



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: February 2, 2006
RE: Tenneco Automotive- Ligonier / 113-22418-00077
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

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 IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of 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
FN-REGIS.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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Governor

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Mr. Kent Herber
Tenneco Automotive - Ligonier
1490 Gerber Street
Ligonier, Indiana 46767

February 2, 2006

Re: Revised Registration No.
113-22418-00077

Dear Mr. Herber:

Tenneco Automotive - Ligonier, located at 1490 Gerber Street, Ligonier, Indiana 46767 was issued Registration No. 113-14290-00077 on May 10, 2001, a Review Request 113-15192-00077 on February 9, 2002, and a Review Request 113-16223-00077 on July 24, 2002 for a muffler systems and automotive parts manufacturing plant. A letter requesting the addition of four (4) MIG welding stations, four (4) MIG/TIG hand welding stations and five (5) robotic welding stations was received on December 27, 2005. Additional information requesting that one (1) tube welder be included in this review was received on January 17, 2006. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following equipment used in the muffler systems and automotive parts manufacturing plant is classified as registered:

(a) Muffler Assembly

- (1) Thirty-four (34) MIG welding stations, each station is capable of using 11.6 pounds of wire per hour (lbs/hr);
- (2) Forty-seven (47) MIG welding stations, each station is capable of using 12.3 lbs/hr welding wire;
- (3) Ten (10) robotic welding stations, each station is capable of using 12.3 lbs/hr welding wire;
- (4) Thirty-Three (33) MIG/TIG hand welding stations, each station is capable of using 12.3 lbs/hr welding wire;
- (5) Two (2) tube mill induction welding stations, which have a capacity of 22,500 lbs/hr of stainless steel, each;
- (6) Two (2) stick welding units, that will be used for repair; and
- (7) Two (2) tube mill mist collectors.

The Particulate Matter emissions from these welding stations are controlled by six (6) baghouses, identified as T-1, T-2, T-3, T-4, T-5 and T-6.

- (b) Three (3) natural gas-fired air make-up units, each has a heat input capacity of 4.125 million British thermal Units per hour (mmBtu/hr); and

(c) One (1) natural gas-fired air make-up unit, with a heat input capacity of 3.85 mmBtu/hr.

The following conditions shall be applicable:

- (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:
- (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 15 minutes (60 readings) in a 6-hour period 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.
- (2) Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes),
- (a) the PM emissions from the combined welding operation shall be limited to 1.2 pounds per hour at a total process weight rate of 0.16 ton/hour. This limit shall be determined using the following equation:

Interpolated and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$
 where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour
 - (b) The baghouses shall be in operation at all times the welding operation is in operation, in order to comply with this limit.

This registration is a revised registration issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3)). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, IN 46204-2251**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

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.

Sincerely,
Original signed by

Nysa L. James, Section Chief
Permits Branch
Office of Air Quality

JF

cc: File - Noble County

Noble County Health Department
Air Compliance – Doyle Houser
Northern Regional Office
Permit Review Section 1 – James Farrell
Compliance Data Section

Registration Annual Notification

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

Company Name:	Tenneco Automotive – Ligonier
Address:	1490 Gerber Street
City:	Ligonier, Indiana 46767
Authorized individual:	Kent Herber
Phone #:	(260) 894-9400
Registration #:	113-22418-00077

I hereby certify that Tenneco Automotive - Ligonier is still in operation and is in compliance with the requirements of Registration 113-22418-00077.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration Revision

Source Background and Description

Source Name: Tenneco Automotive - Ligonier
Source Location: 1490 Gerber Street, Ligonier, Indiana 46767
County: Noble
SIC Code: 3417
Operation Permit No.: 113-22418-00077
Permit Reviewer: James Farrell

The Office of Air Quality (OAQ) has reviewed an application from Tenneco Automotive - Ligonier relating to the operation of a muffler systems and automotive parts manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

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

- (a) Muffler Assembly
 - (1) Thirty-four (34) MIG welding stations, each station is capable of using 11.6 pounds of wire per hour (lbs/hr);
 - (2) Forty-three (43) MIG welding stations, each station is capable of using 12.3 lbs/hr welding wire;
 - (3) Five (5) robotic welding stations, each station is capable of using 12.3 lbs/hr welding wire;
 - (4) Twenty-nine (29) MIG/TIG hand welding stations, each is capable of using 12.3 lbs/hr welding wire;
 - (5) One (1) tube mill induction welding stations, which have a capacity of 22,500 lbs/hr of stainless steel, each;
 - (6) Two (2) stick welding units, that will be used for repair; and
 - (7) One (1) tube mill mist collectors.

