

# PERMIT BOOK

STATE OF MISSOURI



## DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

### PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 062011-012      Project Number: 2011-06-027  
Installation Number: 011-0042

Parent Company: Redneck Manufacturing  
Parent Company Address: 153 SE 1st Lane, Lamar, MO 64759  
Installation Name: Redneck Manufacturing  
Installation Address: 153 SE 1st Lane, Lamar, MO 64759  
Location Information: Barton County (S30, T32N, R30W)

Application for Authority to Construct was made for:

The installation of a new deer blind manufacturing plant. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- 
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUN 27 2011

EFFECTIVE DATE

  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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### SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Redneck Manufacturing  
Barton County (S30, T32N, R30W)

1. Production Limitations
  - A. Redneck Manufacturing shall not produce more than 12 deer blinds in one day.
  - B. Redneck Manufacturing shall not produce more than 60 blinds in one week.
  - C. Attachment A, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A and 1.B.
2. Emissions Limitation
  - A. Redneck Manufacturing shall emit less than ten (10.0) tons of styrene in any consecutive 12-month period from the entire installation. The following equipment/activities emit styrene.
    - 1) Gel coat application (EU-1)
    - 2) Chop Gun (EU-2)
    - 3) Open Mold Fiberglass Coating (EU-3)
  - B. Attachment B, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. Control Measures
  - A. Redneck Manufacturing shall use the controlled spray procedures as outlined in the "CFA Controlled Spray Handbook."
  - B. Redneck Manufacturing shall ensure that the mold containment flanges are in place during spraying operations in accordance with the "CFA Controlled Spray Handbook."

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- C. Redneck Manufacturing shall keep records that verify the following, in accordance with the "CFA Controlled Spray Handbook."
  - 1) The spray gun pressure has been calibrated.
  - 2) The operators have been trained in the techniques of controlled spraying.
  
- 4. Record Keeping and Reporting Requirements
  - A. Redneck Manufacturing shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
  
  - B. Redneck Manufacturing shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2011-06-027  
Installation ID Number: 011-0042  
Permit Number:

Redneck Manufacturing  
153 SE 1st Lane  
Lamar, MO 64759

Complete: June 13, 2011

Parent Company:  
Redneck Manufacturing  
153 SE 1st Lane  
Lamar, MO 64759

Barton County (S30, T32N, R30W)

REVIEW SUMMARY

- Redneck Manufacturing has applied for authority to construct a new deer blind manufacturing facility.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are styrene and methyl methacrylate (MMA).
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment. Subpart WWWW, "National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production," does not apply to this installation because it is not a major source for HAP emissions. The conditioned potential emissions of HAPs are less than 10.0 tons per year (tpy) of each individual HAP and 25.0 tpy of combined HAPs.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Conditioned potential emissions of all pollutants are below their respective *de minimis* level.
- This installation is located in Barton County, an attainment area for all criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was performed to determine the ambient impact of styrene.
- Emissions testing are not required for the equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

### INSTALLATION AND PROJECT DESCRIPTION

Redneck manufacturing owned and operated an installation in Lamar, Missouri that manufactured auto body replicas and modular deer blinds. The company will be relocating this operation from 1101 E. 12<sup>th</sup> Street, Lamar, MO 64759 to 153 SE 1<sup>st</sup> Lane, Lamar, MO 64759 and will no longer produce auto body replicas. For permitting purposes, this installation will be considered new. The previous installation was permitted under permit no. 032011-004 (project no. 2010-05-078), and this permit will no longer be valid as soon as the equipment are removed from the old site.

At the beginning of the manufacturing process, gel-coats will be applied to a number of open molds. After a short curing period, fiberglass reinforced resin will be applied using a chopper gun system before additional curing. The parts will then be sanded and prepped before being assembled into units. Screws and rivets will be used to temporarily hold the pieces together before the seams are bonded together with chopped strand mat. After curing, the blinds are rolled to the next station where the shelves are installed with screws and filled with a seam sealer. The blinds will then be painted with water-based paint and bagged.

The facility is expected to use a maximum of 10 pounds of gel-coat and 13 pounds of resin/fiberglass mix per panel and each deer blind is made up of six panels. No control devices will be used to control emissions at this facility. The installation will use controlled spray procedures as outlined in the "CFA Controlled Spray Handbook" to minimize emissions. This facility is a minor source for construction permits and does not need to apply for an operating permit since emissions of all pollutants are below their respective *de minimis* levels.

