

Statement of Basis

**Permit to Construct No. P-2016.0069
Project ID 61883**

**Heartland RV – Plant 800
Nampa, Idaho**

Facility ID 027-00151

Final

May 23, 2017 
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The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE 3

FACILITY INFORMATION 5

 Description 5

 Permitting History 5

 Application Scope 5

 Application Chronology 5

TECHNICAL ANALYSIS 6

 Emissions Units and Control Equipment 6

 Emissions Inventories..... 7

 Ambient Air Quality Impact Analyses 9

REGULATORY ANALYSIS..... 9

 Attainment Designation (40 CFR 81.313)..... 9

 Facility Classification..... 9

 Permit to Construct (IDAPA 58.01.01.201)..... 10

 Tier II Operating Permit (IDAPA 58.01.01.401) 10

 Visible Emissions (IDAPA 58.01.01.625) 10

 Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701) 10

 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)..... 11

 PSD Classification (40 CFR 52.21)..... 11

 NSPS Applicability (40 CFR 60) 11

 NESHAP Applicability (40 CFR 61) 11

 MACT Applicability (40 CFR 63) 11

 Permit Conditions Review..... 12

PUBLIC REVIEW..... 14

 Public Comment Opportunity..... 14

APPENDIX A – EMISSIONS INVENTORIES..... 15

APPENDIX B – PROCESSING FEE..... 16

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
BRC	below regulatory concern
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS No.	Chemical Abstracts Service registry number
CBP	concrete batch plant
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	CO ₂ equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
fpm	feet per minute
FEC	Facility Emissions Cap
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
HMA	hot mix asphalt
HVLP	high volume low pressure
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants

NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O ₂	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
RICE	reciprocating internal combustion engines
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SCL	significant contribution limits
SDS	safety data sheet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TEQ	toxicity equivalent
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd ³	cubic yards
µg/m ³	micrograms per cubic meter

FACILITY INFORMATION

Description

Heartland RV - Plant 800 is a travel trailer manufacturer. The operations at Heartland RV - Plant 800 consist of manual assembly, aluminum welding, lamination, wood cutting, touch-up and cleaning operations.

Heartland RV –Plant 800 will have two identical assembly lines. Each assembly line operates eight hours per day, five days per week, with a maximum capacity of two units per hour. Both lines use the same existing welding, lamination, and wood cutting operations.

Emissions will be generated from the manual application of caulks, sealers and adhesives, spot touch-up, and cleaning operations. Unit sidewalls will be constructed with welded aluminum frames laminated to fiber reinforced plastic composite panels. Minor wood cutting operations will also be conducted. Wood dust from the cutting operations will be controlled with an external return-air dust collection system. Natural gas combustion of building heaters also emits air pollutants.

Permitting History

This is the initial PTC for an existing facility that was constructed in March 2016 and for an addition of a new duplicate assembly line thus there is no permitting history.

Application Scope

This permit is the initial PTC for a travel trailer manufacturer with two identical assembly lines.

Application Chronology

November 21, 2016	DEQ received an application.
November 22, 2016	DEQ received an application fee.
November 29 – December 14, 2016	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
December 14, 2017	DEQ determined that the application was incomplete.
December 20, 2016 and January 9, 2017	DEQ received supplemental information from the applicant.
February 7, 2017	DEQ determined that the application was complete.
March 28, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
April 5, 2017	DEQ made available the draft permit and statement of basis for applicant review.
April 18, 2017	DEQ received the permit processing fee.
April 21, 2017	DEQ issued the final permit and statement of basis.
May 8, 2017	DEQ reopened the permit for cause.
May 23, 2017	DEQ issued the revised final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment
Plant 800-1	<p><u>Plant 800-1</u> Manufacturer: NA Model: NA Construction Date: 3/14/2016</p> <p>The operations in Plant 800-1 include assemble line operations, touch-up paint operation, and final finish.</p> <p>In the assemble line operations, the activities that emit air pollutants are manual caulking, non-atomized spraying, aerosol spraying, and manual brush. The maximum production rate is two travel trailer units per hour.</p> <p>In the touch-up paint operation, the activity that emits air pollutants is using HVLP spray gun to paint. The maximum production rate of this operation is half travel trailer unit per hour.</p> <p>In final finish, the activity that emits air pollutants is hand/manually applying solvent/cleaner. The maximum production rate is two travel trailer units per hour.</p>	None
Plant 800-2	<p><u>Plant 800-2</u> Manufacturer: NA Model: NA Construction Date: 1/3/2017 The operations are identical to Plant 800-1</p>	None
Plant 800 Lamination	<p><u>Plant 800 Lamination</u> Manufacturer: NA Model: NA Construction Date: 3/14/2016 Max. Production: 8 travel trailer units/hr</p> <p>The activity that emits air pollutants at plant 800 lamination operation is roll coating.</p>	None
Plant 800 Cabinet Assembly	<p><u>Plant 800 Cabinet Assembly</u> Manufacturer: NA Model: NA Construction Date: 3/14/2016 Max. Capacity: 8,000 CFM</p> <p>The activity that emits air pollutants at plant 800 cabinet assembly operation is miscellaneous wood cutting.</p>	<p><u>Thor-Kleen Dust Collector</u> Manufacturer: NSGV Model: 32-75 Type: cyclone with filter bags PM₁₀ control efficiency: 99.0%</p>
Plant 800 Aluminum Welding	<p><u>Plant 800 Aluminum Welding</u> Manufacturer: NA Model: NA Manufacture Date: 3/14/2016 Max. Capacity: 3 lb electrode/hr for Plant 800-1 and Plant 800-2 respectively, or 6 lb electrode/hr total</p>	None
Plant 800 Building Heating	<p><u>Plant 800 Building Heating (10 space heaters and 2 radiant tube heaters)</u> Manufacturer: NA Model: NA Manufacture Date: NA Total Heat Input Rating: 8.4 MMBtu/hr Fuel: natural gas</p>	None

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines potential to emit (PTE) as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit, the applicant developed an emission inventory for the facility. Emissions estimates of criteria pollutant and hazardous air pollutants PTE were based on emission factors from AP-42, operation of 2,600 hours per year, and process specific information to the facility for this project.

