



# 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](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: Mar. 16, 2011

RE: Heartland Recreational Vehicle, LLC / 039-29849-00621

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

## Notice of Decision: Approval - Effective Immediately

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 13-15-5-3, this permit 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.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require 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 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  
FNPER.dot12/03/07



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## New Source Construction and Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY

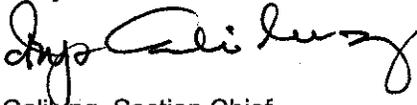
**Heartland Recreational Vehicles, LLC**  
**1001 All Pro Drive**  
**Elkhart, Indiana 46514**

(herein known as the Permittee) is hereby authorized to construct and 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. 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 2-8 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. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-8-11.1, applicable to those conditions

Indiana statutes from IC 13 and rules from 326 IAC, quoted 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 FESOP under 326 IAC 2-8.

Operation Permit No.: F039-29849-00621	
Issued by:  Iryn Callung, Section Chief Permits Branch Office of Air Quality	Issuance Date: Mar. 16, 2011 Expiration Date: Mar. 16, 2021

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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 2-8-3(b)]

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The Permittee owns and operates a stationary non-motorized travel trailer manufacturing plant.

Source Address(es):	1001 All Pro Drive, Elkhart, IN 46514 2944 Dexter Drive, Elkhart, IN 46514 1140 D.I. Drive, Elkhart, IN 46514 1111 All Pro Drive, Elkhart, IN 46514 2900 Dexter Drive, Elkhart, IN 46514 1330 Wade Drive, Elkhart, IN 46514 1110 C.R. 6 West, Elkhart, IN 46514 2950 Paul Drive, Elkhart, IN 46514 2824 Paul Drive, Elkhart, IN 46514 2946 Jami Drive, Elkhart, IN 46514 2929 Gateway Drive, Elkhart, IN 46514
General Source Phone Number:	(574) 262-5992
SIC Code:	3792
County Location:	Elkhart
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

### A.2 Source Definition [326 IAC 2-8-1] [326 IAC 2-7-1(22)]

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This non-motorized travel trailer manufacturing source consists of fifteen (15) plants located at eleven (11) addresses:

- (a) Plants 2, 7A, and 7B are located at 1001 All Pro Drive, Elkhart, IN 46514;
- (b) Plant 3 is located at 2944 Dexter Drive, Elkhart, IN 46514;
- (c) Plant 11 is located at 1140 D.I. Drive, Elkhart, IN 46514;
- (d) Plant 12 is located at 1111 All Pro Drive, Elkhart, IN 46514;
- (e) Plant 14 is located 2900 Dexter Drive, Elkhart, IN 46514;
- (f) Plant 16 is located at 1330 Wade Drive, Elkhart, IN 46514;
- (g) Plant 17 and 18 are located at 110 CR 6 West, Elkhart, IN 46514;
- (h) Plant 21 is located at 2950 Paul Drive, Elkhart, IN 46514;
- (i) Plant 22 is located at 2824 Paul Drive, Elkhart, IN 46514;

- (j) Plant 23 is located at 2946 Jami Drive, Elkhart, IN 46514; and
- (k) Plants 69A and 69B are located at 2929 Gateway Drive, Elkhart, IN 46514.

Since the fifteen (15) plants are located on contiguous or adjacent properties, or within two (2) miles of each other, belong to the same industrial grouping, and are under common control of the same entity, they will be considered one (1) source, effective from the date of issuance of this New Source Construction and FESOP Renewal.

### A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

#### **Plant 2 (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, and exhausting within the building.
- (b) One (1) assembly line operation, identified as ALO2, constructed in 2005, with a maximum capacity of 1.25 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.
- (c) One (1) touch-up paint operation, identified as TP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.
- (d) One (1) final finish operation, identified as FF2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.
- (e) One (1) cabinet and molding assembly operation, identified as WW2, constructed in 2005, controlled by baghouse 2DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 2CS1, constructed in 2006, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Two (2) aluminum chop saws, identified as 2CS2 and 2CS3, constructed in 2006, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 2CS4 through 2CS7, constructed in 2006, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 2DP1 and 2DP2, constructed in 2006, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Six (6) hand routers, identified as 2HR1 through 2HR6, constructed in 2006, with a

combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 3 (2944 Dexter Drive, Elkhart, IN 46514)**

- (a) One (1) small parts lamination process, identified as SPL3, approved for construction in 2011, with a maximum capacity of 10 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

**Plant 7A / 7B (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, exhausting within the building.
- (b) Two (2) assembly line operations, identified as ALO7A and ALO7B, approved for construction in 2011, with a combined maximum capacity of 1.25 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.
- (c) One (1) touch-up paint operation, identified as TP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.
- (d) One (1) final finish operation, identified as FF7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.
- (e) One (1) cabinet and molding assembly operation, identified as WW7A/7B, approved for construction in 2011, controlled by baghouse 7A/7BDC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 7ACS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Two (2) aluminum chop saws, identified as 7ACS2 and 7ACS-3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 7ACS4 through 7ACS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 7ADP1 and 7ADP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Six (6) hand routers, identified as 7AHR1 through 7AHR6, approved for construction in 2011, with a combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 11 (1140 D.I. Drive, Elkhart, IN 46514)**

- (a) One (1) sidewall lamination operation, identified as SLO11, approved for construction in 2011, with a maximum capacity of 20 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

**Plant 12 (1111 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) small parts lamination process, identified as SPL12, approved for construction in 2011, with a maximum capacity of 20 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

**Plant 14 (2900 Dexter Drive, Elkhart, IN 46514)**

- (a) One (1) cabinet and molding assembly operation, identified as WWE14, approved for construction in 2011, and consisting of the following:
- (1) Two (2) 6 inch edge sanders, each with a maximum capacity of 150 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (2) Four (4) 12 inch chop saws, each with a maximum capacity of 50 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (3) One (1) 10 inch band saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (4) Two (2) 12 inch table saws, each with a maximum capacity of 100 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.
  - (5) One (1) panel saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.
  - (6) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-03, and exhausting within the building.
  - (7) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-04, and exhausting within the building.
- (b) One (1) manual sanding operation, identified as MPE14, approved for construction in 2011, with a maximum capacity of 200 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 16 (1330 Wade Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as ALO16 approved for construction in 2011, with a maximum capacity of 0.50 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of

coating per day, applying paint to metal substrates, utilizing no control devices.

- (d) One (1) final finish operation, identified as FF16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW16, approved for construction in 2011, controlled by baghouse 16DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 16CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) One (1) table router, identified as 16TR1, approved for construction in 2011, with a maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 16CS2 through 16CS5, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 16DP1 and 16DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 16HR1 through 16HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 17 / 18 (1110 CR 6 West, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO17 and ALO18, approved for construction in 2011, with a combined maximum capacity of 0.50 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) PVC chop saw, identified as 17/18CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.

- (f) One (1) table saw, identified as 17/18TS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (g) Four (4) wood chop saws, identified as 17/18CS2 through 17/18CS5, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) hand routers, identified as 17/18HR1 through 17/18HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

**Plants 21, 22, 23 (2950 Paul Drive, 2824 Paul Drive, & 2946 Jami Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW21/22/23, approved for construction in 2011, controlled by baghouse 21DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 21CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Three (3) table saws, identified as 21TS1 through 21TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 21CS2 through 21CS5, approved for construction in 2011, with a combined maximum capacity of 8 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) One (1) drill press, identified as 21DP1, approved for construction in 2011, with a combined maximum capacity of 2.5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 21HR1 through 21HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices,

and exhausting within the building.

**Plant 69A / 69B (2929 Gateway Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO69A and ALO69B approved for construction in 2011, with a maximum capacity of 2.00 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW69A/69B, approved for construction in 2011, controlled by baghouse 69DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 69CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Three (3) table saws, identified as 69TS1 through 69TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Seven (7) wood chop saws, identified as 69CS2 through 69CS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 69DP1 and 69DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 69HR1 through 69HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

**Plant 2 (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) welding and cutting operation, identified as WC2, constructed in 2007, consisting of:
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S);
  - (2) One (1) stick welding station, with a maximum electrode usage of 0.50 lbs/hr (E5154 Electrode); and
  - (3) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 2H-01 and 2H-02, each rated at 1.30 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 2H-03 and 2H-04, each rated at 0.09 MMBtu/hr.

**Plant 3 (2944 Dexter Drive, Elkhart, IN 46514)**

- (a) Four (4) metal inert gas (MIG) welding stations, identified as WC3, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Seven (7) tube heaters, identified as 3H-01 through 3H-07, each rated at 0.35 MMBtu/hr;
  - (2) One (1) tube heater, identified as 3H-08, rated at 0.10 MMBtu/hr; and
  - (3) One (1) forced air furnace, identified as 3H-09, rated at 0.08 MMBtu/hr.

**Plant 7A / 7B (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) welding and cutting operation, identified as WC7A/7B, approved for construction in 2011, consisting of:
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S);
  - (2) One (1) stick welding station, with a maximum electrode usage of 0.50 lbs/hr (E5154 Electrode); and

- (3) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 7AH-01 and 7AH-02, each rated at 0.464 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 7AH-03 and 7AH-04, each rated at 0.09 MMBtu/hr.

**Plant 11 (1140 D.I. Drive, Elkhart, IN 46514)**

- (a) Six (6) metal inert gas (MIG) welding stations, identified as WC11, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Twelve (12) tube heaters, identified as 11H-01 through 11H-12, each rated at 0.10 MMBtu/hr.

**Plant 12 (1111 All Pro Drive, Elkhart, IN 46514)**

- (a) Nine (9) aluminum welding stations, identified as WC12, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) One (1) forced air furnace, identified as 12H-01, rated at 0.114 MMBtu/hr;
  - (2) One (1) forced air furnace, identified as 12H-02, rated at 0.08 MMBtu/hr; and
  - (3) Three (3) thermo cyclers, identified as 12H-03 through 12H-05, each rated at 1.20 MMBtu/hr.

**Plant 14 (2900 Dexter Drive, Elkhart, IN 46514)**

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 14H-01 and 14H-02, each rated at 0.80 MMBtu/hr;
  - (2) Two (2) forced air furnaces, identified as 14H-03 and 14H-04, each rated at 0.14 MMBtu/hr; and
  - (3) One (1) thermo cyler, identified as 14H-05, rated at 0.40 MMBtu/hr.

**Plant 16 (1330 Wade Drive, Elkhart, IN 46514)**

- (a) One (1) welding and cutting operation, identified as WC16, approved for construction in 2011, consisting of:
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S); and
  - (2) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 16H-01 and 16H-02, each rated at 0.80 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 16H-03 and 16H-04, each rated at 0.09 MMBtu/hr.

**Plant 17 / 18 (1110 CR 6 West, Elkhart, IN 46514)**

- (a) One (1) metal inert gas (MIG) welding station, identified as WC17/18 with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 17/18H-01 and 17/18H-02, each rated at 0.15 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 17/18H-03 and 17/18H-04, each rated at 0.15 MMBtu/hr.

**Plant 21, 22, 23 (2950 Paul Drive, 2824 Paul Drive, & 2946 Jami Drive, Elkhart, IN 46514)**

- (a) One (1) welding and cutting operation, identified as WC21/22/23 approved for construction in 2011, consisting of:
  - (1) Two (2) metal inert gas (MIG) welding stations, each with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S); and
  - (2) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Twelve (12) radiant tube heaters, identified as 21/22/23H-01 through 21/22/23H-12, each rated at 0.08 MMBtu/hr; and
  - (2) Three (3) forced air furnaces, identified as 21/22/23H-13 through 21/22/23H-16, each rated at 0.06 MMBtu/hr.

**Plant 69A / 69B (2929 Gateway Drive, Elkhart, IN 46514)**

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
- (1) Sixteen (16) radiant tube heaters, identified as 69H-01 through 69H-16, each rated at 0.14 MMBtu/hr;
  - (2) Two (2) forced air furnaces, identified as 69H-17 and 69H-18, each rated at 0.10 MMBtu/hr; and
  - (3) Two (2) forced air furnaces, identified as 69H-19 and 69H-20, each rated at 0.12 MMBtu/hr.

**A.5 FESOP Applicability [326 IAC 2-8-2]**

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This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

## SECTION B GENERAL CONDITIONS

### B.1 Definitions [326 IAC 2-8-1]

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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 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

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- (a) This permit, F039-29849-00621, is issued for a fixed term of ten (10) 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, until the renewal permit has been issued or denied.

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

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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 2-8-6] [IC 13-17-12]

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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 2-8-4(4)]

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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 2-8-4(5)(D)]

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

### B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

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- (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 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

- (a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:
- (1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), 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) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (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

- (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 2-8-4(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]**

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IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

**B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]**

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(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (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.12 Emergency Provisions [326 IAC 2-8-12]

- (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 except as provided in 326 IAC 2-8-12.

- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or 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 Northern 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

Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

- (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 2-8-4(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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (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 2-8-3(c)(6) 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 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
  - (1) 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.
  - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
    - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
    - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

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

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- (a) All terms and conditions of permits established prior to F039-29849-00621 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 permit.

**B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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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 2-8-3(h) and 326 IAC 2-8-9.

**B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination  
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]**

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- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State 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 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (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 2-8-8(a)]
- (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 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(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 2-8-8(c)]

**B.16 Permit Renewal [326 IAC 2-8-3(h)]**

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- (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 2-8-3. 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(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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 2-8 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 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) 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 approval required by 326 IAC 2-8-11.1 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 2-8-15(b) through (d). 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 2-8-15(b)(2), (c)(1), and (d).

- (b) Emission Trades [326 IAC 2-8-15(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 2-8-15(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(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 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (d) 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.19 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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 FESOP 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, at reasonable times, 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, at reasonable times, 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, at reasonable times, 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.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ no later than 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) 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.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]**

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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 2-8-4(1)]

#### C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

#### C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

#### C.3 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 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.4 Open Burning [326 IAC 4-1] [IC 13-17-9]**

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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.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]**

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

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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).

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

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- (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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (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.

### **Testing Requirements [326 IAC 2-8-4(3)]**

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

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- (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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (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]**

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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 2-8-4][326 IAC 2-8-5(a)(1)]**

#### C.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

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 or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

#### C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(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.
- (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 2-8-4][326 IAC 2-8-5(a)(1)]**

#### C.12 Risk Management Plan [326 IAC 2-8-4] [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.13 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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 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.

**C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]**

- (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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**C.15 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

- (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.

**C.16 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]**

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. 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 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.
- (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.

**Stratospheric Ozone Protection**

**C.17 Compliance with 40 CFR 82 and 326 IAC 22-1**

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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:**

#### **Plant 2 (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, and exhausting within the building.
- (b) One (1) assembly line operation, identified as ALO2, constructed in 2005, with a maximum capacity of 1.25 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.
- (c) One (1) touch-up paint operation, identified as TP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.
- (d) One (1) final finish operation, identified as FF2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.

#### **Plant 7A / 7B (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, exhausting within the building.
- (b) Two (2) assembly line operations, identified as ALO7A and ALO7B, approved for construction in 2011, with a combined maximum capacity of 1.25 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.
- (c) One (1) touch-up paint operation, identified as TP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.
- (d) One (1) final finish operation, identified as FF7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.

#### **Plant 16 (1330 Wade Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as ALO16 approved for construction in 2011, with a maximum capacity of 0.50 units per hour, applying various coatings to metal, wood, fabric, and

plastic substrates via flow coating, utilizing no control devices.

- (c) One (1) touch-up paint operation, identified as TP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.

**Plant 17 / 18 (1110 CR 6 West, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO17 and ALO18, approved for construction in 2011, with a combined maximum capacity of 0.50 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.

**Plants 21, 22, 23 (2950 Paul Drive, 2824 Paul Drive, & 2946 Jami Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.

**Plant 69A / 69B (2929 Gateway Drive, Elkhart, IN 46514)**

- (a) One (1) chassis preparation operation, identified as CP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO69A and ALO69B approved for construction in 2011, with a maximum capacity of 2.00 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.

(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 2-8-4(1)]**

**D.1.1 FESOP Limitations [326 IAC 2-8-4][326 IAC 2-4.1]**

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-4.1 (MACT) not applicable, the source shall comply with the following:

- (a) The combined total input volatile organic compounds (VOC) including solvents, coatings, and adhesives delivered to the emission units listed in the table below shall be limited to less than or equal to 98.75 tons per twelve (12) consecutive month period with compliance determined at the end of each month:
- (b) The combined total input hazardous air pollutants (HAP) delivered to the emission units listed in the table below shall be limited such that input of any single HAP shall not exceed 9.74 tons per twelve (12) consecutive month period with compliance determined at the end of each month:

Plant ID	Emission Units		
Plant 2	CP2 ALO2	TP2 FF2	
Plant 7A / 7B	CP7A/7B, ALO7A	ALO7B TP7A/7B	FF7A/7B
Plant 16	CP16 ALO16	TP16 FF16	
Plant 17/18	CP17/18 ALO17	ALO18 TP17/18	FF17/18
Plants 21, 22, 23	CP21/22/23 ALO21/22/23	TP21/22/23 FF21/22/23	
Plant 69A/69B	CP69A/69B ALO69A	ALO69B TP69A/69B	FF69A/69B

Compliance with these limits, combined with the potential to emit VOC and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC to less than 100 tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

**D.1.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

A Preventive Maintenance Plan is required for these facilities and their 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**

**D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-1-2] [326 IAC 8-1-4]**

Compliance with the VOC limitations contained in Condition D.2.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

**D.1.4 Record Keeping Requirements**

- (a) To document the compliance status with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC content limits established in Condition D.1.1. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (1) The VOC content of each coating material and solvent used.
  - (2) The amount of coating material and solvent less water used on a monthly basis.
    - (A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
    - (B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.
  - (3) The cleanup solvent usage for each month;
  - (4) The total VOC usage for each month; and
  - (5) The total weight of VOC emitted for each compliance period.
- (b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

#### D.1.5 Reporting Requirements

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A quarterly summary of the information to document compliance status with Condition D.1.1 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 meet the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

#### **Plant 2 (1001 All Pro Drive, Elkhart, IN 46514)**

- (e) One (1) cabinet and molding assembly operation, identified as WW2, constructed in 2005, controlled by baghouse 2DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 2CS1, constructed in 2006, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Two (2) aluminum chop saws, identified as 2CS2 and 2CS3, constructed in 2006, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 2CS4 through 2CS7, constructed in 2006, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 2DP1 and 2DP2, constructed in 2006, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Six (6) hand routers, identified as 2HR1 through 2HR6, constructed in 2006, with a combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.

#### **Plant 7A / 7B (1001 All Pro Drive, Elkhart, IN 46514)**

- (e) One (1) cabinet and molding assembly operation, identified as WW7A/7B, approved for construction in 2011, controlled by baghouse 7A/7BDC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 7ACS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Two (2) aluminum chop saws, identified as 7ACS2 and 7ACS-3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 7ACS4 through 7ACS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 7ADP1 and 7ADP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.

- (j) Six (6) hand routers, identified as 7AHR1 through 7AHR6, approved for construction in 2011, with a combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 14 (2900 Dexter Drive, Elkhart, IN 46514)**

- (a) One (1) cabinet and molding assembly operation, identified as WWE14, approved for construction in 2011, and consisting of the following:
  - (1) Two (2) 6 inch edge sanders, each with a maximum capacity of 150 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (2) Four (4) 12 inch chop saws, each with a maximum capacity of 50 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (3) One (1) 10 inch band saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (4) Two (2) 12 inch table saws, each with a maximum capacity of 100 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.
  - (5) One (1) panel saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.
  - (6) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-03, and exhausting within the building.
  - (7) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-04, and exhausting within the building.
- (b) One (1) manual sanding operation, identified as MPE14, approved for construction in 2011, with a maximum capacity of 200 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 16 (1330 Wade Drive, Elkhart, IN 46514)**

- (e) One (1) cabinet and molding assembly operation, identified as WW16, approved for construction in 2011, controlled by baghouse 16DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 16CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) One (1) table router, identified as 16TR1, approved for construction in 2011, with a maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 16CS2 through 16CS5, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 16DP1 and 16DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.

- (j) Four (4) hand routers, identified as 16HR1 through 16HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 17 / 18 (1110 CR 6 West, Elkhart, IN 46514)**

- (e) One (1) PVC chop saw, identified as 17/18CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (f) One (1) table saw, identified as 17/18TS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (g) Four (4) wood chop saws, identified as 17/18CS2 through 17/18CS5, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) hand routers, identified as 17/18HR1 through 17/18HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 21, 22, 23 (2950 Paul Drive, 2824 Paul Drive, & 2946 Jami Drive, Elkhart, IN 46514)**

- (e) One (1) cabinet and molding assembly operation, identified as WW21/22/23, approved for construction in 2011, controlled by baghouse 21DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 21CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Three (3) table saws, identified as 21TS1 through 21TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 21CS2 through 21CS5, approved for construction in 2011, with a combined maximum capacity of 8 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) One (1) drill press, identified as 21DP1, approved for construction in 2011, with a combined maximum capacity of 2.5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 21HR1 through 21HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

**Plant 69A / 69B (2929 Gateway Drive, Elkhart, IN 46514)**

- (e) One (1) cabinet and molding assembly operation, identified as WW69A/69B, approved for construction in 2011, controlled by baghouse 69DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.

