INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: April 8, 2011

RE: Vigo Machine Shop Inc. / 167-30415-00152

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot12/3/07

IDEM

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Gary Michl
Vigo Machine Shop Inc.
3920 Locust St
Terre Haute, Indiana 47803

April 8, 2011

Re: 167-30415-00152
First Registration Notice-Only Change to
R167-28842-00152

Dear Gary Michl:

Vigo Machine Shop Inc. was issued a Registration No. R167-28842-00152 on July 12, 2010 for a stationary miscellaneous steel parts fabrication and surface coating operation located at 3920 Locust St, Terre Haute, Indiana 47803. On February 28, 2011, the Office of Air Quality (OAQ) received an application from the source regarding the construction of 4 natural gas-fired heaters. Pursuant to 326 IAC 2-5.5-6, the registration is hereby revised as follows, with deleted language as ~~strikeouts~~ and new language **bolded**:

1. This source submitted an application on February 28, 2011 relating to construction and operation of 4 natural gas-fired heaters, which is phase 1 of the compliance schedule from Condition D.1.2 of R167-28842-00152. The addition of these units to the registration is considered a notice-only change, since the potential emissions of regulated criteria pollutants and hazardous air pollutants are less than the ranges specified in 326 IAC 2-5.5-6(d)(10) and 326 IAC 2-5.5-6(d)(12), respectively. The uncontrolled/unlimited potential to emit of the entire source will continue to be within the threshold levels specified in 326 IAC 2-5.5-1(b)(1). No new state rules are applicable to this source. There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) or National Emission standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in this notice-only change.

...

A.2 Emission Units and Pollution Control Equipment Summary

...

(e) **Four (4) natural gas-fired heaters, approved for construction in 2011, with a maximum heat input capacity of 1.8 MMBtu/hr each**

...

C.3 Response to Excursions or Exceedances

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation 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 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 reasonable response steps taken.

C.4 General Record Keeping Requirements [326 IAC 2-6.1-5]

(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. 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.

SECTION D.1 OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(b) One (1) coal-fired boiler, identified as 1, constructed in 1998, with a maximum heat capacity of 3.375 MMBtu per hour.

(e) Four (4) natural gas-fired heaters, approved for construction in 2011, with a maximum heat input capacity of 1.8 MMBtu/hr each

(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 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate Matter [326 IAC 6.5]

Pursuant to 326 IAC 6.5-1-2(b)(1)(C), the particulate from the 3.375 MMBtu/hour coal-fired boiler **and the four (4) natural gas-fired heaters** shall not exceed 0.6 lb/MMBtu.

...

The source shall continue to operate according to 326 IAC 2-5.5. Please find enclosed the revised registration. A copy of the registration is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Marcia Earl, at (800) 451-6027, press 0 and ask for Marcia Earl or extension 3-0863, or dial (317) 233-0863.

Sincerely,

Alfred C. Dumaual, Ph. D., Section Chief
Permits Branch
Office of Air Quality

ACD/me

Attachment: Revised Registration
Revised calculations

cc: File - Vigo County
Vigo County Health Department
Compliance and Enforcement Branch
Billing, Licensing and Training Section

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REGISTRATION
OFFICE OF AIR QUALITY

Vigo Machine Shop Inc.
3920 Locust St
Terre Haute, Indiana 47803

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. R167-28842-00152	
Original signed by: Alfred C. Dumaual, Ph.D., Section Chief Permits Branch Office of Air Quality	Issuance Date: July 12, 2010

First Registration Notice-Only Change No.167-30415-00152	
Issued by: Alfred C. Dumaual, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: April 8, 2011

SECTION A SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary miscellaneous steel parts fabrication and surface coating operations.

Source Address:	3920 Locust St, Terre Haute, Indiana 47803
General Source Phone Number:	(812) 235-8393
SIC Code:	7692
County Location:	Vigo County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

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

(a) One (1) steel surface coating operation, identified as Grayco airless sprayer, constructed in 2004, with a maximum capacity of 500 gallons of coatings per year.

(b) One (1) coal-fired boiler, identified as 1, constructed in 1998, with a maximum heat capacity of 3.375 MMBtu per hour.

(c) Arc welding process consisting of 10 stations, with a maximum electrode consumption of 3 pounds per hour per station.