### EMISSIONS/CONTROLS EVALUATION

The main pollutants expected from the operation are styrene and methyl methacrylate (MMA), which are considered both VOC and HAP. Styrene and MMA emissions were calculated using the "Unified Emission Factors for Open molding of Composites" developed by the National Marine Manufacturer's Association (NMMA) and Composite

Fabricators Association (CFA) published in 1999 in the paper “Technical Discussion of the Unified Emission Factors for Open Molding of Composites.” The controlled emission factors were used because the facility will be using the controlled spray procedure as outlined in the “CFA Controlled Spray Handbook.”

VOC emissions from painting of the deer blinds were calculated using mass balances and assuming that all of the VOC are emitted. The particulate matter (PM) emissions from painting were calculated by assuming a 50% transfer efficiency. Particulate matter less than two-and-a-half microns in diameter (PM<sub>2.5</sub>) and particulate matter less than ten microns in diameter (PM<sub>10</sub>) emissions from painting were calculated by taking the PM emissions and multiplying by the percentage of PM<sub>2.5</sub> and PM<sub>10</sub> that are in the PM. The particle size distribution was taken from the California Emissions Inventory Development and Reporting System (CEIDARS) table on the California Air Resources Board website. Each deer blind is expected to receive 6.75 pounds of paint on average. The calculations were performed by adding a 10% safety factor for a total of 7.425 pounds of paint per blind, to account for any variability of paint on each blind.

No emission factor is currently available for sanding of fiberglass. The closest process is the sanding of retread tires, which has an emission factor of 9.0 x 10<sup>-7</sup> pounds of PM per pound processed. This emission factor is from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, the “Emission Factor Tables,” Chapter 4.12, “Manufacture of Rubber Products,” (11/2008). Due to the small emission factor, PM emissions from sanding of fiberglass can be considered negligible.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The limit of 10.0 tons per year of styrene was set to keep this facility from becoming a major source for HAP. The limit of 25.0 tons of combined HAPs per year is not needed because by limiting the styrene emissions to 10.0 tpy, the total HAP emissions will be conditioned to less than 25.0 tpy.

**Table 1: Emissions Summary (tons per year)**

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	<sup>1</sup> Potential Emissions of the Application	<sup>2</sup> New Installation Conditioned Potential
PM <sub>2.5</sub>	10.0	N/A	N/A	10.1	2.2
PM <sub>10</sub>	15.0	N/A	N/A	11.1	2.5
PM	25.0	N/A	N/A	16.3	3.6
SOx	40.0	N/A	N/A	N/A	N/A
NOx	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	54.4	12.1
CO	100.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	53.8	11.9
Styrene	<sup>3</sup> 1.0	N/A	N/A	45.05	<10.0
MMA	10.0	N/A	N/A	8.8	1.9

N/A = Not Applicable

Note 1: Potential emissions of the application based maximum production without limitations.

Note 2: Styrene conditioned potential based on limit to avoid major source status. Other pollutants proportionally reduced.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below *de minimis* levels.

## APPLICABLE REQUIREMENTS

Redneck Manufacturing shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

## AMBIENT AIR QUALITY IMPACT ANALYSIS

The Air Pollution Control Program requires that modeling be performed for individual HAP with emissions greater than its Screening Model Action Level (SMAL) and that the modeled ambient impact be less than the Risk Assessment Level (RAL) for that pollutant. The SMAL for styrene is 1.0 tons per year while the conditioned potential emission for styrene is 10.0 tons per year. Therefore, the styrene emissions from the installation were modeled. Results show that the facility will be in compliance with the RAL.