Uncontrolled Potential to Emit

Using the definition of potential to emit, uncontrolled potential to emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled potential to emit is used to determine if a facility is a “Synthetic Minor” source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled potential to emit for criteria pollutants and HAP as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. The uncontrolled Potential to Emit is based upon a worst-case operation of the facility at 8,760 hr/yr.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS AND HAP

Potential to Emit (T/yr)							
Emission Unit	PM	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	VOC	CO	Total HAP
Plant 800 Assembly Line 1	0.031	0.031	--	--	22.986	--	1.450
Plant 800 Assembly Line 2	0.032	0.032	--	--	22.836	--	1.444
Lamination	0.000	0.000	--	--	2.60E-08	--	--
Cabinet and Molding Assembly	30.0	14.4	--	--	--	--	--
Natural Gas Combustion	0.274	0.274	0.022	3.607	0.198	3.030	0.068
Welding	0.150	0.150	--	--	--	--	0.000
Total	30.5	14.9	0.022	3.607	46.020	3.030	2.962

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is an existing facility. However, since this is the first time the facility is receiving a permit, pre-project emissions are set to zero for all criteria pollutants.

Post Project Potential to Emit

Post project potential to emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project potential to emit includes all permit limits resulting from this project.

The following table presents the post project potential to emit for criteria pollutants and HAP from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS AND HAP

Potential to Emit after Control (T/yr)							
Emission Unit	PM	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	VOC	CO	Total HAPs
Plant 800 Assembly Line 1	0.009	0.009	--	--	6.666	--	0.420
Plant 800 Assembly Line 2	0.009	0.009	--	--	6.622	--	0.419
Lamination	0.000	0.000	--	--	7.54E-09	--	--
Cabinet and Molding Assembly	0.087	0.042	--	--	--	--	--
Natural Gas Combustion	0.206	0.206	0.016	2.705	0.149	2.272	0.051
Welding	0.044	0.044	--	--	--	--	0.000
Total	0.355	0.309	0.016	2.705	13.437	2.272	0.890

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Emission Unit	PM	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	VOC	CO
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Potential to Emit	0.355	0.309	0.016	2.705	13.437	2.272
Total	0.355	0.309	0.016	2.705	13.437	2.272

TAP Emissions

A summary of the estimated PTE for emissions increase of toxic air pollutants (TAP) is provided in the following table. Pre- and post-project, as well as the change in, TAP emissions are presented in the following table:

Table 5 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project Max. Emissions Rates for Units at the Facility (lb/hr)	Post Project Max. Emissions Rates for Units at the Facility (lb/hr)	Change in Max. Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Xylene 1330-20-7	0.00	0.020	0.020	29	No
Toluene 108-88-3	0.00	0.177	0.177	25	No
VM&P Naptha 8032-32-4	0.00	0.008	0.008	91.3	No
Ethyl acetate 141-78-6	0.00	0.006	0.006	93.3	No
n-Butyl acetate 123-86-4	0.00	0.006	0.006	47.3	No
MEK 78-93-3	0.00	0.115	0.115	39.3	No
Methanol 67-56-1	0.00	0.219	0.219	17.3	No
HDI 822-06-0	0.00	0.243	0.243	0.002	No
Tetrahydrofuran 109-99-9	0.00	0.069	0.069	39.3	No
Ethyl Benzene 100-41-4	0.00	0.000	0.000	29	No
Isopropyl alcohol 67-63-0	0.00	0.243	0.243	65.3	No

Non-Carcinogenic Toxic Air Pollutants	Pre-Project Max. Emissions Rates for Units at the Facility (lb/hr)	Post Project Max. Emissions Rates for Units at the Facility (lb/hr)	Change in Max. Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Hexane 110-54-3	0.00	0.065	0.065	12	No
MIBK 108-10-1	0.00	0.001	0.001	13.7	No
Heptane 142-82-5	0.00	4.183	4.183	109	No
Acetone 67-64-1	0.00	5.144	5.144	119	No

None of the TAP increments exceed the respective screening emissions levels (EL) as a result of this project. Therefore, modeling is not required.

Ambient Air Quality Impact Analyses

According to the State of Idaho Air Quality Modeling Guideline,¹ modeling is not required because emissions of PM₁₀/PM_{2.5}, SO₂, NO_x, and CO qualify for a below regulatory concern (BRC) exemption (Idaho Air Rules Section 221) and because TAP increments are below the respective EL.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Canyon County, which is designated as attainment or unclassifiable for PM_{2.5}, PM₁₀, SO₂, NO₂, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

- A = Use when any one HAP has actual or potential emissions ≥ 10 T/yr or if the aggregate of all HAPS (Total HAPS) has actual or potential emissions ≥ 25 T/yr.
- SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits ≥ 8 T/yr of a single HAP or ≥ 20 T/yr of THAP.
- SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.
- B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold
- UNK = Class is unknown

For All Other Pollutants:

- A = Actual or potential emissions of a pollutant are ≥ 100 T/yr.
- SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the

¹ Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

Table 6 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	< 100	< 100	100	B
PM ₁₀ /PM _{2.5}	< 100	< 100	100	B
SO ₂	< 100	< 100	100	B
NO _x	< 100	< 100	100	B
CO	< 100	< 100	100	B
VOC	< 100	< 100	100	B
HAP (single)	< 10	< 10	10	B
HAP (Total)	< 25	< 25	25	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the proposed emissions sources. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Condition 2.4.

Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)

IDAPA 58.01.01.701Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment’s process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979 and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following equations:

IDAPA 58.01.01.701.01.a: If PW is $< 9,250$ lb/hr; $E = 0.045 (PW)^{0.60}$

IDAPA 58.01.01.701.01.b: If PW is $\geq 9,250$ lb/hr; $E = 1.10 (PW)^{0.25}$

As presented in the Emissions Inventories in Appendix A, emissions from the emissions units are well below the process weight limitations. Therefore, compliance with this requirement has been demonstrated.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for any regulated air pollutants, or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006, and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements in 40 CFR Part 60. The natural gas-fired building heaters at this facility do not meet the definition of boilers or process heaters and are therefore not subject to NSPS.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility is not subject to any MACT standards in 40 CFR Part 63.

40 CFR 63, Subpart HHHHHHNational Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, Subpart HHHHHH, are not applicable to this source for the following reasons:

- (1) The source does not engage any paint stripping operations.
- (2) The source does not perform spray application of coatings to motor vehicles or mobile equipment. Pursuant to 63.11170(a)(2), the source does not meet the definition of motor vehicle and mobile equipment surface coating as defined in 63.11180 because motor vehicle and mobile equipment surface coating does not include the surface coating of motor vehicle or mobile equipment parts or subassemblies at a vehicle assembly plant or parts manufacturing plant.
- (3) The source does perform spray application of coatings to plastic and /or metal substrates. However, pursuant to 63.11170(a)(3), the source does not perform spray application of coatings containing compounds of chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd) to a plastic and/or metal substrate on a part or product.

Therefore, the source is not subject to 40 CFR 63, Subpart HHHHHH.

The requirements of the National Emission Standards for Hazardous Air Pollutants for Area Source Standards for Nine Metal Fabrication and Finishing Source Categories, Subpart XXXXXX are not applicable to this source because the Standard Industrial Classification (SIC) of this source is not listed.

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Permit Condition 1.1 states that this is the initial PTC for a travel trailer manufacturer.

Table 1.1 lists the regulated sources in this permit.

Permit Conditions 2.1 and 2.2 describe the process and its control.

Permit Condition 2.3

While the potential to emit of volatile organic compounds (VOC) is well below the major source threshold of 100 T/yr, to follow DEQ's current process, a VOC limit, taken from Table 3, is imposed in the permit to reflect the proposed operation and to keep the facility being a minor source. No other emissions limits are imposed because under the maximum rates, the emissions are well below 10 T/yr for HAP combined and the respective EL for TAP and because emissions of PM₁₀/PM_{2.5}, SO₂, NO_x, and CO qualify for a below regulatory concern (BRC) exemption with the use of dust collector to control particulate emissions from miscellaneous wood cutting.

Permit Condition 2.4 is the visible emissions limit applying to each stack, or any other stack, vent, or functionally equivalent opening associated with the facility.

Permit Conditions 2.5 and 2.6 are requirements for odor control and fugitive dust control.

Permit Condition 2.7 specifies what materials can be used at Heartland RV-Plant 800. The facility complies with NAAQS and TAP standards when using the materials listed in the application at design capacity. Because the emissions are well below 100 T/yr for criteria pollutants, 10 T/yr for HAP combined, and the respective EL for TAP, no specific throughputs are imposed in the permit when the facility is operated as designed. Refer to emissions inventory in Appendix A for details.

Permit Condition 2.7 allows using alternative materials when the use of alternative materials qualify for a PTC exemption (IDAPA 58.01.01.2220-223), or would exhibit the TAP emissions not exceed 585 or 586 EL and do not exceed the VOC limit in Permit Condition 2.3.

Though 75% transfer efficiency was used when calculating particulate emissions from spray painting, the particulate emissions are BRC even without using HVLP or with 0% transfer efficiency. Therefore, 75% transfer efficiency or using HVLP is not imposed in the permit.

Permit Condition 2.8 requires the use of a dust collection system, a cyclone dust collector(s) with filter bag(s) as described in the application, to control emissions from wood cutting operations at the cabinet assembly operation. The emissions concentration is required to be 0.001 grain per actual cubic feet per minutes (gr/acfm) or less as used in the emissions calculation.

Permit Condition 2.9 is taken from DEQ's internal guidance for baghouse or filter systems. Quarterly see-no-see is chosen because the emissions from the operation are small.

Permit Condition 2.10 is a monitoring requirement. It is for demonstrating compliance that the facility uses the materials as specified in the application (refer to Appendix A for details), or if not, that the changes meet the requirements in Permit Conditions 2.3 and 2.7.

Permit Condition 2.11 requires the permittee prior to using alternative materials, to perform analysis and make sure the changes meeting the requirements in Permit Conditions 2.3 and 2.7 and to keep the documentation. The permittee will use the same calculation metrology used in the application, or DEQ approved alternatives.

Permit Condition 2.12 requires the permittee to keep the minimum emissions concentration of the dust collecting system.

Permit Conditions 2.13 and 2.14 require the permittee to keep the records for odor and/or fugitive dust complaints and corrective actions.

Permit Condition 2.15 is a VOC monitoring requirement for showing compliance with the VOC limit in Permit Condition 2.3.

Permit Condition 2.16 is a reporting requirement. The permittee is required to submit a report to DEQ if alternative materials are used.

General Provisions

Permit Condition 3.1

The duty to comply general compliance provision requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Permit Condition 3.2

The maintenance and operation general compliance provision requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Permit Condition 3.3

The obligation to comply general compliance provision specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Permit Condition 3.4

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Permit Condition 3.5

The permit expiration construction and operation provision specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Permit Condition 3.6

The notification of construction and operation provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.03.

Permit Condition 3.7

The performance testing notification of intent provision requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Permit Condition 3.8

The performance test protocol provision requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Permit Condition 3.9

The performance test report provision requires that the permittee report any performance test results to DEQ within 30 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Permit Condition 3.10

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Permit Condition 3.11

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Permit Condition 3.12

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Permit Condition 3.13

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Permit Condition 3.14

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Permit Condition 3.15

The transferability provision specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Permit Condition 3.16

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

	A	B	C	D	E	F	G	H	I	J	K	
1		Appendix A: Emission Calculations										
2		PTE Summary										
3												
4		Company Name:		Heartland Recreational Vehicles, LLC - Plant 800								
5		Address City IN Zip:		900 East Karcher Road, Nampa, Idaho 83687								
6		Permit No./Pit ID:										
7		Prepared By:		D&B Environmental Services, Inc.								
8		Date:		4/4/2017								
9												
10		Potential to Emit (tons/yr)										
11	Emission Unit	PM	PM10	SO₂	NOx	VOC	CO	Total HAPs				
12	Plant 800 Assembly Line 1	0.031	0.031	--	--	22.986	--	1.450				
13	Plant 800 Assembly Line 2	0.032	0.032	--	--	22.836	--	1.444				
14	Lamination	0.00E+00	0.00E+00	--	--	2.60E-08	--	--				
15	Cabinet and Molding Assembly	30.034	14.400	--	--	--	--	--				
16	Natural Gas Combustion	0.274	0.274	0.022	3.607	0.198	3.030	0.068				
17	Welding	0.150	0.150	--	--	--	--	0.000				
18	Total	30.522	14.888	0.022	3.607	46.020	3.030	2.962				
19												
20												
21		Potential to Emit after Control (tons/yr)*										
22	Emission Unit	PM	PM10	SO₂	NOx	VOC	CO	Total HAPs				
23	Plant 800 Assembly Line 1	0.009	0.009	--	--	6.666	--	0.420				
24	Plant 800 Assembly Line 2	0.009	0.009	--	--	6.622	--	0.419				
25	Lamination	0.000	0.000	--	--	7.54E-09	--	--				
26	Cabinet and Molding Assembly	0.087	0.042	--	--	--	--	--				
27	Natural Gas Combustion	0.206	0.206	0.016	2.705	0.149	2.272	0.051				
28	Welding	0.044	0.044	--	--	--	--	0.000				
29	Total	0.355	0.309	0.016	2.705	13.437	2.272	0.890				
30												
31	* Controlled = 2,600 Annual Hours of Operation											
32												
33	TAP Emissions Level (EL-lb/hr)	Xylene 1330-20-7 29	Toluene 108-88-3 25	VM&P Naphtha 8032-32-4 91.3	Ethyl acetate 141-78-6 93.3	n-Butyl acetate 123-86-4 47.3	MEK 78-93-3 39.3	Methanol 67-56-1 17.3	HDI 822-06-0 0.002	Tetrahydrofuran 109-99-9 9 39.3	Ethyl Benzene 100-41-4 29	
34	Agrigated TAP Emission Rates	0.020	0.177	0.008	0.006	0.006	0.115	0.219	0.243	0.069	0.000	
35												
36	TAP Emissions Level (EL-lb/hr)	Isopropyl alcohol 67-63-0 65.3	Hexane 110-54-3 12	MIBK 108-10-1 13.7	Heptane 142-82-5 109	Acetone 67-64-1 119						
37	Agrigated TAP Emission Rates	0.243	0.065	0.001	4.183	5.144						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V		
1	Appendix A: Emission Calculations																							
2	VOC and Particulate																							
3	Plant 800-1																							
4																								
5	Company Name: Heartland Recreational Vehicles, LLC - Plant 800																							
6	Address City IN Zip: 900 East Karcher Road, Nampa, Idaho 83687																							
7	Permit No./Pt ID:																							
8	Prepared By: D&B Environmental Services, Inc.																							
9	Date: 4/4/2017																							
10																								
11	Chassis Preparation																							
12	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method				
13	51333 Undercoat	7.09	65.75%	0.0%	65.8%	0.0%	56.20%	0.00025	2.000	0.01	4.66	4.66	0.00	0.06	0.01	0.00	8.29	75%	Metal	Hand/manual				
14	Potential Emissions:												0.00	0.06	0.01	0.00								
15																								
16	Assembly Line Operations																							
17	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method				
18	Sikaflex 255	10.01	4.90%	0.0%	4.9%	0.0%	95.10%	0.0085	2.000	0.41	0.49	0.49	0.01	0.20	0.04	0.00	0.52	100%	Plastic	Manual Caulk				
19	Bondaflex 100	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1990	2.000	9.55	0.71	0.71	0.28	6.81	1.24	0.00	0.79	100%	Wood/Fabric	Manual Caulk				
20	Manus 25-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	2.000	6.07	0.01	0.01	0.00	0.08	0.01	0.00	0.01	100%	Wood/Fabric	Manual Caulk				
21	Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	2.000	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric	Manual Caulk				
22	Super Stick HAPS Free	6.08	70.30%	25.0%	45.3%	18.2%	41.83%	0.8165	2.000	39.19	3.37	2.75	4.50	107.94	19.70	0.00	6.57	100%	Wood/Fabric	non-atomized spray				
23	Cydo C-33	5.42	92.00%	0.00%	92.00%	0.0%	0.09%	0.0132	2.000	0.63	4.99	4.99	0.13	3.16	0.58	0.03	5540.44	50%	Solvent/Cleaner	aerosol				
24	Clay Clear Cement	7.51	88.00%	0.0%	88.0%	0.0%	12.00%	0.0026	2.000	0.12	6.61	6.61	0.03	0.82	0.15	0.00	55.07	100%	Plastic	Manual Brush				
25	1. IDEM, OAG has determined that application of Sta/Put SP80 and Sta/Put SP90 in RV assembly																							
26	operations at this source when using non-atomizing spray does not generate particulate emissions.																							
27																								
28	Touchup Paint Operation																							
29	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method	Process Weight Limit (lb/hr)	Emissions less than PWL?		
30	BASF AM800	6.90	79.71%	8.70%	71.01%	10.9%	9.00%	0.0008	0.500	0.01	5.50	4.90	0.00	0.05	0.01	0.00	54.44	75%	Wood/Fabric	HVLP	0.001311	Y		
31	BASF NRL Bases	8.83	69.08%	0.00%	69.08%	0.0%	21.00%	0.0006	0.500	0.01	6.10	6.10	0.00	0.04	0.01	0.00	29.05	75%	Wood/Fabric	HVLP	0.00128	Y		
32	BASF DC5135	8.50	68.20%	25.00%	43.20%	25.0%	31.80%	0.0023	0.500	0.03	4.90	3.67	0.00	0.10	0.02	0.00	11.55	75%	Wood/Fabric	HVLP	0.002801	Y		
33	BASF 352-500	7.80	98.68%	0.00%	98.68%	0.0%	1.90%	0.0001	0.500	0.00	7.50	0.00	0.00	0.01	0.00	0.00	749.97	75%	Plastic	HVLP	0.000399	Y		
34	BASF UR30	6.93	100.00%	10.00%	90.00%	10.0%	4.00%	0.0028	0.500	0.03	6.93	6.24	0.01	0.21	0.04	0.00	155.93	75%	Plastic	HVLP	0.002788	Y		
35	Potential Emissions:												0.02	0.41	0.07	0.00								
36																								
37																								
38	Final Finish																							
39	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method				
40	TCI DT-10 Lacquer Thinner	6.79	100.00%	0.00%	100.00%	0.0%	0.00%	0.0023	2.000	0.11	N/A	6.79	0.03	0.75	0.14	0.00	N/A	100%	Solvent/Cleaner	Hand/manual	0.005623	Y		
41	TCI Acetone	6.69	100.00%	100.00%	0.00%	100.0%	0.00%	0.0023	2.000	0.11	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	Solvent/Cleaner	Hand/manual	0.005573	Y		
42	TCI Isopropenol	6.55	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	2.000	0.44	6.55	6.55	0.12	2.89	0.53	0.00	N/A	100%	Solvent/Cleaner	Hand/manual	0.012643	Y		
43	TCI Mineral Spirits	6.48	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	2.000	0.55	6.48	6.48	0.15	3.58	0.65	0.00	N/A	100%	Solvent/Cleaner	Hand/manual	0.014351	Y		
44	Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	2.000	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Plastic	Hand/manual	0.001905	Y		
45	Potential Emissions:												0.27	6.47	1.19	0.00								
46																								
47	Grand Totals Plant 800-1												5.248	125.951	22.986	0.031								
48																								
49																								
50	Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)																							
51	Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)																							
52	Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)																							
53	Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)																							
54	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)																							
55	Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (1-lb/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)																							
56	Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)																							
57	Total = Worst Coating + Sum of all solvents used																							

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA		
Appendix A: Emission Calculations																												
Plant 800-1 TAPs																												
Company Name: Heartland Recreational Vehicles, LLC - Plant 800																												
Address City IN Zip: 900 East Karcher Road, Nampa, Idaho 83667																												
Permit No./PIR ID:																												
Prepared By: D&B Environmental Services, Inc.																												
Date: 4/4/2017																												
10 Chassis Preparation																												
Material	Density (lb/gal)	Gallons of Material (gal/Unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naptha	Weight % Ethyl Acetate	Weight % n-butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naptha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)		
51333 Undercoat	7.09	0.0025	2.00	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%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
																				Potential Emissions:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16 Assembly Line Operations																												
Material	Density (lb/gal)	Gallons of Material (gal/Unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naptha	Weight % Ethyl Acetate	Weight % n-butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naptha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)		
51333 Undercoat	7.09	0.0025	2.00	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%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
																				Potential Emissions:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28 Touchup Paint Operation																												
Material	Density (lb/gal)	Gallons of Material (gal/Unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naptha	Weight % Ethyl Acetate	Weight % n-butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naptha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)		
51333 Undercoat	7.09	0.0025	2.00	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%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
																				Potential Emissions:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39 Final Finish																												
Material	Density (lb/gal)	Gallons of Material (gal/Unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naptha	Weight % Ethyl Acetate	Weight % n-butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naptha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)		
51333 Undercoat	7.09	0.0025	2.00	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%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
																				Potential Emissions:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
																				Total Potential TAP Emissions:	0.010	0.009	0.004	0.003	0.003	0.007	0.159	0.121
																				Total Potential HAP Emissions:	0.044	0.102					0.479	0.551
52 METHODOLOGY:																												
53 TAPs emission rate (pounds/hr) = Density (lb/gal) * Gal of Material (gal/Unit) * Maximum (unit/hr) * Weight % TAP																												

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
1	Appendix A: Emission Calculations																					
2	VOC and Particulate																					
3	Plant 800-2																					
4																						
5	Company Name: Heartland Recreational Vehicles, LLC - Plant 800																					
6	Address City IN Zip: 900 East Karcher Road, Nampa, Idaho 83687																					
7	Permit No./PR ID:																					
8	Prepared By: D&B Environmental Services, Inc.																					
9	Date: 4/4/2017																					
10																						
11	Chassis Preparation																					
12	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method		
13	51333 Undercoat	8.86	52.50%	0.0%	52.5%	60.8%	11.07%	0.00025	2,000	0.01	11.87	4.65	0.00	0.06	0.01	0.00	42.02	75%	Metal	Hand/manual		
14												Potential Emissions:	0.00	0.06	0.01	0.00						
15	Assembly Line Operations																					
16	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method		
17	Staflex 255	10.01	4.90%	0.0%	4.9%	0.0%	95.10%	0.0085	2,000	0.41	0.49	0.49	0.01	0.20	0.04	0.00	0.52	100%	Plastic	Manual Caulk		
18	Bondaflex 100	7.92	9.00%	0.0%	9.0%	0.0%	90.32%	0.1980	2,000	9.55	0.71	0.71	0.28	6.81	1.24	0.00	0.79	100%	Wood/Fabric	Manual Caulk		
19	Manus 75-AM	11.68	0.11%	0.0%	0.1%	0.0%	99.83%	0.1265	2,000	6.07	0.01	0.01	0.00	0.08	0.01	0.00	0.01	100%	Wood/Fabric	Manual Caulk		
20	Manus 75-AM	14.19	0.00%	0.0%	0.0%	0.0%	100.00%	0.1265	2,000	6.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Wood/Fabric	Manual Caulk		
21	Super Stick HAPS Free	6.08	70.30%	25.0%	45.3%	18.2%	41.93%	0.1865	2,000	39.19	3.37	2.75	4.50	107.94	19.70	0.00	6.57	100%	Wood/Fabric	non-atomized spray		
22	Cylo C-33	5.42	92.00%	0.00%	92.00%	0.0%	0.09%	0.0132	2,000	0.63	4.99	4.99	0.13	3.16	0.56	0.03	5540.44	50%	solvent/Clean	aerosol		
23	Oatey Clear Cement	16.68	0.00%	0.0%	0.0%	0.0%	20.00%	0.0026	2,000	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%	Plastic	Manual Brush		
24	1. IDEM, OAQ has determined that application of StaPut SP90 and StaPut SP90 in RV assembly operations at this source when using non-atomizing spray does not generate particulate emissions.																					
25												Potential Emissions:	4.92	118.19	21.57	0.03						
26	Touchup Paint Operation																					
27	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method		
28	BASF AM800	6.90	79.71%	8.79%	71.01%	10.9%	9.00%	0.0008	0.500	0.01	5.50	4.90	0.00	0.05	0.01	0.00	54.44	75%	Wood/Fabric	HVLP		
29	BASF NRI Bases	8.83	89.08%	0.00%	89.08%	0.0%	21.00%	0.0008	0.500	0.01	6.10	6.10	0.00	0.04	0.01	0.00	29.05	75%	Wood/Fabric	HVLP		
30	BASF DC5135	6.50	68.20%	25.00%	43.20%	25.0%	31.80%	0.0023	0.500	0.03	4.90	3.67	0.00	0.10	0.02	0.00	11.55	75%	Wood/Fabric	HVLP		
31	BASF 352-500	7.60	98.68%	0.00%	98.68%	0.0%	1.00%	0.0001	0.500	0.00	7.50	7.50	0.00	0.01	0.00	0.00	749.97	75%	Plastic	HVLP		
32	BASF UR30	6.93	100.00%	10.00%	90.00%	10.0%	4.00%	0.0028	0.500	0.03	6.93	6.24	0.01	0.21	0.04	0.00	155.93	75%	Plastic	HVLP		
33												Potential Emissions:	0.02	0.41	0.07	0.00						
34	Final Finish																					
35	Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water & Exempt	Weight % Organics	Volume % Water & Exempt	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Gallons Used (gal/day)	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	Application Method		
36	TCI DT-10 Lacquer Thinnr	6.79	100.00%	0.00%	100.00%	0.0%	0.00%	0.0023	2,000	0.11	N/A	6.79	0.03	0.75	0.14	0.00	N/A	100%	solvent/Clean	Hand/manual		
37	TCI Acetone	6.69	100.00%	100.00%	0.00%	100.00%	0.00%	0.0023	2,000	0.11	N/A	0.00	0.00	0.00	0.00	0.00	N/A	100%	solvent/Clean	Hand/manual		
38	TCI Isopropanol	6.55	100.00%	0.00%	100.00%	0.0%	0.00%	0.0092	2,000	0.44	6.55	6.55	0.12	2.89	0.53	0.00	N/A	100%	solvent/Clean	Hand/manual		
39	TCI Mineral Spirits	6.48	100.00%	0.00%	100.00%	0.0%	0.00%	0.0115	2,000	0.55	6.48	6.48	0.15	3.58	0.65	0.00	N/A	100%	solvent/Clean	Hand/manual		
40	Markal Various Markers	11.18	0.00%	0.00%	0.00%	0.00%	100.00%	0.0002	2,000	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00%	Plastic	Hand/manual		
41												Potential Emissions:	0.27	6.47	1.18	0.00						
42														Grand Totals Plant 800-2	6.214	126.126	22.836	0.032				
43																						
44																						
45																						
46																						
47																						
48																						
49																						
50	Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)																					
51	Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)																					
52	Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)																					
53	Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)																					
54	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)																					
55	Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)																					
56	Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)																					
57	Total = Worst Coating + Sum of all solvents used																					

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ																		
Appendix A: Emission Calculations																																																					
Plant 800-2 HAPs																																																					
Company Name: Heartland Recreational Vehicles, LLC - Plant 800																																																					
Address City, IN Zip: 900 East Karcher Road, Nampa, Idaho 83687																																																					
Permit No./PI ID:																																																					
Prepared By: D&B Environmental Services, Inc.																																																					
Date: 4/4/2017																																																					
10 Chassis Preparation																																																					
11	Material	Density (lb/Gal)	Gallons of Material Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naphtha	Weight % Ethyl Acetate	Weight % n-Butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naphtha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-Butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)	Tetrahydrofuran Emissions (lb/hr)	Ethyl Benzene Emissions (lb/hr)	Isopropyl Alcohol Emissions (lb/hr)	Hexane Emissions (lb/hr)	MIBK Emissions (lb/hr)	Heptane Emissions (lb/hr)	Acetone Emissions (lb/hr)																				
12	5133 Undercoat	7.09	0.0092	2.00	0.00%	5.00%	0.00%	0.00%	0.00%	0.00%	3.00%	5.00%	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00																			
13	Potential Emissions:																			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	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	0.00	0.00	0.00	0.00		
16 Assembly Line Operations																																																					
17	Material	Density (lb/Gal)	Gallons of Material Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naphtha	Weight % Ethyl Acetate	Weight % n-Butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naphtha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-Butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)	Tetrahydrofuran Emissions (lb/hr)	Ethyl Benzene Emissions (lb/hr)	Isopropyl Alcohol Emissions (lb/hr)	Hexane Emissions (lb/hr)	MIBK Emissions (lb/hr)	Heptane Emissions (lb/hr)	Acetone Emissions (lb/hr)																				
18	StarTex 255	10.01	0.0045	2.00	4.00%	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%	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	0.00	0.00																			
19	Bondline 100	7.92	0.1360	2.00	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%	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	0.00	0.00	0.00																			
20	Manua 25-AM	11.68	0.1245	2.00	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%	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	0.00	0.00	0.00																			
21	Manua 75-AM	14.19	0.1245	2.00	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%	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	0.00	0.00	0.00																			
22	Super Blux HAPS FN	6.08	0.8145	2.00	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%	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	0.00	0.00	0.00																			
23	Cyba 2-33	5.42	0.2133	2.00	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%	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	0.00	0.00	0.00																			
24	Calay Adhesive	16.68	0.0026	2.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	30.00%	0.00%	40.00%	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00																		
25	Potential Emissions:																			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	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	0.00	0.00	0.00	0.00	0.00	
26 Touchup Paint Operation																																																					
29	Material	Density (lb/Gal)	Gallons of Material Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naphtha	Weight % Ethyl Acetate	Weight % n-Butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naphtha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-Butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)	Tetrahydrofuran Emissions (lb/hr)	Ethyl Benzene Emissions (lb/hr)	Isopropyl Alcohol Emissions (lb/hr)	Hexane Emissions (lb/hr)	MIBK Emissions (lb/hr)	Heptane Emissions (lb/hr)	Acetone Emissions (lb/hr)																				
31	BAF AM200	6.90	0.0058	0.50	1.00%	10.00%	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%	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	0.00																			
32	BAF AM 100	8.83	0.0058	0.50	3.00%	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%	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	0.00	0.00																			
33	BAF 205-125	7.58	0.0023	0.50	3.00%	1.00%	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%	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	0.00																			
34	BAF 305-200	7.65	0.0081	0.50	30.00%	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%	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	0.00	0.00																			
35	BAF UR30	6.83	0.0023	0.50	0.00%	10.00%	40.00%	30.00%	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	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																			
36	Potential Emissions:																			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	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	0.00	0.00	0.00	0.00	0.00	
38 Final Finish																																																					
40	Material	Density (lb/Gal)	Gallons of Material Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % VM & P Naphtha	Weight % Ethyl Acetate	Weight % n-Butylacetate	Weight % MEK	Weight % Methanol	Weight % Mineral Spirits	Weight % Tetrahydrofuran	Weight % Ethyl Benzene	Weight % Isopropyl Alcohol	Weight % Hexane	Weight % MIBK	Weight % Heptane	Weight % Acetone	Xylene Emissions (lb/hr)	Toluene Emissions (lb/hr)	VM & P Naphtha Emissions (lb/hr)	Ethyl Acetate Emissions (lb/hr)	n-Butylacetate Emissions (lb/hr)	MEK Emissions (lb/hr)	Methanol Emissions (lb/hr)	Mineral Spirits Emissions (lb/hr)	Tetrahydrofuran Emissions (lb/hr)	Ethyl Benzene Emissions (lb/hr)	Isopropyl Alcohol Emissions (lb/hr)	Hexane Emissions (lb/hr)	MIBK Emissions (lb/hr)	Heptane Emissions (lb/hr)	Acetone Emissions (lb/hr)																				
41	TCI DT-10	7.02	0.0136	2.00	0.00%	40.00%	0.00%	0.00%	0.00%	30.00%	10.00%	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00																			
42	TCI Acetone	6.59	0.0023	2.00	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%	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	0.00	0.00	0.00																			
43	TCI Isopropanol	6.59	0.0023	2.00	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%	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	0.00	0.00	0.00																			
44	TCI Mineral Spirit	6.59	0.0023	2.00	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%	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	0.00	0.00	0.00																			
45	Various Varnishes	11.16	0.0020	2.00	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%	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	0.00	0.00	0.00																			
46	Potential Emissions:																			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	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	0.00	0.00	0.00	0.00	0.00	
47	Total Potential TAP Emissions:																			0.010	0.088	0.054	0.003	0.063	0.087	0.110	0.121	0.036	0.080	0.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48	Total Potential HAP Emissions:																			0.044	0.385	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
49																																																					
50																																																					
51																																																					
52																																																					
53 METHODOLOGY:																																																					
54 TAP emission rate (unit/hr) = Density (lb/gal) * Out of Material (gal/hr) * Maximum (unit/hr) * Weight % TAP																																																					
55 HAP emission rate (unit/hr) = Density (lb/gal) * Out of Material (gal/hr) * Maximum (unit/hr) * Weight % HAP																																																					

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Appendix A: Emission Calculations																	
2	VOC, Particulate, and HAP																	
3	Lamination																	
4	Company Name: Heardand Recreational Vehicles, LLC - Plant 800																	
5	Address City IN Zip: 900 East Karcher Road, Nampa, Idaho 83687																	
6	Permit No./Pit ID:																	
7	Prepared By: D&B Environmental Services, Inc.																	
8	Date: 4/4/2017																	
9																		
10																		
11	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	Application Method
12	798A	8.40	5.00%	0.0%	5.0%	0.0%	95.06%	0.34500	8.000	0.47	0.47	5.94E-09	1.42E-07	2.60E-08	0.00E+00	0.49	100%	roll coating
13	2352*	8.14	0.00%	0.0%	0.0%	0.0%	100.00%	0.00025	8.000	0.00	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	100%	roll coating
14	*2352 Cleaner is a heat dissolved solid										Potential Emissions:		5.94E-09	1.42E-07	2.60E-08	0.00E+00		
15																		
16	Note:																	
17	VOC PTE is calculated using methodology below.																	
18																		
19	METHODOLOGY:																	
20	Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)																	
21	Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)																	
22	Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lb/gal) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)																	
23	Pounds VOC per Gallon of Solids = (Density (lb/gal) * Weight % organics) / (Volume % solids)																	
24	Total = Worst Coating + Sum of all solvents used																	
25																		
26	METHODOLOGY																	
27	Formula W = 25.4 * Vpmdi * (MW / Tproc) * u * 0.78 * SA * (TF * Kmdi)																	
28																		
29	W = Evaporative Losses (grams/day)																	
30																		
31	Vpmdi = Vapor Pressure at Temperature Used (Atmospheres) at process temperature																	
32																		
33					798A	1.023E-05	mm HG	1.346E-08	Atm									
34	MW = Molecular Weight (MDI = 250.26)																	
35																		
36	Tproc = Process Temperature (Kelvin)																	
37																		
38	u = Air Flow Rate (m/s)																	
39																		
40	SA = Exposed Surface Area (Square Meters Exposed/Day)																	
41																		
42	Adhesive	Use					Maximum Area	Maximum Area Exposed	Maximum Area Exposed	Units	Emissions							
43			Units				Coated	Coated	Area		grams/day							
44			Annual				Annual	per Day	M2/Day		per Formula							
45			(Average Size)				(ft2)	(ft2)										
46																		
47																		
48	798A	Parts	2000				1,500,000	4,109.58	381.79	M2	6.46E-05							
49		Coverage	750	sf/unit														
50																		
51	TF = Tack Free Time in Seconds (Default = 5 Seconds)																	
52																		
53	Kmdi = Vapor Pressure Adjustment Factor for Polyisocyanate Concentration (80 degrees @ 10% MDI from Table B)																	
54																		
55	Potential Emission Rate	6.46E-05	grams/day															
56	Potential Emission Rate	2.69E-06	grams/hour	= grams/day / 24 hours/day														
57	Potential Emission Rate	5.94E-09	lbs/hour	= grams/hour / 453.5 grams/lb														
58	Potential Emission Rate	1.42E-07	lbs/day	= lbs/hour x 24 hours /day														
59	Potential Emission Rate	2.60E-08	tons/year	= lbs/day x 365 days/year x 1/2,000 lb/ton														
60																		
61	Note:																	
62	Methodology from: Alliance for the Polyurethanes Industry: Estimating MDI Emissions for Section 313 of EPCRA Reporting																	

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Appendix A: Emission Calculations												
2	Particulate Emissions from Cabinet and Molding Assembly												
3													
4					Company Name:		Heartland Recreational Vehicles, LLC - Plant 800						
5					Address City IN Zip:		900 East Karcher Road, Nampa, Idaho 83687						
6					Permit No./PI# ID:								
7					Prepared By:		D&B Environmental Services, Inc.						
8					Date:		42829						
9													
10													
11	Plant	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 PM10 Emissions After Control		Potential Emissions After Control	
12								(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)
13	Miscellaneous Wood Cutting	P800 DC-01	8,000	0.001	3.5	2,280.00	99.00%	6.86	30.03	0.03	0.14	0.07	0.30
14								6.86	30.03	0.03	0.14	0.07	0.30
15													
16	Note:												
17	PM10 Emission Factor from the SCDHEC BAQ 2013												
18	Woodworking control devices are determined to be integral, therefore the Uncontrolled Emissions (Tons/Yr) on Summary sheet reflects Potential Emissions After Control												
19													
20	Methodology:												
21	Uncontrolled Potential Emission(tons/yr) = [No. Units * Loading (grains/acft) * Air/Cloth Ratio (acfm/ft ²) * Filter Area (ft ²) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)]												
22	Controlled Potential Emission (tons/yr) = [No. Units * Loading (grains/acft) * Air/Cloth Ratio (acfm/ft ²) * Filter Area (ft ²) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs]												

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Appendix A: Emission Calculations															
2	Emissions Calculations															
3	Welding															
4	Company Name: Heartland Recreational Vehicles, LLC - Plant 800															
5	Address City IN Zip: 950 East Karcher Road, Nampa, Idaho 83687															
6	Permit No./Pit ID:															
7	Prepared By: D&B Environmental Services, Inc.															
8	Date: 4/4/2017															
9																
10																
11																
12	Plant (WC)	PROCESS	Number of Stations	Max electrode consumption per station (lbs/hr)	Pounds Electrode per Hour	Plant (WC)	PROCESS	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)						
13		WELDING					FLAME CUTTING									
14	WC 800-1	Metal Inert Gas (MIG)(Aluminum)	6.00	0.50	3.00	WC 800	Oxyacetylene/Electric Arc	0.00	0.00	0.00						
15	WC 800-2	Metal Inert Gas (MIG)(Aluminum)	6.00	0.50	3.00											
16				Total	6.00											
17																
18																
19																
20	PROCESS		Pounds Electrode per Hour	EMISSION FACTORS* (lb pollutant/lb electrode)					EMISSIONS (lbs/hr)					HAPS (lbs/hr)		
21				PM = PM10	Mn	Ni	Co	Cr	PM = PM10	Mn	Ni	Co	Cr			
22	WELDING															
23	Metal Inert Gas (MIG)(E70S)		6.00	0.02410	-	-	-	-	0.14	0.00	0.00E+00	0.00E+00	0.00E+00	-		
24																
25																
26																
27	EMISSION TOTALS															
28	Potential Emissions lbs/hr								0.14	0.00	0.0000	0.0000	0.0000	0.00		
29	Potential Emissions lbs/day								3.47	0.00	0.000	0.000	0.00			
30	Potential Emissions tons/year								0.15	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
31																
32																
33																
34																
35	Methodology:															
36	*Emission Factors are based on AP-42 12.19-4, ER5154 (Aluminum).															
37	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)															
38	Welding emissions, lb/hr: (Pounds Electrode per Hour)(emission factor, lb. pollutant/lb. of electrode used)															
39	Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day															
40	Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.															

APPENDIX B – PROCESSING FEE

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	2.7	0	2.7
SO ₂	0.0	0	0.0
CO	2.3	0	2.3
PM10	0.3	0	0.3
VOC	13.4	0	13.4
TAPS/HAPS	0.9	0	0.9
Total:	19.6	0	19.6
Fee Due	\$ 5,000.00		