The Particulate Matter emissions from these welding stations are controlled by six (6) baghouses, identified as T-1, T-2, T-3, T-4, T-5 and T-6.
- (b) Three (3) natural gas-fired air make-up units, each has a heat input capacity of 4.125 million British thermal Units per hour (mmBtu/hr); and
- (c) One (1) natural gas-fired air make-up unit, with a heat input capacity of 3.85 mmBtu/hr.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

This source plans to add the following emission units:

- (a) Four (4) MIG welding stations, each station is capable of using 12.3 lbs/hr welding wire;
- (b) Five (5) robotic welding stations, each station is capable of using 12.3 lbs/hr welding wire;
- (c) Four (4) MIG/TIG hand welding stations, each is capable of using 12.3 lbs/hr welding wire;
- (d) One (1) tube mill induction welding stations, which have a capacity of 22,500 lbs/hr of stainless steel,
- (e) One (1) tube mill mist collectors.

The potential to emit of all criteria pollutants from the new units are within registration levels.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Registration 113-14290-00077, issued May 10, 2001.

All conditions from previous approvals were incorporated into this permit.

Justification for the Revision

The Registration is being modified through a Registration Revision pursuant to 326 IAC 2-5.5-6(h).

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation 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.

A complete application for the purposes of this review was received on January 17, 2006.

Emission Calculations

See Appendix A, pages 1 through 3, of this document for detailed emission calculations.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
001	Weld cells dept 14, 24, 25, 26, 37, 41, 43, 44, 46	19.8	3 x 2.2	15,200	72
002	Weld cells dept 12, 17, 20, 21, 29, 40, 41b, 42, 45,49, 55, 95	19.8	3 x 2.2	13, 500	72
003	Weld cells dept 11, 12, 29, 55, 95	19.8	3 x 3.3	15,600	72
004	Weld cells dept 7, 9, 10, 13, 22, 27, 29, 33, 38, 49	19.8	3 x 2.2	14,200	72
005	Weld cells dept (inactive)	19.8	3 x 2.2	7,800	72
006	Weld cells dept 4, 28, 48, 81	17.1	3 x 2	15,000	72

Potential To Emit of the Entire Source Before Controls Including this Revision

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	15.50
PM-10	15.90
SO ₂	0.00
VOC	0.40
CO	6.00
NO _x	7.11

HAP's	Potential To Emit (tons/year)
Manganese	0.50
Chromium	0.45
Nickel	0.26
TOTAL	1.21

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than twenty-five (25) tons per year and the potential to emit of particulate matter is greater than 5 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.

- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (c) **Fugitive Emissions**
 Since this type of operation is not one to the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity):

Process/facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Natural Gas Combustion	0.10	0.50	0.00	0.40	6.00	7.11	0.0
Welding Operation	15.40	15.40	0.0	0.0	0.0	0.0	0.0
Total Emissions	15.50	15.90	0.00	0.40	6.00	7.11	0.0

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

County Attainment Status

The source is located in Noble County.

Pollutant	Status
PM-10	attainment
PM-2.5	attainment
SO ₂	attainment
NO ₂	attainment
1-hour Ozone	attainment
8-hour Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to the ozone. Noble County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) Noble County has been classified as attainment for PM_{2.5}. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM _{2.5} emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM_{2.5} emissions, it has directed states to regulate PM₁₀ emissions as surrogate for PM_{2.5} emissions.
- (c) Noble County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the second air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this registration.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) included in this registration.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The welding operation of this muffler systems and automotive parts manufacturing plant will emit less than 10 tons per year of a single HAP and 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)

The source is not required to have an operating permit under 326 IAC 2-7, does not emit lead into the ambient air at levels ≥ 5 tpy, and is located in Noble County. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

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 permit:

- (1) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (2) 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.