(d) One (1) Oxyacetylene flame cutting process, consisting of 1 station, with a maximum cutting rate of 5 inches per minute and maximum metal thickness of 2.5 inches.

(e) Four (4) natural gas-fired heaters, approved for construction in 2011, with a maximum heat input capacity of 1.8 MMBtu/hr each

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration 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 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this registration.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.

(d) For any cause which establishes in the judgment of the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to Registration No. 167-28842-00152 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

(a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.

(b) The annual notice shall be submitted in the format attached no later than March 1 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, IN 46204-2251

(c) The notification 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.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration 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 Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant 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 Registrant shall implement the PMPs.

(b) 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 Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.

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

SECTION C **SOURCE OPERATION CONDITIONS**

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of forty percent (40%) 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 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

C.3 Response to Excursions or Exceedances

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation 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 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 reasonable response steps taken.

C.4 General Record Keeping Requirements [326 IAC 2-6.1-5]

(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. 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.

SECTION D.1 **OPERATION CONDITIONS**

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(b) One (1) coal-fired boiler, identified as 1, constructed in 1998, with a maximum heat capacity of 3.375 MMBtu per hour.

(e) Four (4) natural gas-fired heaters, approved for construction in 2011, with a maximum heat input capacity of 1.8 MMBtu/hr each

(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 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate Matter [326 IAC 6.5]

Pursuant to 326 IAC 6.5-1-2(b)(1)(C), the particulate from the 3.375 MMBtu/hour coal-fired boiler and the four (4) natural gas-fired heaters shall not exceed 0.6 lb/MMBtu.

D.1.2 Compliance Schedule

The Registrant shall comply with the following compliance Schedule to come into compliance with 326 IAC 6.5 and Condition d.1.1:

(a) No later than forty-five (45) days after issuance of Registration No.: 167-28842-00152, the Registrant shall finalize contracts to install natural gas service at the source.

(b) No later than November 1, 2010, the Registrant shall install the first phase of radiant gas heaters at the source.

(c) The Registrant shall submit an application to operate the first phase of radiant heaters at the source no later than thirty (30) days prior to initial operation of the first phase of radiant heaters.

(d) The coal-fired boiler shall only operate during production hours, Monday through Friday, 6 A.M. until 6 P.M. during the 2010-2011 heating season.

(e) The Registrant shall install the second phase of gas heaters no later than October 31, 2011.

(f) The Registrant shall submit an application to operate the second phase of radiant heaters at the source no later than thirty (30) days prior to initial operation of the second phase of radiant heaters.

(g) The coal-fired boiler shall only operate for emergency reasons (e.g., an extended severe cold period) during the 2011-2012 heating season. The burning of coal for heating purposes shall make up less than 10% of heating sources during the 2011-2012 heating season.

(h) The coal-fired boiler shall be removed from service no later than March 1, 2012.

(i) The Registrant shall report to IDEM, OAQ at the address in Section C - General Reporting Condition the above items (a), (b), (e), (g) and (h) no later than five (5) business days of accomplishing each task.

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

Compliance Monitoring Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.4 Visible Emissions Notations

(a) Visible emission notations of the boiler stack exhaust shall be performed once per day during normal daylight operations when burning coal. 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 Registrant shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Registrant's obligation 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 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.2(g), the Registrant shall maintain records of coal-fired boiler hours of operation during the 2011-2012 heating season. The Registrant shall notify IDEM, OAQ, if coal use exceeds 10% of total heating sources.

(b) To document the compliance status with Condition D.1.4, the Registrant shall maintain daily records of visible emission notations of the boiler stack. The Registrant 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 boiler did not operate that day).

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

SECTION D.2 **OPERATION CONDITIONS**

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(b) One (1) steel surface coating operation, identified as Grayco airless sprayer, constructed in 2004, with a maximum capacity of 500 gallons of coatings per year.

(c) Arc welding process consisting of 10 stations, with a maximum electrode consumption of 3 pounds per hour per station.

(d) One (1) Oxyacetylene flame cutting process, consisting of 1 station, with a maximum cutting rate of 5 inches per minute and maximum metal thickness of 2.5 inches.

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

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.2.1 Particulate Matter [326 IAC 6.5]

Pursuant to 326 IAC 6.5-1-2(a), the particulate matter emissions from the surface coating operations and the welding and flame cutting operations shall not exceed 0.03 grain per dry standard cubic foot (gr/dscf), each.

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

REGISTRATION
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Vigo Machine Shop Inc.
Address:	3920 Locust Street
City:	Terre Haute, Indiana 47803
Phone Number:	(812) 235-8393
Registration No.:	167-28842-00152

I hereby certify that Vigo Machine Shop Inc. is :

- ☐ still in operation.
- ☐ no longer in operation.

I hereby certify that Vigo Machine Shop Inc. is :

- ☐ in compliance with the requirements of Registration No. 167-28842-00152.
- ☐ not in compliance with the requirements of Registration No. 167-28842-00152.

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Appendix A: Emission Summary

Company Name: Vigo Machine Shop Inc.
Address City IN Zip: 3920 Locust St. Terre Haute, Indiana 47803
Permit No: 167-30415-00152
Reviewer: Marcia Earl
Date: April 2011

Uncontrolled Emissions

Emission Units	PM	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO	NOx	HAPs	Worst Case Single HAP
Natural Gas Combustion	0.06	0.24	0.24	0.02	0.17	2.65	3.15	0.06	Hexane 0.06
Coal Fired Boiler	10.08	4.17	4.17	11.46	0.87	7.39	6.38	0.91	HCl 0.81
Surface Coating	0.39	0.39	0.39	0.00	1.49	0.00	0.00	0.44	Methanol 0.21
Welding	5.26	5.26	5.26	0.00	0.00	0.00	0.00	1.45	Manganese 1.45
Total	15.80	10.06	10.06	11.48	2.54	10.04	9.54	2.86	Manganese 1.45

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **Vigo Machine Shop Inc.**
Address City IN Zip: **3920 Locust St. Terre Haute, Indiana 47803**
Permit Number: **167-30415-00152**
Reviewer: **Marcia Earl**
Date: **April 2011**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr	
7.2	1000	63.1	4 heaters at 1.8 MMBtu/hr

	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	7.60	0.60	100	5.50	84
					**see below		
Potential Emission in tons/yr	0.06	0.24	0.24	0.02	3.15	0.17	2.65

*PM emission factor is filterable PM only. PM10PM2.5 emission factors are filterable and condensable 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/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: **Vigo Machine Shop Inc.**
Address City IN Zip: **3920 Locust St. Terre Haute, Indiana 47803**
Permit Number: **167-30415-00152**
Reviewer: **Marcia Earl**
Date: **April 2011**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr	
7.2	1000	63.1	4 heaters at 1.8 MMBtu/hr

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
Potential Emission in tons/yr	6.62E-05	3.78E-05	2.37E-03	0.06	1.07E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03
Potential Emission in tons/yr	1.58E-05	3.47E-05	4.42E-05	1.20E-05	6.62E-05

TOTAL HAPs **0.06**

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emissions Calculations
Coal combustion: Underfeed Stoker

Company Name: Vigo Machine Shop Inc.
Address City IN Zip: 3920 Locust St. Terre Haute, Indiana 47803
Permit No./Plt ID: 167-30415-00152
Reviewer: Marcia Earl
Date: April 2011

Heat Input Capacity MMBtu/hr	Heat Content of Coal Btu/lb of Coal	Potential Throughput tons/year	Weight % Sulfur in Fuel
3.375	11,000	1,344	S = 0.55 %

	Pollutant							
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO	HCl	HF
Emission Factor in lb/ton	15.0	6.20	17.1 *(31S)*	9.5	1.30	11.00	1.20	0.15
Potential Emission in tons/yr	10.08	4.17	11.46	6.38	0.87	7.39	0.81	0.10
Potential Emission in lbs/MMBtu	0.68	0.28	0.78	0.43	0.06	0.50	0.05	0.01