**Table 2: Styrene Modeling Results**

<b>24-Hour Averaging Period</b>		
Year	Max Modeled Concentrations ( $\mu\text{g}/\text{m}^3$ )	Risk Assessment Level ( $\mu\text{g}/\text{m}^3$ )
2005	990.84	2,240
2006	923.03	2,240
2007	1321.25	2,240
2008	1323.64	2,240
2009	1059.32	2,240
<b>Annual Averaging Period</b>		
2005	144.19	333
2006	154.09	333
2007	194.08	333
2008	167.68	333
2009	152.82	333

For the 24-hour averaging period, the ambient impact analysis was based on 12 blinds per day and for the annual averaging period, the ambient impact analysis was based on 60 blinds per week, which amounts to 3,120 blinds per calendar year. Therefore, the facility will be limited to these production numbers. By limiting styrene emissions to less than 10 tons per year, the production will be limited to 1,944 blinds per year. However, this is based on a 12-month rolling total and not a calendar year. Therefore, both the limit for 60 blinds per week (3,120 blinds per calendar year) and the limit for 1,944 blinds per year (12-month rolling total) are needed, because they are based on different time periods. Details regarding the ambient impact analysis can be found in the Air Pollution Control Program memo "Ambient Air Quality Impact Analysis (AAQIA) for Redneck Manufacturing, LLC – 2011-06-027."

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Chia-Wei Young  
Environmental Engineer

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 9, 2011, received June 13, 2011, designating Redneck Manufacturing as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Air Pollution Control Program memo “Ambient Air Quality Impact Analysis (AAQIA) for Redneck Manufacturing, LLC – 2011-06-027”

## Attachment A – Production Limit Compliance Worksheet

Redneck Manufacturing  
 Barton County, (S30, T32N, R30W)  
 Project Number: 2011-06-027  
 Installation ID Number: 011-0042  
 Permit Number: \_\_\_\_\_

This sheet covers the period from \_\_\_\_\_ to \_\_\_\_\_.  
 (month, year) (month, year)

<b>Date</b>								
<b>Days of the Week</b>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly
<b><sup>1</sup>Production</b>								
<b>Date</b>								
<b>Days of the Week</b>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly
<b><sup>1</sup>Production</b>								
<b>Date</b>								
<b>Days of the Week</b>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly
<b><sup>1</sup>Production</b>								
<b>Date</b>								
<b>Days of the Week</b>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly
<b><sup>1</sup>Production</b>								
<b>Date</b>								
<b>Days of the Week</b>	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Weekly
<b><sup>1</sup>Production</b>								

Note 1: A daily production of less than **12** deer blinds and a weekly production of less than **60** deer blinds indicate compliance.

## Attachment B – Styrene Emissions Compliance Worksheet

Redneck Manufacturing LLC  
 Barton County (S30, T32N, R30W)  
 Project Number: 2011-06-027  
 Installation ID Number: 011-0042  
 Permit Number: \_\_\_\_\_

This sheet covers the month of \_\_\_\_\_ in the year \_\_\_\_\_

Copy this sheet as needed.

Column 1	Column 2	Column 3	Column 4	Column 5
Type of Process	Amount of Gel Coat or Resin Used (lbs)	Type of HAP	Emission Factors (lbs/ton)	(b) Emissions (tons)
Gel Coat Gun for Deer Blinds		Styrene	240.5	
(a) Chop Gun for the Blinds		Styrene	82.42	
Open Mold Fiberglass Coating		Styrene	117	
(c) Total Styrene Emissions Calculated for this Month in Tons:				
(d) Total Styrene Emissions From the Previous 11 Months in Tons				
(e) Total Styrene Emissions for the Current 12-Month Period in Tons:				

- (a) Amount used for the deer blinds should only be the resin portion and not the fiberglass portion.
- (b) Emission (tons) calculated using  $[\text{Column 2} \div 2,000 \times \text{Column 4}] \div 2,000$
- (c) Total styrene emissions (tons) for the current month calculated from summing Column 5
- (d) Total styrene emissions (tons) from the previous 11 months can be found by adding the total monthly styrene emissions from Attachment A of the previous 11 months.
- (e) Total styrene emissions (tons) for the current 12-month period can be calculated by adding (c) and (d). A total of less than **10.0 tons per year** shows compliance.

Mr. Tim Riegel  
President  
Redneck Manufacturing  
153 SE 1st Lane  
Lamar, MO 64759

RE: New Source Review Permit - Project Number: 2011-06-027

Dear Mr. Riegel:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Chia-Wei Young, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
New Source Review Unit Chief

KBH:cyl

Enclosures

c: Southwest Regional Office  
PAMS File: 2011-06-027

Permit Number: