June 20, 2002

David A. Peffley
Lower Great Lakes Kenworth, Inc.
(d/b/a Whiteford Trailer & Equipment Co.)
P.O. Box 3067
South Bend, IN 46619-0067

Re: Registered Construction and Operation Status
141-16065-00093

Dear Mr. Peffley:

The application from Lower Great Lakes Kenworth, Inc., received on May 28, 2002, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that your emission source, a truck trailer repair shop located at 137 South Olive Street, South Bend, IN 46619-2103, is classified as registered. This emission source consists of the following facilities:

(a) one (1) paint spray booth, identified as B-1, with overspray controlled by dry filters.

(b) one (1) sand blasting operation, identified as D-1, with particulate matter emissions controlled by a baghouse.

(c) one (1) natural gas-fired steam generator, identified as 001, rated at 0.35 million Btu per hour heat input.

(d) one (1) natural gas-fired steam generator, identified as 002, rated at 0.70 million Btu per hour heat input.

(e) one (1) natural gas-fired air makeup unit rated at 3.0 million Btu per hour heat input.

(f) seventeen (17) natural gas-fired heaters totaling 3.75 million Btu per hour heat input.

(g) woodworking operations, including sawing and planing operations.

(h) metalworking operations, including sawing, welding, and flame-cutting operations.

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 Exemptions), opacity shall meet the following:

   (a) 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.

   (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 non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions from the paint spray booth, abrasive blasting operations, woodworking operations and metalworking operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

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

For a process weight rate of 1.17 tons per hour, this equation provides an emission limit of 4.55 pounds per hour.

3. Pursuant to 326 IAC 2-6 (Emission Reporting), the source shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

This registration is the second air approval issued to this source. Michiana Trailer Sales and Service, Inc. was issued a permit for this emission source on August 16, 1995. All prior approvals are now considered obsolete as they have been included in this registration.

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:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

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

Any change or modification which may increase the potential volatile organic compound (VOC) emissions to 25 tons per year or more, increase the potential emissions of any single hazardous air pollutant (HAP) to 10 tons per year or more, or increase the potential emissions of any combination of HAP to 25 tons per year or more must be approved by the Office of Air Quality (OAQ) before such change may occur.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ARD

cc: File - St. Joseph County
St. Joseph County Health Department
IDEM - Northern Regional Office
Air Compliance Section Inspector - Rick Reynolds
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

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:	Lower Great Lakes Kenworth, Inc.
Address:	137 South Olive Street
City:	South Bend, IN 46619-2103
Authorized individual:	
Phone #:	
Registration #:	141-16065-00093

I hereby certify that Lower Great Lakes Kenworth, Inc. is still in operation and is in compliance with the requirements of Registration 141-16065-00093.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	**Lower Great Lakes Kenworth, Inc.**
Source Location:	**137 South Olive Street, South Bend, IN 46619-2103**
County:	**St. Joseph**
SIC Code:	**7538**
Operation Permit No.:	**141-4464-00093**
Operation Permit Issuance Date:	**August 16, 1995**
Revision No.:	**141-16065-00093**
Permit Reviewer:	**Allen R. Davidson**

On May 28, 2002, the Office of Air Quality (OAQ) received an application from Lower Great Lakes Kenworth, Inc. relating to the operation of a truck trailer repair shop located at 137 South Olive Street, South Bend, IN 46619-2103. This emission source consists of the following facilities:

(a) one (1) paint spray booth, identified as B-1, with overspray controlled by dry filters.

(b) one (1) sand blasting operation, identified as D-1, with particulate matter emissions controlled by a baghouse.

(c) one (1) natural gas-fired steam generator, identified as 001, rated at 0.35 million Btu per hour heat input.

(d) one (1) natural gas-fired steam generator, identified as 002, rated at 0.70 million Btu per hour heat input.

(e) one (1) natural gas-fired air makeup unit rated at 3.0 million Btu per hour heat input.

(f) seventeen (17) natural gas-fired heaters totaling 3.75 million Btu per hour heat input.

(g) woodworking operations, including sawing and planing operations.

(h) metalworking operations, including sawing, welding, and flame-cutting operations.

History

Michiana Trailer Sales and Service, Inc. was issued a construction and operation permit for this emission source on August 16, 1995. This application is the first revision since that date. The emission source is now owned by Lower Great Lakes Kenworth, Inc. The application seeks only a change in ownership.

Due to major permit review rule changes in December, 1998, OAQ is reviewing the emission source according to the revised rules to determine whether the permit level has changed.

Enforcement Issues

There are no enforcement actions pending against this emission source.