Methodology

*The PM emission factor is filterable PM only. The PM10/PM2.5 emission factor is filterable and condensable PM10 combined.
VOC emission factor is from Table 1.1-19 (Total non-methane organic carbon).
Potential Throughput (tons/year) = heat Input Capacity (MMBtu/hr * 10 ^ 6 Btu (MMBtu) / Heat Contrent coal (Btu/lb) / 2000 lb/ton * 8,760 /yr
Emission Factors from AP-42, Chapter 1.1 for industrial overfeed stoker SCC 1-02-002-05/25 (Supplement E, 9/98)
Additional emission factors for commercial/institutional and electric generation boilers are available in AP-42, Chapter 1.1.
HAPs emission factors are available in AP-42, Chapter 1.1.
Emission (tons/yr) = Throughput tons per year x Emission Factor (lb/ton) / 2,000 lb/ton
Emissions (lbs/MMBtu) = 10^6 Btu/MMBtu / Heat Content of Coal (Btu/lb) / 2000 lb/ton x Emission Factor (lb/ton)
HCl = Hydrogen Chloride
HF = Hydrogen Fluoride

Appendix A: Emissions Calculations
VOC, Particulate and HAPs
From Surface Coating Operations

Company Name: **Vigo Machine Shop Inc.**
Address City IN Zip: **3920 Locust St. Terre Haute, Indiana 47803**
Permit Number: **167-30415-00152**
Reviewer: **Marcia Earl**
Date: **April 2011**

VOC and Particulate

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Primer	11.3	31.00%	0.0%	31.0%	0.0%	47.00%	0.02000	1.000	3.51	3.51	0.07	1.69	0.31	0.17	7.47	75%
Safety Yellow	8.4	39.89%	0.0%	39.9%	0.0%	49.00%	0.04000	1.000	3.36	3.36	0.13	3.23	0.59	0.22	6.86	75%
Lacquer Thinner	6.8	100.00%	0.0%	100.0%	0.0%	0.00%	0.02000	1.000	6.80	6.80	0.14	3.26	0.60	0.00	na	100%
Total											**0.34**	**8.18**	**1.49**	**0.39**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Sum of all coatings used

HAPs

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	**Total (ton/yr)**
Primer	11.3	0.020000	1.00	5.00%	0.01%	0.00%	0.05	0.00	0.00	**0.05**
Safety Yellow	8.4	0.040000	1.00	1.48%	0.00%	0.00%	0.02	0.00	0.00	**0.02**
Lacquer Thinner	6.8	0.020000	1.00	1.05%	26.05%	35.00%	0.01	0.16	0.21	**0.37**
Total							**0.08**	**0.16**	**0.21**	**0.44**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Vigo Machine Shop Inc.
Address City IN Zip: 3920 Locust St. Terre Haute, Indiana 47803
Permit Number: 167-30415-00152
Reviewer: Marcia Earl
Date: April 2011

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Submerged Arc	10	3		0.036	0.011			1.080	0.330	0.000	0	0.330
Metal Inert Gas (MIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Stick (E7018 electrode)	0	0		0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	1	2.5	5	0.1622	0.0005	0.0001	0.0003	0.122	0.000	0.000	0.000	0.001
Oxymethane	0	0	0	0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								1.20				0.33
Potential Emissions lbs/day								28.84				7.94
Potential Emissions tons/year								5.26				1.45

METHODOLOGY

*Emission Factors are default values for carbon steel.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Gary P. Michl
Vigo Machine Shop
3920 Locust St
Terre Haute, IN 47803

DATE: April 8, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Notice Only Change
167-30415-00152

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	DPABST 4/8/2011 Vigo Machine Shop Inc. 167-30415-00152 (Final)			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee / Remarks
1		Gary P Michl Vigo Machine Shop Inc. 3920 Locust St Terre Haute IN 47803 (Source CAATS) (CONFIRM DELIVERY)									
2		Mr. Charles L. Berger Attorney Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 *(Affected Party)*									
3		Vigo County Board of Commissioners County Annex, 121 Oak Street Terre Haute IN 47807 *(Local Official)*									
4		Terre Haute City Council and Mayors Office 17 Harding Ave Terre Haute IN 47807 *(Local Official)*									
5		Vigo County Health Department 147 Oak Street Terre Haute IN 47807 *(Health Department)*									
6		J.P. Roehm PO Box 303 Clinton IN 47842 *(Affected Party)*									
7		Deb Reeves Vigo County Air Poliution Control 121 Oak Terre Haute IN 47807 *(Local Official)*									
8		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)*									
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