- (f) One (1) PVC chop saw, identified as 69CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Three (3) table saws, identified as 69TS1 through 69TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Seven (7) wood chop saws, identified as 69CS2 through 69CS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 69DP1 and 69DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 69HR1 through 69HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

(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 2-8-4(1)]**

##### **D.2.1 Particulate Emission Limitations [326 IAC 6-3-2]**

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Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Control ID	Process/Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
<b>Plant 2</b>				
WW2	2DC-01	Cabinet and Molding Assembly	0.20 (each)	1.39 (each)
2CS1	None	PVC Chop Saw	0.20	1.39
2CS2, 2CS3	None	Aluminum Chop Saws	0.20 (each)	1.39 (each)
2CS4, 2CS5, 2CS6, 2CS7	None	Wood Chop Saws	0.20 (each)	1.39 (each)
2DP1, 2DP2	None	Drill Presses	0.20 (each)	1.39 (each)
<b>Plants 7A/7B</b>				
WW7A/7B	7A/7BDC-01	Cabinet and Molding Assembly	0.20 (each)	1.39 (each)
7ACS1	None	PVC Chop Saw	0.20	1.39
7ACS2, 7ACS3	None	Aluminum Chop Saws	0.20 (each)	1.39 (each)
7ACS4, 7ACS5, 7ACS6, 7ACS7	None	Wood Chop Saws	0.20 (each)	1.39 (each)
7ADP1, 7ADP2	None	Drill Presses	0.20 (each)	1.39 (each)
7AHR1, 7AHR2, 7AHR3, 7AHR4, 7AHR5, 7AHR6	None	Hand Routers	0.20 (each)	1.39 (each)
<b>Plant 14</b>				
WW14		Cabinet and Molding Assembly		
N/A	14DC-01	(2) 6" Edge Sanders (4) 12" Chop Saws (1) 10" Band Saw	0.15 (each)	1.15 (each)
N/A	14DC-02	(2) 12" Table Saws (1) Panel Saw	0.15 (each)	1.15 (each)
N/A	14DC-03	(1) CNC Router	0.15 (each)	1.15 (each)
N/A	14DC-04	(1) CNC Router	0.15 (each)	1.15 (each)
<b>Plant 16</b>				
WW16	16DC-01	Cabinet and Molding Assembly	0.15 (each)	1.15 (each)
16CS1	None	PVC Chop Saw	0.15	1.15
16TR1	None	Table Router	0.15	1.15
16CS2, 16CS3, 16CS4, 16CS5	None	Wood Chop Saws	0.15 (each)	1.15 (each)
16DP1, 16DP2	None	Drill Presses	0.15 (each)	1.15 (each)
16HR1, 16HR2, 16HR3, 16HR4	None	Hand Routers	0.15 (each)	1.15 (each)
<b>Plants 17/18</b>				
17/18CS1	None	PVC Chop Saw	0.15	1.15
17/18TS1	None	Table Saw	0.15	1.15
17/18CS2, 17/18CS3, 17/18CS4, 17/18CS5	None	Wood Chop Saws	0.15 (each)	1.15 (each)
17/18HR1, 17/18HR2, 17/18HR3, 17/18HR4	None	Hand Routers	0.15 (each)	1.15 (each)
<b>Plants 21/22/23</b>				
WW21/22/23	21DC-01	Cabinet and Molding Assembly	0.15 (each)	1.15 (each)
21CS1	None	PVC Chop Saw	0.15	1.15
21TS1, 21TS2, 21TS3	None	Table Saws	0.15 (each)	1.15 (each)
21CS2, 21CS3, 21CS4, 21CS5	None	Wood Chop Saws	0.15 (each)	1.15 (each)
21DP1	None	Drill Press	0.15	1.15
21HR1, 21HR2, 21HR3, 21HR4	None	Hand Routers	0.15 (each)	1.15 (each)
<b>Plants 69A/69B</b>				
WW69A/69B	69DC-01	Cabinet and Molding Assembly	0.20 (each)	1.39 (each)
69CS1	None	PVC Chop Saw	0.20	1.39
69TS1, 69TS2, 69TS3	None	Table Saws	0.20 (each)	1.39 (each)
69CS2, 69CS3, 69CS4, 69CS5, 69CS6, 69CS7, 69CS8	None	Wood Chop Saws	0.20 (each)	1.39 (each)
69DP1, 69DP2	None	Drill Presses	0.20 (each)	1.39 (each)
69HR1, 69HR2, 69HR3, 69HR4	None	Hand Routers	0.20 (each)	1.39 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

#### D.2.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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A Preventive Maintenance Plan is required for the cabinet and molding operations identified as WW2, WW7A/7B, WW14, WW16, WW21/22/23, and WW69A/69B and their 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

#### D.2.3 Particulate Control

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- (a) In order to comply with Condition D.2.1, the baghouses for particulate control shall be in operation and control emissions from the emission units at all times that the emission units are in operation as listed in the table below, when these units are in operation:

Unit ID	Process Description	Baghouse IDs
WW2	Cabinet and Molding Assembly	2DC-01
WW7A/7B	Cabinet and Molding Assembly	7A/7BDC-01
WW14	Cabinet and Molding Assembly	14DC-01, 14DC-02 14DC-03, 14DC-04
WW16	Cabinet and Molding Assembly	16DC-01
WW21/22/23	Cabinet and Molding Assembly	21DC-01
WW69A/69B	Cabinet and Molding Assembly	69DC-01

- (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 2-8-4][326 IAC 2-8-5(a)(1)]

#### D.2.4 Baghouse Inspections

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An inspection shall be performed each calendar quarter of all bags controlling the cabinet and molding assembly operations (WW2, WW7A/7B, WW14, WW16, WW21/22/23, and WW69A/69B). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

#### D.2.5 Broken or Failed Bag Detection

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- (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 baghouse 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 line. 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 2-8-4(3)]**

#### **D.2.6 Record Keeping Requirements**

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- (a) To document the compliance status with Condition D.2.4, the Permittee shall maintain records of the results of the quarterly bag inspections.
- (b) Section C - General Record Keeping Requirements of this permit 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**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
CERTIFICATION**

Source Name: Heartland Recreational Vehicles, LLC  
Source Address: 1001 All Pro Drive, Elkhart, Indiana 46514  
FESOP Permit No.: F039-29849-00621

**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:

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**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY OCCURRENCE REPORT**

Source Name: Heartland Recreational Vehicles, LLC  
Source Address: 1001 All Pro Drive, Elkhart, Indiana 46514  
FESOP Permit No.: F039-29849-00621

**This form consists of 2 pages**

**Page 1 of 2**

- |  |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and</li><li>• 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</li></ul> |
|--|

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 Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , 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**

**FESOP Quarterly Report**

Source Name: Heartland Recreational Vehicles, LLC  
 Source Address: 1001 All Pro Drive, Elkhart, Indiana 46514  
 FESOP Permit No.: F039-29849-00621  
 Facility: \*See Table Below  
 Parameter: VOC Input  
 Limit: The combined total input volatile organic compounds (VOC) including solvents, coatings, and adhesives delivered to the emission units listed in the table below shall be limited to less than or equal to 98.75 tons per twelve (12) consecutive month period with compliance determined at the end of each month:

Plant ID	Emission Units		
Plant 2	CP2 ALO2	TP2 FF2	
Plant 7A / 7B	CP7A/7B, ALO7A	ALO7B TP7A/7B	FF7A/7B
Plant 16	CP16 ALO16	TP16 FF16	
Plant 17/18	CP17/18 ALO17	ALO18 TP17/18	FF17/18
Plants 21, 22, 23	CP21/22/23 ALO21/22/23	TP21/22/23 FF21/22/23	
Plant 69A/69B	CP69A/69B ALO69A	ALO69B TP69A/69B	FF69A/69B

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- 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

### FESOP Quarterly Report

Source Name: Heartland Recreational Vehicles, LLC  
 Source Address: 1001 All Pro Drive, Elkhart, Indiana 46514  
 FESOP Permit No.: F039-29849-00621  
 Facility: \*See Table Below  
 Parameter: Single HAP Input  
 Limit: The combined total input hazardous air pollutants (HAP) delivered to the emission units listed in the table below shall be limited such that input of any single HAP shall not exceed 9.74 tons per twelve (12) consecutive month period with compliance determined at the end of each month:

Plant ID	Emission Units		
	Plant 2	CP2 ALO2	TP2 FF2
Plant 7A / 7B	CP7A/7B, ALO7A	ALO7B TP7A/7B	FF7A/7B
Plant 16	CP16 ALO16	TP16 FF16	
Plant 17/18	CP17/18 ALO17	ALO18 TP17/18	FF17/18
Plants 21, 22, 23	CP21/22/23 ALO21/22/23	TP21/22/23 FF21/22/23	
Plant 69A/69B	CP69A/69B ALO69A	ALO69B TP69A/69B	FF69A/69B

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- 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  
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Heartland Recreational Vehicles, LLC  
Source Address: 1001 All Pro Drive, Elkhart, Indiana 46514  
FESOP Permit No.: F039-29849-00621

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. 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".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a New Source Review (NSR) and  
Federally Enforceable State Operating Permit (FESOP) Renewal

<b>Source Description and Location</b>
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<b>Source Name:</b>	<b>Heartland Recreational Vehicles, LLC</b>
<b>Source Location(s):</b>	<b>1001 All Pro Drive, Elkhart, IN 46514 2944 Dexter Drive, Elkhart, IN 46514 1140 D.I. Drive, Elkhart, IN 46514 1111 All Pro Drive, Elkhart, IN 46514 2900 Dexter Drive, Elkhart, IN 46514 1330 Wade Drive, Elkhart, IN 46514 1110 C.R. 6 West, Elkhart, IN 46514 2929 Gateway Drive, Elkhart, IN 46514 2950 Paul Drive, Elkhart, IN 46514 2824 Paul Drive, Elkhart, IN 46514 2946 Jami Drive, Elkhart, IN 46514</b>
<b>County:</b>	<b>Elkhart</b>
<b>SIC Code:</b>	<b>3792</b>
<b>Permit Renewal No.:</b>	<b>F039-29849-00621</b>
<b>Permit Reviewer:</b>	<b>Jason R. Krawczyk</b>

On November 3, 2010, the Office of Air Quality (OAQ) received an application from Heartland Recreational Vehicles, LLC to renew their Federally Enforceable State Operating Permit (FESOP). The source also plans to construct and operate new emission units and add several physical addresses to their existing stationary non-motorized travel trailer manufacturing plant.

<b>Source Definition</b>
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This source consists of the following existing plants:

- (a) Plant 2 is located at 1001 All Pro Drive, Elkhart, IN 46514, Plant ID: 039-00621

The source is adding the following plants:

- (a) Plant 3 is located at 2944 Dexter Drive, Elkhart, IN 46514
- (b) Plants 7a and 7b will be located at 1001 All Pro Drive, Elkhart, IN 46514 with existing Plant 2
- (c) Plant 11 is located at 1140 D.I. Drive, Elkhart, IN 46514
- (d) Plant 12 is located at 1111 All Pro Drive, Elkhart, IN 46514
- (e) Plant 14 is located at 2900 Dexter Drive, Elkhart, IN 46514
- (f) Plant 16 is located at 1330 Wade Drive, Elkhart, IN 46514
- (g) Plants 17 and 18 are located at 1110 C.R. 6 West, Elkhart, IN 46514
- (h) Plant 21 is located at 2950 Paul Drive, Elkhart, IN 46514

- (i) Plant 22 is located at 2824 Paul Drive, Elkhart, IN 46514
- (j) Plant 23 is located at 2946 Jami Drive, Elkhart, IN 46514
- (k) Plants 69A and 69B are located at 2929 Gateway Drive, Elkhart, IN 46514

In order to consider all plants as one single source, all three of the following criteria must be met:

- (1) The plants must have common ownership/control;
- (2) The plants must have the same SIC code; and
- (3) The plants must be located on contiguous or adjacent properties.

These plants are located on adjacent properties, have the same SIC codes of 37 and are under common control; therefore they will be considered one (1) source, as defined by 326 IAC 2-7-1(22). This is the initial determination being made for this existing source and the additional physical locations.

This address will be considered as the main address of the source: 1001 All Pro Drive, Elkhart, IN 46514.

#### Existing Approvals

The source was issued FESOP No. 039-22971-00621 on August 11, 2006. The source has since received the following approvals:

- (a) Minor Permit Revision No. 039-25420-00621, issued on December 19, 2007.

None of the plants being added to this existing source are currently permitted facilities. Heartland Recreational Vehicles, LLC is obtaining sources previously permitted, whose permits have been revoked, or sources that may have been unpermitted, and are incorporating them to their site specific operations.

#### County Attainment Status

The source is located in Elkhart County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Attainment effective July 19, 2007, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.

<sup>1</sup>Attainment effective October 18, 2000, for the 1-hour ozone standard for the South Bend-Elkhart area, including Elkhart County, and is a maintenance area for the 1-hour National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X\*. The 1-hour standard was revoked effective June 15, 2005.  
Unclassifiable or attainment effective April 5, 2005, for PM2.5.

- (a) Ozone Standards  
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 ozone. Elkhart 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) **PM2.5**  
Elkhart County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.
- (c) **Other Criteria Pollutants**  
Elkhart County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

### **Fugitive Emissions**

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

### **Background and Description of Permitted Emission Unit**

Emission unit configurations and identifications are being revised for Plant 2. Changes are shown in **bold** and ~~strikethrough~~.

The source consists of the following permitted emission units:

#### **Plant 2 (1001 All Pro Drive, Elkhart, IN 46514)**

- (a) **One (1) chassis preparation operation, identified as CP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, and exhausting within the building.**
- (b) **One (1) assembly line operation, identified as ALO2, constructed in 2005, with a maximum capacity of 1.25 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.**
- (c) **One (1) touch-up paint operation, identified as TP2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.**
- (d) **One (1) final finish operation, identified as FF2, constructed in 2005, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.**
- (e) **One (1) cabinet and molding assembly operation, identified as WW2, constructed in 2005, controlled by baghouse 2DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.**
- (f) **One (1) PVC chop saw, identified as 2CS1, constructed in 2006, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.**

- (g) Two (2) aluminum chop saws, identified as 2CS2 and 2CS3, constructed in 2006, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.**
- (h) Four (4) wood chop saws, identified as 2CS4 through 2CS7, constructed in 2006, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.**
- (i) Two (2) drill presses, identified as 2DP1 and 2DP2, constructed in 2006, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.**
- (j) Six (6) hand routers, identified as 2HR1 through 2HR6, constructed in 2006, with a combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.**

**Plant 2 consists of the following insignificant activities:**

- (a) One (1) welding and cutting operation, identified as WC2, constructed in 2007, consisting of:**
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S);**
  - (2) One (1) stick welding station, with a maximum electrode usage of 0.50 lbs/hr (E5154 Electrode); and**
  - (3) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.**
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:**
  - (1) Two (2) forced air furnaces, identified as 2H-01 and 2H-02, each rated at 1.30 MMBtu/hr; and**
  - (2) Two (2) forced air furnaces, identified as 2H-03 and 2H-04, each rated at 0.09 MMBtu/hr.**
- ~~(a) one (1) travel trailer assembly and finishing operation, designated as EU-01, constructed in 2005, which assembles non-motorized travel trailers from primarily pre-manufactured and pre-coated components using sealants, adhesives, and caulks using flow, roll, and brush applications, and paints using less than five (5) gallons of paint per day, with a maximum throughput of 1.25 trailers per hour, venting to the indoors;~~
- ~~(b) one (1) travel trailer assembly and finishing operation, designated as EU-02, constructed in 2006, which assembles non-motorized travel trailers from primarily pre-manufactured and pre-coated components using sealants, adhesives, and caulks, using flow, roll, and brush applications, and paints using less than five (5) gallons of paint per day, with a maximum throughput of 1.25 trailers per hour, venting to the indoors;~~
- ~~(c) one (1) woodworking operation, designated as Millshop MS-01, constructed in 2005, consisting of cutting, sawing, drilling, and/or routing of wood, with a maximum throughput capacity of 0.6 tons of wood per hour, and with particulate emissions from the emission units controlled by two (2) baghouse dust collectors, identified as DC-1900A-3 and DC-1200A-3, each with an internal return~~

~~air system, a control efficiency of 99.9%, and a maximum design grain loading of less than or equal to 0.03 grain per actual cubic foot of outlet air, when operated at gas flow rates of one thousand nine hundred (1,900) and one thousand two hundred (1,200) actual cubic feet per minute (acfm), respectively. The woodworking operation consists of the following emission units:~~

- ~~(1) One (1) table saw for cutting of wood;~~
- ~~(2) Three (3) chop saws for cutting of wood;~~
- ~~(3) One (1) band saw for cutting of wood;~~
- ~~(4) One (1) drill press for drilling and/or routing of wood;~~
- ~~(5) Miscellaneous hand operated saws, routers, and drills.~~

- ~~(d) one (1) woodworking operation, designated as Millshop MS-02, constructed in 2006, consisting of cutting, sawing, drilling, and/or routing of wood, with a maximum throughput capacity of 0.6 tons of wood per hour, and with particulate emissions from the emission units controlled by two (2) baghouse dust collectors, identified as DC-1900A, each with an internal return air system, a control efficiency of 99.9%, and a maximum design grain loading of less than or equal to 0.03 grain per actual cubic foot of outlet air, when operated at gas flow rates of one thousand nine hundred (1,900) and one thousand two hundred (1,200) actual cubic feet per minute (acfm), respectively. The woodworking operation consists of the following emission units:~~

- ~~(1) One (1) table saw for cutting of wood;~~
- ~~(2) Three (3) chop saws for cutting of wood;~~
- ~~(3) One (1) band saw for cutting of wood;~~
- ~~(4) One (1) drill press for drilling and/or routing of wood;~~
- ~~(5) Miscellaneous hand operated saws, routers, and drills.~~

- ~~(e) three (3) roof-seam sanding operations, equipped with individual internal exhausting return-air dust collectors, identified as RSDC1, RSDC2, and RSDC3, constructed in 2007, with a combined process weight rate of 30 pounds per hour, with an internal return air system.~~

The source consists of the following insignificant activities:

- ~~(a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - ~~(1) two (2) natural gas-fired Thermo Cycle heaters, designated as H-01 and H-02, each rated at 0.464 MMBtu/hr;~~
  - ~~(2) two (2) natural gas-fired office furnaces, designated as H-03 and H-04, each rated at 0.09 MMBtu/hr;~~
  - ~~(3) two (2) natural gas-fired Thermo Cycle heaters, designated as H-05 and H-06, each rated at 1.3 MMBtu/hr;~~
  - ~~(4) two (2) natural gas-fired office furnaces, designated as H-07 and H-08, each rated at 0.09 MMBtu/hr; and~~
  - ~~(5) three (3) additional natural gas-fired Thermo Cycle heaters, constructed in 2007, each rated at 0.24 MMBtu/hr;~~~~
- ~~(b) two (2) additional metal inert gas (MIG) welding stations, constructed in 2007, each with a maximum electrode usage rate of 4.60 lbs of wire per hour (Wire Type 70S-3).~~
- ~~(c) two (2) plasma/arc carbon cutting stations, constructed in 2007, each with a maximum metal thickness cut of 0.1793 inches and a maximum metal rate of 10.00 inch per minute.~~

- ~~(d) side wall lamination operations, constructed in 2005, using Dura-Pur adhesive, with a maximum throughput of five (5) units per hour, venting to the indoors.~~
- ~~(e) ten (10) metal inert gas (MIG) welding stations, constructed in 2005, each with a maximum electrode usage rate of 4.60 lbs of wire per hour (Wire Type 70S-3).~~

<b>Description of Proposed Revision</b>
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The following physical locations and emission units are being added to the source:

**Plant 3 (2944 Dexter Drive, Elkhart, IN 46514)**

Plant 3 consists of the following emission units:

- (a) One (1) small parts lamination process, identified as SPL3, approved for construction in 2011, with a maximum capacity of 10 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

Plant 3 consists of the following insignificant activities:

- (a) Four (4) metal inert gas (MIG) welding stations, identified as WC3, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Seven (7) tube heaters, identified as 3H-01 through 3H-07, each rated at 0.35 MMBtu/hr;
  - (2) One (1) tube heater, identified as 3H-08, rated at 0.10 MMBtu/hr; and
  - (3) One (1) forced air furnace, identified as 3H-09, rated at 0.08 MMBtu/hr.

**Plant 7A / 7B (1001 All Pro Drive, Elkhart, IN 46514)**

Plant 7A / 7B consists of the following emission units:

- (a) One (1) chassis preparation operation, identified as CP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices, exhausting within the building.
- (b) Two (2) assembly line operations, identified as ALO7A and ALO7B, approved for construction in 2011, with a combined maximum capacity of 1.25 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices, and exhausting within the building.
- (c) One (1) touch-up paint operation, identified as TP7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices, and exhausting within the building.
- (d) One (1) final finish operation, identified as FF7A/7B, approved for construction in 2011, with a maximum capacity of 1.25 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices, and exhausting within the building.

- (e) One (1) cabinet and molding assembly operation, identified as WW7A/7B, approved for construction in 2011, controlled by baghouse 7A/7BDC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
- (f) One (1) PVC chop saw, identified as 7ACS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) Two (2) aluminum chop saws, identified as 7ACS2 and 7ACS-3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 7ACS4 through 7ACS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 7ADP1 and 7ADP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Six (6) hand routers, identified as 7AHR1 through 7AHR6, approved for construction in 2011, with a combined maximum capacity of 120 feet per hour, utilizing no control devices, and exhausting within the building.

Plant 7A / 7B consists of the following insignificant activities:

- (a) One (1) welding and cutting operation, identified as WC7A/7B, approved for construction in 2011, consisting of:
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S);
  - (2) One (1) stick welding station, with a maximum electrode usage of 0.50 lbs/hr (E5154 Electrode); and
  - (3) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 7AH-01 and 7AH-02, each rated at 0.464 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 7AH-03 and 7AH-04, each rated at 0.09 MMBtu/hr.

**Plant 11 (1140 D.I. Drive, Elkhart, IN 46514)**

Plant 11 consists of the following emission units:

- (a) One (1) sidewall lamination operation, identified as SLO11, approved for construction in 2011, with a maximum capacity of 20 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

Plant 11 consists of the following insignificant activities:

- (a) Six (6) metal inert gas (MIG) welding stations, identified as WC11, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Twelve (12) tube heaters, identified as 11H-01 through 11H-12, each rated at 0.10 MMBtu/hr.

**Plant 12 (1111 All Pro Drive, Elkhart, IN 46514)**

Plant 12 consists of the following emission units:

- (a) One (1) small parts lamination process, identified as SPL12, approved for construction in 2011, with a maximum capacity of 20 units per hour, applying adhesives to wood and plastic substrates via roll coating, utilizing no control devices.

Plant 12 consists of the following insignificant activities:

- (a) Nine (9) aluminum welding stations, identified as WC12, approved for construction in 2011, each with a maximum electrode usage of 5.40 lbs/hr.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) One (1) forced air furnace, identified as 12H-01, rated at 0.114 MMBtu/hr;
  - (2) One (1) forced air furnace, identified as 12H-02, rated at 0.08 MMBtu/hr; and
  - (3) Three (3) thermo cyclers, identified as 12H-03 through 12H-05, each rated at 1.20 MMBtu/hr.