Recommendation

The staff recommends to the Commissioner that the emission source be issued a registration. 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 May 28, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. (5 pages)

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source 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 following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	14.1
PM-10	14.1
SO_2	0.0
VOC	21.1
CO	2.9
NOX	3.4

HAP's	Potential To Emit (tons/year)
Toluene	5.96
Methyl Isobutyl Ketone	2.66
Xylene	2.03
Ethylbenzene	0.34
TOTAL	10.98

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) a single hazardous air pollutant (HAP) is less than ten (10) tons per year and the potential to emit a combination of HAP is less than twenty-five (25) tons per year. Also, the potential to emit particulate matter (PM) and volatile organic compounds (VOC) are each less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

The potential to emit particulate matter (PM) and volatile organic compounds (VOC) are each less than 25 tons per year, but the potential to emit PM is greater than five tons per year and the potential to emit VOC is greater than 10 tons per year. Therefore, the existing source is classifiable as a registration under 326 IAC 2-5.5.

This source is not a major source for Prevention of Significant Deterioration, 326 IAC 2-2. No attainment regulated pollutant has the potential to emit at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

County Attainment Status

The source is located in St. Joseph County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph County has been designated as attainment or unclassifiable for ozone and for all other pollutants. Therefore, emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source. Subpart Dc is not applicable since the steam generators are rated less than 10 million Btu per hour heat input.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

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

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source does not have potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in one of the eight counties listed in the rule and it has the potential to emit more than ten (10) tons per year of volatile organic compounds or nitrogen oxides. Pursuant to this rule, the source must annually submit an emission statement for the source. The annual statement must contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) 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.

(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.

State Rule Applicability - Paint Booth

326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)

This facility is not subject to 326 IAC 8-2-9. The source conforms to the definition of an "automobile refinishing" operation, as defined in 326 IAC 8-10-2(5). This definition includes mobile equipment such as truck trailers. Automobile refinishing is expressly exempted from 326 IAC 8-2-9.

326 IAC 8-1-6 (General VOC Reduction Requirements)

This facility is not subject to 326 IAC 8-1-6 (General Reduction Requirements) because the potential to emit volatile organic compounds is less than twenty-five (25) tons per year. Therefore, the BACT (best available control technology) requirements do not apply.

326 IAC 6-3-2 (Particulate Emissions Limitations)

This facility is subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

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

A particulate control device is not required to comply with this limit. See Appendix A of this document for detailed emissions calculations.

State Rule Applicability - Sand Blasting, Woodworking and Metalworking

326 IAC 6-3-2 (Particulate Emissions Limitations)

These facilities are subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

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

For a process weight rate of 1.17 tons per hour, this equation provides an emission limit of 4.55 pounds per hour. The control equipment is not required in order to comply with this limit.

State Rule Applicability - Natural Gas Combustion Units

There are no state rules applicable to these facilities.

Conclusion

The operation of these facilities shall be subject to the conditions of the attached registration letter, No 141-16065-00093.

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

Company Name: Lower Great Lakes Kenworth, Inc.
Address City IN Zip: 137 S. Olive Street, South Bend, IN 46119
ID: 141-16065-00093
Reviewer: Allen R. Davidson
Date: 06/25/02

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
7.800	68.3

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.1	0.3	0.0	3.4	0.2	2.9

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

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
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	7.174E-05	4.100E-05	2.562E-03	6.150E-02	1.162E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
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	1.708E-05	3.758E-05	4.783E-05	1.298E-05	7.174E-05

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

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
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors confirm that the correct factor is used (i.e., condensable included/not included).

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

Company Name: Lower Great Lakes Kenworth, Inc.
Address City IN Zip: 137 S. Olive Street, South Bend, IN 46119
ID: 141-16065-00093
Reviewer: Allen R. Davidson
Date: 06/25/02

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	9.90	45.00%	0.0%	45.0%	0.0%	0.00%	1.196	0.130	4.46	4.46	0.69	16.62	3.03	0.93	ERR	75%
Black	8.33	80.00%	0.0%	80.0%	0.0%	0.00%	0.273	0.130	6.66	6.66	0.24	5.68	1.04	0.06	ERR	75%
Grey	8.33	76.00%	0.0%	76.0%	0.0%	0.00%	0.415	0.130	6.33	6.33	0.34	8.20	1.50	0.12	ERR	75%
Red	8.33	90.00%	0.0%	90.0%	0.0%	0.00%	0.431	0.130	7.50	7.50	0.42	10.08	1.84	0.05	ERR	75%
White Enamel	8.92	48.40%	0.0%	48.4%	0.0%	0.00%	0.961	0.130	4.32	4.32	0.54	12.94	2.36	0.63	ERR	75%
Solvent Blend	7.00	100.00%	0.0%	100.0%	0.0%	0.00%	4.442	0.130	7.00	7.00	4.04	97.01	17.70	0.00	ERR	75%
Activator	8.26	50.80%	0.0%	50.8%	0.0%	0.00%	0.081	0.130	4.20	4.20	0.04	1.06	0.19	0.05	ERR	75%

State Potential Emissions **Add worst case coating to all solvents** **4.78** **114.69** **20.93** **0.97**

