configuration. Each module has a solid state control board which sequences the jet pulse cleaning cycle. Each module is isolated for off-line cleaning by an outlet damper. The sequencing of the off-line cleaning is controlled by a PLC in the main control cabinet which also monitors the pressure drop in the system to assure proper operation. The control cabinet also houses a pressure gauge which displays pressure drop across the baghouse. The gauge has a range of ten inches of water with half inch gradations.

BAGHOUSE CONTINUOUS COMPLIANCE PLAN *(continued)*

The cleaning sequence operates by isolating one module at a time by closing a damper in the outlet duct. The damper remains closed throughout the cleaning cycle as well as for a period of time after the cycle to allow the dust removed from the bags to settle in the hopper below. The settling time is adjustable within the PLC. Typically, this is set to one minute. The cleaning sequence cycle operates continuously. Within each module the cleaning sequence is controlled by a solid state timer with ten firing circuits. Each row of tubes is connected to one of the circuits. The timer operates a pneumatic valve which passes a pulse of high pressure air through the bags. This "pulse jet" cleaning action was originally patented by Wheelabrator. The typical pulse duration is .5 seconds with a delay of about 20 seconds between the pulse for each row. These parameters are adjustable on the circuit board.

Inspection and maintenance procedures for the baghouse are as follows. Maintenance intervals are based on the recoendations of the manufacturer. Inspection and maintenance procedures for the baghouse are one as shown in the Appendix.

CONTINUOUS COMPLIANCE PLAN

BAGHOUSE CONTINUOUS COMPLIANCE PLAN

DAILY

1. Record pressure drop across baghouse from the gauge in the main control panel, and fan amperage from motor starter. Note: All modules must be online when readings are taken.

2. Observe and record the function lights on the main contro panel to assure that the cleaning sequence is operating.

3. Record plant air pressure used for cleaning system

4. Observe dust discharge for proper operation

5. Perform a general check for any abnormal visual or audible conditions.

WEEKLY

1. Check baghouse doors and compressed air system for leakage.

2. Check moving parts of discharge system for normal operation.

3. Check isolation damper operation and observe proper operation of cleaning sequence by listening to pulses

MONTHLY

1. Check fan bearings for lubrication

2. Observe discharge stack for signs of leakage (*EPA Method 22*)

SEMI-ANNUALLY

1. Observe LED on timer cards for proper sequence.

2. Check outlet ducts for dust build-up.

ANNUALLY

1. Check bags for seating condition and holes.

2. Check fan for wear or corrosion.

3. Check housings, hoppers and ducts for holes or leaks.

4. Check dampers for proper seating.

5. Check deflector plate for wear.

6. Check discharge system for wear.

7. Clean ductwork as necessary.

A permanent record shall be made listing the results of each of the above inspections. A log of all maintenance activity shall also be kept. These records shall be retained for a minimum of one year such that a complete maintenance history is available at all time. For instance, bag replacement records shall be retained until those bags are replaced.

VISIBLE EMISSION EVALUATION PLAN FOR TMS INTERNATIONAL OPERATIONS AT US Steel Gary, IN

326 IAC 6.8-8-(5)(3)(G)
(3) Steel mill CCPs shall include, at a minimum, the following:
(G) Visible emission evaluation plans shall comply with the following:
(i) Within sixty (60) days of June 11, 1993, ***each steel mill shall submit a plan to conduct visible emissions evaluations*** *per the approved test method or procedures to determine compliance with the applicable opacity standard. The plan shall specify the frequency of visible emissions evaluations at the operations included in clauses (A) through (F). The plan shall include charging, pushing, lids and offtakes, doors, standpipes, and gas collector mains at coke production operations and lime plants.*
(ii) If the plan specifies that the duration of readings is less than one (1) hour per day at each facility, the plan shall include the basis for less frequent evaluations.
(iii) The department shall disapprove the plan if:
(AA) it does not include all facilities; or
(BB) the proposed duration and frequency will not provide for a reasonable assessment of compliance.
(iv) Upon approval of a steel mill's plan by the department, the visible emissions evaluations shall commence and the data submitted to the department within one (1) month of the end of the calendar quarter.
(v) The plan may be revised with department approval at any time.

This plan was prepared and submitted in accordance with revisions to the Indiana Clean Air Statutes as amended June 11, 1993 incorporating PM10 Standards. This plan deals with the visible emissions evaluations as required by 326 IAC 6.8-8-5(3)(G). TMS International operates as an independent contractor within the US Steel Gary facilities. As such, TMS International is submitting the plan covering its facilities directly to the Indiana Department of Environmental Management (IDEM) for review and approval.

TMS International has operations at US Steel Gary to perform work under a contract with US Steel Gary to recycle iron and steel, by processing slag and kish from steel making operations. These processing facilities include slag processing; iron crushing, ball drop and tundish lancing. Each of these operations will be discussed below as well as current plans for achieving compliance and proposed plans for visible emissions evaluations.

The routine activities conducted by TMS International involving the reclamation of iron and steel as stated above, will be subject to a 20% opacity on a three (3) minute measured by 40 CFR 60 Appendix “A”, Method 9 [326 IAC 6.8-8-5(3)(F)] visible emission standards. Fugitive emissions from batch and continuous transfer, storage piles, truck loading, pot dumping and transportation related emissions are not a part of this plan, and are discussed in the fugitive emission plan.

A quarterly report demonstrating compliance with the visible emission plan and the PM10 standards will be submitted to IDEM within (1) month of the end of a calendar quarter. Actual visible emission records will be retained for one year.

METAL RECOVERY AND SI.AG PROCESSING

This area processes by product streams which are high in iron content. The goal of this process is to reduce the slag or iron bearing material in size so that it can be either reused in the iron making process or marketed and sold for other applications. Small amounts of metallic and nonmetallic fines are produced as a by-product of this operation. The process equipment consists of three screening stations and a crusher connected by belt conveyors and magnetic head pulleys to separate iron bearing materials from the nonmagnetic slag. Finished materials, classified by size and iron content, are either returned to the mill for use as feedstock in iron and steelmaking operations, or marketed and sold outside the mill. For emissions evaluation purposes, the slag plant will be treated as a source.

This facility is situated partially outdoors and partially in a vacated mill building which has small areas with roof intact but no walls. The roof provides weather protection for the equipment and material which must remain relatively dry for effective screening. For emissions evaluation purposes, the equipment will be treated as sources, the building plays no role in the control scheme. As stated above, continuous transfer, storage pile, and truck loading operations are covered by fugitive emission regulations.

The normal processing of these materials involves spraying water to cool the hot slag. The moisture introduced controls dusting. Visual emission observations occur on a regular basis to ensure compliance as stipulated in the regulations.

IRON CRUSHING

This area processes by product streams which are high in iron content. The goal of this process is to reduce the iron bearing material to a minus six inch size so that it can be reused in the iron-making process. Small amounts of metallic and nonmetallic fines are produced as a by-product of this operation. The equipment in this operation consists of a jaw crusher, a hammermill, two screens and interconnecting conveyor belts. Magnetic head pulleys separate iron bearing materials from non-magnetic materials.

This facility is situated in a vacated mill building which helps control and contains emissions. The iron bearing material is also watered as needed to control visible emissions from this process.

BALL DROP

This area is used to reduce the size of material which is too large to be processed in the slag plant and iron crushing operations. The process at this facility consists of dropping a large steel ball on the material to break it. Broken material is then sent to the processing areas or directly to the mill for recycling.

This facility is situated outdoors and is surrounded by a fifty foot chain link fence to contain flying debris.

Compliance is achieved by manually wetting the material as needed. Because this is an outdoor facility, the amount of water required will vary with weather conditions. To ensure compliance, designated personnel in this area will be make determination on a regular basis whether emissions are normal or abnormal. If abnormal emissions are observed, TMS International personnel will initiate the application of water to prevent a deviation from permit visible emission limits.

TUNDISH I.ANCING

TMS International performs oxygen lancing on Tundish blocks to reduce their size. Cut blocks are sent to the Ball Drop area for further size reduction, and then back to the steel shops for recycling. This work is now performed indoors at the Old Mill Building. There is not expected to be any visible emissions leaving the building enclosure.

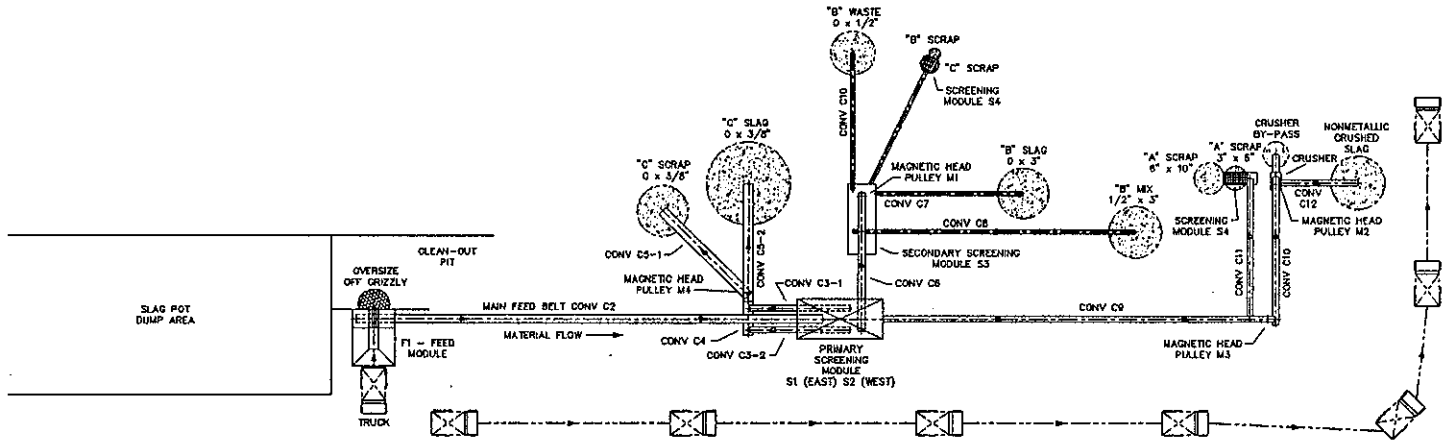
BEACHING OF IRON

TMS International is currently responsible only for cleaning the beached iron at USS Gary Works, when necessary. Beaching of iron is an emergency procedure which is only employed when the steel shops are unable to handle the supply of molten iron available.

USS has assigned a building for beaching iron. With this activity occurring within a building there is not expected to be any visible emissions leaving the enclosure.

Table 1. Visible Emission Evaluation

Source Description	**Frequency of Observation**		**Reasons for less than 1 hour per day visual emission readings (Method 9 opacity readings conducted by USS)**
	Initial Observation	**After Compliance Confirmed**	
Slag Processing	Daily	Weekly	Measurable parameters will be monitored to ensure compliance
Iron Crushing	Daily	Weekly	Measurable parameters will be monitored to ensure compliance
Ball Drop	Daily	Weekly	Measurable parameters will be monitored to ensure compliance
Tundish Lancing	Weekly	Weekly	Control measure implemented will ensure compliance
Beaching of Iron	To be determined by USX.	Weekly	Emission Limitations imposed December 31, 1994. USX to address.



PLAN

M0-57 STEEL SLAG PROCESS PLANT

Last Edit: Dec. 06, 1993

INTERNATIONAL MILL SERVICE

MIDWEST REGION

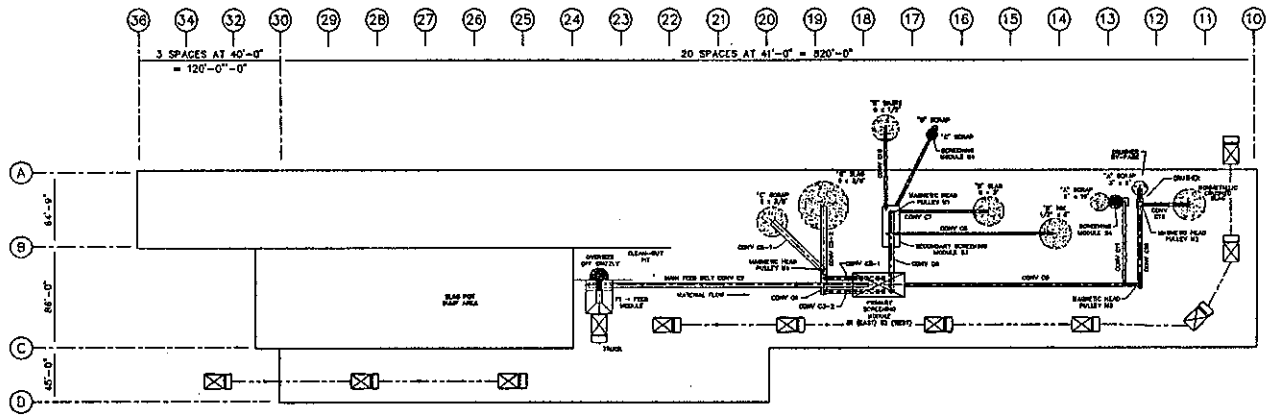
U.S. - GARY WORKS

M0-57 PLANT

FLOW DIAGRAM

DRAWN BY	DATE	CHKD BY	DATE	SCALE
TAP	7/15/93			1"=30'-0"

DRAWING NO. 5041-1



PLAN

MO--57 STEEL SLAG PROCESSING PLANT

(LOCATED IN FORMER #4 OPEN HEARTH BLDG)

Last Edit: Dec. 08, 1993

INTERNATIONAL MILL SERVICE

MIDWEST REGION

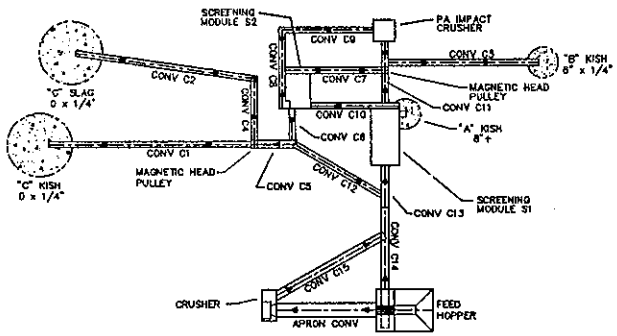
U.S.S. – GARY WORKS

MAIN SLAG PROCESSING

SITE PLAN

DRAWN BY	DATE	CHK'D BY	DATE	SCALE
MJD	10/07/93			1"=50'-0"

DRAWING NO. 5041-2



N

INTERNATIONAL MILL SERVICE

MIDWEST REGION

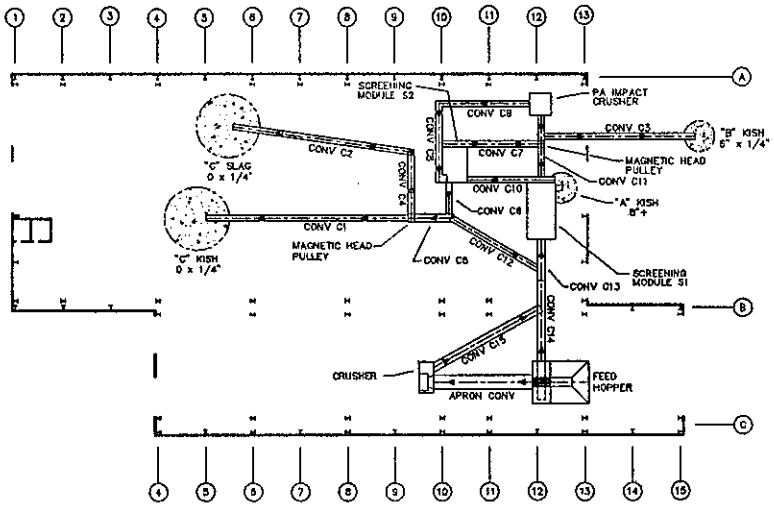
U.S.S. - GARY WORKS

FLOW DIAGRAM

DRAWN BY	DATE	CHK'D BY	DATE	SCALE
PFA	10/1/93			1"=30'-0"

DRAWING NO. 5041-3

N



INTERNATIONAL MILL SERVICE

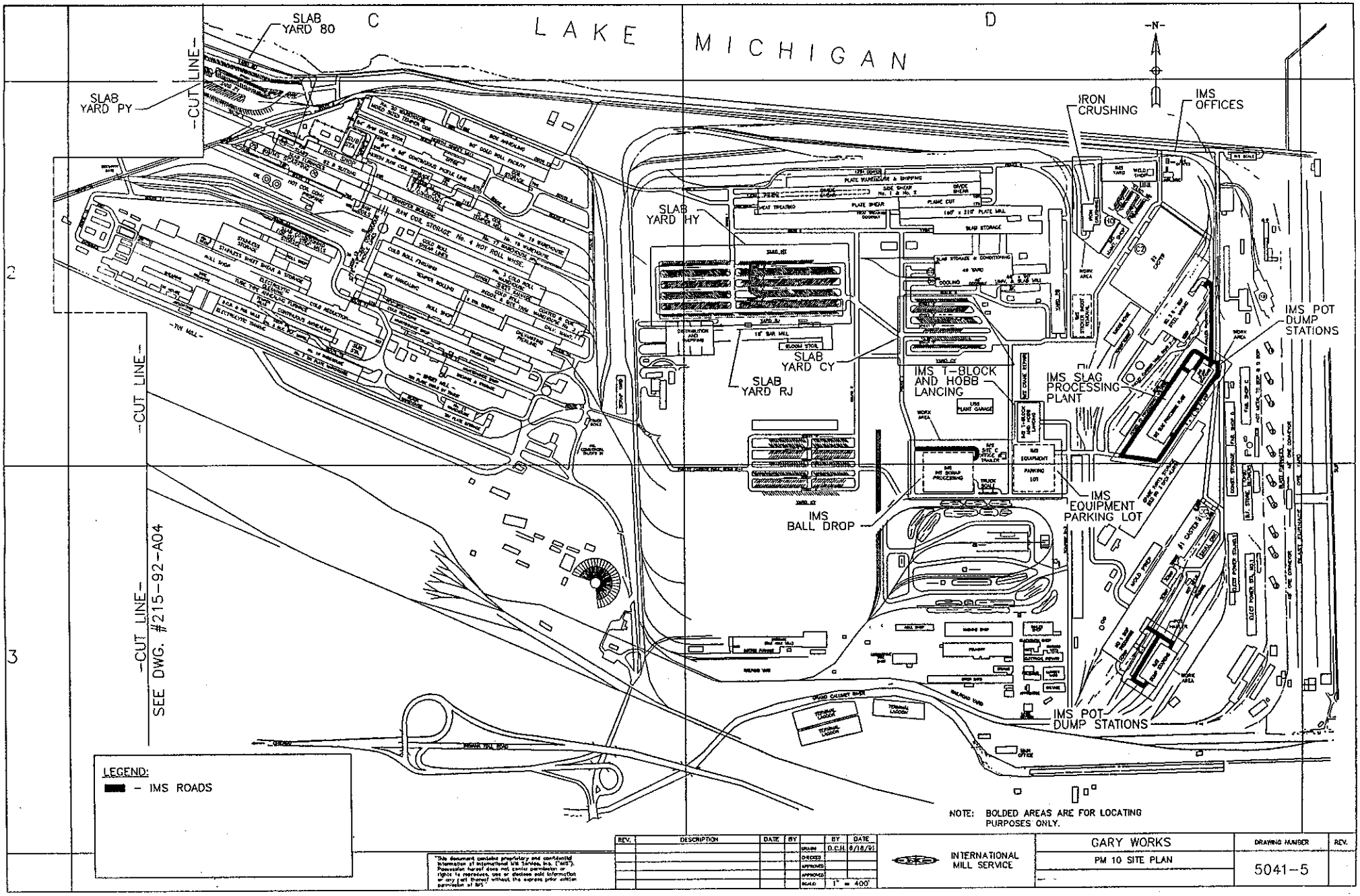
MIDWEST REGION

U.S.S. - GARY WORKS

SITE PLAN

DRAWN BY	DATE	CHK'D BY	DATE	SCALE
PP A	10/31/93			1"=30'-0"

CAD/DWG NO. 5041-4



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REV.	DESCRIPTION	DATE	BY

	BY	DATE
DRAWN	D.C.H.	6/18/91
CHECKED		
APPROVED		
APPROVED		
SCALE	1" = 400'	

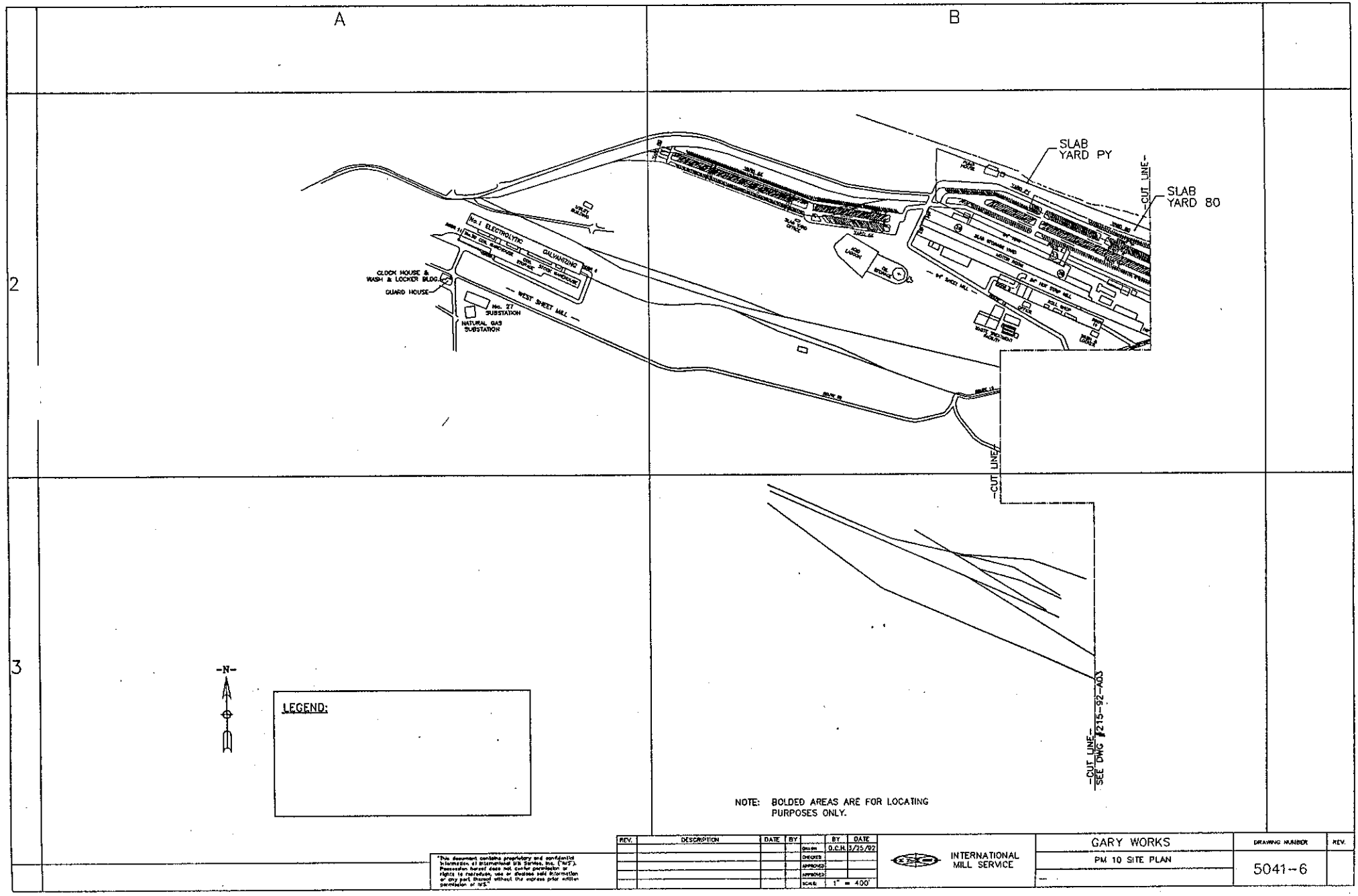
INTERNATIONAL MILL SERVICE

GARY WORKS

PM 10 SITE PLAN

DRAWING NUMBER: 5041-5

REV.



REV.	DESCRIPTION	DATE	BY

	BY	DATE
DRAWN	D.C.H.	3/25/92
CHECKED		
APPROVED		
APPROVED		
SCALE	1" = 400'	

INTERNATIONAL MILL SERVICE

GARY WORKS

PM 10 SITE PLAN

DRAWING NUMBER: 5041-6

REV.

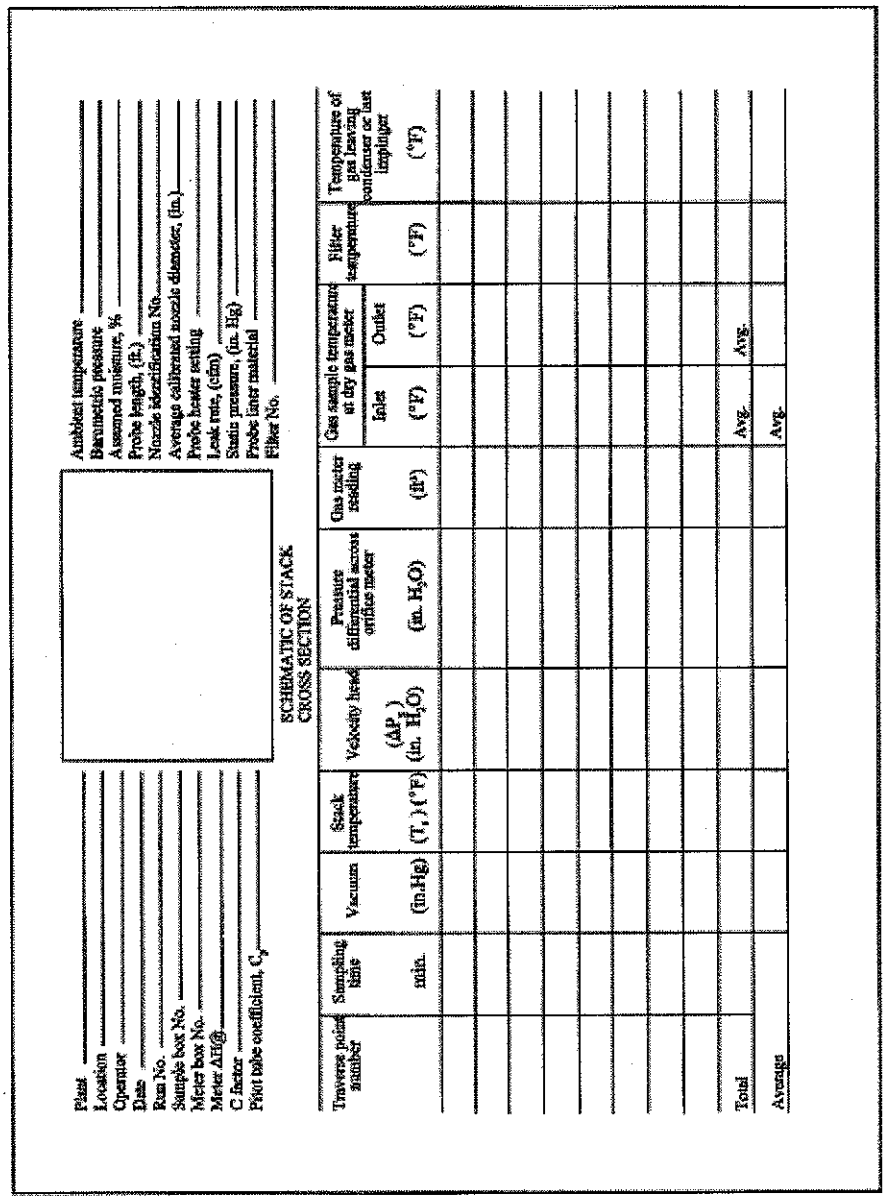


Figure 8-2. Field Data Sheet.

* * * * *

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Method 9—Visual Determination of the Opacity of Emissions From Stationary Sources

Many stationary sources discharge visible emissions into the atmosphere; these emissions are usually in the shape of a plume. This method involves the determination of plume opacity by qualified observers. The method includes procedures for the training and certification of observers, and procedures to be used in the field for determination of plume opacity. The appearance of a plume as viewed by an observer depends upon a number of variables, some of which may be controllable and some of which may not be controllable in the field. Variables which can be controlled to an extent to which they no longer exert a significant influence upon plume appearance include: Angle of the observer with respect to the plume; angle of the observer with respect to the sun; point of observation of attached and detached steam plume; and angle of the observer with respect to a plume emitted from a rectangular stack with a large length to width ratio. The method includes specific criteria applicable to these variables.

Other variables which may not be controllable in the field are luminescence and color contrast between the plume and the background against which the plume is viewed. These variables exert an influence upon the appearance of a plume as viewed by an observer, and can affect the ability of the observer to accurately assign opacity values to the observed plume. Studies of the theory of plume opacity and field studies have demonstrated that a plume is most visible and presents the greatest apparent opacity when viewed against a contrasting background. It follows from this, and is confirmed by field trials, that the opacity of a plume, viewed under conditions where a contrasting background is present can be assigned with the greatest degree of accuracy. However, the potential for a positive error is also the greatest when a plume is viewed under such contrasting conditions. Under conditions presenting a less contrasting background, the apparent opacity of a plume is less and approaches zero as the color and luminescence contrast decrease toward zero. As a result, significant negative bias and negative errors can be made when a plume is viewed under less contrasting conditions. A negative bias decreases rather than increases the possibility that a plant operator will be cited for a violation of opacity standards due to observer error.

Studies have been undertaken to determine the magnitude of positive errors which can be made by qualified observers while reading plumes under contrasting conditions and using the procedures set forth in this method. The results of these studies (field trials) which involve a total of 769 sets of 25 readings each are as follows:

(1) For black plumes (133 sets at a smoke generator), 100 percent of the sets were read with a positive error [1] of less than 7.5 percent opacity; 99 percent were read with a positive error of less than 5 percent opacity.

[1] For a set, positive error=average opacity determined by observers' 25 observations—average opacity determined from transmissometer's 25 recordings.

(2) For white plumes (170 sets at a smoke generator, 168 sets at a coal-fired power plant, 298 sets at a sulfuric acid plant), 99 percent of the sets were read with a positive error of less than 7.5 percent opacity; 95 percent were read with a positive error of less than 5 percent opacity.

The positive observational error associated with an average of twenty-five readings is therefore established. The accuracy of the method must be taken into account when determining possible violations of applicable opacity standards.

1. Principle and Applicability

1.1 Principle. The opacity of emissions from stationary sources is determined visually by a qualified observer.

1.2 Applicability. This method is applicable for the determination of the opacity of emissions from stationary sources pursuant to §60.11(b) and for qualifying observers for visually determining opacity of emissions.

2. Procedures

The observer qualified in accordance with section 3 of this method shall use the following procedures for visually determining the opacity of emissions:

2.1 Position. The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction, and when observing opacity of emissions from rectangular outlets (e.g., roof monitors, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g., stub stacks on baghouses).

2.2 Field Records. The observer shall record the name of the plant, emission location, type facility, observer's name and affiliation, a sketch of the observer's position relative to the source, and the date on a field data sheet (Figure 9–1). The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on a field data sheet at the time opacity readings are initiated and completed.

2.3 Observations. Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume, but instead shall observe the plume momentarily at 15-second intervals.

2.3.1 Attached Steam Plumes. When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible. The observer shall record the approximate distance from the emission outlet to the point in the plume at which the observations are made.

2.3.2 Detached Steam Plume. When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water vapor and the formation of the steam plume.

2.4 Recording Observations. Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on an observational record sheet. (See Figure 9–2 for an example.) A minimum of 24 observations shall be recorded. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

2.5 Data Reduction. Opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall two sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. If an applicable standard specifies an averaging time requiring more than 24 observations, calculate the average for all observations made during the specified time period. Record the average opacity on a record sheet. (See Figure 9–1 for an example.)

3. Qualifications and Testing

3.1 Certification Requirements. To receive certification as a qualified observer, a

candidate must be tested and demonstrate the ability to assign opacity readings in 5 percent increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15 percent opacity on any one reading and an average error not to exceed 7.5 percent opacity in each category. Candidates shall be tested according to the procedures described in section 3.2. Smoke generators used pursuant to section 3.2 shall be equipped with a smoke meter which meets the requirements of section 3.3.

The certification shall be valid for a period of 6 months, at which time the qualification procedure must be repeated by any observer in order to retain certification.

3.2 Certification Procedure. The certification test consists of showing the candidate a complete run of 50 plumes—25 black plumes and 25 white plumes—generated by a smoke generator. Plumes within each set of 25 black and 25 white runs shall be presented in random order. The candidate assigns an opacity value to each plume and records his observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as part of a smoke school or training program, and may be preceded by training or familiarization runs of the smoke generator during which candidates are shown black and white plumes of known opacity.

3.3 Smoke Generator Specifications. Any smoke generator used for the purposes of section 3.2 shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display instack opacity based upon a pathlength equal to the stack exit diameter, on a full 0 to 100 percent chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table 9–1. The smoke meter shall be calibrated as prescribed in section 3.3.1 prior to the conduct of each smoke reading test. At the completion of each test, the zero and span drift shall be checked and if the drift exceeds ±1 percent opacity, the condition shall be corrected prior to conducting any subsequent test runs. The smoke meter shall be demonstrated, at the time of installation, to meet the specifications listed in Table 9–1. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry including the chart recorder or output meter, or every 6 months, whichever occurs first.

Table 9-1_Smoke Meter Design and Performance Specifications

Parameter	Specification
a. Light source	Incandescent lamp operated at nominal rated voltage.
b. Spectral response of photocell	Photopic (daylight spectral response of the human eye_Citation 3).
c. Angle of view	15° maximum total angle.
d. Angle of projection	15° maximum total angle.
e. Calibration error	±3% opacity, maximum.
f. Zero and span drift	±1% opacity, 30 minutes.
g. Response time	5 seconds.

3.3.1 Calibration. The smoke meter is calibrated after allowing a minimum of 30 minutes

warmup by alternately producing simulated opacity of 0 percent and 100 percent. When stable response at 0 percent or 100 percent is noted, the smoke meter is adjusted to produce an output of 0 percent or 100 percent, as appropriate. This calibration shall be repeated until stable 0 percent and 100 percent readings are produced without adjustment. Simulated 0 percent and 100 percent opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

3.3.2 Smoke Meter Evaluation. The smoke meter design and performance are to be evaluated as follows:

3.3.2.1 Light Source. Verify from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within ±5 percent of the nominal rated voltage.

3.3.2.2 Spectral Response of Photocell. Verify from manufacturer's data that the photocell has a photopic response; i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity curve for photopic vision which is referenced in (b) of Table 9–1.

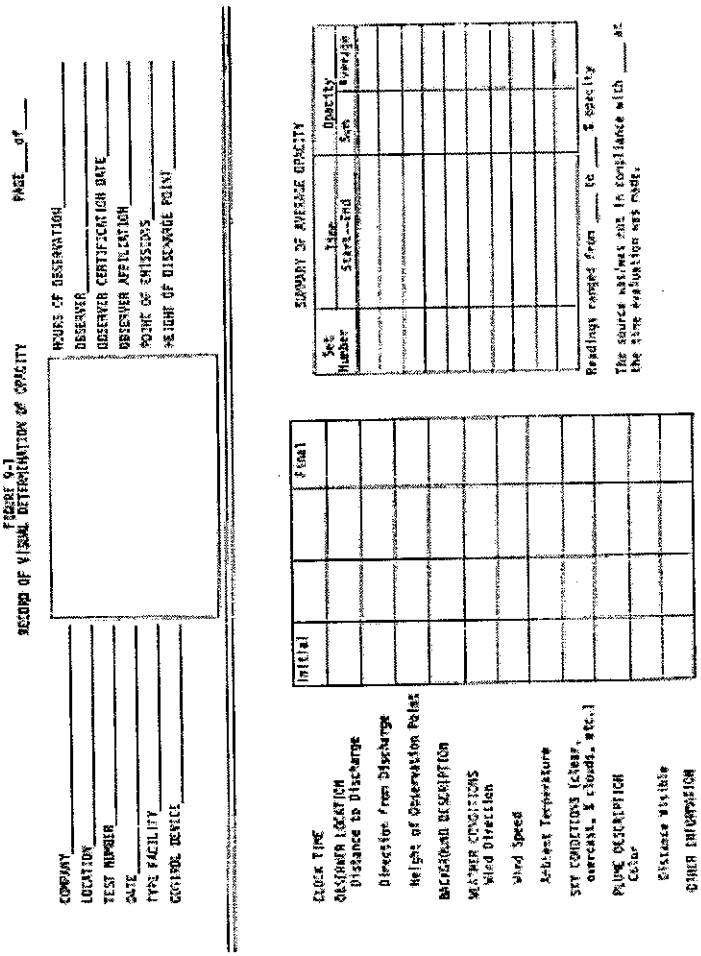

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Figure 9-2_Observation Record
Page __ of __

Company Observer..... .....
Location Type facility..... .....
Test Number Point of emissions..... .....
Date

Hr.	Min.	Seconds				Steam plume (check if applicable)	
		0	15	30	45	Attached	Detached
	0						
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						

24	
25	
26	
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28	
29	

Figure 9-2_Observation Record (Continued)
Page __ of __

Company Observer..... .....
Location Type facility..... .....
Test Number Point of emissions..... .....
Date

Hr.	Min.	Seconds 0	15	30	45	Steam plume (check if applicable) Attached	Detached
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
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3.3.2.3 Angle of View. Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. The total angle of view may be calculated from: $\Theta=2 \tan^{\bullet 1} d/2L$, where Θ=total angle of view; d=the sum of the photocell diameter+the diameter of the limiting aperture; and L=the distance from the photocell to the limiting aperture. The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters this is normally an orifice plate.

3.3.2.4 Angle of Projection. Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. The total angle of projection may be calculated from: $\Theta=2 \tan^{\bullet 1} d/2L$, where Θ=total angle of projection; d=the sum of the length of the lamp filament + the diameter of the limiting aperture; and L=the distance from the lamp to the limiting aperture.

3.3.2.5 Calibration Error. Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter according to 3.3.1 and then inserting a series of three neutral-density filters of nominal opacity of 20, 50, and 75 percent in the smoke meter pathlength. Filters calibrated within ±2 percent shall be used. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The maximum error on any one reading shall be 3 percent opacity.

3.3.2.6 Zero and Span Drift. Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.

3.3.2.7 Response Time. Determine the response time by producing the series of five simulated 0 percent and 100 percent opacity values and observing the time required to reach stable response. Opacity values of 0 percent and 100 percent may be simulated by alternately switching the power to the light source off and on while the smoke generator is not operating.

4. Bibliography

1. Air Pollution Control District Rules and Regulations, Los Angeles County Air Pollution Control District, Regulation IV, Prohibitions, Rule 50.

2. Weisburd, Melvin I., Field Operations and Enforcement Manual for Air, U.S. Environmental Protection Agency, Research Triangle Park, NC. APTD–1100, August 1972, pp. 4.1–4.36.

3. Condon, E.U., and Odishaw, H., Handbook of Physics, McGraw-Hill Co., New York, NY, 1958, Table 3.1, p. 6–52.

FIGURE 9-1
RECORD OF VISUAL DETERMINATION OF OPACITY

PAGE___of___

COMPANY_____
LOCATION_____
TEST NUMBER_____
DATE_____
TYPE FACILITY_____
CONTROL DEVICE_____

HOURS OF OBSERVATION_____
OBSERVER_____
OBSERVER CERTIFICATION DATE_____
OBSERVER AFFILIATION_____
POINT OF EMISSIONS_____
HEIGHT OF DISCHARGE POINT_____

	Initial			Final
CLOCK TIME				
OBSERVER LOCATION Distance to Discharge				
Direction from Discharge				
Height of Observation Point				
BACKGROUND DESCRIPTION				
WEATHER CONDITIONS Wind Direction				
Wind Speed				
Ambient Temperature				
SKY CONDITIONS (clear, overcast, % clouds, etc.)				
PLUME DESCRIPTION Color				
Distance Visible				
OTHER INFORMATION				

SUMMARY OF AVERAGE OPACITY

Set Number	Time	Opacity	
	Start--End	Sum	Average

Readings ranged from ____ to ____ % opacity

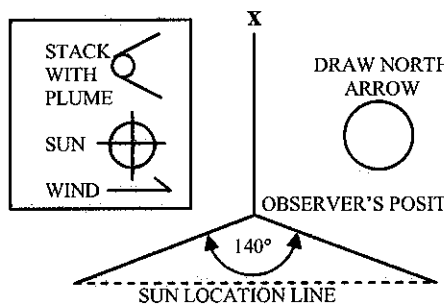
The source was/was not in compliance with ____ at the time evaluation was made.

Tube City IMS
We Create Value

TUBE CITY IMS VISIBLE EMISSION FORM

Company Name **TUBE CITY IMS**		
Location		
City	State	Zip
Process Equipment		Operating Mode
Control Equipment		Operating Mode
Describe Emission Point		
Height of Emission Point	Height Relative to Observer Start End	
Distance to Emission Point Start End	Direction to Emission Point Start End	
Vertical Angle to Obs. Pt Start End	Direction to Obs. Pt. Start End	
Describe Emissions Start	End	
Emission Color Start End	If Water Droplet Plume (Circle) Attached Detached N/A	
Point in The Plume at Which Opacity was Determined Start	End	
Describe Plume Background Start	End	
Background Color Start End	Sky Condition Start End	
Wind Speed Start End	Wind Direction Start End	
Ambient Temp Start End	Wet Bulb Temp	RH Percent

SOURCE LAYOUT SKETCH



Date	Start Time					End Time				
Sec Min	0	15	30	45	Min Sec	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
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16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

Observer's Name (Print)	
Observer's Signature	Date
Organization	
Certified by	Date

Additional Information

OPERATION AND MAINTENANCE

INSTRUCTIONS

FOR

WHEELABRATOR

JET III DUST COLLECTOR

SAFETY INSTRUCTIONS

DUST COLLECTORS AND VENTILATION

With all types of dust collectors, it is important that the dust hoppers discharge dust on a continuous basis. Many dusts due to their chemical and physical properties have the potential to be easily ignited when left stored. The hazards of fires and explosions are minimized when the dust is discharged from the dust collector hoppers on a continuous basis.

WARNING

In applications involving the use of *EXPLOSIVE DUST*, measures must be taken to minimize the risk of dust collector fires and/or explosions.

1. The dust collector refuse hopper(s) must be emptied on a continuous basis.

2. The process equipment and dust collector must be grounded where applicable to minimize static electric charges, which could produce sparks.

3. In some cases, the risk of fire/explosion can be reduced by adding. No. 200 Mesh Agricultural Limestone (CaC03) to the ventilation system at a continuous rate of approximately 0.2 oz. per hour per square foot of filter area.

4. Equipment must be located, and explosion doors vented, in accordance with governing codes.

CAUTION

(CaC03) is crushed limestone rock (not to be confused with lime, otherwise known as hot lime, burnt lime, or hydrated lime). Under ***NO*** circumstances should these highly reactive lime products be used.

THEORY OF OPERATION

FOR JET III
PULSE TYPE DUST COLLECTOR

The ***Jet III Pulse Jet Dust Collector*** is a continuous automatic, suction or pressure type dust collector capable of filtering dust laden air through a needled felt or woven (glass) felt filter media.

This dust collector is used for the dry filtration of solids/fumes suspended in gas. Solids/fumes are collected on the outside of the filter tubes as the gas passes through them.

The dirty or contaminated gas enters the dust collector through the module inlet, striking a baffle plate which distributes the gas uniformly throughout the housing and drops out heavy particulate into the hopper. The "dust carrying" gas then passes through the filterbags which retain the dust particles on the exterior surface while allowing the carrying gas to pass through to the module outlet.

As the collector operates, the collected dust begins to form a dust cake which eventually diminishes the porosity of the filter. This reduction in porosity is measured by a magnehelic gauge and is defined as the dust collector pressure drop or differential pressure. As the pressure drop increases, the system static loss will increase, decreasing the ventilating gas volume.

To maintain a moderate pressure drop, and the system design volume, a cleaning cycle is employed to provide continuous cleaning of the filterbags. The cleaning system consists of a solid state timer which actuates electric solenoids governing the air valves. These air valves deliver a momentary burst or pulse of high pressure compressed air through the manifold pipe and into the venturis. The venturis, natural jet pumps induce secondary air several times the original volume and create a reverse air flow through the filterbags to provide necessary cleaning.

This cleaning procedure occurs on a row by row basis, therefore, the momentary interruption of gas flow is unnoticeable allowing continuous ventilation.

The dust cake, when pulsed from the filterbags, falls directly into the hopper where it is discharged into a dust removal system.

STANDARD PROCEDURE FOR ERECTION OF JET III DUST COLLECTOR

FORWARD

With the proper care and attention, your machine will provide maximum performance and long service, and we are sure that it will prove to be one of your most valued assets.

Our interest in the successful operation of your machine continues throughout the life of the machine. We want it to serve you well. For that reason, please feel free to discuss any problem that you may have concerning it or the work that you are doing. It will be a pleasure to help you.

The purpose of this manual is to assist you in keeping the equipment in the best possible operating and mechanical condition at all times.

This manual contains instructions on the proper care and operation of your equipment. If followed, they will help you greatly in getting the most production and satisfaction from the machine, plus, drawings and part numbers are included for accurately ordering repairs.

To make sure that your parts order is properly filled, please observe ordering instructions

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The following instructions concern erection procedures for a typical Jet III unit. For the specific arrangement of the equipment purchased, please see the General Arrangement.

1.0 FOUNDATION

1.1. The foundation should be prepared according to the anchor bolt layout, which is usually found on the General Arrangement drawing. Piers, or slabs, are to be designed by the Customer to suit loadings of the unit as indicated on the above drawings and by soil conditions.

2.0 ERECTION

2.1 After verifying that foundation dimensions are accurate to within ± 1/8", bolt the support columns to the anchor bolts. Erect the rest of the support steel, tightening the bolts only enough to hold the columns in an upright position until the module is installed.

Level and square the framework with shims under the base plates if necessary, then tighten all bolts and ground under the base plates.

NOTE 1: It is essential that all pieces of support steel (i.e., columns, beams, bracing, etc.) be erected before setting any piece of the collector.

NOTE 2: All high strength bolts shall be installed in accordance with the specifications for structural joints using ASTM A-325 bolts. The tightening mechanism used shall be either a torque wrench, a properly calibrated impact wrench, or the turn of the nut method.

NOTE 3: Although all components are closely monitored during fabrication to ensure conformance to tolerances; transportation and handling in the field may necessitate some final adjustment to such items as access doors, etc. On larger units, a backing plate may be required on field splices. Should this be the case it is our recommendation that these be welded on the interior of the unit. (Material and labour by others).

2.2 Set module into place on the support steel and bolt in loosely. Make sure entire structure is level and square; then tighten bolts to the proper pre-tension loads. **Warning:** Do not set module without installing cross bracing.

2.3 **NOTE:** Some small units arrive on site with support steel attached. Extended units shipped with separate housing and hoppers, may have bracing attached to keep sub-assemblies supported during shipping. These braces should be removed before erection.

2.4 Assemble the walkway and handrail on the ground near the unit. Cut, bend and weld handrail to suit if necessary. Place ladder(s) in desired position and cut cage to suit if necessary. Weld to the support framework.

2.5 Bolt inlet and outlet ductwork to module inlet and outlet making sure to use correct gasketing material between flanges. On modules where an inlet or outlet damper valve is required, bolt all mating flanges as above with gasket material. Be sure that damper blade and damper actuator have proper clearance and do not have interferences.
See Separate instructions.

NOTE: Inlet and outlet ducts outside baghouse confines to be supported independently.

2.6 Assemble screw conveyor and/or rotary valve to hopper discharge flange, making sure to use a gasketing material between all flanges. Assemble drive components and wire motors taking note of rotation. See Separate Instructions.

2.7 **BAG INSTALLATION: See Fig. 1**

1. **NOTE:** To insure proper operation and the longest possible filterbag life, it is imperative that bags be handled with care at all times. Any small cut or puncture can result in total bag failure in future.

2. Before installing filterbags in the collector, inspect all cages for broken or bent wires. Do not install damaged cages into bags. Install side rows first, and proceed to work towards access door.

3. Install filterbags by first inserting closed end portion into tubesheet hole.

4. Compress snap ring by grasping with both hands and pushing in with thumbs. Once the top ringed portion of the bag is inserted in cup, be certain it is properly seated. Top end of bag cuff should be slightly below top of the tubesheet or just even. We suggest bagging 1/3 of the collector before proceeding to next step. See Page D-9. It is suggested that the collector have bags installed approximately 1/3 near the side, then insert venturi and cages, followed by 1/3 near other side, followed by centre section .

5. Snap cage top (open end) onto venturi lugs, making sure venturi is locked into place.
NOTE: A. Be certain that the venturi lugs do not line up with the splits in the cage ring.
B. If you have vertical split cages, please contact Wheelabrator for interlock instructions.

6. Insert closed end of cage into bag and allow cage to slide until venturi flange rests flat on the tubesheet. **NOTE:** There is no fastening hardware required as the interference between the bag and cage is sufficient to hold down the assembly.

JET III TOP ACCESS

Bag Changing - Once unit is shut down, remove the manifold, then pull out cage and venturi leaving the dirty bag in place. Reach into the top of the filter bag and using the convenient finger loop, remove the bag.

Bag may then be dropped to the hopper below for removal, keeping the clean air plenum as clean as possible, or, if desired, bag may be pulled up through the collar. This can be difficult, however, if the accumulated dust has caused the bag to swell, or become very heavy.

Proceed with bag installation as per Item 2.7.

2.8 **MANIFOLD PIPE INSTALLATION**

Remove compression nut and spacer from coupling and slide on manifold pipe, followed by gasket. Insert manifold into wall coupling with holes facing down.

Bolt tail to support angle firmly and slip compression nut, spacer and gasket on and into coupling. Secure nut on coupling and at tail end of manifold. Proceed through all rows working side wall ends first and working to door until complete.

2.9 **COMPRESSED AIR**

To ensure trouble free operation an adequate supply of clean, dry compressed air is essential. Check the detail of order to see Wheelabrators recommendations for the compressed air required. The pressure at the air header (air valves) should be 90 PSI. Wheelabrator Canada Inc. recommends that a line filter, dryer and regulator pressure gauge be installed ahead of the air header to ensure trouble free service. All air piping should be of adequate size with a shut-off valve with pressure gauge located at each module. The air header is supplied with 1 ¼ NPT compressed air connection at each end (one end plug to be used as drain).

2.10 ELECTRICAL

For trouble free service, a solid state pulse timer is provided in a NEMA IV weather-tight enclosure (NEMA IX explosion proof optional). The timer is to be mounted in an area that is free of the danger of being bumped or damaged, yet is accessible.

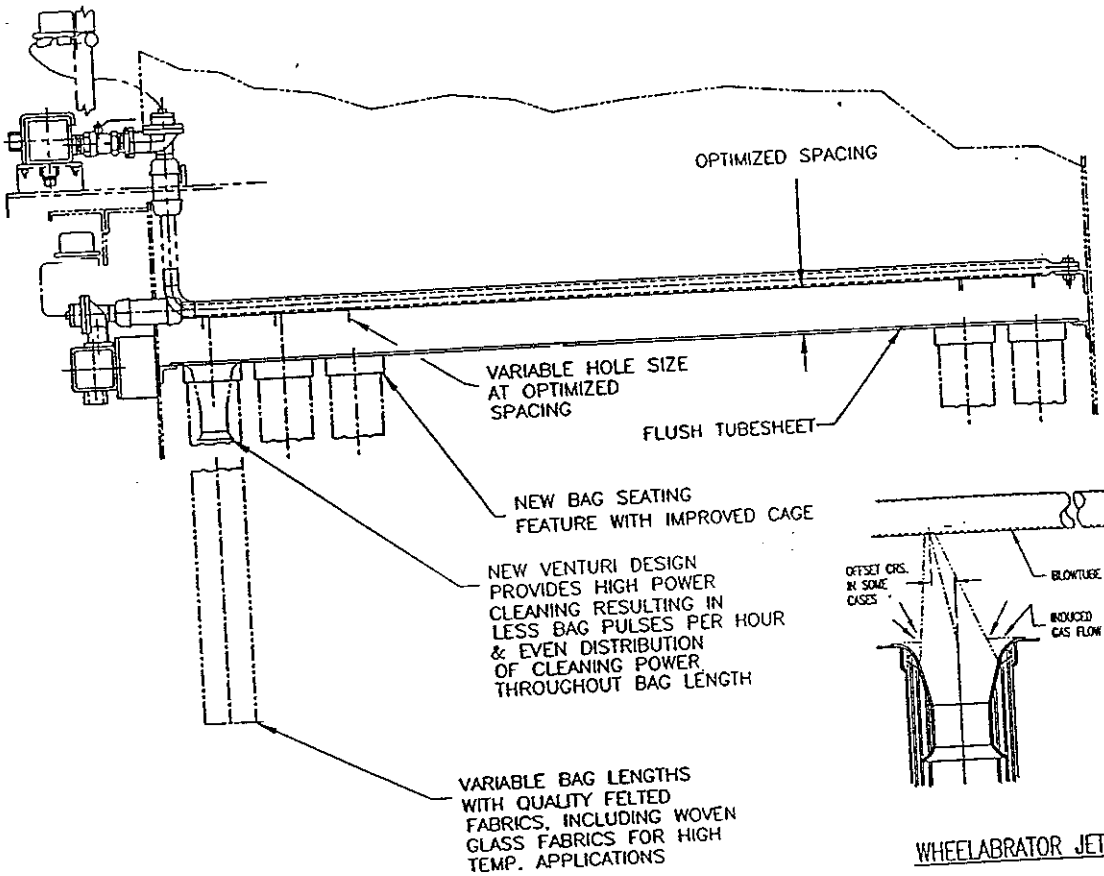
To wire solenoids to timer, follow the wiring schematic as shown per Electrical Drawing Section IV. Recommended wire from the timer to solenoids is No. 14 gauge and should be encased in a conduit according to local codes requirements. Power input and output to and from the timer is 110-115 volt AC.

NOTE: The timer is equipped with "on time" and "off time" control knobs. Do not adjust the "on time" setting as it has been factory set to give a 50 millisecond pulse. The "off time" can be adjusted as required to maintain a satisfactory differential pressure across the filter. Decreasing the "off time" increases the pulse rate causing the unit to clean at a faster rate.

Wire all motors, fan, air locks, screw conveyors, compressor, etc., - in accordance with nameplate data and note rotation of each to ensure proper operation of driven equipment.

If light fixture (optional) is furnished, locate in a convenient location free from the danger of being bumped. Be sure to install a toggle-type on/off switch.

PULSE-JET MARK III COMPONENT HARDWARE BY WHEELABRATOR

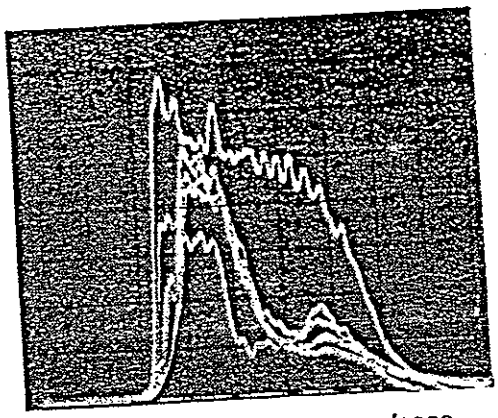


WHEELABRATOR JET III PULSE JET

Blowpipe, Venturi design

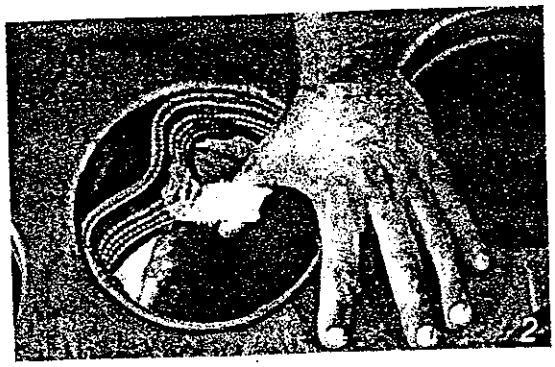
Perhaps the key ingredient to maximized pulsing power to all filter bag elements is the design of the blowpipe manifold. The Wheelabrator design uses variable orifice size, and variable orifice spacing, to maximize cleaning power and effectively reduce filter drag. Note how the placement of the orifice in relation to the venturi and other spacing criteria form part of the design.

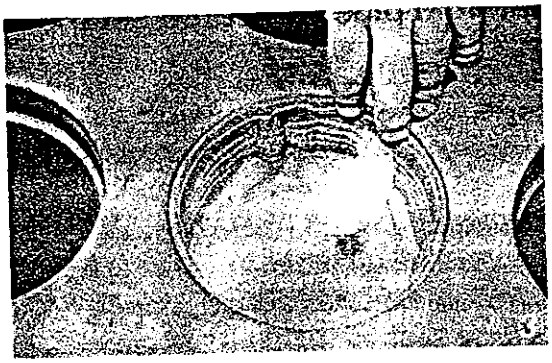
The use of a properly designed venturi without question improves cleaning power. The venturi utilizes flow from the primary orifice, which causes inducement of secondary air flow from the clean air plenum. The solid state timing system and double diaphragm valve and manifold distribution, effectively cleans each individual filter bag with split second action. The over-all design lowers filter bag wear as a direct result of fewer bag pulses per hour. This also reduces penetration of the collected dust to the clean gas side improving over-all filtration efficiency for the system.

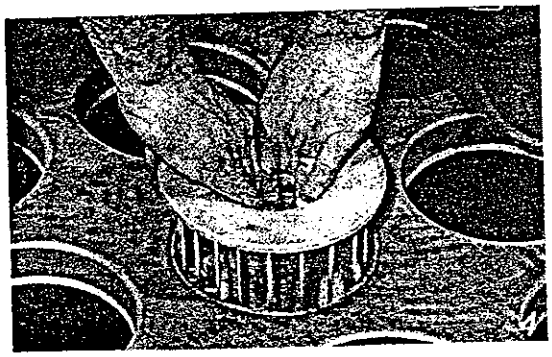


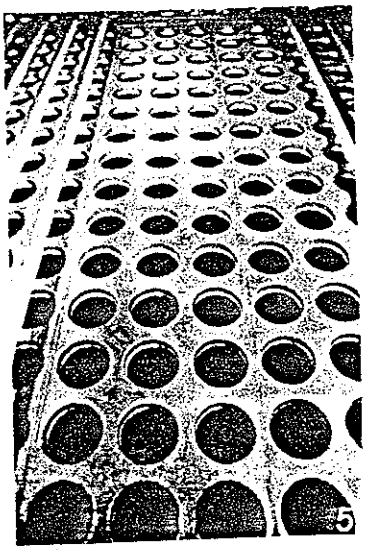
Optimized ejector pump curve cleans all filter bags effectively. Irregular cleaning power as indicated has been eliminated. Increased flow — lower filter drag — less power consumption. Wheelabrator Mark III conversion is available for all fabric filter installations.

FILTER INSTALLATION INSTRUCTIONS FOR JET III FILTERS OFFER TRUE SIMPLICITY IN IDENTIFICATION AND REPLACEMENT OF MALFUNCTIONING BAGS









1. *With unit shut down, remove the manifold pipe, pull out venturi and cage assembly, leaving the dirty bag in place.*

2. *Simply reach into the bag collar and retract the snap ring using the convenient finger loop. No tools required. Bag may then be dropped to the hopper for removal, keeping the clean air plenum as clean as possible.*

3. *Feed the new bag into the unit through the tubesheet hole. Ensure that the bag top is flush with the surface of tube sheet and the snap ring is located securely.*

4. *Replace the cage/venturi assembly and th manifold pipes.*

5. *Because of the clean flat design of the tub sheets in the Jet III, housekeeping at ba changing is minimized.*

DUSTUBE, CAGE AND VENTURI FIELD ASSEMBLY
JET III MK. III

1. Place bag into tube sheet by folding in half lengthwise and carefully sliding it through the tube sheet hole. Ensure the snap ring is set into the proper position inside the cup of the tube sheet and "snaps" open.

2. Snap the venturi into the top of the cage making sure the venturi is locked into place.

   NOTE: a) Be certain that the venturi lugs do not line up with the split opening in the cage ring.
   b) If you have vertical split cages, please contact Wheelabrator for interlock instructions.

3. Insert the closed end of the cage into the bag and allow the cage to slide gently until the venturi flange rests flatly on the tube sheet.

4. Replace the manifold pipe with the holes down and on a centre line with the venturis once the manifold pipe is located securely in place.

PRECOMMISSIONING START-UP
AND SHUT DOWN
FOR
JET III DUST COLLECTORS

The following should be checked and corrected before introducing dust laden air into the filter.

1. Check filter bags for proper fit into the cup so that top edge of bag cuff is slightly below top of the tube sheet or just even.

2. Make sure the cage is properly snapped into the venturi lugs and that venturi flange is flush with the tube sheet floor.

   NOTE:
   - *A. No additional hold down device is required, as the interference fit between the cage and bag is adequate.*
   - *B. If there is a grounding strip supplied in the filter bag; make sure the strip is in contact with the tubesheet.*
   - *C. If you have vertical split cages, please contact Wheelabrator for interlock instructions.*

3. Make certain the manifold pipes are parallel, the holes are facing down and the longitudinal center line of the pipes are directly over the center line of the venturis. Blow holes along the pipes do not necessarily line up with the center of the venturi. They have been spaced scientifically to achieve maximum cleaning power. Manifolds should be secured by connecting the open end of pipe to the coupling and the other end bolts to the manifold support angle at rear of module.

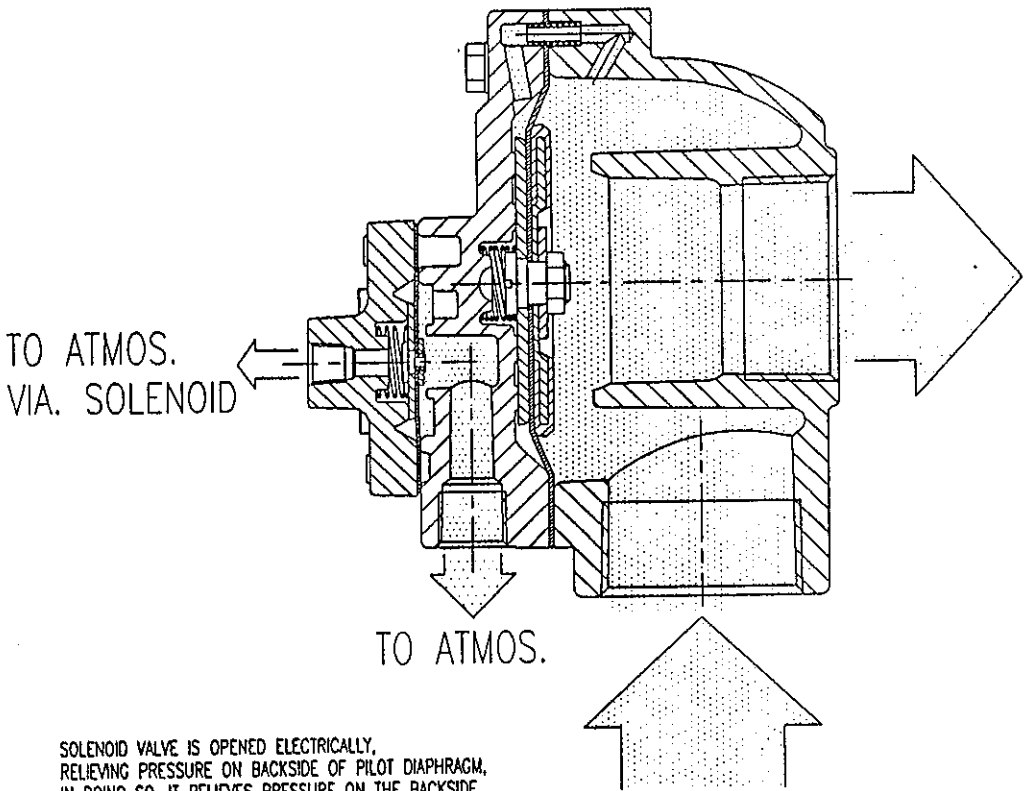
4. Insure the access door is properly secured and sealed, if not adjust as necessary by moving butt hinges and/or latch plates as required.

5. Inspect hopper area to insure that the screw conveyor and/or rotary valves are free of debris. Firmly secure hopper access door or bolted panels airtight.

6. Check the screw conveyor for correct rotation. Check rotary valve for correct rotation.

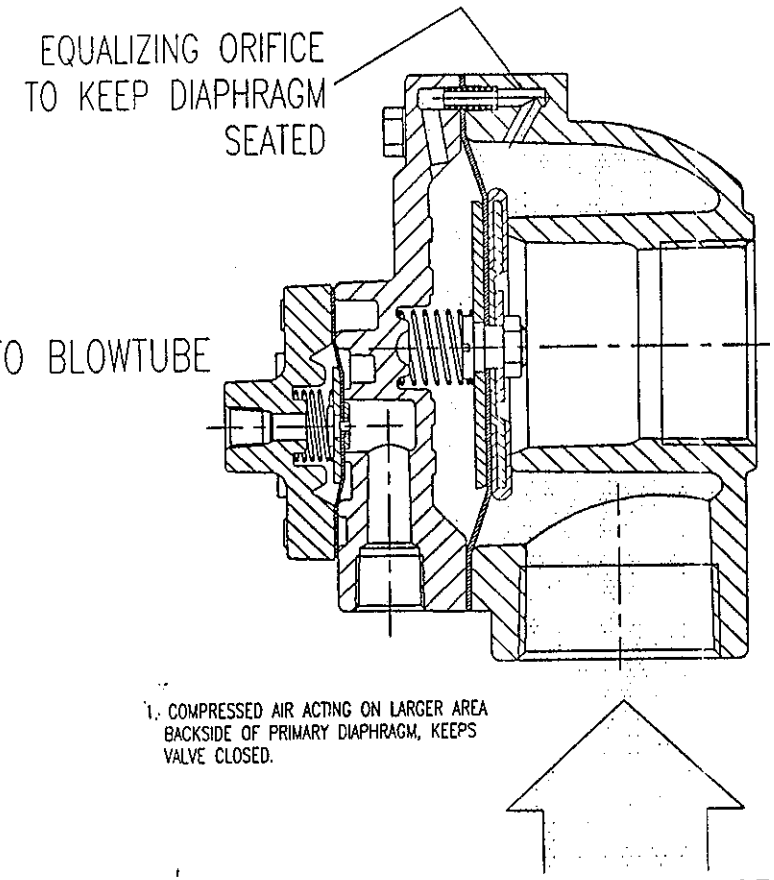
7. Open the compressed air header drain cocks or plugs and turn on compressed air to header system to blow out moisture and debris. When header discharge is free of visible moisture shut off the compressed air supply and close the drain or plugs.

8. Do not open air supply at this time.



SOLENOID VALVE IS OPENED ELECTRICALLY, RELIEVING PRESSURE ON BACKSIDE OF PILOT DIAPHRAGM, IN DOING SO, IT RELIEVES PRESSURE ON THE BACKSIDE OF THE PRIMARY DIAPHRAGM, VIA. CONNECTING PORTS (NOT SHOWN IN SECT. DWG.) THIS IS EXHAUSTED TO ATMOS. FILLS THE BLOWTUBES & CAUSES THE FILTER BAGS TO BE CLEANED.
THE SOLENOID VALVE CLOSES, PILOT DIAPHRAGM CLOSES ASSISTED BY THE SPRING, CAUSING THE PRIMARY DIAPHRAGM TO CLOSE ASSISTED BY THE SPRING.
COMP. AIR BLEEDS THRU' THE EQUALIZING ORIFICES TO KEEP BOTH DIAPHRAGMS CLOSED.

VALVE OPEN



VALVE CLOSED

CAUTION

TOLERANCES ON DIMENSIONS UNLESS OTHERWISE ARE: (PLUS OR MINUS)
MACHINING .010" -- STRUCTURAL OVERALL 1/16" -- OTHERS 1/32" NON ACCUMULATIVE

G					
F					
E					
D					
C					
B					
A					

Wheelabrator
AIR POLLUTION CONTROL

RIGHT ANGLE VALVE
CROSS-SECTION OF WORKING

SCALE	DRAWN	TRACED

RAV- 1

9. Energize the electronic(s) on the timer board and adjust for a rapid fire sequence. Observe timer LED's at the same time. Listen for an audible click from the solenoid box until all terminals have been fired. (See timer schematic wiring diagram if trouble occurs.)

10. Cover diaphragm valve exhaust ports with a piece of adhesive masking tape.

11. Open compressed air supply to headers, these valves should be opened as quickly as possible, so as to seat the diaphragm. Failure to do so may cause the diaphragm to flutter, and air will leak past the diaphragm seat.

12. Re-energize the electrical supply to the timer, and allow module to pulse through a cycle.

13. With air and power off, examine each diaphragm valve exhaust port. The pieces of masking tape should be blown away from the valve exhaust ports. Any valve with masking tape in place should be checked for malfunction, including it's solenoid valve. See Dwg. RAV-1

14. Reset timer back to an off-time setting of approximately 45 seconds.

15. Adjust header compressed air supply to 90 psig.

THE COLLECTOR IS NOW READY FOR OPERATION.

INITIAL SYSTEM START-UP

1. Start mechanical dust handling system. Screw conveyor(s) and/or rotary air lock valves.

2. Insure compressed air is open to header system at a pressure of 90 PSIG except for units equipped with Gore-Tex filter bags, in which case the header pressure should not exceed 70 PSIG.

3. Start exhaust fan in dampered condition.

   NOTE: On process systems such as dryers, coolers or kilns, etc., where water vapour or other condensibles are present, it is necessary to preheat the system so that the module skin temperature of the complete dust control system is above the dew point temperatures. Instrumentation should be adjusted to maintain the gas temperature above the dew point of the condensibles and below the maximum limit of the filter media.

4. Note and record the magnehelic reading. The system should be allowed to operate in the "throttled" position until the magnehelic reading reaches 4" to 5" W.G.

5. At this point, start the pulse cleaning system. The timer off-time setting should be adjusted for 45 sec pulse frequency and should be increased or decreased if the differential pressure begins to climb or fall.

6. Slowly, and in small increments, open the fan damper. Observe differential pressure reading for the effect on resistance. Increase or decrease the timer setting to pulse as required to maintain a manometer reading between 4" and 5" W.G.

7. Continue over the next few hours to open the fan damper until design volume is reached.

8. With the collector operating at design volume, the pulse frequency should ideally be set for the fewest pulses/minute while holding the pressure differential across the filter at a stable condition in the 4.0" to 6" range.

   NOTE: During some conditions, the differential pressure may creep beyond 6" W.G. due to surge grain loadings, moisture in air, etc. This can also be considered normal, providing the differential pressure can be regained after the surge.

   For prolonged periods of work stoppage when the system is not required to handle dust laden air it is recommended that the timer be shut down. This will prevent over cleaning of the filter.

DUST COLLECTOR SYSTEM SHUT DOWN

1. Stop exhaust fan (by stop switch, NOT main disconnect switch).

2. Allow the pulse cleaning system to remain operating for between 5 to 15 minutes after fan has stopped rotating. (This is to ensure that all the remaining dust has been removed from the dust bags).

3. Allow the dust removal and disposal equipment (rotary valves, screw conveyors, etc.) to operate for approximately 10 to 15 minutes after pulsing to allow material to be fully discharged from the hoppers.

This procedure must be followed to ensure that all remaining dust is removed from the system to prevent "cementing" of the dust which causes plugging.

NOTE: On certain process systems it is essential that heat continually be introduced into the dust collecting system at a reduced rate to dry all metal surfaces and filter media. Heat can be removed only after all surfaces are free of the danger of condensation.

If you have any doubt as to these procedures, do not hesitate to contact your local Wheelabrator Representative or Wheelabrator Canada Customer Service.

TROUBLE SHOOTING

1.0 VISIBLE STACK EMISSIONS

1.1 Improperly installed Bags

Check bag snap bands to insure proper seating into tubesheet. Bag should be flush or slightly below the top of tubesheet.

1.2 Torn or Punctured Bags

Inspect filter bags for tears or punctures caused by mechanical damage during installation. Abrasion, thermal or chemical attack and broken cages can also cause failures.

NOTES:

- Dust usually accumulates around the area of broken bags. Replace bags as required.
- If cage wires are broken or split, replace cages immediately. Do not put new bags on broken cages.

1.3 Dirty Clean Air Plenum

After bag failure or during routine filter change-outs, dust will accumulate in dead air zones.
Always clean tubesheet when dust accumulation is present.

2.0 HIGH DIFFERENTIAL PRESSURE

2.1 Over Volume

Check fan and motor speeds and V-belt drive ratio if applicable.
Reset fan damper to handle collector design volume.

2.2 System Resistance Static Is Too Low

Recalculate ductwork design to insure proper static losses. If too low, reduce fan speed or add system resistance.

2.3 Fugitive Air Entrainment.

Check all doors and cover plates for proper sealing. Check all ductwork flanges for air tight seals. Apply gasketing or re-tighten fasteners.

2.4 **Lack of Compressed Air:**
Check pulsing system for compressed air leakage - repair as required.
Check compressor output to assure it exceeds pulse cleaning system usage - add extra volume as required.
Compressed air pressure too low - increase line pressure from regulator-compressor.
Check clogged feed lines. Replace line filter or check for debris in line.
On larger runs of piping, make sure the diameter is of sufficient size so as not to cause abnormal pressure drop.

2.5 **Malfunctioning Timer**.
Check timer outputs to insure all terminals are firing. If timer is faulty, return to Wheelabrator for repair.

2.6 **Dust Re-Entrainment**.
Check dust removal system for worn or faulty seals - repair or replace as required.
Check mating flanges - apply gasketing and/or re-tighten fasteners as required.
Dust disposal system plugged or jammed - clean and check disposal system for unloading capacity.

2.7 **Dust on Clean Air Side**.
Check tubesheet floor and clean as necessary to prevent dust from entering bags from clean air side.
Check inside of bags for dust and empty as required. Dust in bag will cause stack emissions on a cycle synchronized with pulse blasts.

2.8 **Bag Blinding**.
Check system so that no condensation or free moisture is occurring on bags. Add auxiliary heat by changing process procedure and eliminate water seepage in to unit.

Check fan to insure collector was started under throttled conditions. Extra high speed impingement of fine particles can permanently blind filter media.

3.0 **INADEQUATE SYSTEM VOLUME**.

3.1 **Fan Rotating Backwards**.
Check and correct if necessary, rotation of fan.

3.2 **High Differential Pressure**
See Section 2.0 above.

3.3 **Fan RPM Too Low.**
Check drive ratio between fan and motor. Check drive for slippage - re-tighten or replace as required.
Fan damper improperly adjusted. Check damper position and adjust to maintain collector design volumes.

3.4 **System in Leakage**
Check all ducting and flanges to and from collector for leaks. Re-gasket and tighten fasteners as required.
Check hopper dust disposal equipment for leaking seals. Adjust or replace as required.

3.5 **System Resistance Static Too High.**
Recalculate ductwork design to insure proper static losses. If too high, increase fan speed or lower system resistance. Check ductwork for material build-up or blockages. Clear and re-design if necessary.

3.6 **Blinded Bags**
Inspect bags for possible blinding. Blinded bags result in high pressure drop. Clean bags with fan off, if differential pressure is still high, have filter bags laundered or install new bags.
See 5.0 - Filter Bag Problems.

LOW COMPRESSED AIR AT HEADER.

4.1 **Sticking Solenoid Valves.**
Check solenoid plungers for dirt. Clean or replace as required.
Short circuit in wiring may cause one or more solenoids to remain open - check wiring and repair or replace as required.
Short circuit in timer relays - check and repair if possible. Replace timer if required.

4.2 **"Pulse On time" Is Too Long.**
Adjust "on time" for 1/20 (50 m/s) second maximum. (This is factory preset and normally should not be adjusted.)

4.3 **Sticking Diaphragm Valves** - check for torn or damaged diaphragms. Replace as required.

4.4 **Debris in Diaphragm Valves.**
Check for dirt or ice on diaphragm wafer. Clean or replace as required. If ice, install dryer on compressed air to eliminate moisture.

4.5 **Leaks in Compressed Air Piping.**
Inspect compressed air line run for leaks.

4.6 **Insufficient Supply of Compressed Air.**
Check capacity for air compressor to insure proper sizing. See detail or Order to determine demand of unit. Also check for undesigned branch-offs in compressed air run. Add extra capacity or independent source.

4.7 **Header/Air Valve Connection is Faulty.**
Inspect connection and repair as required.

5.0 **FILTER BAG PROBLEMS (POOR LIFE)**

5.1 Check system operating temperature against filter media rating. Lower temperature of system or rebag with media suitable to higher temperatures encountered.

5.2 Check system physical and chemical characteristics against filter media rating. Adjust system gas stream or install new media compatible with gas stream.

5.3 Check abrasion patterns on bag, collector walls, etc. Evaluate duct design.

5.4 Check material build-up in hopper. Inspect dust disposal equipment for proper operation. Repair as required.
Check hopper bridging. Install vibrators, rappers, etc.,or enlarge discharge opening.

5.5 **Incorrectly Installed Bags.**
Check for proper seating of bag into tubesheet. Make sure bags are hanging straight and not touching walls or each other.

5.6 Inspect cages for broken or bent wires which can puncture or tear bags. Repair or replace cages(s).

5.7 **Dirty Clean Air Plenum.**
Inspect tubesheet floor for dust accumulations. Dust on tubesheet floor can be entrained into inside of bag by cleaning system. This can cause blinding or abrasion by impregnating bags from the reverse direction.

5.8 **Rough Handling of Bags At Time of Installation.**
Handle bags with care as any small cut or abrasion can cause total bag failure.

STORAGE OF FILTERBAGS

Proper storage of filterbags is essential in maintaining maximum collecting efficiency of your air pollution control unit.

Store filterbags in the crate(s) in which they were shipped in a cool dry place, (preferably on pallets covered with plastic, in a warehouse, where physical damage to the crates will not occur).

IMS DAILY INSPECTION SHEET

1 Photohelic Gauge Reading _____

Range set HIGH _____ LOW _____

2 Fan Amperage Reading _____ AMPS

3 Cleaning Cycle Working? YES _____ NO _____

4 Compressed Air (Mill Incoming) _____ psi

5 Dust Discharge Working? YES _____ NO _____

6 Dust Discharged? YES _____ NO _____

7 Visual Inspection YES _____ NO _____

8a Excessive Noise? YES _____ NO _____

8b If Yes, What? _____

_____

INSPECTED BY: _____

DATE: _____

COMMENTS:

_____

_____

_____

_____

_____

IMS

DATE:___/___/___

WEEKLY INSPECTION CHECKLIST

S...FACE CONDITIONING DIVISION

JOB SITE: USX GARY WORKS

BAGHOUSE

DESCRIPTION	OK	DEFECTIVE	REPAIR/ REPLACE	COMMENTS
* General Condition/ Function				
* Lubrication:				
- Gear Box Oil Level				
- Rod End Bearings				
- Fan Motor Bearings (Twice a Year)				
- Fan Motor (Twice a Year)				
- Compressed Air Cylinder Oiler				
- Dampers Bearings (Main & Modules)				
* Photohetic Gauge (Record Reading)				Gauge Reading:
* Exhaust Damper Condition/Function				
* Modules Dampers Condition/Function				
* Timer Box Condition/Function				
* Screw Conveyors Condition/Function				
* Cleaning Cycle Function: ON-LINE				
OFF-LINE				
* Heating Elements Condition				
* Leakage:				
...ampers Cylinders/Valves				
...ylinder Hoses/Fittings				
- Modules Doors				
- Piping & Isolation Valves				
- Pulse Valves/Fittings				
- Conveyors Cover/Discharge Hose				
- Expansion Joint @ Main Damper				
* Cleanliness				
* Visual Smoke Emission From Stack				YES: ——— NO: ———

ADDITIONAL COMMENT(S):

09/18/01

INTERNATIONAL MILL SERVICE
MONTHLY INSPECTION OF BAGHOUSE

	OK	REPLACE	COMMENTS	CHAMBER
A BAG SEATING CONDITION				
B MOVING PARTS ON SHAKER				
C FAN CORROSION & BLADE WEAR				
D HOSE & CLAMPS				
E HOLES OR LEAKS IN BAGS				
F BAG HOUSING FOR CORROSION				

INSPECTED BY: _____

DATE: _____

COMMENTS:

_____

_____

_____

_____

_____

INTERNATIONAL MILL SERVICE
QUARTERLY INSPECTION OF BAGHOUSE

	OK	REPLACE	COMMENTS	CHAMBEF
A BAGS				
B DUCTS FOR BUILD UP OF DUST				
C DAMPER VALVES FOR PROPER SEATING				
D DOOR GASKETS				
E BAFFLE PLATE FOR WEAR				

.NSPECTED BY: _____

DATE: _____

COMMENTS:

_____

_____

_____

_____

_____

INTERNATIONAL MILL SERVICE
ANNUAL INSPECTION OF BAGHOUSE

	OK	REPLACE	COMMENTS	CHAMBER
WELDS ON STRUCTURE A BOLTS ON STRUCTURE				
B HOPPERS FOR WEAR				
C CLEANING PARTS FOR WEAR				

INSPECTED BY: _____

DATE: _____

COMMENTS:

_____

_____

_____

_____

_____

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Part 70 Renewal

Source Background and Description

Source Name:	**TMS International, LLC**
Source Location:	**One North Broadway, Gary, IN 46402**
County:	**Lake**
SIC Code:	**3312; 7389**
Operation Permit No.:	**T 089-36864-00132**
Permit Reviewer:	**Kelsey Bonhivert**

On August 24, 2016, the Office of Air Quality (OAQ) had a notice published in Post Tribune, Merrillville, Indiana, and The Times, Munster, Indiana, stating that TMS International LLC had applied for a renewal of its Part 70 Operating Permit. The notice also stated that the OAQ proposed to issue a renewal of the Part 70 Operating Permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On September 21, Michael Connolly submitted comments to IDEM, OAQ on the draft renewal.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

We have now changed our name to TMS International, LLC. We still note some sections of the draft permit specifying Tube City IMS, LLC and each section should be changed in Section A.2, (7) On-site Contractors. Per my July 7 email, please change the permit holder from Tube City IMS LLC to TMS International, LLC.

Response to Comment 1:

Although TMS International, LLC has changed the name of the company and all operations from Tube City IMS to TMS International, the permits that are still listed as "Tube City IMS" in A.2 are listed as such because those permits still contain the name. In order for IDEM OAQ to change the name, an application will need to be submitted for each of those permits. No changes were made as a result of this comment.

Comment 2:

Please change the permit holder for iron ore screening to US Steel - Gary Works.

Response to Comment 2:

U.S. Steel - Gary Works obtained control and ownership of the source specified under A.2(4). However,

TMS International, LLC has not applied for a revocation of the permit; therefore, the permit is still effective. No changes were made as a result of this comment.

Comment 3:

A list of tanks is missing the portable tanks which is listed in Section A.2(e). Add the following tanks to Section D.5.(e):

(4) One (1) portable lube truck with diesel fuel storage tank, identified as 71(a), with a maximum capacity of 1,615 gallons.

(5) One (1) portable lube truck with diesel fuel storage tank, identified as 72(a), with a maximum capacity of 850 gallons.

Response to Comment 3:

The two tanks referred to in the above comment are not stationary vessels and are therefore not subject to the requirements of 326 IAC 8-9-1 listed under condition D.5.1 of the draft permit. The two tanks are used for the transport of diesel, so they are not subject to the requirements of 326 IAC 8-4-9 listed under condition D.5.3 of the draft permit, which specifies requirements for gasoline transport systems. Section D.5 (e) only list tanks that are subject to the requirements listed in Section D.5. For clarity, the following changes have been made to the permit:

A.2~~3~~**3** Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

.....

(e) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) Two (2) diesel fuel storage tanks, identified as 19A and 19B, with a maximum capacity of 8,000 gallons, each.

(2) One (1), low sulfur diesel fuel storage tank, identified as 21, with a maximum capacity of 500 gallons.

(3) One (1) diesel fuel storage tank, identified as 37, with a maximum capacity of 4,000 gallons.

~~(4) One (1) portable diesel fuel storage tank, identified as 71(a), with a maximum capacity of 1,615 gallons..~~

~~(5) One (1) portable diesel fuel storage tank, identified as 72(a), with a maximum capacity of 850 gallons.~~

.....

A.3~~4~~**4** Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

.....

A.5 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

(a) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) One (1) portable diesel fuel storage tank, identified as 71(a), with a maximum capacity of 1,615 gallons..

(2) One (1) portable diesel fuel storage tank, identified as 72(a), with a maximum capacity of 850 gallons.

A. ~~4~~ **6** Part 70 Permit Applicability [326 IAC 2-7-2]

.....

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

(a) After viewing the rule making for the Vapor Recovery Measures for Gasoline Dispensing Facilities, 326 IAC 8-4-6, it is clear that that the recent rule revision did not intend to include operations less than 10,000 gallons a month in the Stage I requirements. IDEM has removed Stage I Vapor Requirements from section D.5 of the draft permit.

(b) The table in section under section A.2 has been updated remove permits that have expired at the source.

The permit has been revised as follows:

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

US Steel - Gary Works is an integrated steel mill that includes the primary operation, U.S. Steel – Gary Works (Source ID 089-00121), at One North Broadway, Gary, Indiana, collocated with on-site contractors:

	Company Name	Source ID	Operation Description
1	U.S. Steel - Gary Works	089-00121	integrated steel mill
	On-Site Contractors		
2	TMS International, LLC	089-00132	slag processing/metal recovery
3	South Shore Slag LLC	089-00133	slag crushing, screening and conveying
4	Tube City IMS LLC	089-00170	iron ore screening operation
5	Central Teaming Company Inc	089-00172	material handling
6	Mid-Continent Coal & Coke	089-00173	coke screening operation
7	Tube City IMS LLC	089-00174	scrap metal processing
~~8~~	~~J.L Smith Services~~	~~089-00509~~	~~slag crushing and recycling~~
~~9~~ **8**	Fritz Enterprises, Inc.	089-00578	iron and slag processing operation
~~10~~	~~Crister Companies~~	~~089-05333~~	~~slag crushing and screening operation~~

.....

~~D.5.2 Gasoline Dispensing Facilities [326 IAC 8-4-6]~~

~~Pursuant to 326 IAC 8-4-6(b), the Permittee shall comply with the Stage I Vapor Recovery System requirements at the Gasoline Dispensing Facility, are as the follows:~~

~~(a) No owner or operator of a gasoline dispensing facility shall allow the transfer of gasoline~~

between any transport and any storage tank unless the tank is equipped with the following:

(1) A submerged fill pipe that extends to not more than twelve (12) inches from the bottom of the storage tank.

(2) Either a pressure relief valve set to release at not less than seven-tenths (0.7) pounds per square inch or an orifice of five-tenths (0.5) inch in diameter.

(3) A vapor balance system connected between the tank and the transport operating according to manufacturer's specifications.

(b) If the owner or employees of the owner of a gasoline dispensing facility are not present during loading, it shall be the responsibility of the owner or the operator of the transport to make certain the vapor balance system is:

(A) connected between the transport and the storage tank; and

(B) operating according to manufacturer's specifications.

D.5.3 Leaks from Transports and Vapor Collection Systems; Records [326 IAC 8-4-9]

Pursuant to 326 IAC 8-4-9, the owner of the gasoline transport system shall operate a vapor control system. The requirements are as follows:

(a) The Permittee shall not allow a gasoline transport that is subject to this rule and that has a capacity of two thousand (2,000) gallons or more to be filled or emptied unless the owner of the gasoline transport completes the following:

(1) Annual leak detection testing before the end of the twelfth (12th) calendar month following the previous year's test, according to test procedures contained in 40 CFR 63.425 (e), as follows:

(A) Conduct the pressure and vacuum tests for the transport's cargo tank using a time period of five (5) minutes. The initial pressure for the pressure test shall be four hundred sixty (460) millimeters H2O (eighteen (18) inches H2O) gauge. The initial vacuum for the vacuum test shall be one hundred fifty (150) millimeters H2O (six (6) inches H2O) gauge. The maximum allowable pressure or vacuum change is twenty-five (25) millimeters H2O (one (1) inch H2O) in five (5) minutes.

(B) Conduct the pressure test of the cargo tank's internal vapor valve as follows:

(i) After completing the test under clause (A) of this condition, use the procedures in 40 CFR 60, Appendix A, Method 27 to repressurize the tank to four hundred sixty (460) millimeters H2O (eighteen (18) inches H2O) gauge. Close the transport's internal vapor valve or valves, thereby isolating the vapor return line and manifold from the tank.

(ii) Relieve the pressure in the vapor return line to atmospheric pressure, then reseal the line. After five (5) minutes, record the gauge pressure in the vapor return line and manifold. The

~~maximum allowable five (5) minute pressure increase is one hundred thirty (130) millimeters H2O (five (5) inches H2O).~~

~~(2) Repairs by the gasoline transport owner or operator, if the transport does not meet the criteria of subdivision (1) of this condition, and retesting to prove compliance with the criteria of subdivision (1) of this condition.~~

~~(b) The annual test data remain valid until the end of the twelfth (12th) calendar month following the test. The owner of the gasoline transport shall be responsible for compliance with subsection (a) of this condition, and shall provide the Permittee or the owner of the loading facility with the most recent valid modified 40 CFR 60, Appendix A, Method 27 test results upon request. The Permittee shall take all reasonable steps, including reviewing the test date and tester's signature, to ensure that gasoline transports loading at its facility comply with subsection (a) of this condition.~~

~~(c) The owner or operator shall:~~

~~(1) Design and operate the applicable system and the gasoline loading equipment in a manner that prevents:~~

~~(A) Gauge pressure from exceeding four thousand five hundred (4,500) pascals (eighteen (18) inches of H2O) and a vacuum from exceeding one thousand five hundred (1,500) pascals (six (6) inches of H2O) in the gasoline transport;~~

~~(B) A reading equal to or greater than twenty-one thousand (21,000) parts per million as propane, from all points on the perimeter of a potential leak source when measured by the method referenced in 40 CFR 60, Appendix A, Method 21, or an equivalent procedure approved by the commissioner during loading or unloading operations at gasoline dispensing facilities, bulk plants, and bulk terminals; and~~

~~(C) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants, and bulk terminals.~~

~~(2) Within fifteen (15) days, repair and retest a vapor balance, collection, or control system that exceeds the limits in subdivision (1) of this condition.~~

~~(d) The department may, at any time, monitor a gasoline transport, vapor balance, or vapor control system to confirm continuing compliance with (a) of this condition.~~

~~(e) If the commissioner allows alternative test procedures, such method shall be submitted to the U.S. EPA as a SIP revision.~~

~~(f) During compliance tests conducted under 326 IAC 3-6 (stack testing), each vapor balance or control system shall be tested applying the standards described in subsection (c)(1)(B) of this condition. Testers shall use 40 CFR 60, Appendix A, Method 21 to determine if there are any leaks from the hatches and the flanges of the gasoline transports. If any leak is detected, the transport cannot be used for the capacity of the compliance test of the one (1) gasoline dispensing unit, identified as tank 20. The threshold for leaks shall be ten thousand (10,000) parts per million methane.~~

~~D.5.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]~~

~~A Preventive Maintenance Plan is required for this facility. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.~~

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IDEM Contact

(a) Questions regarding this proposed Part 70 Renewal can be directed to Kelsey Bonhivert at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-1782 or toll free at 1-800-451-6027 extension 3-1782.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

Source Background and Description

Source Name:	**TMS International, LLC**
Source Location:	**One North Broadway, Gary, IN 46402**
County:	**Lake**
SIC Code:	**3312, 7389 (Steel Works, Business Services)**
Permit Renewal No.:	**T089-36864-00132**
Permit Reviewer:	**Kelsey Bonhivert**

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from TMS International, LLC relating to the operation of a stationary slag processing and metal recovery operation. On February 23, 2016, TMS International, LLC submitted an application to the OAQ requesting to renew its operating permit. TMS International, LLC was issued its first Part 70 Operating Permit Renewal (T089-29892-00132) on December 5, 2011. TMS International, LLC is a contractor of US Steel - Gary Works and is considered one major source.

Source Definition

US Steel - Gary Works is an integrated steel mill that includes the primary operation, U.S. Steel – Gary Works (Source ID 089-00121), at One North Broadway, Gary, Indiana, collocated with on-site contractors:

	Company Name	Source ID	Operation Description
1	U.S. Steel - Gary Works	089-00121	integrated steel mill
	On-Site Contractors		
2	TMS International, LLC	089-00132	slag processing/metal recovery
3	South Shore Slag LLC	089-00133	slag crushing, screening and conveying
4	Tube City IMS LLC	089-00170	iron ore screening operation
5	Central Teaming Company Inc	089-00172	material handling
6	Mid-Continent Coal & Coke	089-00173	coke screening operation
7	Tube City IMS LLC	089-00174	scrap metal processing
8	J.L Smith Services	089-00509	slag crushing and recycling
9	Fritz Enterprises, Inc.	089-00578	iron and slag processing operation
10	Crister Companies	089-05333	slag crushing and screening operation

TMS International, LLC are still under the common control of US Steel -Gary Works. These plants are considered one major source, as defined by 326 IAC 2-7-1(22), based on this contractual control. Therefore, the term “source” in the Part 70 documents refers to both US Steel - Gary Works and TMS International, LLC as one major source. This conclusion was initially determined under Part 70 Operating Permit (089-5630-00132) on August 8, 2006.

Separate Part 70 Operating Permit Renewals be issued to US Steel - Gary Works and TMS International, LLC solely for administrative purposes.

Permitted Emission Units and Pollution Control Equipment

This stationary source consists of the following emission units and pollution control devices:

(a) One (1) kish iron crushing operation, identified as M029, constructed in October 1990, with a

maximum capacity of 125 tons per hour, with emissions controlled by building enclosure and kish iron pre-watering or water sprays, consisting of the following:

(1) One (1) jaw crusher;

(2) One (1) hammer mill;

(3) Two (2) screens;

(4) Sixteen (16) conveyers;

(5) Storage piles, four-tenths (0.4) acre with storage capacity of 6,000 tons; and

(6) Unpaved haul road traffic.

(b) One (1) slag processing plant, identified as M057, constructed on October 6, 1995, with a maximum capacity of 1,000 tons per hour, with emissions controlled by slag pre-watering or water sprays, consisting of the following:

(1) Five (5) screen stations;

(2) Eighteen (18) conveyers;

(3) Storage piles, nine-tenths (0.9) acre with storage capacity of 16,000 tons;

(4) One (1) VSI crusher, constructed October 1997;

(5) Four (4) conveyers, constructed October 1997; and

(6) Unpaved haul road traffic; and

(7) Material transfers.

(c) One (1) steel slab scarfing plant, constructed in August 1991, with a maximum capacity of 180 tons per hour, controlled by a baghouse, ducted to the Scarfing Stack, using a 1.5 MMBtu per hour natural gas flame.

(d) Oxygen lancing of metal, with a maximum capacity of 50 tons per hour, controlled by building enclosure.

(e) A petroleum fuel, other than gasoline, dispensing facility having an approximate throughput of 230,000 gallons per month.

(1) Two (2) diesel fuel storage tanks, identified as 19A and 19B, with a maximum capacity of 8,000 gallons, each.

(2) One (1), low sulfur diesel fuel storage tank, identified as 21, with a maximum capacity of 500 gallons.

(3) One (1) diesel fuel storage tank, identified as 37, with a maximum capacity of 4,000 gallons.

(4) One (1) portable diesel fuel storage tank, identified as 71(a), with a maximum capacity of 1,615 gallons.

(5) One (1) portable diesel fuel storage tank, identified as 72(a), with a maximum capacity of 850 gallons.

(f) One (1) crushing and screening operation, constructed in 2014, with a bottlenecked capacity of 300 tons per hour (this is the quickest material can be physically loaded into the process), using wet suppression as control, and consisting of the following:

(1) One (1) feed hopper, identified as FH1, with a maximum capacity of 441 tons per hour.

(2) One (1) crusher, identified as CR-1, with a maximum capacity of 441 tons per hour.

(3) Two (2) conveyors, identified as C1 and C2, each with a maximum capacity of 441 tons per hour.

(4) One (1) screener, identified as S1, with a maximum capacity of 551 tons per hour.

(5) Three (3) conveyors, identified as C3, C4, and C5, with a combined maximum capacity of 441 tons per hour.

(6) Five (5) storage piles, identified as PA10+, PB5", P1 5" minus, P2 1/4"x5", and P3 1/4" minus.

(7) Unpaved roads.

(g) One (1) screening operation, constructed in 2014, identified as Field Screen, with a maximum capacity of 551 tons per hour, using wet suppression as control, and consisting of the following:

(1) One (1) screen.

(2) Two (2) storage piles.

Insignificant Activities

The source also consists of the following insignificant activities:

(a) Gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.

(1) One (1) storage tank, with a maximum capacity of 600 gallons.

Existing Approvals

Since the issuance of the Part 70 Operating Permit Renewal (089-29892-00132) on December 5, 2011, the source has constructed or has been operating under the following additional approvals:

(a) Significant Source Modification No. (089-33812-00132) issued on January 9, 2014; and,

(b) Significant Permit Modification No. (089-33824-00132) issued on January 27, 2014.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Lake County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of East Chicago bounded by Columbus Drive on the north; the Indiana Harbor Canal on the west; 148th Street, if extended, on the south; and Euclid Avenue on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of East Chicago and Lake County.
O_3	On June 11, 2012, the U.S. EPA designated Lake County nonattainment, for the 8-hour ozone standard. [12]
$PM_{2.5}$	Unclassifiable or attainment effective February 6, 2012, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Attainment effective March 11, 2003, for the cities of East Chicago, Hammond, Whiting, and Gary. Unclassifiable effective November 15, 1990, for the remainder of Lake County.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]The U. S. EPA has acknowledged in both the proposed and final rulemaking for this redesignation that the anti-backsliding provisions for the 1-hour ozone standard no longer apply as a result of the redesignation under the 8-hour ozone standard. Therefore, permits in Lake County are no longer subject to review pursuant to Emission Offset, 326 IAC 2-3 for the 1-hour standard.
[2]The department has filed a legal challenge to U.S. EPA's designation in 77 FR 34228

(a) Ozone Standards

U.S. EPA, in the Federal Register Notice 77 FR 112 dated June 11, 2012, has designated Lake County as nonattainment for ozone. On August 1, 2012, the air pollution control board issued an emergency rule adopting the U.S. EPA's designation. This rule became effective August 9, 2012. IDEM does not agree with U.S. EPA's designation of nonattainment. IDEM filed a suit against U.S. EPA in the U.S. Court of Appeals for the DC Circuit on July 19, 2012. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's designation. Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Therefore, VOC and NO_x emissions were evaluated pursuant to the requirements of Emission Offset, 326 IAC 2-3.

(b) $PM_{2.5}$

Lake County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Lake County has been classified as attainment or unclassifiable in Indiana for SO_2, CO, PM_{10}, NO_2, and Pb. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is classified as an iron and steel mill plant, it is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	Greater than 100
PM_{10}	Greater than 100
$PM_{2.5}$	Greater than 100
SO_2	Greater than 100
NO_x	Greater than 100
VOC	Greater than 100
CO	Greater than 100
Single HAP	Greater than 10
Total HAP	Greater than 25

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of all criteria pollutants are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	Total HAPs	Worst Single HAP
M029 - Kish Iron Crushing (crushing, screening, conveying)	6.48	3.40	21.79	--	--	--	--	--	--
M029 - Storage Piles	0.22	0.08	0.16[a]	--	--	--	--	--	--
M029 - Roads	7.07	1.89	0.38[a]	--	--	--	--	--	--
M057- Slag Processing (crushing, screening, conveying, storage piles, roads)	< 25	< 15	287.77[a]	--	--	--	--	--	--
Steel Slab Scarfing	13.52	13.52	13.52	--	--	--	--	--	--
Steel Slab Scarfing - Natural Gas Combustion	0.01	0.05	0.05	0.004	0.64	0.04	0.54	0.012	0.012 (Hexane)
Oxygen Lancing	21.90	21.90	21.90	--	--	--	--	--	--
Crusher/Screener Operation (crushing, screening, conveying)	10.05	3.92	0.66	--	--	--	--	--	--
Crusher/Screener Operation (storage pile)	2.07	0.73	0.73	--	--	--	--	--	--
Crusher/Screener Operation (roads)	3.56	0.95	0.09	--	--	--	--	--	--
Field Screen	6.64	2.33	0.32	--	--	--	--	--	--
Total PTE of Entire Source* **	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>100**	**>25**	**>10**

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	Total HAPs	Worst Single HAP
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	100	100	100	100	100	NA	100	NA	NA
Emission Offset/ Nonattainment NSR Major Source Thresholds	NA	NA	NA	NA	NA	100	NA	NA	NA

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.
***Reflects total for entire including U.S. Steel – Gary Works and other on-site contractors.
[a]PM2.5 PTE listed as uncontrolled PTE because PM2.5 was not a regulated and limited pollutant at time of permit issuance for this emission unit

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is a major stationary source, under Emission Offset (326 IAC 2-3), because Ozone, a nonattainment regulated pollutant, is emitted at a rate of 100 tons per year or more.

(c) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability

Compliance Assurance Monitoring (CAM)

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each existing emission unit and specified pollutant subject to CAM:

Emission Unit / Pollutant		Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (tons/year)	Controlled PTE (tons/year)	Major Source Threshold (tons/year)	CAM Applicable (Y/N)	Large Unit (Y/N)
Steel Slab Scarfing Plant	PM	Baghouse	Y	1592.57	15.93	NA	Y	N
	PM10			1332.40	13.32	100	Y	
	PM2.5			437.04	4.73	100	Y	

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable to the steel slab scarfing plant for PM, PM10, and $PM_{2.5}$ upon issuance of the Title V Renewal. A CAM plan will be incorporated into this Part 70 permit renewal.

New Source Performance Standards (NSPS)

(b) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, 40 CFR 60.110b, Subpart Kb, are still not included in the permit for the petroleum fuel dispensing facility or the storage tanks because the capacity of each tank is less than 75 m_3 (19,800 gallons).

(c) The requirements of the New Source Performance Standard for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983, 40 CFR 60.140a, Subpart Na, are not included in the permit for the oxygen lancing of metal because it does not meet the definition of a basic oxygen process furnace (BOPF).

(d) The requirements of the New Source Performance Standard for Nonmetallic Mineral Processing Plants, 40 CFR 60.670, Subpart OOO, are still not included in the permit for the kish iron crushing, slag processing and chip plant because these emission units do not process nonmetallic minerals.

(e) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(f) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations), 40 CFR 63.420, Subpart R, are still not included in the permit for the petroleum fuel dispensing facility. The fuel dispensing facility is not located at a bulk gasoline terminal.

(g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities, 40 CFR 63.7780, Subpart FFFFF, are still not included in the permit for the slag processing and metal recovery operation. The source is part of

an integrated iron and steel manufacturing facility, which is also a major source of HAP; however, the slag processing and metal recovery operation does not consist of the affected facilities listed in 40 CFR 63.7782.

(h) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities, 40 CFR 63.11080, Subpart BBBBBB, are still not included in the permit for the gasoline fuel dispensing facility. The gasoline dispensing facility is not located at a gasoline distribution bulk terminal, bulk plant and/or pipeline facility.

(i) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Gasoline Dispensing Facilities ,40 CFR 63.11110, Subpart CCCCCC are still not included in the permit for the gasoline dispensing facility. The gasoline dispensing facility is not located at an area source of HAPs.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 1-5-2 (Emergency Reduction Plans)
The source is subject to 326 IAC 1-5-2.

326 IAC 2-6 (Emission Reporting)
This source is subject to 326 IAC 2-6 (Emission Reporting) because it is located in Lake County and its emissions of VOC and NOx are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(1), annual reporting is required. An emission statement shall be submitted by July 1, 2017 and every year thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Cerification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(2).

326 IAC 6-4 (Fugitive Dust Emission Limitations)
This source is subject to 326 IAC 6-4 because it generates fugitive dust. The source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source has fugitive particulate emissions greater than twenty-five (25) tons. Pursuant to 326 IAC 6-5-1(a), this source is not subject to the requirements of 326 IAC 6-5 because it is located in Lake County.

326 IAC 6.5 (PM Limitations Except Lake County)
This source is not subject to 326 IAC 6.5 because it is not located in one (1) of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 (PM Limitations for Lake County)
This source is subject to 326 IAC 6.8 because it is located in Lake County, its PM PTE is equal to or greater than 100 tons/year or actual emissions are greater than 10 tons/year. However, this source is not one of the sources specifically listed in 326 IAC 6.8-2. Therefore, 326 IAC 6.8-1-2(a) applies.

326 IAC 6.8-8 (Lake County: Continuous Compliance Plan)
This source is not subject to Continuous Compliance Plan reporting, as it is a contractor at the source and not the primary operation. The primary operation, U.S. Steel - Gary Works, is responsible for meeting this requirement.

State Rule Applicability - Prevention of Significant Deterioration (PSD) and Emission Offset (EO)

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-3 (Emission Offset (EO))

TMS International, LLC has been a major source under PSD upon the promulgation of the Prevention of Significant Deterioration Program. The following determinations regarding PSD applicability have been made as part of prior permitting actions.

The following tables show modifications made to this source, by year. The tables show the PTE for each facility and necessary emission limits to render the requirements of 326 IAC 2-2 (PSD) and/or 326 IAC 2-3 (EO) not applicable for each modification. There is a separate table for each modification. The facilities may be further limited by subsequent modifications.

State Construction Permit No. 089-2092-00132
The following limits ensure that the scarfing operation project is minor under 326 IAC 2-3 (EO):

(a) The particulate matter emissions from the scarfing operation shall not exceed 0.004 gr/dscf at an actual flow rate of 90,000 cfm.

State Construction Permit No. 089-4337-00132
The source was issued a State Construction Permit No. 089-4337-00132 on March 31, 1995, which granted approval to construct the Slag Processing plant M057. This project is not major under 326 IAC 2-3 (EO) because a throughput limit of raw materials was incorporated into the permit to ensure the project is minor.

The following limits ensure the project is minor under 326 IAC 2-3 (EO):

(a) The input of raw material to the slag processing plant, identified as M057, shall be less than 2.3 million tons per twelve (12) consecutive month period, with compliance determined at the end of each month

(b) In conjunction with the material input limit, utilizing wet suppression will also assure the project is minor.

Part 70 Administrative Permit No. 089-29892-00132
The source was issued a Part 70 Administrative Permit Renewal No. 089-29892-00132 on December 5, 2011. During the review, it was determined limitions were needed for the M029 Kish Iron Crushing modification to maintain the minor status under 326 IAC 2-2 (PSD) and 326 IAC 2-3 (EO). Although the M029 Kish Iron crushing modification took place in 1990, the limits were not incorporated into the permit until the renewal.

The following limits ensure that the project is minor under 326 IAC 2-3 (EO):

(a) The nonfugitive particulate emissions from the Crushing/Screening operation and the Field Screen shall be limitited to the following pound per ton rates:

1990 Kish Iron Crushing Operation M029		
	Limits necessary to render PSD not applicable	
Emission Units	PM (lb/ton)	PM_{10} (lb/ton)
Each Crusher	0.0012	0.00054
Each Screen	0.0036	0.0022
Each conveyor transfer point	0.00014	0.000046

(b) The moisture content of the kish iron processed shall not be less than 0.55%.

SSM No. 089-33812-00132
Significant Source Modification No. 089-33812-00132, issued on January 9, 2014, authorized the construction and operation of the Crushing/Screening operation and the Field Screen operation. This modification was not major under 326 IAC 2-2 because the emissions increase is less than the PSD and EO significant thresholds.

The following limits ensure that the project is minor under 326 IAC 2-2 (PSD):

(a) The nonfugitive particulate emissions from the Crushing/Screening operation and the Field Screen shall be limitited to the following pound per ton rates:

2014 Crushing/Screening and Field Screen Modification (SSM 089-33812-00132)			
Facility	**PTE after Controls**		
	PM	**PM_{10}**	**$PM_{2.5}$**
	(tons/yr)	(tons/yr)	(tons/yr)
Crushing/Screening	10.05	3.92	0.66
Field Screen	6.64	1.69	0.32
Unpaved Roads	3.59	0.95	0.09
Storage Piles	2.07	0.73	0.73
Total	22.32	7.93	1.80
	Limits necessary to render PSD not applicable		
Emission Units	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Each Crusher	0.0012	0.00054	0.0001
Each Screen	0.0022	0.00074	0.00005
Each conveyor transfer point	0.00014	0.000046	0.000013

(b) The moisture content of the slag processed shall not be less than 0.55%.

(c) The fugitive dust control plan shall be implemented to reduce emissions fro the storage piles and unpaved roads by fifty percent.

State Rule Applicability – Individual Facilities

326 IAC 6.8-10 (Lake County: Fugitive Particulate Matter)
Pursuant to 326 IAC 6.8-10-3 the kish iron crushing plant (M029), the slag processing plant (M057), the oxygen lancing metal plant, the field screen, and the crushing and screening operation shall meet the following requirements:

(a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).

(b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).

(c) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

(d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

(e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.

(f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.

(g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).

(h) Material processing facilities shall include the following:

(1) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.

(2) The PM_{10} emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(3) The PM_{10} stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.

(4) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.

(5) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).

(i) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

(j) Material transfer limits shall be as follows:

(1) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

(2) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.

(3) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:

(A) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.

(B) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in 326 IAC 6.8-10-3(9).

(k) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

(a) The petroleum fuel storage facilities (Tanks 19A, 19B, 21, 37, 71(a), and 72(a)) each have storage capacities less than 39,000 gallons. Therefore, the tanks are not subject to the requirements of 326 IAC 8-4-3.

(b) The gasoline fuel transfer and dispensing operation, identified as tank 20, has a storage capacity less than 39,000 gallons. Therefore, tank 20 is not subject to the requirements of 326 IAC 8-4-3.

326 IAC 8-4-4 (Bulk Gasoline Terminals)

The source is not a bulk gasoline terminal. Therefore the requirements of 326 IAC 8-4-4 do not apply to the gasoline fuel transfer and dispensing operation, identified as tank 20.

326 IAC 8-4-6 (Gasoline Dispensing Facilities)

The gasoline fuel transfer and dispensing operation meets the definition of a gasoline dispensing facility and is located in Lake County; therefore pursuant to 326 IAC 8-4-1(a), it is subject to the requirements of 326 IAC 8-4-6.

(a) Pursuant to 326 IAC 8-4-6(b), the facility must meet the following requirements for a Stage I Vapor Recovery System:

(1) No owner or operator of a gasoline dispensing facility shall allow the transfer of gasoline between any transport and any storage tank unless the tank is equipped with the following:

(A) A submerged fill pipe that extends to not more than six (6) inches from the bottom of the storage tank.

(B) Either a pressure relief valve set to release at not less than seven-tenths (0.7) pounds per square inch or an orifice of five-tenths (0.5) inch in diameter.

(C) A vapor balance system connected between the tank and the transport operating according to manufacturer's specifications.

(2) If the owner or employees of the owner of a gasoline dispensing facility are not present during loading, it shall be the responsibility of the owner or the operator of the transport to make certain the vapor balance system is:

(A) connected between the transport and the storage tank; and

(B) operating according to manufacturer's specifications.

(B) If a permittee was previously required to employ a Stage II Vapor Recovery System under 326 IAC 8-4-6(a), they may choose to decommission the system pursuant to 326 IAC 8-4-6(d). However, this facility has not ever had a Stage II Vapor Recovery System, and will not be subject to the requirements of 326 IAC 8-4-6(a).

326 IAC 8-4-9 (Leaks from Transports and Vapor Collection Systems; Records)
The source is subject to the following requirements of 326 IAC 8-4-9 because it is subject to the requirements of 326 IAC 8-4-6:

(a) The Permittee shall not allow a gasoline transport that is subject to this rule and that has a capacity of two thousand (2,000) gallons or more to be filled or emptied unless the owner of the gasoline transport completes the following:

(1) Annual leak detection testing before the end of the twelfth (12th) calendar month following the previous year's test, according to test procedures contained in 40 CFR 63.425 (e), as follows:

(A) Conduct the pressure and vacuum tests for the transport's cargo tank using a time period of five (5) minutes. The initial pressure for the pressure test shall be four hundred sixty (460) millimeters H2O (eighteen (18) inches H2O) gauge. The initial vacuum for the vacuum test shall be one hundred fifty (150) millimeters H2O (six (6) inches H2O) gauge. The maximum allowable pressure or vacuum change is twenty-five (25) millimeters H2O (one (1) inch H2O) in five (5) minutes.

(B) Conduct the pressure test of the cargo tank's internal vapor valve as follows:

(i) After completing the test under clause (A) of this condition, use the procedures in 40 CFR 60, Appendix A, Method 27 to repressurize the tank to four hundred sixty (460) millimeters H2O (eighteen (18) inches H2O) gauge. Close the transport's internal vapor valve or valves, thereby isolating the vapor return line and manifold from the tank.

(ii) Relieve the pressure in the vapor return line to atmospheric pressure, then reseal the line. After five (5) minutes, record the gauge pressure in the vapor return line and manifold. The maximum allowable five (5) minute pressure increase is one hundred thirty (130) millimeters H2O (five (5) inches H2O).

(2) Repairs by the gasoline transport owner or operator, if the transport does not meet the criteria of subdivision (1) of this condition, and retesting to prove compliance with the criteria of subdivision (1) of this condition.

(b) The annual test data remain valid until the end of the twelfth (12th) calendar month following the test. The owner of the gasoline transport shall be responsible for compliance with subsection (a) of this condition, and shall provide the Permittee or the owner of the loading facility with the most recent valid modified 40 CFR 60, Appendix A, Method 27 test results upon request. The Permittee shall take all reasonable steps, including reviewing the test date and tester's signature, to ensure that gasoline transports loading at its facility comply with subsection (a) of this condition.

(c) The owner or operator shall:

(1) Design and operate the applicable system and the gasoline loading equipment in a manner that prevents:

(A) Gauge pressure from exceeding four thousand five hundred (4,500) pascals (eighteen (18) inches of H2O) and a vacuum from exceeding one thousand five hundred (1,500) pascals (six (6) inches of H2O) in the gasoline transport;

(B) A reading equal to or greater than twenty-one thousand (21,000) parts per million as propane, from all points on the perimeter of a potential leak source when

measured by the method referenced in 40 CFR 60, Appendix A, Method 21, or an equivalent procedure approved by the commissioner during loading or unloading operations at gasoline dispensing facilities, bulk plants, and bulk terminals; and

(C) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants, and bulk terminals.

(2) Within fifteen (15) days, repair and retest a vapor balance, collection, or control system that exceeds the limits in subdivision (1) of this condition.

(d) The department may, at any time, monitor a gasoline transport, vapor balance, or vapor control system to confirm continuing compliance with (a) of this condition.

(e) If the commissioner allows alternative test procedures, such method shall be submitted to the U.S. EPA as a SIP revision.

(f) During compliance tests conducted under 326 IAC 3-6 (stack testing), each vapor balance or control system shall be tested applying the standards described in subsection (c)(1)(B) of this condition. Testers shall use 40 CFR 60, Appendix A, Method 21 to determine if there are any leaks from the hatches and the flanges of the gasoline transports. If any leak is detected, the transport cannot be used for the capacity of the compliance test of the one (1) gasoline dispensing unit, identified as tank 20. The threshold for leaks shall be ten thousand (10,000) parts per million methane.

Note: This condition does not require the permittee to perform testing. IDEM, OAQ will not require testing to demonstrate compliance with these requirements.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

(a) The petroleum fuel dispensing facilities (Tanks 19A, 19B, 21, and 37), the gasoline fuel transfer and dispensing operation (Tank 20) and the storage tanks are located in Lake County, used to store volatile organic liquids and have maximum capacities less than 39,000 gallons each. Pursuant to 326 IAC 8-9-1(b), these volatile organic liquid storage vessels are subject to the reporting and record keeping provisions of 326 IAC 8-9-6(a) and (b). The source shall maintain the following records pursuant to 326 IAC 8-9-6(a) and (b) for the life of the vessel:

(1) The vessel identification number,

(2) The vessel dimensions, and

(3) The vessel capacity.

(b) Pursuant to 326 IAC 8-9-2(3), lube truck tanks 71(a) and 71(b) are not subject to the requirements of 326 IAC 8-9 because they are permanently attached to a truck.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

Emission Unit	Parameter	Frequency	Range	Excursions and Exceedances
Kish Iron Crushing Operation - M029 (Jaw Crusher, Hammer Mill, Screens, and Conveyors)	Visible Emissions	Daily	Normal-Abnormal	Section C- Response to Excursions or Exceedances
Slag Processing Plant - M057 (Screens, Conveyors, and Crusher Exhaust Stacks	Visible Emissions	Daily	Normal-Abnormal	Section C- Response to Excursions or Exceedances
Scarfing Plant	Visible Emissions	Daily	Normal-Abnormal	Section C- Response to Excursions or Exceedances
	Pressure Drop		3.0" - 10.0"	
	Broken/Failed Bag Detection		Indicated by baghouse pressure drop, abnormal, visible emissions, and opacity violation	Section B - Emergency Provisions
Crushing/Screening Operation (Crusher, Screens, and Conveyors)	Visible Emissions	Daily	Normal-Abnormal	Section C- Response to Excursions or Exceedances
Field Screen	Visible Emissions	Daily	Normal-Abnormal	Section C- Response to Excursions or Exceedances

These monitoring conditions are necessary to ensure compliance with:

(a) 326 IAC 2-2 (PSD), 326 IAC 2-3 (Emission Offset), 326 IAC 6.8-1 (Particulate Matter Limitations for Lake County), and 326 IAC 2-7 (Part 70) for:

(1) Kish Iron Crushing plant,

(2) Slag Processing plant,

(3) Crushing/Screening operation, and

(4) Field Screen

(b) 40 CFR 64 (CAM), 326 IAC 2-2 (PSD), 326 IAC 2-3 (Emission Offset), 326 IAC 6.8-1 (Particulate Matter Limitations for Lake County), and 326 IAC 2-7 (Part 70) for:

(1) Scarfing Plant

Recommendation

The staff recommends to the Commissioner that the Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 23, 2016.

Conclusion

The operation of this stationary slag processing and metal recovery operation shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. 089-36864-00132.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Kelsey Bonhivert at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-1782 or toll free at 1-800-451-6027 extension 3-1782.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A: Emissions Calculations
Summary
Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Uncontrolled Potential to Emit (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**
M029 - Kish Iron Crushing (crushing, screening, conveying)	305.94	21.79	21.79	--	--	--	--	--
M029 - Storage Piles	0.45	0.16	0.16					
M029 - Roads	14.15	3.77	0.38					
M057- Slag Processing (crushing, screening, conveying, storage piles, roads)	813.51	289.41	288.25					
Scarfing Plant	1351.54	1351.54	1351.54	--	--	--	--	--
Scarfing Plant - Natural Gas Combustion	0.01	0.05	0.05	3.86E-03	0.64	0.04	0.54	0.012
Oxygen Lancing	21.90	21.90	21.90	--	--	--	--	--
Crusher/Screener Operation (crushing, screening, conveying)	134.02	47.31	41.24	--	--	--	--	--
Crusher/Screener Operation (storage pile)	4.15	1.45	1.45					
Crusher/Screener Operation (roads)	4.68	1.25	0.12					
Field Screen	88.81	34.00	27.51	--	--	--	--	--
Total	**2,739.16**	**1,772.62**	**1,754.39**	**3.86E-03**	**0.64**	**0.04**	**0.54**	**0.01**

** PM2.5 listed is direct PM2.5*
Note: Does not include all emission units. Calculations done to determine rule applicability.

Potential to Emit after Control (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**
M029 - Kish Iron Crushing (crushing, screening, conveying)	4.95	1.80	0.28	--	--	--	--	--
M029 - Storage Piles	0.22	0.08	0.08	--	--	--	--	--
M029 - Roads	7.07	1.89	0.19	--	--	--	--	--
M057- Slag Processing (crushing, screening, conveying, storage piles, roads)	69.85	24.15	23.24					
Scarfing Plant	13.52	13.52	13.52	--	--	--	--	--
Scarfing Plant - Natural Gas	0.01	0.05	0.05	3.86E-03	0.64	0.04	0.54	0.012
Oxygen Lancing	21.90	21.90	21.90	--	--	--	--	--
Crusher/Screener Operation (crushing, screening, conveying)	10.05	3.92	0.66	--	--	--	--	--
Crusher/Screener Operation (storage pile)	2.07	0.73	0.73	--	--	--	--	--
Crusher/Screener Operation (roads)	3.56	0.95	0.09	--	--	--	--	--
Field Screen	6.64	2.33	0.32	--	--	--	--	--
Total	**139.84**	**71.31**	**61.05**	**3.86E-03**	**0.64**	**0.04**	**0.54**	**0.01**

** PM2.5 listed is direct PM2.5*
Note: Does not include all emission units. Calculations done to determine rule applicability.

Potential to Emit after Issuance (tons/yr)								
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**Total HAPs**
M029 - Kish Iron Crushing (crushing, screening, conveying)	6.48	3.40	21.79	--	--	--	--	--
M029 - Storage Piles	0.22	0.08	0.16					
M029 - Roads	7.07	1.89	0.38					
M057- Slag Processing (crushing, screening, conveying, storage piles, roads)	< 25	< 15	287.77					
Scarfing Plant	13.52	13.52	13.52	--	--	--	--	--
Scarfing Plant - Natural Gas	0.01	0.05	0.05	3.86E-03	0.64	0.04	0.54	0.012
Oxygen Lancing	21.90	21.90	21.90	--	--	--	--	--
Crusher/Screener Operation (crushing, screening, conveying)	10.05	3.92	0.66	--	--	--	--	--
Crusher/Screener Operation (storage pile)	2.07	0.73	0.73					
Crusher/Screener Operation (roads)	3.56	0.95	0.09					
Field Screen	6.64	2.33	0.32	--	--	--	--	--
Total	**96.53**	**63.76**	**347.36**	**0.00**	**0.64**	**0.04**	**0.54**	**0.01**

** PM2.5 listed is direct PM2.5*
Note: The shaded cells indicate where limits are included.
Note: Does not include all emission units. Calculations done to determine rule applicability.

Appendix A: Emissions Calculations
Particulate from Crushing, Screening, and Conveying - Kish Iron - M029
Uncontrolled Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Type of unit	Emission Unit - New Name:	Capacity (tons / hour)	326 IAC 6-3-2 PM limit (lb/hr)	EPA emission factor - PM (lb/ton)	Potential emissions PM (lb/hour)	Total PM Emissions (tons/yr)	EPA emission factor - PM_{10} (lb/ton)	Potential emissions PM_{10} (lb/hour)	Total PM_{10} Emissions (tons/yr)	EPA emission factor - $PM_{2.5}$ (lb/ton)	Potential emissions $PM_{2.5}$ (lb/hour)	Total $PM_{2.5}$ Emissions (tons/yr)
Crushers												
Tertiary	Jaw crusher	125	53.55	0.0054	0.675	2.9565	0.0024	0.3	1.314	0.0024	0.3000	1.3140
Tertiary	Hammer mill	125	53.55	0.0054	0.675	2.9565	0.0024	0.3	1.314	0.0024	0.3000	1.3140
Conveyors												
	conveyor 1	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 2	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 3	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 4	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 5	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 6	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 7	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 8	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 9	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 10	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 11	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 12	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 13	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 14	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 15	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
	conveyor 16	125	53.55	0.003	0.375	1.6425	0.0011	0.1375	0.60225	0.0011	0.1375	0.6023
Screens												
Tertiary	Screen 1	125	53.55	0.25	31.25	136.875	0.0087	1.0875	4.76325	0.0087	1.0875	4.7633
Tertiary	Screen 2	125	53.55	0.25	31.25	136.875	0.0087	1.0875	4.76325	0.0087	1.0875	4.7633

Total Uncontrolled Emissions

	Crushing	***Conveying***	***Screening***	***Total Potential Emissions Uncontrolled***	
PM	5.91	26.28	273.75	***PM***	**305.94**
PM_{10}	2.63	9.636	9.53	***PM_{10}***	***21.79***
PM2.5	2.6280	9.64	9.5265	***$PM_{2.5}$***	***21.79***

Emission Factors
Emission Factors PM/PM10 from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)
Emission Factors PM10 is used as a surrogate for PM 2.5

Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Particlate from Crushing, Screening, and Conveying - Kish Iron - M029
Controlled and Limited Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Type of unit	Emission Unit - New Name:	Capacity (tons / hour)	PM - EPA emission factor (lb/ton)	PM - potential emissions (lb/hour)	PM - Controlled Emissions (tons/yr)	PM10 - EPA emission factor (lb/ton)	PM10 - potential emissions (lb/hour)	PM10 - Controlled Emissions (tons/yr)	PM2.5 - EPA emission factor (lb/ton)	PM2.5 - potential emissions (lb/hour)	PM2.5 - Controlled Emissions (tons/yr)
Crushers											
Tertiary	MI0104	125	0.0012	0.15	0.657	0.00054	0.0675	0.29565	0.0001	0.0125	0.05475
Tertiary	MI0106	125	0.0012	0.15	0.657	0.00054	0.0675	0.29565	0.0001	0.0125	0.05475
Conveyors											
	conveyor 1	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 2	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 3	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 4	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 5	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 6	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 7	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 8	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 9	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 10	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 11	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 12	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 13	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 14	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 15	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
	conveyor 16	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185	0.000013	0.001625	0.0071175
Screens											
Tertiary	Screen 1	125	0.0022	0.275	1.2045	0.00074	0.0925	0.40515	0.00005	0.00625	0.027375
Tertiary	Screen 2	125	0.0022	0.275	1.2045	0.00074	0.0925	0.40515	0.00005	0.00625	0.027375
Total Controlled Emissions											

	Crushing	***Conveying***	***Screening***	***Total Potential Emissions After Controls***	
PM	1.31	1.23	2.41	***PM***	**4.95**
PM_{10}	0.59	0.40	0.81	***PM_{10}***	**1.80**
$PM_{2.5}$	0.11	0.11	0.05	***$PM_{2.5}$***	**0.28**

Emission Factors
Emission Factors from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)
Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Particlate from Crushing, Screening, and Conveying - Kish Iron - M029
Limited Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Type of unit	Emission Unit - New Name:	Capacity (tons / hour)	PM - Limited emission factor (lb/ton)	PM - potential emissions (lb/hour)	PM - Limited Emissions (tons/yr)	PM10 - EPA emission factor (lb/ton)	PM10 - potential emissions (lb/hour)	PM10 - Controlled Emissions (tons/yr)
Crushers								
Tertiary	MI0104	125	0.0012	0.15	0.657	0.00054	0.0675	0.29565
Tertiary	MI0106	125	0.0012	0.15	0.657	0.00054	0.0675	0.29565
Conveyors								
	conveyor 1	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 2	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 3	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 4	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 5	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 6	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 7	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 8	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 9	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 10	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 11	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 12	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 13	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 14	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 15	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
	conveyor 16	125	0.00014	0.0175	0.07665	0.000046	0.00575	0.025185
Screens								
Tertiary	Screen 1	125	0.0036	0.45	1.971	0.0022	0.275	1.2045
Tertiary	Screen 2	125	0.0036	0.45	1.971	0.0022	0.275	1.2045
Total Controlled Emissions								

	Crushing	***Conveying***	***Screening***	***Total Potential Emissions After Controls***	
PM	1.31	1.23	3.94	***PM***	**6.48**
PM 10	0.59	0.40	2.41	***PM 10***	**3.40**

Emission Factors
Emission Factors from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)
Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton
Note:
[a]AP-42 footnote b of Table 11.19.2-2 -Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays.

Appendix A: Emissions Calculations
Material Storage Piles
Kish Iron Crushing - M029

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = emission factor (lb/acre/day)
s = silt content (wt %)
p = 125 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)	Controlled PM (tons/yr)	Controlled PM10/PM2.5 (tons/yr)**
Slag	5.3	6.13	0.40	0.448	0.157	0.224	0.078

Methodology
Limited PTE of PM (tons/yr) = [Emission Factor (lb/acre/day)] * [Maximum Pile Size (acres)] * (ton/2000 lbs) * (365 days/yr)
Limited PTE of PM10 (tons/yr) = [Potential PM Emissions (tons/yr)] * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Control Efficiency of applied dust suppressant can be up to 90%, based on AP-42 Chapter 13.2.4 page 5. Control efficiency is conservatively assumed to be 50%.

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads
Kish Iron Crushing - M029

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Euclid R50 Rock Truck (round trip)	1.0	60.0	60.0	88.5	5310.0	750	0.142	8.5	3110.8
		Totals	**60.0**		**5310.0**			**8.5**	**3110.8**

Average Vehicle Weight Per Trip = 88.5 tons/trip
Average Miles Per Trip = 0.14 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	88.5	88.5	88.5	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	13.83	3.69	0.37	lb/mile
Mitigated Emission Factor, Eext =	9.10	2.42	0.24	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Euclid R50 Rock Truck (round trip)	14.15	3.77	0.38	7.07	1.89	0.19
Totals	**14.15**	**3.77**	**0.38**	**7.07**	**1.89**	**0.19**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emissions Calculations
Slag Processing Plant - M057
Limtied Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Plant throughput Emission Offset minor limit (from 089-4337-000132) : **2,300,000.00** **ton raw material/year**

	PM tpy	PM10 tpy
Crushing, screening, conveying	17.57	6.04
Storage Piles	0.50	0.18
Roads	2.42	0.64
Overall tpy	**20.49**	**6.86**

Type of unit	Emission Unit - New Name:	Capacity (tons / year)	PM - EPA emission factor (lb/ton)	PM - Controlled Emissions (tons/yr)	PM10 - EPA emission factor (lb/ton)	PM10 - Controlled Emissions (tons/yr)
Crushers						
Tertiary	VSI	2,300,000	0.0012	1.38	0.00054	0.621
Conveyors						
	conveyor 1	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 2	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 3	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 4	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 5	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 6	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 7	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 8	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 9	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 10	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 11	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 12	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 13	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 14	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 15	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 16	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 17	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 18	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 19	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 20	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 21	2,300,000	0.00014	0.161	0.000046	0.0529
	conveyor 22	2,300,000	0.00014	0.161	0.000046	0.0529
Screens						
Tertiary	Screen 1	2,300,000	0.0022	2.53	0.00074	0.851
Tertiary	Screen 2	2,300,000	0.0022	2.53	0.00074	0.851
Tertiary	Screen 3	2,300,000	0.0022	2.53	0.00074	0.851
Tertiary	Screen 4	2,300,000	0.0022	2.53	0.00074	0.851
Tertiary	Screen 5	2,300,000	0.0022	2.53	0.00074	0.851
Total Limited Emissions						

	Crushing	*Conveying*	*Screening*	*Total Potential Emissions Controlled*	
PM	1.38	3.54	12.65	***PM***	**17.57**
PM 10	0.62	1.16	4.26	***PM 10***	**6.04**

Emission Factors
Emission Factors from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)

Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton
Note:

[a] AP-42 footnote b of Table 11.19.2-2-Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays.

Appendix A: Emissions Calculations
Slag Processing Plant - M057
Controlled Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Type of unit	Emission Unit - New Name:	Capacity (tons / hour)	PM - EPA emission factor (lb/ton)	PM - potential emissions (lb/hour)	PM - Controlled Emissions (tons/yr)	PM10 - EPA emission factor (lb/ton)	PM10 - potential emissions (lb/hour)	PM10 - Controlled Emissions (tons/yr)
Crushers								
Tertiary	VSI	1000	0.0012	1.2	5.256	0.00054	0.54	2.3652
Conveyors								
	conveyor 1	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 2	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 3	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 4	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 5	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 6	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 7	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 8	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 9	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 10	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 11	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 12	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 13	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 14	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 15	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 16	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 17	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 18	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 19	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 20	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 21	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
	conveyor 22	1000	0.00014	0.14	0.6132	0.000046	0.046	0.20148
Screens								
Tertiary	Screen 1	1000	0.0022	2.2	9.636	0.74	0.00074	3.2412
Tertiary	Screen 2	1000	0.0022	2.2	9.636	0.74	0.00074	3.2412
Tertiary	Screen 3	1000	0.0022	2.2	9.636	0.74	0.00074	3.2412
Tertiary	Screen 4	1000	0.0022	2.2	9.636	0.74	0.00074	3.2412
Tertiary	Screen 5	1000	0.0022	2.2	9.636	0.74	0.00074	3.2412
Total Controlled Emissions								

	Crushing	***Conveying***	***Screening***	***Total Potential Emissions Controlled***	
PM	5.26	13.49	48.18	***PM***	**66.93**
PM_{10}	2.37	4.43	16.21	***PM_{10}***	**23.00**

0.01528

Emission Factors
Emission Factors from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)
Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Slag Processing Plant - M057
Uncontrolled Potential Emissions

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Type of unit	Emission Unit - New Name:	Capacity (tons / hour)	326 IAC 6-3-2 PM limit (lb/hr)	EPA emission factor - PM (lb/ton)	Potential emissions PM (lb/hour)	Total PM Emissions (tons/yr)	EPA emission factor - PM_{10} (lb/ton)	Potential emissions PM_{10} (lb/hour)	Total PM_{10} Emissions (tons/yr)	EPA emission factor - $PM_{2.5}$ (lb/ton)	Potential emissions $PM_{2.5}$ (lb/hour)	Total $PM_{2.5}$ Emissions (tons/yr)
Crushers												
Tertiary	VSI	1000	77.59	0.0054	5.4	23.652	0.0024	2.4	10.512	0.0024	2.4000	10.5120
Conveyors												
	conveyor 1	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 2	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 3	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 4	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 5	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 6	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 7	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 8	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 9	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 10	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 11	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 12	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 13	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 14	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 15	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 16	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 17	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
	conveyor 18	1000	77.59	0.003	3	13.14	0.0011	1.1	4.818	0.0011	1.1000	4.8180
Screens												
Tertiary	Screen 1	1000	77.59	0.025	25	109.5	0.0087	8.7	38.106	0.0087	8.7000	38.1060
Tertiary	Screen 2	1000	77.59	0.025	25	109.5	0.0087	8.7	38.106	0.0087	8.7000	38.1060
Tertiary	Screen 3	1000	77.59	0.025	25	109.5	0.0087	8.7	38.106	0.0087	8.7000	38.1060
Tertiary	Screen 4	1000	77.59	0.025	25	109.5	0.0087	8.7	38.106	0.0087	8.7000	38.1060
Tertiary	Screen 5	1000	77.59	0.025	25	109.5	0.0087	8.7	38.106	0.0087	8.7000	38.1060
Total Uncontrolled Emissions												

	Crushing	***Conveying***	***Screening***	***Total Potential***	
PM	23.65	236.52	547.50	***PM***	**807.67**
PM_{10}	10.51	86.724	190.53	***PM_{10}***	**287.77**
PM2.5	10.5120	86.72	190.5300	***$PM_{2.5}$***	***287.77***

Emission Factors 0.18
Emission Factors PM/PM10 from AP-42 Ch.11.19.2, Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton) (Fifth edition, 8/2004)
Emission Factors PM10 is used as a surrogate for PM 2.5
Methodology
Emission (tons/yr) = [Capacity (tons/hr) x Emission Factor (lb/ton)] x 8760 hr/yr / 2,000 lb/ton

Appendix A: Emissions Calculations
Material Storage Piles
Slag Processing Plant - M057

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = emission factor (lb/acre/day)
s = silt content (wt %)
p = 125 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)	Controlled PM (tons/yr)	Controlled PM10/PM2.5 (tons/yr)**
Slag	5.3	6.13	0.90	1.008	0.353	0.504	0.176

Methodology
Limited PTE of PM (tons/yr) = [Emission Factor (lb/acre/day)] * [Maximum Pile Size (acres)] * (ton/2000 lbs) * (365 days/yr)
Limited PTE of PM10 (tons/yr) = [Potential PM Emissions (tons/yr)] * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Control Efficiency of applied dust suppressant can be up to 90%, based on AP-42 Chapter 13.2.4 page 5. Control efficiency is conservatively assumed to be 50%.

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads
Slag Processing Plant - M057

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum distance (feet/trip)	Maximum distance (mi/trip)	Maximum miles (miles/day)	Maximum miles (miles/yr)
Kawasaki 115Z Wheel Loader (round trip)	1.0	199.0	199.0	63.0	12537.0	90	0.017	3.4	1238.1
		Totals	**199.0**		**12537.0**			**3.4**	**1238.1**

Average Vehicle Weight Per Trip = 63.0 tons/trip
Average Miles Per Trip = 0.02 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	63.0	63.0	63.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	11.87	3.16	0.32	lb/mile
Mitigated Emission Factor, Eext =	7.81	2.08	0.21	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Kawasaki 115Z Wheel Loader (round trip)	4.83	1.29	0.13	2.42	0.64	0.06
Totals	**4.83**	**1.29**	**0.13**	**2.42**	**0.64**	**0.06**

Methodology
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Emissions from Scarfing Plant

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

Process	PM/PM10/ PM2.5 limit (grain/dscf)	Process actual flow rate (cfm)	Grain/min	lb/hour	Controlled/Limited ton/year	Uncontrolled ton/year
Steel Slab Scarfing - Controlled by Baghouse	0.004	90000	360.00	3.09	13.52	1351.54

Methodology
Limit and process flow rate from Emission offset limit in Section D.3.1 of permit
Grain/minute = PM/PM10/PM2.5 limit (grain/dscf) * actual flow rate (cfm)
lb/hour = grain/min * 60 (min/hour) / 7000 (grain/lb)
Controlled/Limited Emissions (ton/year) = lb/hour * 8760 (hour/year) / 2000 (lb/ton)
Assume 99% control efficiency for baghouse
Uncontrolled Emissions (ton/year) = Controlled Emissions / (1 - Control Efficiency)

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Scarfing Plant - Natural Gas Flame

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

Heat Input Capacity MMBtu/hr	HHV mmBtu/mmscf	Potential Throughput MMCF/yr
1.5	1020	12.9

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.05	0.05	3.86E-03	0.64	0.04	0.54

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.4E-05	7.7E-06	4.8E-04	0.012	2.2E-05	**0.012**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	3.2E-06	7.1E-06	9.0E-06	2.4E-06	1.4E-05	**3.5E-05**
					Total HAPs	**0.012**
					Worst HAP	**0.000**

Methodology is the same as above.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Material Storage Piles
Oxygen Lancing

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

Process	Maximum Throughput (ton/hour)	Emission Factor PM (lbs/ton)	Emission Factor PM10 (lbs/ton)	Emission Factor PM2.5 (lbs/ton)	PM PTE (lb/hour)	PM10 PTE (lb/hour)	PM2.5 PTE (lb/hour)	PM PTE (ton/year)	PM10 PTE (ton/year)	PM2.5 PTE (ton/year)
Oxygen Lancing	50	0.1	0.1	0.1	5.0	5.0	5.0	21.9	21.9	21.9
							total:	**21.9**	**21.9**	**21.9**

Methodology:
PTE (ton/hour) = Maximum throughput (lb/hour) * Emission Factor (lbs/ton)
PTE (ton/year) = PTE (lb/hour) * 8760 (hours/yr) / 2000 (lbs/ton)
Emission factors are from AP-42, chapter 12.5, table 12.5-1 (Emission Factors for Iron and Steel Production)

Appendix A: Emission Calculations
TSP POTENTIAL TO EMIT FOR CRUSHER AND SCREENING PLANT

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00880	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95333	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from Table 11.19.2-2)
	0.00041	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.00014	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

Uncontrolled

Ef(front end loader)	0.00880	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.00300	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	0.062	540.842	0.270
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	0.062	540.842	0.270
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	0.062	540.842	0.270
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	0.062	540.842	0.270
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	0.077	675.746	0.338
T6 - C2 to S1	551	4,826,760	0.077	675.746	0.338
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	0.077	675.746	0.338
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	0.077	675.746	0.338
TOTAL (TRANSFERS)			0.556	4,866	2.433

	Raw Material Maximum Throughputs		Potential to Emit		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	3.881	33995.808	16.998
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	1.323	11589.480	5.795
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	1.323	11589.480	5.795
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	1.323	11589.480	5.795
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	1.653	14480.280	7.240
T6 - C2 to S1	551	4,826,760	1.653	14480.280	7.240
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	1.653	14480.280	7.240
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	1.653	14480.280	7.240
TOTAL (TRANSFERS)			14.462	126,685	63.343

Controlled

Ef(screening controlled) =	0.00220	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

Uncontrolled

Ef (Screening uncontrolled) =	0.025	lbs/ton	(Source: Table 11.19.2-2, screening, AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
S1	551	4,826,760	1.21	10,619	5.31
TOTAL (SCREENING)			1.21	10,619	5.31

	Raw Material Maximum Throughputs		Potential to Emit		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
S1	551	4,826,760	13.78	120,669	60.33
TOTAL (SCREENING)			13.78	120,669	60.33

Controlled

Ef(crushing controlled) =	0.00120	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing (controlled), AP-42, 8/04)

Uncontrolled

Ef (crushing uncontrolled) =	0.0054	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing, AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
CRUSHING	Average Throughput (tons/hr)	Amount Crushed (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	0.53	4,636	2.32
TOTAL (CRUSHING)			0.53	4,636	2.32

	Raw Material Maximum Throughputs		Potential to Emit		
CRUSHING	Average Throughput (tons/hr)	Amount Crushed (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	2.38	20,861	10.43
TOTAL (CRUSHING)			2.38	20,861	10.43

	Potential To Emit[a]		
Crushing and Screening Plant Operations	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	0.56	4,866	2.43
Screening	1.21	10,619	5.30
Crushing	0.53	4,636	2.32
TOTAL PLANT - Controlled	2.30	20,121	**10.05**

	Potential To Emit		
Crushing and Screening Plant Operations	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	14.46	126,685	63.34
Screening	13.78	120,669	60.24
Crushing	2.38	20,861	10.43
TOTAL PLANT - Uncontrolled	30.62	268,215	**134.02**

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.
Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining PTE from this operation.