**Plant 14 (2900 Dexter Drive, Elkhart, IN 46514)**

Plant 14 consists of the following emission units:

- (a) One (1) cabinet and molding assembly operation, identified as WWE14, approved for construction in 2011, and consisting of the following:
  - (1) Two (2) 6 inch edge sanders, each with a maximum capacity of 150 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (2) Four (4) 12 inch chop saws, each with a maximum capacity of 50 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (3) One (1) 10 inch band saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-01, and exhausting within the building.
  - (4) Two (2) 12 inch table saws, each with a maximum capacity of 100 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.
  - (5) One (1) panel saw, with a maximum capacity of 200 lbs per hour, controlled by baghouse 14DC-02, and exhausting within the building.

- (6) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-03, and exhausting within the building.
- (7) One (1) CNC router, with a maximum capacity of 600 lbs per hour, controlled by baghouse 14DC-04, and exhausting within the building.
- (b) One (1) manual sanding operation, identified as MPE14, approved for construction in 2011, with a maximum capacity of 200 feet per hour, utilizing no control devices, and exhausting within the building.

Plant 14 consists of the following insignificant activities:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 14H-01 and 14H-02, each rated at 0.80 MMBtu/hr;
  - (2) Two (2) forced air furnaces, identified as 14H-03 and 14H-04, each rated at 0.14 MMBtu/hr; and
  - (3) One (1) thermo cyler, identified as 14H-05, rated at 0.40 MMBtu/hr.

**Plant 16 (1330 Wade Drive, Elkhart, IN 46514)**

Plant 16 consists of the following emission units:

- (a) One (1) chassis preparation operation, identified as CP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as ALO16 approved for construction in 2011, with a maximum capacity of 0.50 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF16, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW16, approved for construction in 2011, controlled by baghouse 16DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 16CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
- (g) One (1) table router, identified as 16TR1, approved for construction in 2011, with a maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.

- (h) Four (4) wood chop saws, identified as 16CS2 through 16CS5, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) Two (2) drill presses, identified as 16DP1 and 16DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 16HR1 through 16HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

Plant 16 consists of the following insignificant activities:

- (a) One (1) welding and cutting operation, identified as WC16, approved for construction in 2011, consisting of:
  - (1) One (1) metal inert gas (MIG) welding station, with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S); and
  - (2) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 16H-01 and 16H-02, each rated at 0.80 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 16H-03 and 16H-04, each rated at 0.09 MMBtu/hr.

**Plant 17 / 18 (1110 CR 6 West, Elkhart, IN 46514)**

Plant 17 /18 consists of the following emission units:

- (a) One (1) chassis preparation operation, identified as CP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO17 and ALO18, approved for construction in 2011, with a combined maximum capacity of 0.50 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF17/18, approved for construction in 2011, with a maximum capacity of 0.50 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) PVC chop saw, identified as 17/18CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.

- (f) One (1) table saw, identified as 17/18TS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (g) Four (4) wood chop saws, identified as 17/18CS2 through 17/18CS5, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) hand routers, identified as 17/18HR1 through 17/18HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

Plant 17 / 18 consists of the following insignificant activities:

- (a) One (1) metal inert gas (MIG) welding station, identified as WC17/18 with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S).
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Two (2) forced air furnaces, identified as 17/18H-01 and 17/18H-02, each rated at 0.15 MMBtu/hr; and
  - (2) Two (2) forced air furnaces, identified as 17/18H-03 and 17/18H-04, each rated at 0.15 MMBtu/hr.

**Plants 21, 22, 23 (2950 Paul Drive, 2824 Paul Drive, & 2946 Jami Drive, Elkhart, IN 46514)**

Plants 21, 22, and 23 consist of the following emission units:

- (a) One (1) chassis preparation operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying rubberized undercoating to metal substrates, utilizing no control devices.
- (b) One (1) assembly line operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour, applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as CP21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF21/22/23, approved for construction in 2011, with a maximum capacity of 0.75 units per hour and uses less than five (5) gallons of coating per day, applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW21/22/23, approved for construction in 2011, controlled by baghouse 21DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 300 lbs/hr.
- (f) One (1) PVC chop saw, identified as 21CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.

- (g) Three (3) table saws, identified as 21TS1 through 21TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
- (h) Four (4) wood chop saws, identified as 21CS2 through 21CS5, approved for construction in 2011, with a combined maximum capacity of 8 cuts per hour, utilizing no control devices, and exhausting within the building.
- (i) One (1) drill press, identified as 21DP1, approved for construction in 2011, with a combined maximum capacity of 2.5 pieces per hour, utilizing no control devices, and exhausting within the building.
- (j) Four (4) hand routers, identified as 21HR1 through 21HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

Plants 21, 22, and 23 consist of the following insignificant activities:

- (a) One (1) welding and cutting operation, identified as WC21/22/23 approved for construction in 2011, consisting of:
  - (1) Two (2) metal inert gas (MIG) welding stations, each with a maximum electrode usage of 1.00 lbs/hr (Wire Type E70S); and
  - (2) One (1) oxyacetylene/electric arc cutting station, cutting a maximum metal thickness of 0.75 inches and a maximum metal cutting rate of 12 inches per minute.
- (b) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Twelve (12) radiant tube heaters, identified as 21/22/23H-01 through 21/22/23H-12, each rated at 0.08 MMBtu/hr; and
  - (2) Three (3) forced air furnaces, identified as 21/22/23H-13 through 21/22/23H-16, each rated at 0.06 MMBtu/hr.

**Plant 69A / 69B (2929 Gateway Drive, Elkhart, IN 46514)**

Plant 69A / 69B consists of the following emission units:

- (a) One (1) chassis preparation operation, identified as CP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying a rubberized undercoating to metal substrates, utilizing no control devices.
- (b) Two (2) assembly line operations, identified as ALO69A and ALO69B approved for construction in 2011, with a maximum capacity of 2.00 units per hour, each applying various coatings to metal, wood, fabric, and plastic substrates via flow coating, utilizing no control devices.
- (c) One (1) touch-up paint operation, identified as TP69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day, applying paint to metal substrates, utilizing no control devices.
- (d) One (1) final finish operation, identified as FF69A/69B, approved for construction in 2011, with a maximum capacity of 2.00 units per hour and uses less than five (5) gallons of coating per day,

- applying polish, cleaners, and markers to metal, plastic, and wood substrates, utilizing no control devices.
- (e) One (1) cabinet and molding assembly operation, identified as WW69A/69B, approved for construction in 2011, controlled by baghouse 69DC-01, exhausting within the building, and consisting of multiple sanders, saws, and routers, each with a maximum throughput rate of 400 lbs/hr.
  - (f) One (1) PVC chop saw, identified as 69CS1, approved for construction in 2011, with a maximum capacity of 10 cuts per hour, utilizing no control device, and exhausting within the building.
  - (g) Three (3) table saws, identified as 69TS1 through 69TS3, approved for construction in 2011, with a combined maximum capacity of 10 cuts per hour, utilizing no control devices, and exhausting within the building.
  - (h) Seven (7) wood chop saws, identified as 69CS2 through 69CS8, approved for construction in 2011, with a combined maximum capacity of 20 cuts per hour, utilizing no control devices, and exhausting within the building.
  - (i) Two (2) drill presses, identified as 69DP1 and 69DP2, approved for construction in 2011, with a combined maximum capacity of 5 pieces per hour, utilizing no control devices, and exhausting within the building.
  - (j) Four (4) hand routers, identified as 69HR1 through 69HR4, approved for construction in 2011, with a combined maximum capacity of 80 feet per hour, utilizing no control devices, and exhausting within the building.

Plant 69A / 69B consists of the following insignificant activities:

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million BTU per hour:
  - (1) Sixteen (16) radiant tube heaters, identified as 69H-01 through 69H-16, each rated at 0.14 MMBtu/hr;
  - (2) Two (2) forced air furnaces, identified as 69H-17 and 69H-18, each rated at 0.10 MMBtu/hr; and
  - (3) Two (2) forced air furnaces, identified as 69H-19 and 69H-20, each rated at 0.12 MMBtu/hr.

<b>Unpermitted Emission Units and Pollution Control Equipment</b>
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There are currently no unpermitted emission units operating at the source.

<b>Enforcement Issues</b>
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There are no pending enforcement actions related to this source.

<b>Emission Calculations</b>
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See Appendix A of this TSD for detailed emission calculations.

**Permit Level Determination – FESOP**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

<b>Pollutant</b>	<b>tons/year</b>
PM	Less than 100, Greater than 25
PM <sub>10</sub>	Less than 100, Greater than 25
PM <sub>2.5</sub>	Less than 100, Greater than 25
SO <sub>2</sub>	Less than 25
VOC	Less than 250, Greater than 100
CO	Less than 25
NO <sub>x</sub>	Less than 25

- (1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

Note: This PTE is based on the PTE after control for woodworking (see below for additional explanation).

<b>HAPs</b>	<b>tons/year</b>
Single	Greater than 10
Combined	Less than 25

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of VOC is greater than one hundred (100) tons per year. The PTE of all other regulated criteria pollutants are less than one hundred (100) tons per year. The source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a Federally Enforceable State Operating Permit (FESOP) Renewal (326 IAC 2-8), because the source will continue to limit emissions to less than the Title V major source threshold levels.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year. However, the source has agreed to continue to limit their single HAP emissions and total HAP emissions below Title V thresholds. Therefore, the source will be issued a New Source Review and FESOP Renewal.

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-7, fugitive emissions are not counted toward the determination of Part 70 applicability.

In October of 1993 a Final Order Granting Summary Judgment was signed by an Administrative Law Judge ("ALJ") Garrettson resolving an appeal filed by Kimball Hospitality Furniture Inc. (Cause Nos. 92-A-J-730 and 92-A-J-833) related to the method by which IDEM calculated potential emissions from woodworking operations. In his findings, the ALJ determined that particulate controls are necessary for the facility to produce its normal product and are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter from woodworking operations were calculated after consideration of the controls.

**PTE of the Entire Source After Issuance of the FESOP Renewal**

The table below summarizes the potential to emit of the entire source after issuance of this FESOP, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP Renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/Emission Unit	Limited Potential To Emit of the Entire Source (tons/year)								
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Single HAP
<b>Plant 2</b>									
Chassis Preparation (CP2)	0.22	0.22	0.22	-	-	α	-	0.16	β
Assembly Operations (ALO2)	negl.	negl.	negl.	-	-		-	3.55	
Touch-Up Paint (TP2)	0.09	0.09	0.09	-	-		-	0.27	
Final Finish (FF2)	0.04	0.04	0.04	-	-		-	0.48	
Cabinet & Molding Assembly (WW2)	0.26	0.26	0.26	-	-	-	-	-	-
PVC Chop Saw (2CS1)	0.44	0.44	0.44	-	-	-	-	-	-
Aluminum Chop Saws (2CS2 & 2CS3)	0.27	0.27	0.27	-	-	-	-	-	-
Wood Chop Saws (2CS4 - 2CS8)	0.57	0.57	0.57	-	-	-	-	-	-
Drill Presses (2DP1 & 2DP2)	0.22	0.22	0.22	-	-	-	-	-	-
Hand Routers (2HR1 - 2HR6)	0.10	0.10	0.10	-	-	-	-	-	-
Welding / Cutting (WC2)	0.41	0.41	0.41	-	-	-	-	0.02	negl.
Natural Gas (2H-01 through 2H-04)	0.02	0.09	0.09	0.01	1.22	0.07	1.02	0.02	0.02 Hexane
<b>Plant 3</b>									
Small Parts Lamination (SPL3)	-	-	-	-	-	negl.	-	negl.	negl.
Welding / Cutting (WC3)	0.49	0.49	0.49	-	-	-	-	0.30	0.30 Manganese
Natural Gas (3H-01 through 3H-09)	0.03	0.13	0.13	0.01	1.68	0.09	1.41	0.03	0.03 Hexane
<b>Plant 7A / 7B</b>									
Chassis Preparation (CP7A/7B)	0.19	0.19	0.19	-	-	α	-	0.14	β
Assembly Operations (ALO7A & ALO7B)	negl.	negl.	negl.	-	-		-	3.55	
Touch-Up Paint (TP7A/7B)	0.09	0.09	0.09	-	-		-	0.27	
Final Finish (FF7A/7B)	0.04	0.04	0.04	-	-		-	0.48	
Cabinet & Molding Assembly (WW7A/7B)	0.26	0.26	0.26	-	-	-	-	-	-
PVC Chop Saw (7ACS1)	0.44	0.44	0.44	-	-	-	-	-	-
Aluminum Chop Saws (7ACS2 & 7ACS3)	0.27	0.27	0.27	-	-	-	-	-	-
Wood Chop Saws (7ACS4 - 7ACS8)	0.57	0.57	0.57	-	-	-	-	-	-
Drill Presses (7ADP1 & 7ADP2)	0.22	0.22	0.22	-	-	-	-	-	-
Hand Routers (7AHR1 - 7AHR6)	0.10	0.10	0.10	-	-	-	-	-	-
Welding / Cutting (WC7A/7B)	0.46	0.46	0.46	-	-	-	-	0.02	negl.
Natural Gas (7AH-01 through 7AH-04)	0.01	0.04	0.04	negl.	0.49	0.03	0.41	0.01	0.01 Hexane
<b>Plant 11</b>									
Sidewall Lamination (SLO11)	-	-	-	-	-	negl.	-	negl.	negl.
Welding (WC11)	0.74	0.74	0.74	-	-	-	-	0.45	0.45 Manganese
Natural Gas (11H-01 - 11H-12)	0.01	0.04	0.04	negl.	0.53	0.03	0.44	0.01	0.01 Hexane
<b>Plant 12</b>									
Small Parts Lamination (SPL12)	-	-	-	-	-	negl.	-	negl.	negl.

Process/Emission Unit	Limited Potential To Emit of the Entire Source (tons/year)								
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Single HAP
Welding (WC12)	1.35	1.35	1.35	-	-	-	-	0.83	0.83 Manganese
Natural Gas (12H-01 - 12H-05)	0.03	0.13	0.13	0.01	1.66	0.09	1.40	0.03	0.03 Hexane
<b>Plant 14</b>									
Woodworking (WWE14)	1.29	1.29	1.29	-	-	-	-	-	-
Manual Sanding (MPE14)	0.16	0.16	0.16	-	-	-	-	-	-
Natural Gas (14H-01 - 14H-05)	0.01	0.03	0.03	negl.	0.37	0.02	0.31	0.01	0.01 Hexane
<b>Plant 16</b>									
Chassis Preparation (CP16)	0.08	0.08	0.08	-	-	α	-	0.06	β
Assembly Operations (ALO16)	negl.	negl.	negl.	-	-		-	1.42	
Touch-Up Paint (TP16)	0.04	0.04	0.04	-	-		-	0.11	
Final Finish (FF16)	0.01	0.01	0.01	-	-		-	0.19	
Cabinet & Molding Assembly (WW16)	15.77	15.77	15.77	-	-	-	-	-	-
PVC Chop Saw (16CS1)	0.44	0.44	0.44	-	-	-	-	-	-
Table Router (16TR1)	0.53	0.53	0.53	-	-	-	-	-	-
Wood Chop Saws (16CS2 - 16CS5)	0.57	0.57	0.57	-	-	-	-	-	-
Drill Presses (16DP1 & 16DP2)	0.22	0.22	0.22	-	-	-	-	-	-
Hand Routers (16HR1 - 16HR6)	0.06	0.06	0.06	-	-	-	-	-	-
Welding / Cutting (WC16)	0.41	0.41	0.41	-	-	-	-	0.02	negl.
Natural Gas (16H-01 - 16H-04)	0.01	0.06	0.06	negl.	0.78	0.04	0.65	0.01	0.01 Hexane
<b>Plant 17 / 18</b>									
Chassis Preparation (CP17/18)	0.08	0.08	0.08	-	-	α	-	0.06	β
Assembly Operations (ALO17 & ALO18)	negl.	negl.	negl.	-	-		-	1.42	
Touch-Up Paint (TP17/18)	0.04	0.04	0.04	-	-		-	0.11	
Final Finish (FF17/18)	0.01	0.01	0.01	-	-		-	0.19	
PVC Chop Saw (17/18CS1)	0.44	0.44	0.44	-	-	-	-	-	-
Table Saw (17/18TS1)	0.27	0.27	0.27	-	-	-	-	-	-
Wood Chop Saws (17/18CS2 - 17/18CS5)	0.29	0.29	0.29	-	-	-	-	-	-
Hand Routers (2HR1 - 2HR6)	0.06	0.06	0.06	-	-	-	-	-	-
Welding (WC17/18)	0.02	0.02	0.02	-	-	-	-	0.01	negl.
Natural Gas (17/18H-01 - 17/18H-04)	negl.	0.02	0.02	negl.	0.26	0.01	0.22	negl.	negl.
<b>Plants 21, 22, 23</b>									
Chassis Preparation (CP21/22/23)	0.11	0.11	0.11	-	-	α	-	0.08	β
Assembly Operations (ALO21/22/23)	negl.	negl.	negl.	-	-		-	2.13	
Touch-Up Paint (TP21/22/23)	0.06	0.06	0.06	-	-		-	0.16	
Final Finish (FF21/22/23)	0.02	0.02	0.02	-	-		-	0.29	
Cabinet & Molding Assembly (WW21/22/23)	0.35	0.35	0.35	-	-	-	-	-	-
PVC Chop Saw (21CS1)	0.44	0.44	0.44	-	-	-	-	-	-
Table Saws (21TS1 - 21TS3)	0.76	0.76	0.76	-	-	-	-	-	-
Wood Chop Saws (21CS2 - 21CS5)	0.23	0.23	0.23	-	-	-	-	-	-
Drill Press (21DP1)	0.08	0.08	0.08	-	-	-	-	-	-
Hand Routers (21HR1 - 21HR4)	0.06	0.06	0.06	-	-	-	-	-	-
Welding / Cutting (WC21/22/23)	0.43	0.43	0.43	-	-	-	-	0.03	0.03 Manganese
Natural Gas (21/22/23H-01 - 21/22/23H-15)	0.01	0.04	0.04	negl.	0.50	0.03	0.42	0.01	0.01 Hexane
<b>Plant 69A / 69B</b>									

Process/Emission Unit	Limited Potential To Emit of the Entire Source (tons/year)								
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Single HAP
Chassis Preparation (CP69A/69B)	0.31	0.31	0.31	-	-	α	-	0.22	β
Assembly Operations (ALO69A & ALO69B)	negl.	negl.	negl.	-	-		-	5.67	
Touch-Up Paint (TP69A/69B)	0.15	0.15	0.15	-	-		-	0.43	
Final Finish (FF69A/69B)	0.06	0.06	0.06	-	-		-	0.77	
Cabinet & Molding Assembly (WW69A/69B)	0.35	0.35	0.35	-	-	-	-	-	-
PVC Chop Saw (69CS1)	0.44	0.44	0.44	-	-	-	-	-	-
Table Saws (69TS1 - 69TS3)	3.20	3.20	3.20	-	-	-	-	-	-
Wood Chop Saws (69CS2 - 69CS8)	0.57	0.57	0.57	-	-	-	-	-	-
Drill Presses (69DP1 & 69DP2)	0.22	0.22	0.22	-	-	-	-	-	-
Hand Routers (69HR1 - 69HR6)	0.06	0.06	0.06	-	-	-	-	-	-
Natural Gas (69H-01 - 69H-20)	0.02	0.09	0.09	0.01	1.17	0.06	0.99	0.02	0.02 Hexane
<b>Total PTE of Source</b>	<b>21.22</b>	<b>21.72</b>	<b>21.72</b>	<b>0.05</b>	<b>8.66</b>	<b>&lt; 99.00</b>	<b>7.27</b>	<b>24.02</b>	<b>&lt; 9.90</b>
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA
Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.  α Combined VOC emissions for these emission units are limited to less than or equal to 98.75 tons per twelve (12) consecutive month period.  β Combined Single HAP emissions for these units are limited to less than 9.74 tons per twelve (12) consecutive month period.									

(a) FESOP Status

This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

- (1) The combined total input volatile organic compounds (VOC) including solvents, coatings, and adhesives delivered to the emission units listed in the table below shall be limited to less than or equal to 98.75 tons per twelve (12) consecutive month period with compliance determined at the end of each month:
- (2) The combined total input hazardous air pollutants (HAP) delivered to the emission units listed in the table below shall be limited such that input of any single HAP shall not exceed 9.74 tons per twelve (12) consecutive month period with compliance determined at the end of each month:

Plant ID	Emission Units		
Plant 2	CP2 ALO2	TP2 FF2	
Plant 7A / 7B	CP7A/7B, ALO7A	ALO7B TP7A/7B	FF7A/7B
Plant 16	CP16 ALO16	TP16 FF16	
Plant 17/18	CP17/18 ALO17	ALO18 TP17/18	FF17/18
Plants 21, 22, 23	CP21/22/23 ALO21/22/23	TP21/22/23 FF21/22/23	
Plant 69A/69B	CP69A/69B ALO69A	ALO69B TP69A/69B	FF69A/69B

Compliance with these limits, combined with the potential to emit VOC and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC to less than 100 tons per twelve (12) consecutive month period, any single HAP to less than ten (10) tons per twelve (12) consecutive month period, and total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

Note: The Small Parts Lamination and Sidewall Lamination Operations are not covered in the FESOP limit because the input of VOCs is not representative of the potentials to emit from these types of processes, which have negligible VOC emissions.

- (b) **PSD Minor Source**  
 This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potentials to emit all attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Note: This PSD evaluation is based on the PTE before control for the woodworking.

See the State Rule Applicability portion of this TSD for detailed emission unit limits.

<b>Federal Rule Applicability Determination</b>
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New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Automobile and Light Duty Truck Surface Coating Operations, 40 CFR 60.390, Subpart MM (326 IAC 12), are not included in the permit, since the source does not operate an automobile or light-duty truck assembly plant.
- (b) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Halogenated Solvent Cleaning, 40 CFR 63.460, Subpart T, are not included in this permit, since the source does not use any solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent.

- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Automobiles and Light-Duty Trucks, 40 CFR 63.3080, Subpart IIII (326 20-85), are not included in the permit, since this source is not located at a facility which applies topcoat to new automobile or new light-duty truck bodies or body parts for new automobiles or new light-duty trucks, is not a major source, is not located at a major source, and is not part of a major source of emissions of hazardous air pollutants (HAP).
- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR 63.3880, Subpart MMMM (326 IAC 20-80), are not included in the permit, since this source is not a major source, located at a major source, or part of a major source of emissions of HAP.
- (f) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Plastic Parts and Products, 40 CFR Part 63.4480, Subpart PPPP (326 IAC 20-81), are not included in the permit, since this source is not a major source, located at a major source, or part of a major source of emissions of HAP.
- (g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR 63.11169, Subpart HHHHHH, are not included in the permit, since this source does not perform Paint stripping operations that involve the use of chemical strippers that contain methylene chloride (MeCl), Autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations, or spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.
- (h) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Nine Metal Fabrication and Finishing Source Categories, 40 CFR 63.11514, Subpart XXXXXX, are not included in the permit, since the source is not primarily engaged in operations which are classified in one of the nine source categories listed in this NESHAP.
- (i) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (j) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

<b>State Rule Applicability - Entire Source</b>
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The following state rules are applicable to the source:

- (a) 326 IAC 2-8-4 (FESOP)  
FESOP applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))  
PSD applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.
- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The unlimited potential to emit of HAPs from the new units is greater than ten (10) tons per year for any single HAP and/or greater than twenty-five (25) tons per year of a combination of HAPs.

However, the source shall limit the potential to emit of HAPs from the new units to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the source is not subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Section above.

- (d) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (e) 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%) in 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.
- (f) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), 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, in a manner that would violate 326 IAC 6-4.
- (g) 326 IAC 8-2-2 (Automobile and Light Duty Truck Coating Operations)  
Pursuant to 326 IAC 8-2-2, all lines are exempt from the requirements of 326 IAC 8-2-2, because the source does not coat passenger car or passenger car derivatives capable of seating twelve (12) or fewer passengers and any motor vehicle rated at 3,864 kilograms (eight thousand five hundred (8,500 pounds) gross weight or less which are designed primarily for the purpose of transportation or are derivatives of such vehicles.
- (h) 326 IAC 8-2-10 (Volatile Organic Compounds, Flat Wood Panels Manufacturing Operations)  
The requirements of 326 IAC 8-2-10 are not applicable to this source, since this source does not perform manufacturing of flat wood panels.
- (i) 326 IAC 8-2-11 (Volatile Organic Compounds, Fabric and Vinyl Coating)  
The requirements of 326 IAC 8-2-11 are not applicable to this source, since this source does not perform surface coating of fabric or vinyl as defined by 326 IAC 8-2-11(a).
- (j) 326 IAC 8-2-12 (Volatile Organic Compounds, Wood Furniture and Cabinet Coating)  
The requirements of 326 IAC 8-2-12 are not applicable to this source, since this source does not perform surface coating of wood furniture or cabinets. All wood furniture and wood furniture components installed in the travel trailers are shipped to the source pre-manufactured and pre-coated. Surface coating of wood at this source consists of surface coating of structural wood with adhesives, which is not subject to this rule.

<b>State Rule Applicability – Individual Facilities</b>
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## **Plant 2**

### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP2, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP2, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Assembly Line Operation

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO2, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.
- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO2, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO2, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions of less than fifteen (15) pounds of VOC per day, when coating metal.

### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP2, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP2, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Final Finish Operation

- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF2, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.

- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
 The final finish operations, identified as FF2, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2 (Surface Coating Emission Limitations)  
 Pursuant to 326 IAC 8-1, the final finish operation, identified as FF2, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

Cabinet and Molding Assembly

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.39 pounds per hour when operating at a process weight rate of 0.20 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collector 2DC-01 shall be in operation at all times WW2 is in operation, in order to comply with this limit.

Miscellaneous Machining (Saws / Presses / Routers)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
2CS1	PVC Chop Saw	0.20	1.39
2CS2, 2CS3	Aluminum Chop Saws	0.20 (each)	1.39 (each)
2CS4, 2CS5, 2CS6, 2CS7	Wood Chop Saws	0.20 (each)	1.39 (each)
2DP1, 2DP2	Drill Presses	0.20 (each)	1.39 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

Based on calculations, a control device is not needed to comply with these limits.

## Welding

- (m) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the one (1) metal inert gas (MIG) welding station and one (1) manual stick welding station, are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.
- (n) 326 IAC 6-3(Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(10) the one oxyacetylene/electric arc cutting station is exempt from the requirements of 326 IAC 6-3, because less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut.

## **Plant 3**

### Small Parts Lamination

- (a) 326 IAC 6-3(Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(6) the small parts lamination operation, identified as SPL3, is exempt from the requirements of 326 IAC 6-3, because the process consists of surface coating using roll coating.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the small parts lamination operation, identified as SPL3, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

## Welding

- (c) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the four (4) metal inert gas (MIG) welding stations are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.

## **Plant 7A / 7B**

### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP7A/7B, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP7A/7B, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Assembly Line Operations

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO7A and ALO7B, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.

- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO7A and ALO7B, are exempt from the requirements of 326 IAC 8-1-6 because each of the assembly line operations does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO7A and ALO7B, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operations were constructed after July 1, 1990 and have actual VOC emissions of less than fifteen (15) pounds of VOC per day each, when coating metal.

#### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP7A/7B, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP7A/7B, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Final Finish Operation

- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF7A/7B, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The final finish operations, identified as FF7A/7B, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the final finish operation, identified as FF7A/7B, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

#### Cabinet and Molding Assembly

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.39 pounds per hour when operating at a process weight rate of 0.20 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collector 7A/7BDC-01 shall be in operation at all times WW7A/7B is in operation, in order to comply with this limit.

Miscellaneous Machining (Saws / Presses / Routers)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
7ACS1	PVC Chop Saw	0.20	1.39
7ACS2, 7ACS3	Aluminum Chop Saws	0.20 (each)	1.39 (each)
7ACS4, 7ACS5 7ACS6, 7ACS7	Wood Chop Saws	0.20 (each)	1.39 (each)
7ADP1, 7ADP2	Drill Presses	0.20 (each)	1.39 (each)
7AHR1, 7AHR2 7AHR3, 7AHR4 7AHR5, 7AHR6	Hand Routers	0.20 (each)	1.39 (each)

The pounds per hour limitations were calculated using the following equation:

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

$$E = 4.10(P)^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and}$$

$$P = \text{process weight rate in tons per hour}$$

Based on calculations, a control device is not needed to comply with these limits.

Welding

- (m) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
 Pursuant to 326 IAC 6-3-1(a)(9) the one (1) metal inert gas (MIG) welding station and one (1) manual stick welding station, are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.
- (n) 326 IAC 6-3(Particulate Emission Limitations, Work Practices, and Control Technologies)  
 Pursuant to 326 IAC 6-3-1(a)(10) the one oxyacetylene/electric arc cutting station is exempt from the requirements of 326 IAC 6-3, because less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut.

**Plant 11**

Sidewall Lamination Operation

- (a) 326 IAC 6-3(Particulate Emission Limitations, Work Practices, and Control Technologies)  
 Pursuant to 326 IAC 6-3-1(a)(6) the sidewall lamination operation, identified as SLO11, is exempt from the requirements of 326 IAC 6-3, because the process consists of surface coating using roll coating.

- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the sidewall lamination operation, identified as SLO11, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Welding

- (c) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the six (6) metal inert gas (MIG) welding stations are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.

### **Plant 12**

#### Small Parts Lamination

- (a) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(6) the small parts lamination operation, identified as SPL12, is exempt from the requirements of 326 IAC 6-3, because the process consists of surface coating using roll coating.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the small parts lamination operation, identified as SPL12, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Welding

- (c) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the nine (9) metal inert gas (MIG) welding stations are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.

### **Plant 14**

#### Cabinet and Molding Assembly

- (a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.15 pounds per hour when operating at a process weight rate of 0.15 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collectors 14DC-01, 14DC-02, 14DC-03, and 14DC-04 shall be in operation at all times WW14 is in operation, in order to comply with this limit.

## Manual Sanding

- (b) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(a)(14) the manual sanding operation, identified as MPE14, is exempt from the requirements of 326 IAC 6-3, because the process has potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

## **Plant 16**

### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP16, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP16, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Assembly Line Operation

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO16, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.
- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO16, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO16, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions of less than fifteen (15) pounds of VOC per day, when coating metal.

### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP16, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP16, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Final Finish Operation

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

Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF16, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.

- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
 The final finish operations, identified as FF16, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2 (Surface Coating Emission Limitations)  
 Pursuant to 326 IAC 8-1, the final finish operation, identified as FF16, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

Cabinet and Molding Assembly

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.15 pounds per hour when operating at a process weight rate of 0.15 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collector 16DC-01 shall be in operation at all times WW16 is in operation, in order to comply with this limit.

Miscellaneous Machining (Saws / Presses / Routers)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
16CS1	PVC Chop Saw	0.15	1.15
16TR1	Table Router	0.15	1.15
16CS2, 16CS3, 16CS4, 16CS5	Wood Chop Saws	0.15 (each)	1.15 (each)
16DP1, 16DP2	Drill Presses	0.15 (each)	1.15 (each)
16HR1, 16HR2, 16HR3, 16HR4	Hand Routers	0.15 (each)	1.15 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

Based on calculations, a control device is not needed to comply with these limits.

#### Welding

- (m) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the one (1) metal inert gas (MIG) welding station is exempt from the requirements of 326 IAC 6-3, because its potential to consume welding wire is less than six hundred twenty-five (625) pounds per day.
- (n) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(10) the one oxyacetylene/electric arc cutting station is exempt from the requirements of 326 IAC 6-3, because less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut.

#### **Plant 17 / 18**

##### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP17/18, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP17/18, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

##### Assembly Line Operations

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO17 and ALO18, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.
- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO17 and ALO18, are exempt from the requirements of 326 IAC 8-1-6 because each of the assembly line operations does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO17 and ALO18, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operations were constructed after July 1, 1990 and have actual VOC emissions of less than fifteen (15) pounds of VOC per day each, when coating metal.

##### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP17/18, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.

- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
 Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP17/18, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

Final Finish Operation

- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF17/18, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
 The final finish operations, identified as FF17/18, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2 (Surface Coating Emission Limitations)  
 Pursuant to 326 IAC 8-1, the final finish operation, identified as FF17/18, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

Miscellaneous Machining (Saws / Routers)

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
17/18CS1	PVC Chop Saw	0.15	1.15
17/18TS1	Table Saw	0.15	1.15
17/18CS2, 17/18CS3 17/18CS4, 17/18CS5	Wood Chop Saws	0.15 (each)	1.15 (each)
17/18HR1, 17/18HR2 17/18HR3, 17/18HR4	Hand Routers	0.15 (each)	1.15 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

Based on calculations, a control device is not needed to comply with these limits.

Welding

- (l) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
 Pursuant to 326 IAC 6-3-1(a)(9) the one (1) metal inert gas (MIG) welding station is exempt from the requirements of 326 IAC 6-3, because its potential to consume welding wire is less than six hundred twenty-five (625) pounds per day.

### **Plants 21, 22, & 23**

#### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP21/22/23, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP21/22/23, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Assembly Line Operation

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO 21/22/23, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.
- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO21/22/23, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO21/22/23, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions of less than fifteen (15) pounds of VOC per day, when coating metal.

#### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP21/22/23, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP21/22/23, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Final Finish Operation

- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF21/22/23, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.

- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
 The final finish operations, identified as FF21/22/23, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2 (Surface Coating Emission Limitations)  
 Pursuant to 326 IAC 8-1, the final finish operation, identified as FF21/22/23, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

Cabinet and Molding Assembly

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.15 pounds per hour when operating at a process weight rate of 0.15 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collector 21DC-01 shall be in operation at all times WW21/22/23 is in operation, in order to comply with this limit.

Miscellaneous Machining (Saws / Presses / Routers)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
21CS1	PVC Chop Saw	0.15	1.15
21TS1, 21TS2, 21TS3	Table Saws	0.15 (each)	1.15 (each)
21CS2, 21CS3, 21CS4, 21CS5	Wood Chop Saws	0.15 (each)	1.15 (each)
21DP1	Drill Press	0.15	1.15
21HR1, 21HR2, 21HR3, 21HR4	Hand Routers	0.15 (each)	1.15 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

Based on calculations, a control device is not needed to comply with these limits.

## Welding

- (m) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(9) the two (2) metal inert gas (MIG) welding stations are exempt from the requirements of 326 IAC 6-3, because their potential to consume welding wire is less than six hundred twenty-five (625) pounds per day, each.
- (n) 326 IAC 6-3 (Particulate Emission Limitations, Work Practices, and Control Technologies)  
Pursuant to 326 IAC 6-3-1(a)(10) the one oxyacetylene/electric arc cutting station is exempt from the requirements of 326 IAC 6-3, because less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut.

## **Plant 69A / 69B**

### Chassis Preparation

- (a) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the Chassis Preparation operation, identified as CP69A/69B, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (b) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the Chassis Preparation operation, identified as CP69A/69B, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

### Assembly Line Operations

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(7), the assembly line operations, identified as ALO69A and ALO69B, are exempt from the requirements of 326 IAC 6-3, because the surface coating is applied using flow coating.
- (d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The assembly line operations, identified as ALO69A and ALO69B, are exempt from the requirements of 326 IAC 8-1-6 because each of the assembly line operations does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (e) 326 IAC 8-2-9 (Miscellaneous metal and plastic coating operations)  
Pursuant to 326 IAC 8-1, the assembly line operations, identified as ALO69A and ALO69B, are exempt from the requirements of 326 IAC 8-2-9, because the surface coating operations were constructed after July 1, 1990 and have actual VOC emissions of less than fifteen (15) pounds of VOC per day each, when coating metal.

### Touch-Up Paint Operation

- (f) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the touch-up paint operation, identified as TP21/22/23, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.

- (g) 326 IAC 8-2 (Surface Coating Emission Limitations)  
Pursuant to 326 IAC 8-1, the touch-up paint operation, identified as TP21/22/23, is exempt from the requirements of 326 IAC 8-2, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day.

#### Final Finish Operation

- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b)(15), the final finish operation, identified as FF21/22/23, is exempt from the requirements of 326 IAC 6-3, because the surface coating operation uses less than five (5) gallons of coating per day.
- (i) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)  
The final finish operations, identified as FF21/22/23, are exempt from the requirements of 326 IAC 8-1-6 because the assembly line operation does not have potential VOC emissions greater than or equal to twenty-five (25) tons per year when coating substrates that are not otherwise regulated under other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56.
- (j) 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)  
Pursuant to 326 IAC 8-1, the final finish operation, identified as FF21/22/23, is exempt from the requirements of 326 IAC 8-2-9, because the surface coating operation was constructed after July 1, 1990 and has actual VOC emissions less than fifteen (15) pounds of VOC per day, when coating metal.

#### Cabinet and Molding Assembly

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, particulate emissions from each of the cabinet and molding assembly operation emission units shall not exceed 1.39 pounds per hour when operating at a process weight rate of 0.20 tons per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate less than 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 dust collector 69DC-01 shall be in operation at all times WW69 is in operation, in order to comply with this limit.

#### Miscellaneous Machining (Saws / Presses / Routers)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
69CS1	PVC Chop Saw	0.20	1.39
69TS1, 69TS2, 69TS3	Table Saws	0.20 (each)	1.39 (each)
69CS2, 69CS3, 69CS4, 69CS5 69CS6, 69CS7, 69CS8	Wood Chop Saws	0.20 (each)	1.39 (each)
69DP1, 69DP2	Drill Presses	0.20 (each)	1.39 (each)
69HR1, 69HR2, 69HR3, 69HR4	Hand Routers	0.20 (each)	1.39 (each)

The pounds per hour limitations were calculated using the following equation:

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

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

Based on calculations, a control device is not needed to comply with these limits.

**Compliance Determination and Monitoring Requirements**

Permits issued under 326 IAC 2-8 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 2-8-4. 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.

- (a) The compliance determination and monitoring requirements applicable to this source are as follows:

Emission Unit ID	Control ID	Parameter	Frequency
WW2	2DC-01	Baghouse Inspection	Quarterly
WW7A/7B	7A/7BDC-01		
WW14	14DC-01		
	14DC-02		
	14DC-03		
	14DC-04		
WW16	16DC-01		
WW21/22/23	21DC-01		
WW69A/69B	69DC-01		

- (b) There are no applicable testing requirements for this source.

### Conclusion and Recommendation

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 November 3, 2010.

The construction of emission units and continued operation of this source shall be subject to the conditions of the attached proposed New Source Review and FESOP Renewal No. 039-29849-00621. The staff recommends to the Commissioner that this New Source Review and FESOP Renewal be approved.

### IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Jason R. Krawczyk 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) 232-8427 or toll free at 1-800-451-6027 extension 2-8427.
- (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's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

**Appendix A: Emissions Calculations  
Source Wide Summary of Emissions**

**Company Name: Heartland Recreational Vehicles, LLC**  
**Permit Number: 039-29849-00621**  
**Plt ID: 039-00621**  
**Reviewer: Jason R. Krawczyk**  
**Date: January 24, 2011**

Uncontrolled Emissions (Tons/Yr)									
Plant ID	PM	PM10	PM2.5	VOC	NOx	SO2	CO	Single HAP*	Combined HAP
Plant 2	2.64	2.70	2.70	22.35	1.22	0.01	1.02	3.70	4.49
Plant 3	0.52	0.62	0.62	0.09	1.68	0.01	1.41	0.03	0.33
Plant 7A/7B	2.65	2.67	2.67	22.26	0.49	0.00	0.41	3.67	4.46
Plant 11	0.75	0.78	0.78	0.03	0.53	0.00	0.44	0.01	0.46
Plant 12	1.38	1.48	1.48	0.09	1.66	0.01	1.40	0.03	0.86
Plant 14	1.46	1.48	1.48	0.02	0.37	0.00	0.31	0.01	0.01
Plant 16	2.69	2.74	2.74	8.94	0.78	0.00	0.65	1.48	1.80
Plant 17/18	1.21	1.22	1.22	8.91	0.26	0.00	0.22	1.47	1.79
Plants 21, 22, & 23	2.55	2.58	2.58	13.37	0.50	0.00	0.42	2.20	2.70
Plant 69A/69B	5.38	5.45	5.45	35.64	1.17	0.01	0.99	5.88	7.11
<b>Potential to Emit:</b>	<b>21.22</b>	<b>21.72</b>	<b>21.72</b>	<b>111.69</b>	<b>8.66</b>	<b>0.05</b>	<b>7.27</b>	<b>18.48</b>	<b>24.02</b>

Note:

Highest Single HAP = Hexane

Controlled Emissions (Tons/Yr)									
Plant ID	PM	PM10	PM2.5	VOC	NOx	SO2	CO	Single HAP*	Combined HAP
Plant 2	2.64	2.70	2.70	22.35	1.22	0.01	1.02	3.70	4.49
Plant 3	0.52	0.62	0.62	0.09	1.68	0.01	1.41	0.03	0.33
Plant 7A/7B	2.65	2.67	2.67	22.26	0.49	0.00	0.41	3.67	4.46
Plant 11	0.75	0.78	0.78	0.03	0.53	0.00	0.44	0.01	0.46
Plant 12	1.38	1.48	1.48	0.09	1.66	0.01	1.40	0.03	0.86
Plant 14	1.46	1.48	1.48	0.02	0.37	0.00	0.31	0.01	0.01
Plant 16	2.69	2.74	2.74	8.94	0.78	0.00	0.65	1.48	1.80
Plant 17/18	1.21	1.22	1.22	8.91	0.26	0.00	0.22	1.47	1.79
Plants 21, 22, & 23	2.55	2.58	2.58	13.37	0.50	0.00	0.42	2.20	2.70
Plant 69A/69B	5.38	5.45	5.45	35.64	1.17	0.01	0.99	5.88	7.11
<b>Potential to Emit:</b>	<b>21.22</b>	<b>21.72</b>	<b>21.72</b>	<b>111.69</b>	<b>8.66</b>	<b>0.05</b>	<b>7.27</b>	<b>18.48</b>	<b>24.02</b>

Note:

Highest Single HAP = Hexane

Limited Emissions (Tons/Yr)									
Plant ID	PM	PM10	PM2.5	VOC	NOx	SO2	CO	Single HAP	Combined HAP
Plant 2	2.64	2.70	2.70	99.00	1.22	0.01	1.02	9.90	4.49
Plant 3	0.52	0.62	0.62		1.68	0.01	1.41		0.33
Plant 7A/7B	2.65	2.67	2.67		0.49	0.00	0.41		4.46
Plant 11	0.75	0.78	0.78		0.53	0.00	0.44		0.46
Plant 12	1.38	1.48	1.48		1.66	0.01	1.40		0.86
Plant 14	1.46	1.48	1.48		0.37	0.00	0.31		0.01
Plant 16	2.69	2.74	2.74		0.78	0.00	0.65		1.80
Plant 17/18	1.21	1.22	1.22		0.26	0.00	0.22		1.79
Plants 21, 22, & 23	2.55	2.58	2.58		0.50	0.00	0.42		2.70
Plant 69A/69B	5.38	5.45	5.45		1.17	0.01	0.99		7.11
<b>Potential to Emit:</b>	<b>21.22</b>	<b>21.72</b>	<b>21.72</b>	<b>99.00</b>	<b>8.66</b>	<b>0.05</b>	<b>7.27</b>	<b>9.90</b>	<b>24.02</b>

**Appendix B: Emission Calculations  
Emissions Summary  
Plant 2**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Uncontrolled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.02	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.64
PM10	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
PM2.5	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
VOC	0.07	0.40	18.49	1.10	2.30	-	-	-	22.35
NOx	1.22	-	-	-	-	-	-	-	1.22
SO2	0.01	-	-	-	-	-	-	-	0.01
CO	1.02	-	-	-	-	-	-	-	1.02
Single HAP (Hexane)	0.02	0.15	3.53	0.00	0.00	-	-	-	3.70
Combined HAPs	0.02	0.16	3.55	0.27	0.48	-	-	0.02	4.49

Controlled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.02	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.64
PM10	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
PM2.5	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
VOC	0.07	0.40	18.49	1.10	2.30	-	-	-	22.35
NOx	1.22	-	-	-	-	-	-	-	1.22
SO2	0.01	-	-	-	-	-	-	-	0.01
CO	1.02	-	-	-	-	-	-	-	1.02
Single HAP (Hexane)	0.02	0.15	3.53	0.00	0.00	-	-	-	3.70
Combined HAPs	0.02	0.16	3.55	0.27	0.48	-	-	0.02	4.49

Limited Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.02	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.64
PM10	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
PM2.5	0.09	0.22	0.00	0.09	0.04	0.26	1.59	0.41	2.70
VOC	0.07	α				-	-	-	0.07
NOx	1.22	-	-	-	-	-	-	-	1.22
SO2	0.01	-	-	-	-	-	-	-	0.01
CO	1.02	-	-	-	-	-	-	-	1.02
Single HAP (Hexane)	0.02	β				-	-	-	0.02
Combined HAPs	0.02	0.16	3.55	0.27	0.48	-	-	0.02	4.49

**Note:**

α Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

β Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix B: Emission Calculations  
Natural Gas Combustion Only  
Plant 2**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity  
MMBtu/hr  
 2.60  
 0.18  
 2.78

Potential Throughput  
MMCF/yr  
 22.78  
 1.58  
 24.4

Emission Units  
 Two (2) Forced Air Furnaces @ 1.30 MMBtu/hr each (2H-03 and 2H-04)  
 Two (2) Forced Air Furnaces @ 0.09 MMBtu/hr each (2H-01 and 2H-02)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.02	0.09	0.01	1.22	0.07	1.02

\*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  
 \*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix B: Emission Calculations  
Natural Gas Combustion Only  
Plant 2  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	2.557E-05	1.461E-05	9.132E-04	2.192E-02	4.140E-05

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	6.088E-06	1.339E-05	1.705E-05	4.627E-06	2.557E-05

Methodology is the same as page 2.