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 = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Lower Great Lakes Kenworth, Inc.
Address City IN Zip: 137 S. Olive Street, South Bend, IN 46119
ID: 141-16065-00093
Reviewer: Allen R. Davidson
Date: 06/25/02

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % HAP#1	Weight % HAP#2	Weight % HAP#3	Weight % HAP#4	Weight % HAP#5	Weight % HAP#6	Weight % HAP#7	Emissions HAP#1 (ton/yr)	Emissions HAP#2 (ton/yr)	Emissions HAP#3 (ton/yr)	Emissions HAP#4 (ton/yr)	Emissions HAP#5 (ton/yr)	Emissions HAP#6 (ton/yr)	Emissions HAP#7 (ton/yr)
Primer	9.90	1.19600	0.13000	5.00%		25.00%	5.00%				0.34	0.00	1.69	0.34	0.00	0.00	0.00
Black	8.33	0.27300	0.13000	10.00%							0.13	0.00	0.00	0.00	0.00	0.00	0.00
Grey	8.33	0.41500	0.13000			5.00%					0.00	0.00	0.10	0.00	0.00	0.00	0.00
Red	8.33	0.43100	0.13000			5.00%					0.00	0.00	0.10	0.00	0.00	0.00	0.00
White Enamel	8.92	0.96100	0.13000			3.00%					0.00	0.00	0.15	0.00	0.00	0.00	0.00
Solvent Blend	7.00	4.44200	0.13000	31.00%	15.00%						5.49	2.66	0.00	0.00	0.00	0.00	0.00
Activator	8.26	0.08070	0.13000								0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total State Potential Emissions											**5.96**	**2.66**	**2.03**	**0.34**	**0.00**	**0.00**	**0.00**

METHODOLOGY Total for all: 10.98

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

LEGEND

HAP#1 = Toluene
HAP#2 = Methyl Isobutyl Ketone
HAP#3 = Xylene
HAP#4 = Ethylbenzene
HAP#5 = n/a
HAP#6 = n/a
HAP#7 = n/a

Company Name: Lower Great Lakes Kenworth, Inc.
Address City IN Zip: 137 S. Olive Street, South Bend, IN 46119
ID: 141-16065-00093
Reviewer: Allen R. Davidson
Date: 06/25/02

The following calculations determine emissions from abrasive blasting based on Volume 1, Section 3 of "Air Quality Permits, A Handbook for Regulators and Industry" by STAPPA/ALAPCO:

$$\frac{0.041 \text{ lb PM}}{\text{lb abrasive}} * 225 \text{ lb abrasive} / \text{trailer} * 0.13 \text{ trailer} / \text{hr} = 1.1993 \text{ lb PM / hr}$$

$$\frac{1.1993 \text{ lb PM}}{\text{hr}} * 8760 \text{ hr} / \text{yr} * \text{ton} / 2000 \text{ lb} = 5.2527 \text{ ton/yr}$$

5.2527 ton/yr * 1% emitted= 0.0525 ton/yr after controls

The following calculations determine process weight rate:

9 ton/trailer * 0.13 trailer/hr = 1.17 ton/hr

The following calculations determine compliance with 326 IAC 6-3-2:

E = 4.1 * (1.17 ^ 0.67) = 4.55 lb/hr (will comply)

4.55 lb/hr * 8760 hr/yr / 2000 lb/ton = 19.95 ton/yr

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Lower Great Lakes Kenworth, Inc.
Address City IN Zip: 137 S. Olive Street, South Bend, IN 46119
ID: 141-16065-00093
Reviewer: Allen R. Davidson
Date: 06/25/02

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				0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	2	7.8		0.0055	0.0005			0.086	0.008	0.000	0	0.008
Stick (E7018 electrode)	5	6		0.0211	0.0009			0.633	0.027	0.000	0	0.027
Tungsten Inert Gas (TIG)(carbon steel)	1	2.8		0.0055	0.0005			0.015	0.001	0.000	0	0.001
Oxyacetylene(carbon steel)	10	18		0.0055	0.0005			0.990	0.090	0.000	0	0.090
	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				0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane				0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	1	1	6	0.0039				0.001	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								1.73				0.13
Potential Emissions lbs/day								41.41				3.03
Potential Emissions tons/year								7.56				0.55

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**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 factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

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.
Welding and other flame cutting emission factors are from an internal training session document, "Welding and Flame Cutting". See Rebecca Mason if you need a copy.
Refer to AP-42, Chapter 12.19 for additional emission factors for welding.

	NatGas	Paint	Blasting	Welding	***Total***
PM/PM-10	0.30	0.97	5.25	7.56	**14.08**
SO2	0.00	0.00	0.00	0.00	**0.00**
NOx	3.40	0.00	0.00	0.00	**3.40**
VOC	0.20	20.93	0.00	0.00	**21.13**
CO	2.90	0.00	0.00	0.00	**2.90**