State Rule Applicability - Individual Facilities

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

This rule mandates a PM emission limit of 1.2 pound per hour for the combined welding operation at a total process weight rate of 0.16 ton/hour, using the following equation:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouses shall be in operation at all times the welding operation is in operation, in order to comply with this limit.

326 IAC 6-2-4 (Emission Limitations for facilities specified in 326 IAC 6-2-1(d))

The various air make-up units are not sources of indirect heating. Therefore, 326 IAC 6-2-4 does not apply.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The volatile organic compound potential emissions from this source are less than 25 tons per year. Therefore, 326 IAC 8-1-6 does not apply.

326 IAC 8 (Volatile Organic Sources)

There are no other provisions in article 326 IAC 8 that apply to this source that manufactures muffler systems and automotive parts. Therefore, no other 326 IAC 2-8 provisions apply.

Registration Revision Changes

The registration is hereby revised as follows with deleted language indicated with strikeout and new language as bold type:

- (a) Muffler Assembly
- (1) ...
 - (2) ~~Forty-three (43)~~ **Forty-seven (47)** MIG welding stations, each station is capable of using 12.3 lbs/hr welding wire;
 - (3) ~~Five (5)~~ **Ten (10)** robotic welding stations, each station is capable of using 12.3 lbs/hr welding wire;
 - (4) ~~Twenty-nine (29)~~ **Thirty-three (33)** MIG/TIG hand welding stations, each station is capable of using 12.3 lbs/hr welding wire;
 - (5) **Two (2)** ~~One (1)~~ tube mill induction welding stations, which ~~have~~ **has** a capacity of 22,500 lbs/hr of stainless steel, **each**;
 - (6) ...
 - (7) **Two (2)** ~~One (1)~~ tube mill mist collectors.

- (b) The conditions are revised as follows:
- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary **Alternative Opacity Limitations Exemptions**), opacity shall meet the following:
- (a) ...
 - (b) ...
- (2) Pursuant to 326 IAC 6-3 (**Particulate Emission Limitations for Manufacturing Processes Operations**),
- (a) the PM emissions from the **combined** welding operation shall be limited to 1.24 pounds per hour at a **total** process weight rate of 0.164 ton/hour. This limit shall be determined using the following equation:
- Interpolated and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:
- $$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$
- (b) The baghouses shall be in operation at all times the welding operation is in operation, in order to comply with this limit.

(c) The calculation table of the Welding Emissions is revised as follows:

Welding Emissions:

SUMMARY OF EMISSIONS (TONS/YEAR)										
Type of Welding/Wire	Throughput Pounds/Hour	Emission Factor	PM/PM10 Emissions		Manganese		Chromium		Nickel	
			Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Hand Welding Cells MIG 409 (GMAW) E308-16	407 121.8	10.8 lbPM/PM10/1000lb; 0.390.32 lb Cr/1000 lb; 0.250.346 lb Mn/1000 lb; 0.0430.184 lb Ni/1000 lb	5.06 5.76	0.01	0.42 0.18	0.0	0.20 0.17	0.0	0.02 0.10	0.0
Welding Cells Stick 409 (SMAW) E6011	1.20	38.4 lbPM/PM10/1000lb; 0.005 lb Cr/1000 lb; 0.998 lb Mn/1000 lb; 0.005 lb Ni/1000 lb;	0.20	0.0	0.01	0.0	0.0	0.0	0.0	0.0
Melton(torch units) 409 (GMAW) E308-16	88.3 96.5	10.8 lbPM/PM10/1000lb; 0.390.32 lb Cr/1000 lb; 0.250.346 lb Mn/1000 lb; 0.0430.184 lb Ni/1000 lb	4.2 4.56	0.004 0.005	0.40 0.15	0.0	0.45 0.14	0.0	0.047 0.08	0.0
Robotic Welders 409 (GMAW) E308-16	48.5 37	10.8 lbPM/PM10/1000lb; 0.390.32 lb Cr/1000 lb; 0.250.346 lb Mn/1000 lb; 0.0430.184 lb Ni/1000 lb	0.88 1.75	0.0	0.02 0.06	0.0	0.03 0.05	0.0	0.0 0.03	0.0
Melton Hego Welders E308-16	65.9	10.8 lbPM/PM10/1000lb; 0.390.32 lb Cr/1000 lb; 0.250.346 lb Mn/1000 lb; 0.0430.184 lb Ni/1000 lb	3.11	0.003	0.07 0.10	0.0	0.44 0.09	0.0	0.0 0.05	0.0
Two Tube Mills	Uses no wire. Sheet steel is rolled and heated by induction and formed into a continuous tube. Coolant evaporates during the welding but a mist collector controls emissions and then exhausted inside the building.									
TOTAL			43.45 15.38	0.047 0.018	0.32 0.50	0.0	0.29 0.45	0.0	0.037 0.26	0.0

Conclusion

The operation of this muffler systems and automotive parts manufacturing source shall be subject to the conditions of the attached Registration Revision 113-22418-00077.

**Appendix A: Emissions Calculations
 Natural Gas Combustion Only
 MM BTU/HR <100
 Small Industrial Boiler**

Company Name: Tenneco Automotive - Ligonier
Address City IN Zip: 1490 Gerber St., Ligonier, Indiana 46767
Permit Number: 22418
Plt ID: 113-00077
Reviewer: James Farrell
Date: 23-Jan-06

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

16.2

141.9

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.1	0.5	0.0	7.1	0.4	6.0

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 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

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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 (SUPPLEMENT D 3/98)

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

gasc99.xls 9/95

See page 2 for HAPs emissions calculations.

updated 4/99

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

Company Name: Tenneco Automotive - Ligonier
Address City IN Zip: 1490 Gerber St., Ligonier, Indiana 46767
Permit Number: 22418
Plt ID: 113-00077
Reviewer: James Farrell
Date: 23-Jan-06

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.490E-04	8.515E-05	5.322E-03	1.277E-01	2.413E-04

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.548E-05	7.805E-05	9.934E-05	2.696E-05	1.490E-04

Methodology is the same as page 1.

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
Welding Emissions
Company Name: Tenneco Automotive - Ligonier
Address City IN Zip: 1490 Gerber St., Ligonier, Indiana 46760
Permit Number: 22418
Pit ID: 113-00077
Reviewer: James Farrell
Date: 23-Jan-06

SUMMARY OF EMISSIONS (TONS/YEAR)										
Type of Welding/Wire	Throughput (Pounds/Hour)	Emission Factor	PM/PM10 Emissions		Manganese		Chromium		Nickel	
			Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Hand Welding Cells MIG 409 (GMAW) E308-16	121.8	10.8 lbPM/PM10/1000lb; 0.32 lb Cr/1000 lb; 0.346 lb Mn/1000 lb; 0.184 lb Ni/1000 lb	5.76	0.01	0.18	0.0	0.17	0.0	0.10	0.0
Welding Cells Stick 409 (SMAW) E6011	1.20	38.4 lbPM/PM10/1000lb; 0.005 lb Cr/1000 lb; 0.998 lb Mn/1000 lb; 0.005 lb Ni/1000 lb;	0.20	0.0	0.01	0.0	0.0	0.0	0.0	0.0
Melton(torch units) 409 (GMAW) E308-16	96.5	10.8 lbPM/PM10/1000lb; 0.32 lb Cr/1000 lb; 0.346 lb Mn/1000 lb; 0.184 lb Ni/1000 lb	4.56	0.005	0.15	0.0	0.14	0.0	0.08	0.0
Robotic Welders 409 (GMAW) E308-16	37	10.8 lbPM/PM10/1000lb; 0.32 lb Cr/1000 lb; 0.346 lb Mn/1000 lb; 0.184 lb Ni/1000 lb	1.75	0.0	0.06	0.0	0.05	0.0	0.03	0.0
Melton Hego Welders E308-16	65.9	10.8 lbPM/PM10/1000lb; 0.32 lb Cr/1000 lb; 0.346 lb Mn/1000 lb; 0.184 lb Ni/1000 lb	3.11	0.003	0.10	0.0	0.09	0.0	0.05	0.0
Two Tube Mills	Uses no wire. Sheet steel is rolled and heated by induction and formed into a continuous tube. Coolant evaporates during the welding but a mist collector controls emissions and then exhausted inside the building.									
TOTAL			15.38	0.018	0.50	0.0	0.45	0.0	0.26	0.0