Appendix A: Emission Calculations
PM10 POTENTIAL TO EMIT FOR CRUSHER AND SCREENING PLANT

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00430	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95333	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from Table 11.19.2-2)
	0.00020	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.00005	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

TRANSFERS	Raw Material Maximum Throughputs: Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Loaded or Transferred (tons/yr)	Potential to Emit[a]: Hourly Emission Rate (lb/hr)	Potential to Emit[a]: Annual Emission Rate (lbs/yr)	Potential to Emit[a]: Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	0.09	775.26	0.39
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	0.02	177.71	0.09
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	0.02	177.71	0.09
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	0.02	177.71	0.09
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	0.03	222.03	0.11
T6 - C2 to S1	551	4,826,760	0.03	222.03	0.11
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	0.03	222.03	0.11
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	0.03	222.03	0.11
TOTAL (TRANSFERS)			0.25	2196.50	1.10

Controlled

Ef(screening controlled) =	0.00074	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

SCREENING	Raw Material Maximum Throughputs: Average Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Screened (tons/yr)	Potential to Emit[a]: Hourly Emission Rate (lb/hr)	Potential to Emit[a]: Annual Emission Rate (lbs/yr)	Potential to Emit[a]: Annual Emission Rate (tons/yr)
S1	551	4,826,760	0.41	3,572	1.79
TOTAL (SCREENING)			0.41	3,572	1.79

Controlled

Ef(crushing controlled) =	0.00054	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing (controlled), AP-42, 8/04)

CRUSHING	Raw Material Maximum Throughputs: Average Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Crushed (tons/yr)	Potential to Emita: Hourly Emission Rate (lb/hr)	Potential to Emita: Annual Emission Rate (lbs/yr)	Potential to Emita: Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	0.24	2,086	1.04
TOTAL (CRUSHING)			0.24	2,086	1.04

Crushing and Screening Plant Operations	Potential to Emit[a]: Hourly Emission Rate (lb/hr)	Potential to Emit[a]: Annual Emission Rate (lbs/yr)	Potential to Emit[a]: Annual Emission Rate (tons/yr)
Transfers	0.25	2,197	1.10
Screening	0.41	3,572	1.78
Crushing	0.24	2,086	1.04
TOTAL PLANT - Controlled	0.90	7,854	3.92

Uncontrolled

Ef(front end loader)	0.00430	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.00110	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

TRANSFERS	Raw Material Maximum Throughputs: Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Loaded or Transferred (tons/yr)	Potential to Emit: Hourly Emission Rate (lb/hr)	Potential to Emit: Annual Emission Rate (lbs/yr)	Potential to Emit: Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	1.90	16611.59	8.31
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	0.49	4249.48	2.12
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	0.49	4249.48	2.12
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	0.49	4249.48	2.12
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	0.61	5309.44	2.65
T6 - C2 to S1	551	4,826,760	0.61	5309.44	2.65
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	0.61	5309.44	2.65
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	0.61	5309.44	2.65
TOTAL (TRANSFERS)			5.78	50597.76	25.30

Uncontrolled

Ef(screening controlled) =	0.00870	lbs/ton	(Source: Table 11.19.2-2, screening, AP-42, 8/04)

SCREENING	Raw Material Maximum Throughputs: Average Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Screened (tons/yr)	Potential to Emit: Hourly Emission Rate (lb/hr)	Potential to Emit: Annual Emission Rate (lbs/yr)	Potential to Emit: Annual Emission Rate (tons/yr)
S1	551	4,826,760	4.79	41,993	21.00
TOTAL (SCREENING)			4.79	41,993	21.00

Uncontrolled

Ef(crushing controlled) =	0.00240	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing, AP-42, 8/04)

CRUSHING	Raw Material Maximum Throughputs: Average Throughput (tons/hr)	Raw Material Maximum Throughputs: Amount Crushed (tons/yr)	Potential to Emit: Hourly Emission Rate (lb/hr)	Potential to Emit: Annual Emission Rate (lbs/yr)	Potential to Emit: Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	1.06	2,086	1.04
TOTAL (CRUSHING)			1.06	2,086	1.04

Crushing and Screening Plant Operations	Potential to Emit: Hourly Emission Rate (lb/hr)	Potential to Emit: Annual Emission Rate (lbs/yr)	Potential to Emit: Annual Emission Rate (tons/yr)
Transfers	5.78	50,598	25.30
Screening	4.79	41,993	20.96
Crushing	1.06	2,086	1.04
TOTAL PLANT - Uncontrolled	11.63	94,677	47.31

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.

Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining controlled PTE from this operation.

Appendix A: Emission Calculations
PM2.5 POTENTIAL TO EMIT FOR CRUSHER AND SCREENING PLANT

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00160	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95333	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from
	0.00007	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.000013	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

Uncontrolled

Ef(front end loader)	0.00160	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.001100	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	0.03	288.470	0.14
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	5.73E-03	50.221	2.51E-02
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	5.73E-03	50.221	0.03
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	5.73E-03	50.221	0.03
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	7.16E-03	62.748	0.03
T6 - C2 to S1	551	4,826,760	7.16E-03	62.748	0.03
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	7.16E-03	62.748	3.14E-02
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	7.16E-03	62.748	0.03
TOTAL (TRANSFERS)			0.08	690.12	0.35

	Raw Material Maximum Throughputs		Potential to Emit		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Feed Hopper 1 (FH1)	441	3,863,160	0.71	6181.056	3.09
T2 - Feed Hopper 1 to PA (10"+) or Crusher CR1	441	3,863,160	4.85E-01	4249.476	2.12
T3 - Crusher CR1 to Conveyor C1	441	3,863,160	5.73E-03	4249.476	2.12
T4 - Conveyor CI to Feed Hopper FH2	441	3,863,160	5.73E-03	4249.476	2.12
T5 - Feed Hopper FH2 to Conveyor C2 or PB (5+)	551	4,826,760	7.16E-03	5309.436	2.65
T6 - C2 to S1	551	4,826,760	7.16E-03	5309.436	2.65
*T7 - S1 to C3 / T9 - S1 to C4 / T11 - S1 to C5	551	4,826,760	7.16E-03	5309.436	2.65
*T8 - C3 to P1 / T10 - C4 to P2 / T12 - C5 to P3	551	4,826,760	7.16E-03	5309.436	2.65
TOTAL (TRANSFERS)			1.23	40167.23	20.08

Controlled

Ef(screening controlled) =	0.00005	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

Uncontrolled

Ef(screening uncontrolled) =	0.00870	lbs/ton	(Source: Table 11.19.2-2, screening, AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
S1	551	4,826,760	0.03	241	0.12
TOTAL (SCREENING)			0.03	241	0.12

	Raw Material Maximum Throughputs		Potential to Emit		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
S1	551	4,826,760	4.79	41,993	21.00
TOTAL (SCREENING)			4.79	41,993	21.00

Controlled

Ef(crushing controlled) =	0.00010	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing (controlled), AP-42, 8/04)

Uncontrolled

Ef(crushing controlled) =	0.00010	lbs/ton	(Source: Table 11.19.2-2, tertiary crushing (controlled), AP-42, 8/04)

	Raw Material Maximum Throughputs		Potential to Emit[a]		
CRUSHING	Average Throughput (tons/hr)	Amount Crushed (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	0.044	386	0.193
TOTAL (CRUSHING)			0.044	386	0.193

	Raw Material Maximum Throughputs		Potential to Emit		
CRUSHING	Average Throughput (tons/hr)	Amount Crushed (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
CR 1 - Jaw Crusher	441	3,863,160	0.044	386	0.193
TOTAL (CRUSHING)			0.044	386	0.193

	Potential to Emit[a]		
Crushing and Screening Plant Operations	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	0.08	690	0.35
Screening	0.03	241	0.12
Crushing	0.04	386	0.19
TOTAL PLANT - Controlled	0.15	1,318	0.66

	Potential to Emit		
Crushing and Screening Plant Operations	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	1.23	40,167	20.08
Screening	4.79	41,993	20.96
Crushing	0.04	386	0.19
TOTAL PLANT - Uncontrolled	6.07	82,546	41.24

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.
Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining PTE from this operation.
b. AP-42 PM Uncontrolled Emission Factors from Table 11.19.2-2 are used a surrogate for PM2.5 Emission Factors because there is no data in the table for uncontrolled PM2.5 emissions

Appendix A: Emissions Calculations
Material Storage Piles
Crushing and Screening Operation

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

Ef = 1.7*(s/1.5)*(365-p)/235*(f/15)
where Ef = emission factor (lb/acre/day)
s = silt content (wt %)
p = 120 days of rain greater than or equal to 0.01 inches
f = 15 % of wind greater than or equal to 12 mph

Material Storage Pile	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)	Controlled PM (tons/yr)	Controlled PM10/PM2.5 (tons/yr)
P1 5" minus	5.3	6.26	3.63	4.15	1.45	2.07	0.73

Methodology
PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (365 days/yr)
PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%
*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)
**Maximum anticipated pile size (acres) provided by the source.
Note: The Filed Screen Oversized Pile (15" + size material), PA 10" +, and PB 5" + piles all contain large sized material that will have negligible emissions.
The P2 1/4" x 5" pile and the P3 1/4" minus pile contain only metallic material with negligible dust on the material. The only expected emissions from these piles are the drop point emissions already accounted for.
The Field Screen Pile material is an intermediate pile that is quickly feed into the crushing and screening operation. Erosion emissions are negligible.
**Control Efficiency of applied dust suppressant can be up to 90%, based on AP-42 Chapter 13.2.4 page 5. Control efficiency is conservatively assumed to be 50%.

POTENTIAL TO EMIT FOR PILES (cont.)
Gary, Indiana

Estimate surface area of long piles

Given:
M mass (tons)
H height (feet)
d bulk density (lbs/cu ft)

M = 150,000 tons For slag with fines
H = 45 feet
d = 110 lbs/cu ft

Ast = (6.536*H^2)+((46.12*(M-(6.536*((H^2)/K)^(3/2)))/H)

K = 723.5/(d^(2/3))

Asc = (6.536)*(H^2)
Mc = (H^3)/(10.56)
Mp = (M-((6.536)*(H^2)/K)^(3/2))
Asp = (46.12*Mp)/(H)

where d is the bulk density of the material

WEIGHT PILE M tons	HEIGHT PILE H feet	CONSTANT K	BULK DENSITY d lbs/cu ft	SURF AREA PILE Ast sq ft	SURF AREA PILE Ast acres	SURF AREA CONE Asc sq ft	WEIGHT CONE Mc tons	SURF AREA PRIZM Asp sq ft	WEIGHT PRIZM Mp tons
150,000	45	31.51448	110	158,148	3.63	13235	8629	144,912	141,393

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads
Crushing and Screening Operation

Company Name: **TMS International, LLC**
Address City IN Zip: **One North Broadway, Gary, IN 46402**
Permit Number: **089-36864-00132**
Reviewer: **Kelsey Bonhivert**
Date: **March 2016**

According to AP-42, Section 13.2.2 Unpaved Roads, November 2006, the PM/PM10/PM2.5 emission factors for unpaved roads can be estimated from the following equation:

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	6.0	6.0	6.0	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Iron and Steel Production)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	58.0	58.0	58.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)

Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	11.44	3.05	0.30	lb/mile
Mitigated Emission Factor, Eext =	7.52	2.00	0.20	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Emission Area	Vehicle Weight* (tons)	Unpaved Total* VMT	Unmitigated PTE (tpy)	Mitigated PTE (tpy)	Controlled PTE** (tpy)
Roads (TSP)	58	1,244	**7.11**	**4.68**	**3.56**
Roads (PM10)	58	1,244	**1.90**	**1.25**	**0.95**
Roads (PM2.5)	58	1,244	**0.19**	**0.12**	**0.09**

* This information is provided by the source.

Methodology

Total Vehicle Emissions (tons/yr) = Unpaved Total VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

**Control Efficiency of applied dust suppressant can be up to 80%, based on AP-42 Chapter 13.2.2 page 13. Control efficiency is conservatively assumed to be 50%.

Appendix A: Emission Calculations
TSP POTENTIAL TO EMIT FOR TCIMS FIELD SCREEN

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00880	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95333	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from Table 11.19.2-2)
	0.00041	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.00014	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

Uncontrolled

Ef(front end loader)	0.00880	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.00300	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	0.226	1982.331	0.991
T2 & T3 - Screen to Piles	551	4,826,760	0.077	675.746	0.338
TOTAL (TRANSFERS)			0.303	2,658	1.329

	Raw Material Throughputs		Potential to Emit		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	4.849	42475.488	21.238
T2 & T3 - Screen to Piles	551	4,826,760	1.653	14480.280	7.240
TOTAL (TRANSFERS)			6.502	56,956	28.478

Controlled

Ef(screening controlled) =	0.00220	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

Uncontrolled

Ef(screening uncontrolled) =	0.02500	lbs/ton	(Source: Table 11.19.2-2, screening, AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
SCREENING	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	1.212	10,619	5.309
TOTAL (SCREENING)			1.212	10,619	5.309

	Raw Material Throughputs		Potential to Emit		
SCREENING	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	13.775	120,669	60.335
TOTAL (SCREENING)			13.775	120,669	60.335

	Potential to Emit[a]		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	0.30	2,658	1.329
Screening	1.21	10,619	5.309
TOTAL PLANT - Controlled	1.52	13,277	**6.638**

	Potential to Emit		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	6.50	56,956	28.478
Screening	13.78	120,669	60.335
TOTAL PLANT - Uncontrolled	20.28	177,625	**88.812**

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.

Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining controlled PTE from this operation.

Appendix A: Emission Calculations
PM10 POTENTIAL TO EMIT FOR TCIMS FIELD SCREEN

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00430	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95818	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from Table 11.19.2-2)
	0.00018	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.000046	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	0.099	867.977	0.434
T2 & T3 - Screen to Piles	551	4,826,760	0.025	222.031	0.111
TOTAL (TRANSFERS)			0.124	1,090	0.545

Controlled

Ef(screening controlled) =	0.00074	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
SCREENING	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	0.408	3,572	1.786
TOTAL (SCREENING)			0.408	3,572	1.786

	Potential to Emit[a] Emissions		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	0.12	1,090	0.545
Screening	0.41	3,572	1.783
TOTAL PLANT- controlled	0.53	4,662	**2.328**

Uncontrolled

Ef(front end loader)	0.00430	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.001100	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	2.369	20755.068	10.378
T2 & T3 - Screen to Piles	551	4,826,760	0.606	5309.436	2.655
TOTAL (TRANSFERS)			2.975	26,065	13.032

Uncontrolled

Ef(screening controlled) =	0.00870	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit		
SCREENING	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	4.794	41,993	20.996
TOTAL (SCREENING)			4.794	41,993	20.996

	Potential to Emit Emissions		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	2.98	26,065	13.032
Screening	4.79	41,993	20.965
TOTAL PLANT - uncontrolled	7.77	68,057	**33.997**

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.

Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining controlled PTE from this operation.

Appendix A: Emission Calculations
PM2.5 POTENTIAL TO EMIT FOR TCIMS FIELD SCREEN

Company Name: TMS International, LLC
Address City IN Zip: One North Broadway, Gary, IN 46402
Part 70 Renewal No.: 089-36864-00132
Reviewer: Kelsey Bonhivert
Date: March 2016

Controlled

Ef(front end loader)	0.00160	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Control efficiency	0.95333	%	(1-Ef conveyor transfer controlled/Ef conveyor transfer uncontrolled from Table 11.19.2-2)
	0.00007	lbs/ton	(calculated EF controlled batch transfer is more conservative than the conveyor transfer controlled value)
Ef(conveyor transfer controlled) =	0.000013	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer (controlled), AP-42, 8/04)

Uncontrolled

Ef(front end loader)	0.00160	lbs/ton	(Source: Table 12.5-4, Batch drop low silt slag (uncontrolled), AP-42)
Ef(conveyor transfer uncontrolled) =	0.001100	lbs/ton	(Source: Table 11.19.2-2, conveyor transfer, AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	0.039	337.873	0.169
T2 & T3 - Screen to Piles	551	4,826,760	0.007	62.748	0.031
TOTAL (TRANSFERS)			0.046	401	0.200

	Raw Material Throughputs		Potential to Emit		
TRANSFERS	Throughput (tons/hr)	Amount Loaded or Transferred (tons/yr)	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
T1 - Load Screen (Batch transfer)	551	4,826,760	0.882	7722.816	3.861
T2 & T3 - Screen to Piles	551	4,826,760	0.606	5309.436	2.655
TOTAL (TRANSFERS)			1.488	13,032	6.516

Controlled

Ef(screening controlled) =	0.00005	lbs/ton	(Source: Table 11.19.2-2, screening (controlled), AP-42, 8/04)

Uncontrolled

Ef(screening uncontrolled) =	0.00870	lbs/ton	(Source: Table 11.19.2-2, screening, AP-42, 8/04)

	Raw Material Throughputs		Potential to Emit[a]		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	0.028	241	0.121
TOTAL (SCREENING)			0.028	241	0.121

	Raw Material Throughputs		Potential to Emit		
SCREENING	Average Throughput (tons/hr)	Amount Screened (tons/yr)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Screen	551	4,826,760	4.794	41,993	20.996
TOTAL (SCREENING)			4.794	41,993	20.996

	Potential to Emit[a]		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	0.05	401	0.200
Screening	0.03	241	0.121
TOTAL PLANT - controlled	0.07	642	**0.321**

	Potential to Emit		
Field Screen Operations	Hourly Emission Rate (lbs/hr)	Annual Emission Rate (lbs/yr)	Annual Emission Rate (tons/yr)
Transfers	1.49	13,032	6.516
Screening	4.79	41,993	20.996
TOTAL PLANT - uncontrolled	6.28	55,025	**27.513**

a. AP-42 footnote b of Table 11.19.2-2 - Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with appropriate control efficiency that best reflects the effectiveness of the controls employed.

Information provided by the source is an email on 10/29/13 states that based on random sampling the material in the legacy piles has a moisture content ranging from 1.8% to 2.58%. Therefore, based on the above note from AP-42 controlled emission factors are appropriate for determining PTE from this operation.
b. AP-42 PM Uncontrolled Emission Factors from Table 11.19.2-2 are used a surrogate for PM2.5 Emission Factors because there is no data in the table for uncontrolled PM2.5 emissions