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 B: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP2)  
Plant 2**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02864	1.250	6.44	2.52	0.09	2.17	0.40	0.22	22.80	50%
<b>Potential Emissions:</b>											<b>0.09</b>	<b>2.17</b>	<b>0.40</b>	<b>0.22</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0286	1.25	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.01	0.00	0.00	0.15	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.15</b>	<b>0.00</b>	<b>0.00</b>

**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 B: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO2)  
Plant 2**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	1.250	0.16	0.16	0.00	0.04	0.01	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	1.250	0.71	0.71	0.18	4.25	0.78	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	1.250	0.01	0.01	0.00	0.05	0.01	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	1.250	0.18	0.18	0.05	1.18	0.22	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta'Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	1.250	3.37	2.75	2.81	67.47	12.31	0.00	6.57	100%	Wood/Fabric
Sta'Put SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	1.250	4.15	3.31	0.90	21.71	3.96	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	1.250	7.10	6.17	0.27	6.60	1.20	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>4.22</b>	<b>101.31</b>	<b>18.49</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	1.250	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.008	0.01	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta'Put SP90	6.08	0.8165	1.250	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	3.53	0.00	0.00
Oatey 60E5	16.68	0.0026	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.008</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>3.53</b>	<b>0.00</b>	<b>0.00</b>

**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 B: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP2)  
Plant 2**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.2%	64.77%	20.6%	7.00%	0.0003	1.250	4.76	3.78	0.00	0.04	0.01	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.1%	61.92%	23.8%	6.00%	0.0414	1.250	4.71	3.59	0.19	4.46	0.81	0.07	59.86	50%	Metal
SW 10010	6.09	82.10%	27.1%	55.04%	25.0%	7.00%	0.0003	1.250	4.47	3.35	0.00	0.03	0.01	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.7%	71.01%	10.9%	9.00%	0.0008	1.250	5.50	4.90	0.00	0.12	0.02	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.0%	69.08%	0.0%	21.00%	0.0006	1.250	6.10	6.10	0.00	0.11	0.02	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.0%	96.10%	0.0%	2.84%	0.0018	1.250	6.90	6.90	0.02	0.38	0.07	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.6%	58.04%	10.0%	23.00%	0.0023	1.250	4.89	4.40	0.01	0.30	0.06	0.01	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.0%	28.03%	0.0%	66.00%	0.0005	1.250	2.50	2.50	0.00	0.03	0.01	0.00	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.0%	98.68%	0.0%	1.00%	0.0001	1.250	7.50	7.50	0.00	0.03	0.00	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.5%	92.58%	2.0%	4.00%	0.0028	1.250	6.23	6.10	0.02	0.51	0.09	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>											<b>0.25</b>	<b>6.01</b>	<b>1.10</b>	<b>0.09</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)
SW 10001	5.84	0.0003	1.250	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.002	0.000	0.000	0.000	0.000	0.000
SW 4402	5.80	0.0414	1.250	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.184	0.000	0.000	0.000	0.000	0.000
SW 10010	6.09	0.0003	1.250	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF AM800	6.90	0.0008	1.250	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.003	0.000	0.000	0.000	0.000	0.000
BASF NRL Bases	8.83	0.0006	1.250	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.010	0.000	0.000	0.003	0.000	0.004	0.013
DuPont 7601S	7.18	0.0018	1.250	13.00%	28.00%	0.00%	3.30%	0.00%	0.00%	0.00%	0.009	0.020	0.000	0.002	0.000	0.000	0.000
BASF DC76NR	7.58	0.0023	1.250	6.00%	0.00%	0.00%	1.00%	0.00%	0.00%	6.00%	0.006	0.000	0.000	0.001	0.000	0.000	0.006
BASF LH200	8.92	0.0005	1.250	0.00%	13.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.003	0.000	0.000	0.000	0.000	0.000
BASF 352-500	7.60	0.0001	1.250	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.001	0.000	0.000	0.000	0.000	0.000	0.000
BASF UR500	6.59	0.0028	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.026</b>	<b>0.213</b>	<b>0.000</b>	<b>0.006</b>	<b>0.000</b>	<b>0.004</b>	<b>0.018</b>

**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 B: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF2)  
Plant 2**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	1.25	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	1.25	4.83	3.09	0.00	0.02	0.00	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	1.25	7.09	6.09	0.10	2.48	0.45	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	1.25	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	1.25	6.59	6.59	0.08	1.82	0.33	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	1.25	6.51	6.51	0.20	4.86	0.89	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	1.25	4.16	0.98	0.02	0.39	0.07	0.03	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	1.25	6.42	1.67	0.01	0.26	0.05	0.01	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	1.25	6.59	6.59	0.09	2.27	0.41	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	1.25	6.53	0.99	0.02	0.49	0.09	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	1.25	5.94	5.94	0.00	0.02	0.00	0.00	51.29	100.00%	Wood
<b>Potential Emissions:</b>											<b>0.53</b>	<b>12.62</b>	<b>2.30</b>	<b>0.04</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	1.25	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	1.25	0.00%	67.00%	19.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.349	0.099	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.030	0.000
Cyclo C-192	8.34	0.0052	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	1.25	3.00%	0.00%	0.00%	1.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.349</b>	<b>0.099</b>	<b>0.000</b>	<b>0.000</b>	<b>0.030</b>	<b>0.000</b>

**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 B: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plant 2**

**Company Name: Heartland Recreational Vehicles, LLC**  
**Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514**  
**Permit Number: 039-29849-00621**  
**Plt ID: 039-00621**  
**Reviewer: Jason R. Krawczyk**  
**Date: January 24, 2011**

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft²)	Total Filter Area (ft²)	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
2DC-01	3,500	0.002	3.1	1,140.00	98.00%	3.00	13.14	0.06	0.26
						3.00	13.14	0.06	0.26

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]

**Appendix B: Emission Calculations**  
**Particulate Emissions from Miscellaneous Machining**  
**Plant 2**

Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011

**One (1) PVC Chop Saws 2CS1**

10.00	cuts/hr	x	4.000	1 diameter pip	x	3.14	pi	x	0.1250	in thick pipe wall	x	0.125	in thick blade	=	1.96	in3 loss/hr
1.96	in3 loss/hr	/	1,728	in3/ft3	x	87.71	lb/ft3	=	0.10	lb loss/hr		0.44	tons/yr			

**Two (2) Aluminum Chop Saws 2CS2-3**

10.00	cuts/hr	x	4.00	in long	x	0.125	in thick	x	0.125	in wide	=	0.625	in3 loss/hr
0.63	in3 loss/hr	/	1,728	in3/ft3	x	168.43	lb/ft3	=	0.06	lb loss/hr	=	0.27	tons/yr

**Four (4) Wood Chop Saws 2CS4-8**

20.00	cuts/hr	x	1.50	in long	x	1.50	in thick	x	0.125	in wide	=	5.625	in3 loss/hr
5.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.13	lb loss/hr	=	0.57	tons/yr

**Two (2) Drill Presses 2DP1-2**

20.00	BF/hr	/	4	BF/piece	=	5	pieces/hr									
5.00	pieces/hr	x	6.00	holes/piece	x	3.14	pi	x	0.0156	r <sup>2</sup> *	x	1.5	in depth	=	2.21	in3 loss/hr
*1/4 in diameter bit																
2.21	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.05	lb loss/hr	=	0.22	tons/yr			

**Six (6) Hand Routers 2HR1-6**

120.00	feet/hr	x	0.125	in wide bit	x	0.06	in depth (edge trimming)	=	0.94	in3 loss/hr			
0.94	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.02	lb loss/hr		0.10	tons/yr

Total Loss Estimate =	0.36 lb loss/hr
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Total Loss Estimate =	1.59 tons/year
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**Appendix B: Emission Calculations**  
**Welding and Thermal Cutting**  
**Plant 2**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC 2	Metal Inert Gas (MIG)(E70S)	1	1.00	0.0052	0.00318	0.00001	0.00001	0.00001	0.005	0.003	0.000	0.000	0.00001	0.003	
	FLAME CUTTING	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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC 2	Oxacetylene / Electric Arc	1	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.088	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
	Potential Emissions lbs/hr									0.09				0.00	
	Potential Emissions lbs/day									2.23				0.09	
	Potential Emissions tons/year									<b>0.41</b>				<b>0.02</b>	

**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.

**Appendix C: Emission Calculations** Page 1 of 5 TSD App C  
**Emissions Summary**  
**Plant 3**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2944 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<b>Uncontrolled Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	0.49	0.52
PM10	0.13	-	0.49	0.62
PM2.5	0.13	-	0.49	0.62
VOC	0.09	0.00	-	0.09
NOx	1.68	-	-	1.68
SO2	0.01	-	-	0.01
CO	1.41	-	-	1.41
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.30	0.33

<b>Controlled Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	0.49	0.52
PM10	0.13	-	0.49	0.62
PM2.5	0.13	-	0.49	0.62
VOC	0.09	0.00	-	0.09
NOx	1.68	-	-	1.68
SO2	0.01	-	-	0.01
CO	1.41	-	-	1.41
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.30	0.33

<b>Limited Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	0.49	0.52
PM10	0.13	-	0.49	0.62
PM2.5	0.13	-	0.49	0.62
VOC	0.09	0.00	-	0.09
NOx	1.68	-	-	1.68
SO2	0.01	-	-	0.01
CO	1.41	-	-	1.41
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.30	0.33

**Appendix C: Emission Calculations  
Natural Gas Combustion Only  
Plant 3**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2944 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity MMBtu/hr
2.45
1.30
0.09
<b>3.84</b>

Potential Throughput MMCF/yr
21.46
11.39
0.79
<b>33.6</b>

Emission Units  
 Seven (7) Tube Heaters @ 0.35 MMBtu/hr each (3H-01 through 3H-07)  
 One (1) Tube Heater @ 0.10 MMBtu/hr (3H-08)  
 One (1) Forced Air Furnace @ 0.08 MMBtu/hr (3H-09)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.03	0.13	0.01	1.68	0.09	1.41

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadshee

**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

See page 3 for HAPs emissions calculations.

**Appendix C: Emission Calculations  
Natural Gas Combustion Only  
Plant 3  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2944 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	3.532E-05	2.018E-05	1.261E-03	3.027E-02	5.719E-05

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	8.410E-06	1.850E-05	2.355E-05	6.391E-06	3.532E-05

Methodology is the same as page 2.

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 C: Emission Calculations  
VOC, Particulate, and HAP  
From Small Parts Lamination (SPL3)  
Plant 3**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2944 Dexter Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	
UH 3040	9.40	7.00%	0.0%	7.0%	0.0%	91.06%	0.34500	10.000	0.66	0.66	5.94E-08	1.42E-06	2.60E-07	0.00	0.72	100%	
2352	8.14	0.00%	0.0%	0.0%	0.0%	100.00%	0.00025	10.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	
<b>Potential Emissions:</b>												<b>5.94E-08</b>	<b>1.42E-06</b>	<b>2.60E-07</b>	<b>0.00</b>		

**Note:**  
VOC PTE is calculated using methodology below.

**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)  
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

**\*METHODOLOGY**  
**Formula**  $W = 25.4 * Vpmdi * (MW / Tproc) * u^{0.78} * SA * tTF * Kmdi$

W = Evaporative Losses (grams/day)

VPmdi = Vapor Pressure at Temperature Used (Atmospheres) at process temperature

MW = Molecular Weight (MDI = 250.26) UH 3040 1.023E-05 mm HG 1.346E-08 Atm  
   250.26

Tproc = Process Temperature (Kelvin) UH 3040 77 F 298.15 K

u = Air Flow Rate (m/s) 100 ft/min 0.508 m/s

SA = Exposed Surface Area (Square Meters Exposed/Day)

<u>Adhesive</u>	<u>Use</u>	<u>Units</u>	<u>Maximum Area Coated Annual (Average Size)</u>	<u>Maximum Area Coated per Day (ft2)</u>	<u>Maximum Exposed Area M2/Day</u>	<u>Units</u>	<u>Emissions grams/day per Formula</u>
<b>UH 3040</b>	Small Parts Coverage	20000 50	sf/unit	15,000,000	41,095.89	<u>3,817.93</u> <u>M2</u>	<u>6.46E-04</u>

tTF = Tack Free Time in Seconds (Default = 5 Seconds) 5 s

Kmdi = Vapor Pressure Adjustment Factor for Polyisocyanate Concentration (80 degrees @ 10% MDI from Table B) 0.20

Potential Emission Rate 6.46E-04 grams/day  
Potential Emission Rate 2.69E-05 grams/hour = grams/day / 24 hours/day  
Potential Emission Rate 5.94E-08 lbs/hour = grams/hour / 453.5 grams/lb  
Potential Emission Rate 1.42E-06 lbs/day = lbs/hour x 24 hours /day  
**Potential Emission Rate** **2.60E-07 tons/year** = lbs/day x 365 days/year x 1/2,000 lb/ton

**Note:**  
Methodology from: Alliance for the Polyurethanes Industry: Estimating MDI Emissions for Section 313 of EPCRA Reporting

**Appendix C: Emission Calculations  
Welding and Thermal Cutting  
Plant 3**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2944 Dexter Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC 3	Metal Inert Gas (MIG)(E70S)	4	5.40	0.0052	0.00318	0.00001	0.00001	0.00001	0.112	0.069	0.000	0.000	0.000216	0.069	
	FLAME CUTTING	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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC 3	Oxacetylene / Electric Arc	0	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.000	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
	Potential Emissions lbs/hr									0.11					0.07
	Potential Emissions lbs/day									2.70					1.66
	Potential Emissions tons/year									<b>0.49</b>					<b>0.30</b>

**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.

**Appendix D: Emission Calculations  
Emissions Summary  
Plants 7A / 7B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Uncontrolled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.65
PM10	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
PM2.5	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
VOC	0.03	0.34	18.49	1.10	2.30	-	-	-	22.26
NOx	0.49	-	-	-	-	-	-	-	0.49
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.41	-	-	-	-	-	-	-	0.41
Single HAP (Hexane)	0.01	0.13	3.53	0.00	0.00	-	-	-	3.67
Combined HAPs	0.01	0.14	3.55	0.27	0.48	-	-	0.02	4.46

Controlled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.65
PM10	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
PM2.5	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
VOC	0.03	0.34	18.49	1.10	2.30	-	-	-	22.26
NOx	0.49	-	-	-	-	-	-	-	0.49
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.41	-	-	-	-	-	-	-	0.41
Single HAP (Hexane)	0.01	0.13	3.53	0.00	0.00	-	-	-	3.67
Combined HAPs	0.01	0.14	3.55	0.27	0.48	-	-	0.02	4.46

Limited Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.65
PM10	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
PM2.5	0.04	0.19	0.00	0.09	0.04	0.26	1.59	0.46	2.67
VOC	0.03	α				-	-	-	0.03
NOx	0.49	-	-	-	-	-	-	-	0.49
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.41	-	-	-	-	-	-	-	0.41
Single HAP (Hexane)	0.01	β				-	-	-	0.01
Combined HAPs	0.01	0.14	3.55	0.27	0.48	-	-	0.02	4.46

**Note:**

α Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

β Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix D: Emission Calculations  
Natural Gas Combustion Only  
Plant 7A / 7B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity  
MMBtu/hr  
 0.93  
 0.18  
 1.11

Potential Throughput  
MMCF/yr  
 8.13  
 1.58  
 9.7

Emission Units  
 Two (2) Forced Air Furnaces @ 0.464 MMBtu/hr each (7AH-01 and 7AH-02)  
 Two (2) Forced Air Furnaces @ 0.09 MMBtu/hr each (7AH-03 and 7AH-04)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.04	0.00	0.49	0.03	0.41

\*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  
 \*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix D: Emission Calculations  
Natural Gas Combustion Only  
Plant 7A / 7B  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	1.019E-05	5.824E-06	3.640E-04	8.735E-03	1.650E-05

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	2.427E-06	5.338E-06	6.794E-06	1.844E-06	1.019E-05

Methodology is the same as page 2.

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 D: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP7A/7B)  
Plant 7A/7B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02490	1.250	6.44	2.52	0.08	1.89	0.34	0.19	22.80	50%
<b>Potential Emissions:</b>											<b>0.08</b>	<b>1.89</b>	<b>0.34</b>	<b>0.19</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0249	1.25	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.01	0.00	0.00	0.13	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.13</b>	<b>0.00</b>	<b>0.00</b>

**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 D: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO7A & ALO7B)  
Plant 7A/7B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	1.250	0.16	0.16	0.00	0.04	0.01	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	1.250	0.71	0.71	0.18	4.25	0.78	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	1.250	0.01	0.01	0.00	0.05	0.01	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	1.250	0.18	0.18	0.05	1.18	0.22	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta'Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	1.250	3.37	2.75	2.81	67.47	12.31	0.00	6.57	100%	Wood/Fabric
Sta'Put SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	1.250	4.15	3.31	0.90	21.71	3.96	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	1.250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	1.250	7.10	6.17	0.27	6.60	1.20	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>4.22</b>	<b>101.31</b>	<b>18.49</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	1.250	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.008	0.01	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta'Put SP90	6.08	0.8165	1.250	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	3.53	0.00	0.00
Oatey 60E5	16.68	0.0026	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.008</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>3.53</b>	<b>0.00</b>	<b>0.00</b>

**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 D: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP7A/7B)  
Plant 7A/7B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.2%	64.77%	20.6%	7.00%	0.0003	1.250	4.76	3.78	0.00	0.04	0.01	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.1%	61.92%	23.8%	6.00%	0.0414	1.250	4.71	3.59	0.19	4.46	0.81	0.07	59.86	50%	Metal
SW 10010	6.09	82.10%	27.1%	55.04%	25.0%	7.00%	0.0003	1.250	4.47	3.35	0.00	0.03	0.01	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.7%	71.01%	10.9%	9.00%	0.0008	1.250	5.50	4.90	0.00	0.12	0.02	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.0%	69.08%	0.0%	21.00%	0.0006	1.250	6.10	6.10	0.00	0.11	0.02	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.0%	96.10%	0.0%	2.84%	0.0018	1.250	6.90	6.90	0.02	0.38	0.07	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.6%	58.04%	10.0%	23.00%	0.0023	1.250	4.89	4.40	0.01	0.30	0.06	0.01	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.0%	28.03%	0.0%	66.00%	0.0005	1.250	2.50	2.50	0.00	0.03	0.01	0.00	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.0%	98.68%	0.0%	1.00%	0.0001	1.250	7.50	7.50	0.00	0.03	0.00	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.5%	92.58%	2.0%	4.00%	0.0028	1.250	6.23	6.10	0.02	0.51	0.09	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>											<b>0.25</b>	<b>6.01</b>	<b>1.10</b>	<b>0.09</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)
SW 10001	5.84	0.0003	1.250	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.002	0.000	0.000	0.000	0.000	0.000
SW 4402	5.80	0.0414	1.250	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.184	0.000	0.000	0.000	0.000	0.000
SW 10010	6.09	0.0003	1.250	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF AM800	6.90	0.0008	1.250	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.003	0.000	0.000	0.000	0.000	0.000
BASF NRL Bases	8.83	0.0006	1.250	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.010	0.000	0.000	0.003	0.000	0.004	0.013
DuPont 7601S	7.18	0.0018	1.250	13.00%	28.00%	0.00%	3.30%	0.00%	0.00%	0.00%	0.009	0.020	0.000	0.002	0.000	0.000	0.000
BASF DC76NR	7.58	0.0023	1.250	6.00%	0.00%	0.00%	1.00%	0.00%	0.00%	6.00%	0.006	0.000	0.000	0.001	0.000	0.000	0.006
BASF LH200	8.92	0.0005	1.250	0.00%	13.00%	0.00%	1.00%	0.00%	0.00%	0.00%	0.000	0.003	0.000	0.000	0.000	0.000	0.000
BASF 352-500	7.60	0.0001	1.250	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.001	0.000	0.000	0.000	0.000	0.000	0.000
BASF UR500	6.59	0.0028	1.250	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.026</b>	<b>0.213</b>	<b>0.000</b>	<b>0.006</b>	<b>0.000</b>	<b>0.004</b>	<b>0.018</b>

**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 D: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF7A/7B)  
Plant 7A/7B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	1.25	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	1.25	4.83	3.09	0.00	0.02	0.00	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	1.25	7.09	6.09	0.10	2.48	0.45	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	1.25	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	1.25	6.59	6.59	0.08	1.82	0.33	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	1.25	6.51	6.51	0.20	4.86	0.89	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	1.25	4.16	0.98	0.02	0.39	0.07	0.03	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	1.25	6.42	1.67	0.01	0.26	0.05	0.01	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	1.25	6.59	6.59	0.09	2.27	0.41	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	1.25	6.53	0.99	0.02	0.49	0.09	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	1.25	5.94	5.94	0.00	0.02	0.00	0.00	51.29	100.00%	Wood
<b>Potential Emissions:</b>											<b>0.53</b>	<b>12.62</b>	<b>2.30</b>	<b>0.04</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	1.25	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	1.25	0.00%	67.00%	19.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.349	0.099	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.030	0.000
Cyclo C-192	8.34	0.0052	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	1.25	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	1.25	3.00%	0.00%	0.00%	1.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.349</b>	<b>0.099</b>	<b>0.000</b>	<b>0.000</b>	<b>0.030</b>	<b>0.000</b>

**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 D: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plant 7A/7B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1001 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft²)	Total Filter Area (ft²)	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
7A/7BDC-01	3,500	0.002	3.1	1,140.00	98.00%	3.00	13.14	0.06	0.26
						3.00	<b>13.14</b>	0.06	<b>0.26</b>

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]



**Appendix D: Emission Calculations  
Welding and Thermal Cutting  
Plant 7A/7B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1001 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC 7A / 7B	Metal Inert Gas (MIG)(E70S)	1	1.00	0.0052	0.00318	0.00001	0.00001	0.00001	0.005	0.003	0.000	0.000	0.00001	0.003	
WC 7A / 7B	Stick (E5154 Electrode)	1	0.50	0.0241	0.00034	0	0	0.001	0.012	0.000	0.000	0.000	0.0005	0.001	
	FLAME CUTTING	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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC 7A / 7B	Oxacetylene / Electric Arc	1	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.088	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
	Potential Emissions lbs/hr									0.10				0.00	
	Potential Emissions lbs/day									2.52				0.10	
	Potential Emissions tons/year									<b>0.46</b>				<b>0.02</b>	

**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.

**Appendix E: Emission Calculations**    Page 1 of 5 TSD App E  
**Emissions Summary**  
**Plant 11**

**Company Name: Heartland Recreational Vehicles, LLC**  
**Address City IN Zip: 1140 D.I. Drive, Elkhart, IN 46514**  
**Permit Number: 039-29849-00621**  
**Plt ID: 039-00621**  
**Reviewer: Jason R. Krawczyk**  
**Date: January 24, 2011**

<b>Uncontrolled Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Sidewall Lamination</b>	<b>Welding</b>	<b>Total</b>
PM	0.01	-	0.74	0.75
PM10	0.04	-	0.74	0.78
PM2.5	0.04	-	0.74	0.78
VOC	0.03	0.00	-	0.03
NOx	0.53	-	-	0.53
SO2	0.00	-	-	0.00
CO	0.44	-	-	0.44
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	0.00	0.45	0.46

<b>Controlled Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Sidewall Lamination</b>	<b>Welding</b>	<b>Total</b>
PM	0.01	-	0.74	0.75
PM10	0.04	-	0.74	0.78
PM2.5	0.04	-	0.74	0.78
VOC	0.03	0.00	-	0.03
NOx	0.53	-	-	0.53
SO2	0.00	-	-	0.00
CO	0.44	-	-	0.44
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	0.00	0.45	0.46

<b>Limited Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Sidewall Lamination</b>	<b>Welding</b>	<b>Total</b>
PM	0.01	-	0.74	0.75
PM10	0.04	-	0.74	0.78
PM2.5	0.04	-	0.74	0.78
VOC	0.03	0.00	-	0.03
NOx	0.53	-	-	0.53
SO2	0.00	-	-	0.00
CO	0.44	-	-	0.44
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	0.00	0.45	0.46

**Appendix E: Emission Calculations  
Natural Gas Combustion Only  
Plant 11**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1140 D.I. Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity

MMBtu/hr

1.20

1.20

Potential Throughput

MMCF/yr

10.51

10.5

Emission Units

Twelve (12) Tube Heaters @ 0.10 MMBtu/hr each (11H-01 through 11H-12)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
1.9	7.6	0.6	100	5.5	84	
			**see below			
Potential Emission in tons/yr	0.01	0.04	0.00	0.53	0.03	0.44

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadshee

**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

See page 3 for HAPs emissions calculations.

**Appendix E: Emission Calculations  
Natural Gas Combustion Only  
Plant 11  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1140 D.I. Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	1.104E-05	6.307E-06	3.942E-04	9.461E-03	1.787E-05

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	2.628E-06	5.782E-06	7.358E-06	1.997E-06	1.104E-05

Methodology is the same as page 2.

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 E: Emission Calculations  
VOC, Particulate, and HAP  
From Sidewall Lamination Operation (SL011)  
Plant 11**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1140 D.I Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
UH 2199	9.40	7.00%	0.0%	7.0%	0.0%	91.06%	1.03500	20.000	0.66	0.66	6.68E-08	1.60E-06	2.92E-07	0.00	0.72	100%
<b>Potential Emissions:</b>											<b>6.68E-08</b>	<b>1.60E-06</b>	<b>2.92E-07</b>	<b>0.00</b>		

**Note:**  
VOC PTE is calculated using methodology below.

**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)  
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

**\*METHODOLOGY**  
**Formula**  $W = 25.4 * Vpmdi * (MW / Tproc) * u^{0.78} * SA * tTF * Kmdi$   
W = Evaporative Losses (grams/day)

VPmdi = Vapor Pressure at Temperature Used (Atmospheres) at process temperature

UH 3040    1.023E-05    mm HG    1.346E-08    Atm

MW = Molecular Weight (MDI = 250.26)    250.26

Tproc = Process Temperature (Kelvin)    UH 3040    77    F    298.15    K

u = Air Flow Rate (m/s)    100    ft/min    0.508    m/s

SA = Exposed Surface Area (Square Meters Exposed/Day)

Adhesive	Use	Units	Maximum Area Coated Annual (ft2)	Maximum Area Coated per Day (ft2)	Maximum Exposed Area per Day (M2/Day)	Units	Emissions grams/day per Formula
UH 3040	Sidewalls Line 1 Coverage	25000 750    sf/unit	18,750,000	51,369.86	<u>4,772.41</u>	<u>M2</u>	<u>7.27E-04</u>

tTF = Tack Free Time in Seconds (Default = 5 Seconds)    5    s

Kmdi = Vapor Pressure Adjustment Factor for Polyisocyanate Concentration (80 degrees @ 10% MDI from Table B)    0.18

Potential Emission Rate    7.27E-04    grams/day  
 Potential Emission Rate    3.03E-05    grams/hour    = grams/day / 24 hours/day  
 Potential Emission Rate    6.68E-08    lbs/hour    = grams/hour / 453.5 grams/lb  
 Potential Emission Rate    1.60E-06    lbs/day    = lbs/hour x 24 hours /day  
**Potential Emission Rate    2.92E-07    tons/year    = lbs/day x 365 days/year x 1/2,000 lb/ton**

**Note:**  
Methodology from: Alliance for the Polyurethanes Industry: Estimating MDI Emissions for Section 313 of EPCRA Reporting

**Appendix E: Emission Calculations  
Welding and Thermal Cutting  
Plant 11**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1140 D.I Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC11	Metal Inert Gas (MIG)(E70S)	6	5.40	0.0052	0.00318	0.00001	0.00001	0.00001	0.168	0.103	0.000	0.000	0.000324	0.104	
FLAME CUTTING		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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC11	Oxacetylene / Electric Arc	0	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.000	0.000	0.000	0.000	0.000	
<b>EMISSION TOTALS</b>															
Potential Emissions lbs/hr										0.17					0.10
Potential Emissions lbs/day										4.04					2.49
Potential Emissions tons/year										0.74					0.45

**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.

**Appendix F: Emission Calculations**    Page 1 of 5 TSD App F  
**Emissions Summary**  
**Plant 12**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1111 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<b>Uncontrolled Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	1.35	1.38
PM10	0.13	-	1.35	1.48
PM2.5	0.13	-	1.35	1.48
VOC	0.09	0.00	-	0.09
NOx	1.66	-	-	1.66
SO2	0.01	-	-	0.01
CO	1.40	-	-	1.40
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.83	0.86

<b>Controlled Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	1.35	1.38
PM10	0.13	-	1.35	1.48
PM2.5	0.13	-	1.35	1.48
VOC	0.09	0.00	-	0.09
NOx	1.66	-	-	1.66
SO2	0.01	-	-	0.01
CO	1.40	-	-	1.40
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.83	0.86

<b>Limited Emissions (Tons/Yr)</b>				
Pollutant	Nat. Gas Combustion	Sm. Parts Lamination	Welding	Total
PM	0.03	-	1.35	1.38
PM10	0.13	-	1.35	1.48
PM2.5	0.13	-	1.35	1.48
VOC	0.09	0.00	-	0.09
NOx	1.66	-	-	1.66
SO2	0.01	-	-	0.01
CO	1.40	-	-	1.40
Single HAP (Hexane)	0.03	-	-	0.03
Combined HAPs	0.03	0.00	0.83	0.86

**Appendix F: Emission Calculations  
Natural Gas Combustion Only  
Plant 12**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1111 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity MMBtu/hr
0.11
0.08
3.60
<b>3.79</b>

Potential Throughput MMCF/yr
1.00
0.70
31.54
<b>33.2</b>

Emission Units

One (1) Forced Air Furnace @ 0.114 MMBtu/hr (12H-01)  
 One (1) Forced Air Furnace @ 0.08 MMBtu/hr (12H-02)  
 Three (3) Thermo Cyclers @ 1.20 MMBtu/her each (12H-03 through 12H-05)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.03	0.13	0.01	1.66	0.09	1.40

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix F: Emission Calculations  
Natural Gas Combustion Only  
Plant 12  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1111 All Pro Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	3.490E-05	1.994E-05	1.246E-03	2.991E-02	5.650E-05

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	8.309E-06	1.828E-05	2.326E-05	6.315E-06	3.490E-05

Methodology is the same as page 2.

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 F: Emission Calculations  
VOC, Particulate, and HAP  
From Small Parts Lamination (SPL12)  
Plant 12**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1111 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	
UH 3040	9.40	7.00%	0.0%	7.0%	0.0%	91.06%	0.34500	10.000	0.66	0.66	8.90E-08	2.14E-06	3.90E-07	0.00	0.72	100%	
2352	8.14	0.00%	0.0%	0.0%	0.0%	100.00%	0.00025	10.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	
<b>Potential Emissions:</b>												<b>8.90E-08</b>	<b>2.14E-06</b>	<b>3.90E-07</b>	<b>0.00</b>		

**Note:**  
VOC PTE is calculated using methodology below.

**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)  
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

**\*METHODOLOGY**  
**Formula**  $W = 25.4 * Vpmdi * (MW / Tproc) * u^{0.78} * SA * tTF * Kmdi$

W = Evaporative Losses (grams/day)

VPmdi = Vapor Pressure at Temperature Used (Atmospheres) at process temperature

MW = Molecular Weight (MDI = 250.26) UH 3040 1.023E-05 mm HG 1.346E-08 Atm  
250.26

Tproc = Process Temperature (Kelvin) UH 3040 77 F 298.15 K

u = Air Flow Rate (m/s) 100 ft/min 0.508 m/s

SA = Exposed Surface Area (Square Meters Exposed/Day)

<u>Adhesive</u>	<u>Use</u>	<u>Units</u>	<u>Maximum Area Coated Annual (ft2)</u>	<u>Maximum Area Coated per Day (ft2)</u>	<u>Maximum Exposed Area M2/Day</u>	<u>Units</u>	<u>Emissions grams/day per Formula</u>
<b>UH 3040</b>	Small Parts Coverage	30000 50		22,500,000 sf/unit	61,643.84	<u>5,726.90</u> <u>M2</u>	<u>9.69E-04</u>

tTF = Tack Free Time in Seconds (Default = 5 Seconds) 5 s

Kmdi = Vapor Pressure Adjustment Factor for Polyisocyanate Concentration (80 degrees @ 10% MDI from Table B) 0.20

Potential Emission Rate 9.69E-04 grams/day  
 Potential Emission Rate 4.04E-05 grams/hour = grams/day / 24 hours/day  
 Potential Emission Rate 8.90E-08 lbs/hour = grams/hour / 453.5 grams/lb  
 Potential Emission Rate 2.14E-06 lbs/day = lbs/hour x 24 hours /day  
**Potential Emission Rate** **3.90E-07 tons/year** = lbs/day x 365 days/year x 1/2,000 lb/ton

**Note:**  
Methodology from: Alliance for the Polyurethanes Industry: Estimating MDI Emissions for Section 313 of EPCRA Reporting

**Appendix F: Emission Calculations  
Welding and Thermal Cutting  
Plant 12**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1111 All Pro Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC12	WELDING Metal Inert Gas (MIG)(Aluminum)	11	5.40	0.0052	0.00318	0.00001	0.00001	0.00001	0.309	0.189	0.001	0.001	0.000594	0.190	
	FLAME CUTTING	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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC12	Oxacetylene / Electric Arc	0	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.000	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
	Potential Emissions lbs/hr									0.31					0.19
	Potential Emissions lbs/day									7.41					4.56
	Potential Emissions tons/year									1.35					0.83

**Methodology:**

\*Emission Factors are default values for carbon steel since no AP-42 Factor exists for Aluminum welding wire.

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

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.

**Appendix G: Emission Calculations** Page 1 of 5 TSD App G  
**Emissions Summary**  
**Plant 14**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2900 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<b>Uncontrolled Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Cabinet &amp; Molding</b>	<b>Sanding</b>	<b>Total</b>
PM	0.01	1.29	0.16	1.46
PM10	0.03	1.29	0.16	1.48
PM2.5	0.03	1.29	0.16	1.48
VOC	0.02	-	-	0.02
NOx	0.37	-	-	0.37
SO2	0.00	-	-	0.00
CO	0.31	-	-	0.31
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	-	-	0.01

<b>Controlled Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Cabinet &amp; Molding</b>	<b>Sanding</b>	<b>Total</b>
PM	0.01	1.29	0.16	1.46
PM10	0.03	1.29	0.16	1.48
PM2.5	0.03	1.29	0.16	1.48
VOC	0.02	-	-	0.02
NOx	0.37	-	-	0.37
SO2	0.00	-	-	0.00
CO	0.31	-	-	0.31
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	-	-	0.01

<b>Limited Emissions (Tons/Yr)</b>				
<b>Pollutant</b>	<b>Nat. Gas Combustion</b>	<b>Cabinet &amp; Molding</b>	<b>Sanding</b>	<b>Total</b>
PM	0.01	1.29	0.16	1.46
PM10	0.03	1.29	0.16	1.48
PM2.5	0.03	1.29	0.16	1.48
VOC	0.02	-	-	0.02
NOx	0.37	-	-	0.37
SO2	0.00	-	-	0.00
CO	0.31	-	-	0.31
Single HAP (Hexane)	0.01	-	-	0.01
Combined HAPs	0.01	-	-	0.01

**Appendix G: Emission Calculations  
Natural Gas Combustion Only  
Plant 14**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2900 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity <u>MMBtu/hr</u>	Potential Throughput <u>MMCF/yr</u>	<u>Emission Units</u>
0.16	1.40	Two (2) Forced Air Furnaces @ 0.08 MMBtu/hr each (14H-01 and 14H-02)
0.28	2.45	Two (2) Forced Air Furnaces @ 0.14 MMBtu/hr each (14H-03 and 14H-04)
0.40	3.50	One (1) Thermo Cycler @ 0.40 MMBtu/hr (14H-05)
0.84	7.4	

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.01	0.03	0.00	0.37	0.02	0.31

\*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  
 \*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadshee

**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

See page 3 for HAPs emissions calculations.

**Appendix G: Emission Calculations  
Natural Gas Combustion Only  
Plant 14  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2900 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	7.726E-06	4.415E-06	2.759E-04	6.623E-03	1.251E-05

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	1.840E-06	4.047E-06	5.151E-06	1.398E-06	7.726E-06

Methodology is the same as page 2.

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 G: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plant 14**

**Company Name: Heartland Recreational Vehicles, LLC**  
**Address City IN Zip: 2900 Dexter Drive, Elkhart, IN 46514**  
**Permit Number: 039-29849-00621**  
**Plt ID: 039-00621**  
**Reviewer: Jason R. Krawczyk**  
**Date: January 24, 2011**

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft <sup>2</sup> )	Total Filter Area (ft <sup>2</sup> )	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
14DC-01	3,600	0.002	11.1	324.00	99.00%	6.17	27.03	0.06	0.27
14DC-02	3,600	0.002	11.1	324.00	99.00%	6.17	27.03	0.06	0.27
14DC-03	5,000	0.002	10.9	460.00	99.00%	8.57	37.54	0.09	0.38
14DC-04	5,000	0.002	10.9	460.00	99.00%	8.57	37.54	0.09	0.38
						20.91	<b>91.60</b>	0.29	<b>1.29</b>

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]

**Appendix G: Emission Calculations**  
**Particulate Emissions from Manual Sanding**  
**Plant 14**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2900 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<b><u>Manual Sanding Stations</u></b>										
200.00	feet/hr	x	0.125	in wide bit	x	0.06	in depth (edge trimming)	=	1.56	in3 loss/hr
1.56	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.04	lb loss/hr
Total Loss Estimate =		0.04 lb loss/hr								
Total Loss Estimate =		0.16 tons/year								

**Appendix H: Emission Calculations  
Emissions Summary  
Plant 16**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1330 Wade Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Uncontrolled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.69
PM10	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
PM2.5	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
VOC	0.04	0.14	7.40	0.44	0.92	-	-	-	8.94
NOx	0.78	-	-	-	-	-	-	-	0.78
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.65	-	-	-	-	-	-	-	0.65
Single HAP (Hexane)	0.01	0.05	1.41	0.00	0.00	-	-	-	1.48
Combined HAPs	0.01	0.06	1.42	0.11	0.19	-	-	0.02	1.80

Controlled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.69
PM10	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
PM2.5	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
VOC	0.04	0.14	7.40	0.44	0.92	-	-	-	8.94
NOx	0.78	-	-	-	-	-	-	-	0.78
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.65	-	-	-	-	-	-	-	0.65
Single HAP (Hexane)	0.01	0.05	1.41	0.00	0.00	-	-	-	1.48
Combined HAPs	0.01	0.06	1.42	0.11	0.19	-	-	0.02	1.80

Limited Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.69
PM10	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
PM2.5	0.06	0.08	0.00	0.04	0.01	0.32	1.83	0.41	2.74
VOC	0.04	α				-	-	-	0.04
NOx	0.78	-	-	-	-	-	-	-	0.78
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.65	-	-	-	-	-	-	-	0.65
Single HAP (Hexane)	0.01	β				-	-	-	0.01
Combined HAPs	0.01	0.06	1.42	0.11	0.19	-	-	0.02	1.80

**Note:**

α Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

β Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix H: Emission Calculations  
Natural Gas Combustion Only  
Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity  
MMBtu/hr  
 1.60  
 0.18  
 1.78

Potential Throughput  
MMCF/yr  
 14.02  
 1.58  
 15.59

Emission Units

Two (2) Force Air Furnaces @ 0.80 MMBtu/hr each (16H-01 and 16H-02)  
 Two (2) Forced Air Furnaces @ 0.09 MMBtu/hr each (16H-03 and 16H-04)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.01	0.06	0.00	0.78	0.04	0.65

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix H: Emission Calculations  
Natural Gas Combustion Only  
Plant 16  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	1.637E-05	9.356E-06	5.847E-04	1.403E-02	2.651E-05

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	3.898E-06	8.576E-06	1.091E-05	2.963E-06	1.637E-05

Methodology is the same as page 2.

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 H: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP16)  
Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02490	0.500	6.44	2.52	0.03	0.75	0.14	0.08	22.80	50%
<b>Potential Emissions:</b>											<b>0.03</b>	<b>0.75</b>	<b>0.14</b>	<b>0.08</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0249	0.50	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.05	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>

**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 H: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO16)  
Plant 16**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1330 Wade Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	0.500	0.16	0.16	0.00	0.02	0.00	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	0.500	0.71	0.71	0.07	1.70	0.31	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	0.500	0.01	0.01	0.00	0.02	0.00	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	0.500	0.18	0.18	0.02	0.47	0.09	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta'Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	0.500	3.37	2.75	1.12	26.99	4.92	0.00	6.57	100%	Wood/Fabric
Sta'Put SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	0.500	4.15	3.31	0.36	8.69	1.59	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	0.500	7.10	6.17	0.11	2.64	0.48	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>1.69</b>	<b>40.52</b>	<b>7.40</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	0.500	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.003	0.00	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta'Put SP90	6.08	0.8165	0.500	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	1.41	0.00	0.00
Oatey 60E5	16.68	0.0026	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.003</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.41</b>	<b>0.00</b>	<b>0.00</b>

**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 H: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP16)  
Plant 16**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1330 Wade Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.23%	64.77%	20.6%	7.00%	0.0003	0.500	4.76	3.78	0.00	0.02	0.00	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.08%	61.92%	23.8%	6.00%	0.0414	0.500	4.71	3.59	0.07	1.78	0.33	0.03	59.86	50%	Metal
SW 10010	6.09	82.10%	27.06%	55.04%	25.0%	7.00%	0.0003	0.500	4.47	3.35	0.00	0.01	0.00	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.70%	71.01%	10.9%	9.00%	0.0008	0.500	5.50	4.90	0.00	0.05	0.01	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.00%	69.08%	0.0%	21.00%	0.0006	0.500	6.10	6.10	0.00	0.04	0.01	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.00%	96.10%	0.0%	2.84%	0.0018	0.500	6.90	6.90	0.01	0.15	0.03	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.60%	58.04%	10.0%	23.00%	0.0023	0.500	4.89	4.40	0.01	0.12	0.02	0.00	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.00%	28.03%	0.0%	66.00%	0.0005	0.500	2.50	2.50	0.00	0.01	0.00	0.00	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.00%	98.68%	0.0%	1.00%	0.0001	0.500	7.50	7.50	0.00	0.01	0.00	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.52%	92.58%	2.0%	4.00%	0.0028	0.500	6.23	6.10	0.01	0.20	0.04	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>											<b>0.10</b>	<b>2.40</b>	<b>0.44</b>	<b>0.04</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)
SW 10001	5.84	0.0003	0.500	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
SW 4402	5.80	0.0414	0.500	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.074	0.000	0.000	0.000	0.000	0.000
SW 10010	6.09	0.0003	0.500	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BASF AM800	6.90	0.0008	0.500	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF NRL Bases	8.83	0.0006	0.500	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.004	0.000	0.000	0.001	0.000	0.002	0.005
DuPont 7601S	7.18	0.0018	0.500	13.00%	28.00%	0.00%	3.30%	0.00%	0.00%	0.00%	0.004	0.008	0.000	0.001	0.000	0.000	0.000
BASF DC76NR	7.58	0.0023	0.500	6.00%	0.00%	0.00%	1.00%	0.00%	0.00%	6.00%	0.002	0.000	0.000	0.000	0.000	0.000	0.002
BASF LH200	8.92	0.0005	0.500	0.00%	13.00%	0.00%	1.00%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF 352-500	7.60	0.0001	0.500	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BASF UR500	6.59	0.0028	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.010</b>	<b>0.085</b>	<b>0.000</b>	<b>0.003</b>	<b>0.000</b>	<b>0.002</b>	<b>0.007</b>

**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 H: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF16)  
Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	0.50	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	0.50	4.83	3.09	0.00	0.01	0.00	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	0.50	7.09	6.09	0.04	0.99	0.18	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	0.50	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	0.50	6.59	6.59	0.03	0.73	0.13	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	0.50	6.51	6.51	0.08	1.94	0.35	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	0.50	4.16	0.98	0.01	0.16	0.03	0.01	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	0.50	6.42	1.67	0.00	0.10	0.02	0.00	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	0.50	6.59	6.59	0.04	0.91	0.17	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	0.50	6.53	0.99	0.01	0.20	0.04	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	0.50	5.94	5.94	0.00	0.01	0.00	0.00	51.29	100.00%	Wood
<b>Potential Emissions:</b>											<b>0.21</b>	<b>5.05</b>	<b>0.92</b>	<b>0.01</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	0.50	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	0.50	0.00%	67.00%	19.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.140	0.040	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.012
Cyclo C-192	8.34	0.0052	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	0.50	3.00%	0.00%	0.00%	1.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.140</b>	<b>0.040</b>	<b>0.000</b>	<b>0.000</b>	<b>0.012</b>	<b>0.000</b>

**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 H: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft²)	Total Filter Area (ft²)	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
16DC-01	4,200	0.002	1.8	2,280.00	98.00%	3.60	15.77	0.07	0.32

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft²) \* Filter Area (ft²) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]

**Appendix H: Emission Calculations  
Particulate Emissions from Miscellaneous Machining  
Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<b>One (1) PVC Chop Saws 16CS1</b>																
10.00	cuts/hr	x	4.000	1 diameter pip	x	3.14	pi	x	0.1250	in thick pipe wall	x	0.125	in thick blade	=	1.96	in3 loss/hr
1.96	in3 loss/hr	/	1,728	in3/ft3	x	87.71	lb/ft3	=	0.10	lb loss/hr	=	<b>0.44</b>	tons/yr			

<b>One (1) Table Router 16TR1</b>																
20.00	cuts/hr	x	4.00	in long	x	0.125	in thick	x	0.125	in wide	=	1.25	in3 loss/hr			
1.25	in3 loss/hr	/	1,728	in3/ft3	x	168.43	lb/ft3	=	0.12	lb loss/hr	=	<b>0.53</b>	tons/yr			

<b>Four (4) Wood Chop Saws 16CS2-5</b>																
20.00	cuts/hr	x	1.50	in long	x	1.50	in thick	x	0.125	in wide	=	5.625	in3 loss/hr			
5.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.13	lb loss/hr	=	<b>0.57</b>	tons/yr			

<b>Two (2) Drill Presses 16DP1-2</b>																
20.00	BF/hr	/	4	BF/piece	=	5	pieces/hr									
5.00	pieces/hr	x	6.00	holes/piece	x	3.14	pi	x	0.0156	r^2*	x	1.5	in depth	=	2.21	in3 loss/hr
*1/4 in diameter bit																
2.21	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.05	lb loss/hr	=	<b>0.22</b>	tons/yr			

<b>Four (4) Hand Routers 16HR1-4</b>																
80.00	feet/hr	x	0.125	in wide bit	x	0.06	in depth (edge trimming)	=	0.63	in3 loss/hr						
0.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.01	lb loss/hr	=	<b>0.06</b>	tons/yr			

Total Loss Estimate =	0.42 lb loss/hr
Total Loss Estimate =	<b>1.83 tons/year</b>

**Appendix H: Emission Calculations**  
**Welding and Thermal Cutting**  
**Plant 16**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1330 Wade Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC16	Metal Inert Gas (MIG)(E70S)	1	1.00	0.0052	0.00318	0.00001	0.00001	0.00001	0.005	0.003	0.000	0.000	0.00001	0.003	
FLAME CUTTING		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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC 16	Oxacetylene / Electric Arc	1	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.088	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
Potential Emissions lbs/hr										0.09					0.00
Potential Emissions lbs/day										2.23					0.09
Potential Emissions tons/year										0.41					0.02

**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.

**Appendix I: Emission Calculations  
Emissions Summary  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Uncontrolled Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Misc. Machining	Welding	Total
PM	0.00	0.08	0.00	0.04	0.01	1.05	0.02	1.21
PM10	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
PM2.5	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
VOC	0.01	0.14	7.40	0.44	0.92	-	-	8.91
NOx	0.26	-	-	-	-	-	-	0.26
SO2	0.00	-	-	-	-	-	-	0.00
CO	0.22	-	-	-	-	-	-	0.22
Single HAP (Hexane)	0.00	0.05	1.41	0.00	0.00	-	-	1.47
Combined HAPs	0.00	0.06	1.42	0.11	0.19	-	0.01	1.79

Controlled Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Misc. Machining	Welding	Total
PM	0.00	0.08	0.00	0.04	0.01	1.05	0.02	1.21
PM10	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
PM2.5	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
VOC	0.01	0.14	7.40	0.44	0.92	-	-	8.91
NOx	0.26	-	-	-	-	-	-	0.26
SO2	0.00	-	-	-	-	-	-	0.00
CO	0.22	-	-	-	-	-	-	0.22
Single HAP (Hexane)	0.00	0.05	1.41	0.00	0.00	-	-	1.47
Combined HAPs	0.00	0.06	1.42	0.11	0.19	-	0.01	1.79

Limited Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Misc. Machining	Welding	Total
PM	0.00	0.08	0.00	0.04	0.01	1.05	0.02	1.21
PM10	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
PM2.5	0.02	0.08	0.00	0.04	0.01	1.05	0.02	1.22
VOC	0.01	α				-	-	0.01
NOx	0.26	-	-	-	-	-	-	0.26
SO2	0.00	-	-	-	-	-	-	0.00
CO	0.22	-	-	-	-	-	-	0.22
Single HAP (Hexane)	0.00	β				-	-	0.00
Combined HAPs	0.00	0.06	1.42	0.11	0.19	-	0.01	1.79

**Note:**

α Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

β Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix I: Emission Calculations  
Natural Gas Combustion Only  
Plant 17 / 18**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1110 CR 6 West, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity  
MMBtu/hr

0.60  
0.60

Potential Throughput  
MMCF/yr

5.26  
5.3

Emission Units

Four (4) Forced Air Furnaces @ 0.15 MMBtu/hr each (17/18H-01 through 17/18H-04)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
1.9	7.6	0.6	100	5.5	84	
			**see below			
Potential Emission in tons/yr	0.00	0.02	0.00	0.26	0.01	0.22

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadshee

**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

See page 3 for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
Plant 17 / 18  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 1110 CR 6 West, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	5.519E-06	3.154E-06	1.971E-04	4.730E-03	8.935E-06

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	1.314E-06	2.891E-06	3.679E-06	9.986E-07	5.519E-06

Methodology is the same as page 2.

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 I: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP17/18)  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02490	0.500	6.44	2.52	0.03	0.75	0.14	0.08	22.80	50%
<b>Potential Emissions:</b>											<b>0.03</b>	<b>0.75</b>	<b>0.14</b>	<b>0.08</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0249	0.50	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.05	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>

**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 I: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO17 & ALO18)  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	0.500	0.16	0.16	0.00	0.02	0.00	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	0.500	0.71	0.71	0.07	1.70	0.31	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	0.500	0.01	0.01	0.00	0.02	0.00	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	0.500	0.18	0.18	0.02	0.47	0.09	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta'Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	0.500	3.37	2.75	1.12	26.99	4.92	0.00	6.57	100%	Wood/Fabric
Sta'Put SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	0.500	4.15	3.31	0.36	8.69	1.59	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	0.500	7.10	6.17	0.11	2.64	0.48	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>1.69</b>	<b>40.52</b>	<b>7.40</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	0.500	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.003	0.00	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta'Put SP90	6.08	0.8165	0.500	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	1.41	0.00	0.00
Oatey 60E5	16.68	0.0026	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.003</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.41</b>	<b>0.00</b>	<b>0.00</b>

**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 I: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP17/18)  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.2%	64.77%	20.6%	7.00%	0.0003	0.500	4.76	3.78	0.00	0.02	0.00	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.1%	61.92%	23.8%	6.00%	0.0414	0.500	4.71	3.59	0.07	1.78	0.33	0.03	59.86	50%	Metal
SW 10010	6.09	82.10%	27.1%	55.04%	25.0%	7.00%	0.0003	0.500	4.47	3.35	0.00	0.01	0.00	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.7%	71.01%	10.9%	9.00%	0.0008	0.500	5.50	4.90	0.00	0.05	0.01	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.0%	69.08%	0.0%	21.00%	0.0006	0.500	6.10	6.10	0.00	0.04	0.01	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.0%	96.10%	0.0%	2.84%	0.0018	0.500	6.90	6.90	0.01	0.15	0.03	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.6%	58.04%	10.0%	23.00%	0.0023	0.500	4.89	4.40	0.01	0.12	0.02	0.00	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.0%	28.03%	0.0%	66.00%	0.0005	0.500	2.50	2.50	0.00	0.01	0.00	0.00	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.0%	98.68%	0.0%	1.00%	0.0001	0.500	7.50	7.50	0.00	0.01	0.00	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.5%	92.58%	2.0%	4.00%	0.0028	0.500	6.23	6.10	0.01	0.20	0.04	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>											<b>0.10</b>	<b>2.40</b>	<b>0.44</b>	<b>0.04</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane 0.00%	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)
SW 10001	5.84	0.0003	0.500	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
SW 4402	5.80	0.0414	0.500	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.074	0.000	0.000	0.000	0.000	0.000
SW 10010	6.09	0.0003	0.500	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BASF AM800	6.90	0.0008	0.500	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF NRL Bases	8.83	0.0006	0.500	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.004	0.000	0.000	0.001	0.000	0.002	0.005
DuPont 7601S	7.18	0.0018	0.500	13.00%	28.00%	0.00%	3.30%	13.00%	0.00%	0.00%	0.004	0.008	0.000	0.001	0.004	0.000	0.000
BASF LH200	8.92	0.0005	0.500	0.00%	13.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF 352-500	7.60	0.0001	0.500	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BASF UR500	6.59	0.0028	0.500	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.008</b>	<b>0.085</b>	<b>0.000</b>	<b>0.002</b>	<b>0.004</b>	<b>0.002</b>	<b>0.005</b>

**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 I: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF17/18)  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	0.50	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	0.50	4.83	3.09	0.00	0.01	0.00	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	0.50	7.09	6.09	0.04	0.99	0.18	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	0.50	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	0.50	6.59	6.59	0.03	0.73	0.13	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	0.50	6.51	6.51	0.08	1.94	0.35	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	0.50	4.16	0.98	0.01	0.16	0.03	0.01	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	0.50	6.42	1.67	0.00	0.10	0.02	0.00	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	0.50	6.59	6.59	0.04	0.91	0.17	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	0.50	6.53	0.99	0.01	0.20	0.04	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	0.50	5.94	5.94	0.00	0.01	0.00	0.00	51.29	100.00%	Wood
<b>Potential Emissions:</b>											<b>0.21</b>	<b>5.05</b>	<b>0.92</b>	<b>0.01</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	0.00% Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	0.50	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	0.50	0.00%	67.00%	19.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.140	0.040	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.012	0.000
Cyclo C-192	8.34	0.0052	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	0.50	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	0.50	3.00%	0.00%	0.00%	1.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.140</b>	<b>0.040</b>	<b>0.000</b>	<b>0.000</b>	<b>0.012</b>	<b>0.000</b>

**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 I: Emission Calculations**  
**Particulate Emissions from Miscellaneous Machining**  
**Plant 17/18**

Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1330 Wade Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011

**One (1) PVC Chop Saws 17/18CS1**

10.00	cuts/hr	x	4.000	1 diameter pip	x	3.14	pi	x	0.1250	in thick pipe wall	x	0.125	in thick blade	=	1.96	in3 loss/hr
1.96	in3 loss/hr	/	1,728	in3/ft3	x	87.71	lb/ft3	=	0.10	lb loss/hr	=	<b>0.44</b>	tons/yr			

**One (1) Table Saw 17/18TS1**

10.00	cuts/hr	x	4.00	in long	x	0.125	in thick	x	0.125	in wide	=	0.625	in3 loss/hr
0.63	in3 loss/hr	/	1,728	in3/ft3	x	168.43	lb/ft3	=	0.06	lb loss/hr	=	<b>0.27</b>	tons/yr

**Four (4) Wood Chop Saws 17/18CS2-5**

10.00	cuts/hr	x	1.50	in long	x	1.50	in thick	x	0.125	in wide	=	2.8125	in3 loss/hr
2.81	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.07	lb loss/hr	=	<b>0.29</b>	tons/yr

**Four (4) Hand Routers 17/18HR1-4**

80.00	feet/hr	x	0.125	in wide bit	x	0.06	in depth (edge trimming)	=	0.63	in3 loss/hr			
0.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.01	lb loss/hr	=	<b>0.06</b>	tons/yr

Total Loss Estimate =	0.24	lb loss/hr
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Total Loss Estimate =	<b>1.05</b>	tons/year
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**Appendix I: Emission Calculations  
Welding and Thermal Cutting  
Plant 17 / 18**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 1110 CR 6 West, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC17/18	Metal Inert Gas (MIG)(E70S)	1	1.00	0.0052	0.00318	0.00001	0.00001	0.00001	0.005	0.003	0.000	0.000	0.00001	0.003	
FLAME CUTTING		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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC17/18	Oxacetylene / Electric Arc	0	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.000	0.000	0.000	0.000	0.000	
<b>EMISSION TOTALS</b>															
Potential Emissions lbs/hr										0.01					0.00
Potential Emissions lbs/day										0.12					0.08
Potential Emissions tons/year										0.02					0.01

**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.

**Appendix J: Emission Calculations  
Emissions Summary  
Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Uncontrolled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.55
PM10	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
PM2.5	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
VOC	0.03	0.21	11.09	0.66	1.38	-	-	-	13.37
NOx	0.50	-	-	-	-	-	-	-	0.50
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.42	-	-	-	-	-	-	-	0.42
Single HAP (Hexane)	0.01	0.08	2.12	0.00	0.00	-	-	-	2.20
Combined HAPs	0.01	0.08	2.13	0.16	0.29	-	-	0.03	2.70

Controlled Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.55
PM10	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
PM2.5	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
VOC	0.03	0.21	11.09	0.66	1.38	-	-	-	13.37
NOx	0.50	-	-	-	-	-	-	-	0.50
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.42	-	-	-	-	-	-	-	0.42
Single HAP (Hexane)	0.01	0.08	2.12	0.00	0.00	-	-	-	2.20
Combined HAPs	0.01	0.08	2.13	0.16	0.29	-	-	0.03	2.70

Limited Emissions (Tons/Yr)									
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Welding	Total
PM	0.01	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.55
PM10	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
PM2.5	0.04	0.11	0.00	0.06	0.02	0.35	1.57	0.43	2.58
VOC	0.03	α				-	-	-	0.03
NOx	0.50	-	-	-	-	-	-	-	0.50
SO2	0.00	-	-	-	-	-	-	-	0.00
CO	0.42	-	-	-	-	-	-	-	0.42
Single HAP (Hexane)	0.01	β				-	-	-	0.01
Combined HAPs	0.01	0.08	2.13	0.16	0.29	-	-	0.03	2.70

**Note:**

α Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

β Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix J: Emission Calculations  
Natural Gas Combustion Only  
Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Heat Input Capacity  
MMBtu/hr  
 0.96  
 0.18  
 1.14

Potential Throughput  
MMCF/yr  
 8.41  
 1.58  
 10.0

Emission Units

Twelve (12) Radiant Tube Heaters @ 0.08 MMBtu/hr each (21/22/23H-01 through 21/22/23H-12)  
 Three (3) Forced Air Heaters @ 0.06 MMBtu/hr each (21/22/23H-13 through 21/22/23H-15)

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.04	0.00	0.50	0.03	0.42

\*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

\*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix J: Emission Calculations  
Natural Gas Combustion Only  
Plants 21, 22, and 23  
HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	1.049E-05	5.992E-06	3.745E-04	8.988E-03	1.698E-05

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	2.497E-06	5.493E-06	6.990E-06	1.897E-06	1.049E-05

Methodology is the same as page 2.

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 J: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP21/22/23)  
Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
2824 Paul Drive, Elkhart, IN 46514  
2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02490	0.750	6.44	2.52	0.05	1.13	0.21	0.11	22.80	50%
<b>Potential Emissions:</b>											<b>0.05</b>	<b>1.13</b>	<b>0.21</b>	<b>0.11</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0249	0.75	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.01	0.00	0.00	0.08	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.08</b>	<b>0.00</b>	<b>0.00</b>

**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 J: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO21/22/23)  
Plants 21, 22, and 23**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2950 Paul Drive, Elkhart, IN 46514  
2824 Paul Drive, Elkhart, IN 46514  
2946 Jami Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	0.750	0.16	0.16	0.00	0.02	0.00	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	0.750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	0.750	0.71	0.71	0.11	2.55	0.47	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	0.750	0.01	0.01	0.00	0.03	0.01	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	0.750	0.18	0.18	0.03	0.71	0.13	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	0.750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	0.750	3.37	2.75	1.69	40.48	7.39	0.00	6.57	100%	Wood/Fabric
StaPut SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	0.750	4.15	3.31	0.54	13.03	2.38	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	0.750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	0.750	7.10	6.17	0.16	3.96	0.72	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>2.53</b>	<b>60.78</b>	<b>11.09</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	0.75	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.005	0.00	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta Put SP90	6.08	0.8165	0.75	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	2.12	0.00	0.00
Oatey 60E5	16.68	0.0026	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.005</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.12</b>	<b>0.00</b>	<b>0.00</b>

**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 J: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP21/22/23)  
Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.23%	64.77%	20.6%	7.00%	0.0003	0.75	4.76	3.78	0.00	0.02	0.00	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.08%	61.92%	23.8%	6.00%	0.0414	0.75	4.71	3.59	0.11	2.68	0.49	0.04	59.86	50%	Metal
SW 10010	6.09	82.10%	27.06%	55.04%	25.0%	7.00%	0.0003	0.75	4.47	3.35	0.00	0.02	0.00	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.70%	71.01%	10.9%	9.00%	0.0008	0.75	5.50	4.90	0.00	0.07	0.01	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.00%	69.08%	0.0%	21.00%	0.0006	0.75	6.10	6.10	0.00	0.06	0.01	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.00%	96.10%	0.0%	2.84%	0.0018	0.75	6.90	6.90	0.01	0.23	0.04	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.60%	58.04%	10.0%	23.00%	0.0023	0.75	4.89	4.40	0.01	0.18	0.03	0.01	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.00%	28.03%	0.0%	66.00%	0.0005	0.75	2.50	2.50	0.00	0.02	0.00	0.00	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.00%	98.68%	0.0%	1.00%	0.0001	0.75	7.50	7.50	0.00	0.02	0.00	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.52%	92.58%	2.0%	4.00%	0.0028	0.75	6.23	6.10	0.01	0.30	0.06	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>											<b>0.15</b>	<b>3.60</b>	<b>0.66</b>	<b>0.06</b>			

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)
SW 10001	5.84	0.0003	0.75	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
SW 4402	5.80	0.0414	0.75	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.110	0.000	0.000	0.000	0.000	0.000
SW 10010	6.09	0.0003	0.75	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.001	0.000	0.000	0.000	0.000	0.000
BASF AM800	6.90	0.0008	0.75	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.002	0.000	0.000	0.000	0.000	0.000
BASF NRL Bases	8.83	0.0006	0.75	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.006	0.000	0.000	0.002	0.000	0.003	0.008
DuPont 7601S	7.18	0.0018	0.75	13.00%	28.00%	0.00%	3.30%	0.00%	0.00%	0.00%	0.006	0.012	0.000	0.001	0.000	0.000	0.000
BASF DC76NR	7.58	0.0023	0.75	6.00%	0.00%	0.00%	1.00%	0.00%	0.00%	6.00%	0.003	0.000	0.000	0.001	0.000	0.000	0.003
BASF LH200	8.92	0.0005	0.75	0.00%	13.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.002	0.000	0.000	0.000	0.000	0.000
BASF 352-500	7.60	0.0001	0.75	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BASF UR500	6.59	0.0028	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.016</b>	<b>0.128</b>	<b>0.000</b>	<b>0.004</b>	<b>0.000</b>	<b>0.003</b>	<b>0.011</b>

**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 J: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF21/22/23)  
Plants 21, 22, and 23**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2950 Paul Drive, Elkhart, IN 46514  
2824 Paul Drive, Elkhart, IN 46514  
2946 Jami Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	0.75	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	0.75	4.83	3.09	0.00	0.01	0.00	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	0.75	7.09	6.09	0.06	1.49	0.27	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	0.75	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	0.75	6.59	6.59	0.05	1.09	0.20	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	0.75	6.51	6.51	0.12	2.92	0.53	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	0.75	4.16	0.98	0.01	0.23	0.04	0.02	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	0.75	6.42	1.67	0.01	0.16	0.03	0.00	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	0.75	6.59	6.59	0.06	1.36	0.25	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	0.75	6.53	0.99	0.01	0.30	0.05	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	0.75	5.94	5.94	0.00	0.01	0.00	0.00	51.29	100.00%	Wood
<b>Potential Emissions:</b>											<b>0.32</b>	<b>7.57</b>	<b>1.38</b>	<b>0.02</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	0.75	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	0.75	0.00%	67.00%	0.00%	19.00%	0.00%	0.00%	0.00%	0.000	0.210	0.059	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.018	0.000
Cyclo C-192	8.34	0.0052	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	0.75	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	0.75	3.00%	0.00%	0.00%	0.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.210</b>	<b>0.059</b>	<b>0.000</b>	<b>0.000</b>	<b>0.018</b>	<b>0.000</b>

**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 J: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft <sup>2</sup> )	Total Filter Area (ft <sup>2</sup> )	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
21DC-01	4,650	0.002	2.0	2,280.00	98.00%	3.99	17.46	0.08	0.35
						3.99	<b>17.46</b>	0.08	<b>0.35</b>

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]



**Appendix J: Emission Calculations  
Welding and Thermal Cutting  
Plants 21, 22, and 23**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2950 Paul Drive, Elkhart, IN 46514  
 2824 Paul Drive, Elkhart, IN 46514  
 2946 Jami Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Emission Unit ID	PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)	
				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr		
WC 21/22/23	WELDING Metal Inert Gas (MIG)(E70S)	2	1.00	0.0052	0.00318	0.00001	0.00001	0.00001	0.010	0.006	0.000	0.000	0.00002	0.006	
	FLAME CUTTING	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)
					PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr	
WC 21/22/23	Oxacetylene / Electric Arc	1	0.75	12	0.1622	0.0005	0.0001	0	0.0003	0.088	0.000	0.000	0.000	0.000	0.000
<b>EMISSION TOTALS</b>															
	Potential Emissions lbs/hr									0.10					0.01
	Potential Emissions lbs/day									2.35					0.17
	Potential Emissions tons/year									<b>0.43</b>					<b>0.03</b>

**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.

**Appendix K: Emission Calculations  
Emissions Summary  
Plant 69A / 69B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2929 Gateway Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Uncontrolled Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Total
PM	0.02	0.31	0.00	0.15	0.06	0.35	4.50	5.38
PM10	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
PM2.5	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
VOC	0.06	0.55	29.58	1.75	3.69	-	-	35.64
NOx	1.17	-	-	-	-	-	-	1.17
SO2	0.01	-	-	-	-	-	-	0.01
CO	0.99	-	-	-	-	-	-	0.99
Single HAP (Hexane)	0.02	0.20	5.65	0.00	0.00	-	-	5.88
Combined HAPs	0.02	0.22	5.67	0.43	0.77	-	-	7.11

Controlled Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Total
PM	0.02	0.31	0.00	0.15	0.06	0.35	4.50	5.38
PM10	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
PM2.5	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
VOC	0.06	0.55	29.58	1.75	3.69	-	-	35.64
NOx	1.17	-	-	-	-	-	-	1.17
SO2	0.01	-	-	-	-	-	-	0.01
CO	0.99	-	-	-	-	-	-	0.99
Single HAP (Hexane)	0.02	0.20	5.65	0.00	0.00	-	-	5.88
Combined HAPs	0.02	0.22	5.67	0.43	0.77	-	-	7.11

Limited Emissions (Tons/Yr)								
Pollutant	Nat. Gas Combustion	Chassis Prep	Assembly	Touch-Up Paint	Final Finish	Cabinet & Molding	Misc. Machining	Total
PM	0.02	0.31	0.00	0.15	0.06	0.35	4.50	5.38
PM10	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
PM2.5	0.09	0.31	0.00	0.15	0.06	0.35	4.50	5.45
VOC	0.06	$\alpha$				-	-	0.06
NOx	1.17	-	-	-	-	-	-	1.17
SO2	0.01	-	-	-	-	-	-	0.01
CO	0.99	-	-	-	-	-	-	0.99
Single HAP (Hexane)	0.02	$\beta$				-	-	0.02
Combined HAPs	0.02	0.22	5.67	0.43	0.77	-	-	7.11

**Note:**

$\alpha$  Combined source-wide VOC Emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations, and Final Finish Operations are limited to less than 98.75 tons per twelve (12) consecutive month period.

$\beta$  Combined source-wide single HAP emissions for Chassis Preparation Operations, Assembly Line Operations, Touch-Up Paint Operations and Final Finish Operations are limited to less than 9.74 tons per twelve (12) consecutive month period.

**Appendix K: Emission Calculations  
Natural Gas Combustion Only  
Plant 69A / 69B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2929 Gateway Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

<p>Heat Input Capacity  <u>MMBtu/hr</u>                  2.24                  0.20                  0.24                  2.68</p>	<p>Potential Throughput  <u>MMCF/yr</u>                  19.62                  1.75                  2.10                  23.5</p>	<p><u>Emission Units</u>                  Sixteen (16) Radiant Tube Heaters @ 0.14 MMBtu/hr each (69H-01 through 69H-16)                  Two (2) Forced Air Heaters @ 0.10 MMBtu/hr each (69H-17 and 69H-18)                  Two (2) Forced Air Heaters @ 0.12 MMBtu/hr each (69H-19 and 69H-20)</p>
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Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100	5.5	84
				**see below		
Potential Emission in tons/yr	0.02	0.09	0.01	1.17	0.06	0.99

\*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  
 \*\*\*CO emissions from the Rx Gas-Fired Mesh Belt Furnace are estimated on the Rx Gas-Fired Furnace Spreadsheet

**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

See page 3 for HAPs emissions calculations.

**Appendix K: Emission Calculations  
 Natural Gas Combustion Only  
 Plant 69A / 69B  
 HAPs Emissions**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2929 Gateway Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

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	2.465E-05	1.409E-05	8.804E-04	2.113E-02	3.991E-05

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	5.869E-06	1.291E-05	1.643E-05	4.461E-06	2.465E-05

Methodology is the same as page 2.

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 K: Emission Calculations  
VOC, Particulate, and HAP  
From Chassis Preparation (CP69A/69B)  
Plant 69A / 69B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2929 Gateway Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Pit ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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
C-35	9.35	70.00%	43.0%	27.0%	60.8%	11.07%	0.02490	2.000	6.44	2.52	0.13	3.02	0.55	0.31	22.80	50%
<b>Potential Emissions:</b>											<b>0.13</b>	<b>3.02</b>	<b>0.55</b>	<b>0.31</b>		

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
C-35	9.35	0.0249	2.00	0.00%	0.90%	0.00%	0.00%	9.90%	0.00%	0.00%	0.00	0.02	0.00	0.00	0.20	0.00	0.00
<b>Potential Emissions:</b>											<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	<b>0.00</b>	<b>0.00</b>

**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 K: Emission Calculations  
VOC, Particulate, and HAP  
From Assembly Line Operations (ALO69A & ALO69B)  
Plant 69A / 69B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2929 Gateway Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
Sikaflex 552	12.10	1.34%	0.0%	1.3%	0.0%	97.80%	0.0085	2.000	0.16	0.16	0.00	0.07	0.01	0.00	0.17	100%	Metal
Sikaflex 521	10.60	0.00%	0.0%	0.0%	0.0%	100.00%	0.0012	2.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
SIL 100GP	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	2.000	0.71	0.71	0.28	6.81	1.24	0.00	0.79	100%	Wood/Fabric
Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	2.000	0.01	0.01	0.00	0.08	0.01	0.00	0.01	100%	Wood/Fabric
Manus 501-A	10.68	1.69%	0.0%	1.7%	0.0%	97.55%	0.2185	2.000	0.18	0.18	0.08	1.89	0.35	0.00	0.19	100%	Wood/Fabric
Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	2.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric
Sta'Put SP90	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.8165	2.000	3.37	2.75	4.50	107.94	19.70	0.00	6.57	100%	Wood/Fabric
Sta'Put SP80	6.18	80.90%	27.3%	53.6%	20.2%	32.07%	0.2185	2.000	4.15	3.31	1.45	34.74	6.34	0.00	10.33	100%	Wood/Fabric
Oatey 60E5	16.68	0.00%	0.0%	0.0%	0.0%	100.00%	0.0026	2.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic
IPS Corp. 771, 773	7.26	100.00%	15.0%	85.0%	13.1%	13.06%	0.0357	2.000	7.10	6.17	0.44	10.56	1.93	0.00	47.25	100%	Plastic
<b>Potential Emissions:</b>											<b>6.75</b>	<b>162.09</b>	<b>29.58</b>	<b>0.00</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
Sikaflex 552	12.10	0.0085	2.000	1.34%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.012	0.01	0.00	0.00	0.00	0.00	0.00
Sikaflex 521	10.60	0.0012	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SIL 100GP	7.92	0.1990	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 25-AM	11.68	0.1265	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 501-A	10.68	0.2185	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manus 75-AM	14.19	0.1265	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sta'Put SP90	6.08	0.8165	2.000	0.00%	0.00%	0.00%	0.00%	13.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	5.65	0.00	0.00
Oatey 60E5	16.68	0.0026	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IPS Corp. 771, 773	7.26	0.0357	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Potential Emissions:</b>											<b>0.012</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>5.65</b>	<b>0.00</b>	<b>0.00</b>

**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 K: Emission Calculations  
VOC, Particulate, and HAP  
From Touch-up Paint Operation (TP69A/69B)  
Plant 69A / 69B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2929 Gateway Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Plt ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
SW 10001	5.84	88.00%	23.23%	64.77%	20.6%	7.00%	0.0003	2.000	4.76	3.78	0.00	0.06	0.01	0.00	54.04	50%	Metal
SW 4402	5.80	89.00%	27.08%	61.92%	23.8%	6.00%	0.0414	2.000	4.71	3.59	0.30	7.14	1.30	0.12	59.86	50%	Metal
SW 10010	6.09	82.10%	27.06%	55.04%	25.0%	7.00%	0.0003	2.000	4.47	3.35	0.00	0.06	0.01	0.00	47.88	50%	Wood/Fabric
BASF AM800	6.90	79.71%	8.70%	71.01%	10.9%	9.00%	0.0008	2.000	5.50	4.90	0.01	0.19	0.03	0.00	54.44	50%	Wood/Fabric
BASF NRL Bases	8.83	69.08%	0.00%	69.08%	0.0%	21.00%	0.0006	2.000	6.10	6.10	0.01	0.17	0.03	0.00	29.05	75%	Wood/Fabric
DuPont 7601S	7.18	96.10%	0.00%	96.10%	0.0%	2.84%	0.0018	2.000	6.90	6.90	0.03	0.61	0.11	0.00	242.96	75%	Wood/Fabric
BASF DC76NR	7.58	64.64%	6.60%	58.04%	10.0%	23.00%	0.0023	2.000	4.89	4.40	0.02	0.49	0.09	0.01	19.13	75%	Wood/Fabric
BASF LH200	8.92	28.03%	0.00%	28.03%	0.0%	66.00%	0.0005	2.000	2.50	2.50	0.00	0.06	0.01	0.01	3.79	75%	Wood/Fabric
BASF 352-500	7.60	98.68%	0.00%	98.68%	0.0%	1.00%	0.0001	2.000	7.50	7.50	0.00	0.04	0.01	0.00	749.97	75%	Plastic
BASF UR500	6.59	94.10%	1.52%	92.58%	2.0%	4.00%	0.0028	2.000	6.23	6.10	0.03	0.81	0.15	0.00	152.53	75%	Plastic
<b>Potential Emissions:</b>												<b>0.40</b>	<b>9.61</b>	<b>1.75</b>	<b>0.15</b>		

**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 hrs/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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Hexamethylene-1,6 diisocyanate	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % MIBK	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Hexamethylene-1,6 diisocyanate Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	MIBK Emissions (ton/yr)		
SW 10001	5.84	0.0003	2.000	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.003	0.000	0.000	0.000	0.000	0.000		
SW 4402	5.80	0.0414	2.000	0.00%	14.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.294	0.000	0.000	0.000	0.000	0.000		
SW 10010	6.09	0.0003	2.000	0.00%	10.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.000	0.002	0.000	0.000	0.000	0.000	0.000		
BASF AM800	6.90	0.0008	2.000	1.00%	10.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.000	0.005	0.000	0.000	0.000	0.000	0.000		
BASF NRL Bases	8.83	0.0006	2.000	35.00%	0.00%	0.00%	10.00%	0.00%	16.00%	45.00%	0.016	0.000	0.000	0.004	0.000	0.007	0.020		
DuPont 7601S	7.18	0.0018	2.000	13.00%	28.00%	0.00%	3.30%	0.00%	0.00%	0.00%	0.015	0.032	0.000	0.004	0.000	0.000	0.000		
BASF DC76NR	7.58	0.0023	2.000	6.00%	0.00%	0.00%	1.00%	0.00%	0.00%	6.00%	0.009	0.000	0.000	0.002	0.000	0.000	0.009		
BASF LH200	8.92	0.0005	2.000	0.00%	13.00%	0.00%	1.00%	0.00%	0.00%	0.00%	0.000	0.005	0.000	0.000	0.000	0.000	0.000		
BASF 352-500	7.60	0.0001	2.000	15.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.001	0.000	0.000	0.000	0.000	0.000	0.000		
BASF UR500	6.59	0.0028	2.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
<b>Potential Emissions:</b>													<b>0.041</b>	<b>0.341</b>	<b>0.000</b>	<b>0.010</b>	<b>0.000</b>	<b>0.007</b>	<b>0.029</b>

**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 K: Emission Calculations  
VOC, Particulate, and HAP  
From Final Finish Operations (FF69A/69B)  
Plant 69A / 69B**

**Company Name: Heartland Recreational Vehicles, LLC  
Address City IN Zip: 2929 Gateway Drive, Elkhart, IN 46514  
Permit Number: 039-29849-00621  
Pit ID: 039-00621  
Reviewer: Jason R. Krawczyk  
Date: January 24, 2011**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & 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	Substrate
3M 5990	8.31	83.40%	74.24%	9.16%	73.9%	16.53%	0.0001	2.00	2.92	0.76	0.00	0.00	0.00	0.00	4.60	100%	Metal/Plastic
3M5936	9.67	63.00%	31.00%	32.00%	35.9%	18.77%	0.0002	2.00	4.83	3.09	0.00	0.03	0.01	0.00	16.49	100%	Metal/Plastic
TCI DT-10	7.02	100.00%	13.20%	86.80%	14.0%	0.00%	0.0136	2.00	7.09	6.09	0.17	3.97	0.72	0.00	N/A	100%	Solvent/Cleaner
TCI Acetone	6.59	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	2.00	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner
TCI Isopropanol	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	2.00	6.59	6.59	0.12	2.91	0.53	0.00	N/A	100%	Solvent/Cleaner
Camie-Cambell CC-911	9.37	69.47%	0.00%	69.47%	0.0%	0.00%	0.0249	2.00	6.51	6.51	0.32	7.78	1.42	0.00	N/A	100%	Solvent/Cleaner
Cyclo C-31	8.17	90.00%	78.00%	12.00%	76.4%	0.09%	0.0132	2.00	4.16	0.98	0.03	0.62	0.11	0.05	1089.33	50%	Solvent/Cleaner
Cyclo C-192	8.34	94.00%	74.00%	20.00%	74.0%	2.00%	0.0052	2.00	6.42	1.67	0.02	0.41	0.08	0.01	83.40	50%	Solvent/Cleaner
TCI Mineral Spirits	6.59	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	2.00	6.59	6.59	0.15	3.64	0.66	0.00	N/A	100%	Solvent/Cleaner
Convenience Products CP-200	6.59	100.00%	85.00%	15.00%	84.9%	0.00%	0.0167	2.00	6.53	0.99	0.03	0.79	0.14	0.00	N/A	50%	Metal
Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Metal
RPM Wood Finishes M280-0014	7.29	81.48%	0.00%	81.48%	0.00%	11.58%	0.0001	2.00	5.94	5.94	0.00	0.03	0.01	0.00	51.29	100%	Wood
<b>Potential Emissions:</b>											<b>0.84</b>	<b>20.20</b>	<b>3.69</b>	<b>0.06</b>			

**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

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Methanol	Weight % Ethyl Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Formaldehyde	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Methanol Emissions (ton/yr)	Ethyl Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Formaldehyde emissions (ton/yr)
3M 5990	8.31	0.0001	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3M5936	9.67	0.0002	2.00	1.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.01%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI DT-10	7.02	0.0136	2.00	0.00%	67.00%	19.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.559	0.159	0.000	0.000	0.000	0.000
TCI Acetone	6.59	0.0023	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Isopropanol	6.59	0.0092	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Camie-Cambell CC-911	9.37	0.0249	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cyclo C-31	8.17	0.0132	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.047	0.000
Cyclo C-192	8.34	0.0052	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TCI Mineral Spirits	6.59	0.0115	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Convenience Products CP-200	6.59	0.0167	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Markal Various Markers	11.18	0.0002	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RPM Wood Finishes M280-0014	7.29	0.0001	2.00	3.00%	0.00%	0.00%	1.00%	1.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Potential Emissions:</b>											<b>0.000</b>	<b>0.559</b>	<b>0.159</b>	<b>0.000</b>	<b>0.000</b>	<b>0.047</b>	<b>0.000</b>

**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 K: Emission Calculations**  
**Particulate Emissions from Cabinet and Molding Assembly**  
**Plant 69A / 69B**

**Company Name:** Heartland Recreational Vehicles, LLC  
**Address City IN Zip:** 2900 Dexter Drive, Elkhart, IN 46514  
**Permit Number:** 039-29849-00621  
**Plt ID:** 039-00621  
**Reviewer:** Jason R. Krawczyk  
**Date:** January 24, 2011

Control ID	Airflow (acfm)	Grain Loading (gr/acfm)	Air to Cloth Ratio Air Flow (acfm/ft <sup>2</sup> )	Total Filter Area (ft <sup>2</sup> )	Control Efficiency (%)	Potential Emissions Before Control		Potential Emissions After Control	
						(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
69DC-01	4,650	0.002	2.0	2,280.00	98.00%	3.99	17.46	0.08	0.35
						3.99	17.46	0.08	0.35

**Note:**

Assumed PM = PM10 = PM2.5

Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control

**Methodology:**

Uncontrolled Potential Emission(tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs \* 1/(1-Control Efficiency)]

Controlled Potential Emission (tons/yr) = [No. Units \* Loading (grains/acf) \* Air/Cloth Ratio (acfm/ft<sup>2</sup>) \* Filter Area (ft<sup>2</sup>) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs]

**Appendix K: Emission Calculations**  
**Particulate Emissions from Miscellaneous Machining**  
**Plant 69A / 69B**

Company Name: Heartland Recreational Vehicles, LLC  
 Address City IN Zip: 1330 Wade Drive, Elkhart, IN 46514  
 Permit Number: 039-29849-00621  
 Pit ID: 039-00621  
 Reviewer: Jason R. Krawczyk  
 Date: January 24, 2011

**One (1) PVC Chop Saws 69CS1**

10.00	cuts/hr	x	4.000	1 diameter pip	x	3.14	pi	x	0.1250	in thick pipe wall	x	0.125	in thick blade	=	1.96	in3 loss/hr
1.96	in3 loss/hr	/	1,728	in3/ft3	x	87.71	lb/ft3	=	0.10	lb loss/hr	=	<b>0.44</b>	tons/yr			

**Three (3) Table Saws 69TS1-3**

10.00	cuts/hr	x	48.00	in long	x	0.125	in thick	x	0.125	in wide	=	7.5	in3 loss/hr
7.50	in3 loss/hr	/	1,728	in3/ft3	x	168.43	lb/ft3	=	0.73	lb loss/hr	=	<b>3.20</b>	

**Sevin (7) Wood Chop Saws 69CS2-8**

20.00	cuts/hr	x	1.50	in long	x	1.50	in thick	x	0.125	in wide	=	5.625	in3 loss/hr
5.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.13	lb loss/hr	=	<b>0.57</b>	tons/yr

**Two (2) Drill Presses 69DP1-2**

20.00	BF/hr	/	4	BF/piece	=	5	pieces/hr									
5.00	pieces/hr	x	6.00	holes/piece	x	3.14	pi	x	0.0156	r <sup>2</sup> *	x	1.5	in depth	=	2.21	in3 loss/hr
4 in diameter bit																
2.21	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.05	lb loss/hr	=	<b>0.22</b>	tons/yr			

**Four (4) Hand Routers 69HR1-4**

80.00	feet/hr	x	0.125	in wide bit	x	0.06	in depth (edge trimming)	=	0.63	in3 loss/hr			
0.63	in3 loss/hr	/	1,728	in3/ft3	x	40.00	lb/ft3	=	0.01	lb loss/hr	=	<b>0.06</b>	tons/yr

Total Loss Estimate = 1.03 lb loss/hr

Total Loss Estimate = **4.50** tons/year



# 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](http://www.idem.IN.gov)

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

TO: Dave Everett  
Heartland Recreational Vehicle, LLC  
1001 All Pro Dr.  
Elkhart IN 46514

DATE: Mar. 16, 2011

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

SUBJECT: Final Decision  
FESOP  
039-29849-00621

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:  
Jack Culbertson VP of Ops Heartland Recreational Vehicle, LLC  
Doug Elliott D & B Environmental Services, Inc.  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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[www.idem.IN.gov](http://www.idem.IN.gov)

Mar. 16, 2011

TO: Elkhart Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

**Applicant Name: Heartland Recreational Vehicle, LLC**  
**Permit Number: 039-29849-00621**

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures  
Final Library.dot 11/30/07

# Mail Code 61-53

IDEM Staff	BMILLER 3/16/2011 Heartland Recreational Vehicle, LLC - Plant #2 039-29849-00621 (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:  <b>CERTIFICATE OF MAILING ONLY</b>	

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		Dave Everett Heartland Recreational Vehicle, LLC - Plant #2 1001 All Pro Drive Elkhart IN 46514 (Source CAATS) <i>Via Confirm Delivery</i>									
2		Jack Culbertson VP of Operations Heartland Recreational Vehicle, LLC - Plant #2 1001 All Pro Drive Elkhart IN 46514 (RO CAATS)									
3		Elkhart City Council and Mayors Office 229 South Second Street Elkhart IN 46516 (Local Official)									
4		Elkhart Public Library 300 S 2nd St Elkhart IN 46516-3184 (Library)									
5		Elkhart County Health Department 608 Oakland Avenue Elkhart IN 46516 (Health Department)									
6		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)									
7		Elkhart County Board of Commissioners 117 North Second St. Goshen IN 46526 (Local Official)									
8		Mr. Doug Elliott D & B Environmental Services, Inc. 401 Lincoln Way West Osceola IN 46561 (Consultant)									
9		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party)									
10											
11											
12											
13											
14											
15											

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