

AIR QUALITY PERMIT

Issued To: Fiberglass Structures, Inc.
Tank Division
P.O. Box 206
Laurel, MT 59044

Permit #3821-00
Application Complete: 7/20/06
Preliminary Determination Issued: 8/25/06
Department Decision Issued: 9/12/06
Permit Final: 9/28/06
AFS #111-0036

An air quality permit, with conditions, is hereby granted to Fiberglass Structures, Inc. (FSI) for their Tank Division, pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Permitted Equipment

FSI operates a manufacturing facility that produces tanks and other products made from fiberglass. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Location

FSI's Tank Division is located in Section 16, Township 2 South, Range 24 East, in Yellowstone County. The physical address is 1202 E. Railroad Avenue, in Laurel, Montana.

Section II: Conditions and Limitations

A. Operational and Emission Limitations

1. Volatile Organic Compound (VOC) emissions from the facility shall be limited to 30.9 tons during any rolling 12-month time period (ARM 17.8.752).
2. FSI shall not exceed the applicable organic Hazardous Air Pollutant (HAP) emission limit listed in Table 3 of 40 CFR 63 Subpart WWWW on a 12-month rolling basis. For operations characterized as open molding – corrosion resistant and/or high strength, the following limits apply (ARM 17.8.342, 40 CFR 63 Subpart WWWW):
 - Mechanical resin application 112 pounds HAP/ton resin (lb/ton)
 - Manual resin application 123 lb/ton
3. FSI shall comply with all applicable standards and limitations contained in 40 CFR 63, Subpart WWWW, including the work practice standards specified in Table 4 (ARM 17.8.342, 40 CFR 63 Subpart WWWW).
4. FSI shall use high volume/low pressure (HVLP) non-atomizing spray systems on the Chop Hoop Winder and the Chopper Gun (ARM 17.8.752).
5. FSI shall not cause or authorize to be discharged into the atmosphere from any sources, stack emissions that exhibit 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.304).

6. FSI shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
7. FSI shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.6 (ARM 17.8.749).

B. Testing Requirements

1. All compliance source tests must be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. FSI shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. FSI shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745 that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. FSI shall document, by month, the VOC and HAP emissions from the facility. By the 25th day of each month, FSI shall total the VOC and HAP emissions from the facility during the previous 12 months to verify compliance with the limitations in Section II.A.1 and Section II.A.2.

For the fiberglass resin applications, the calculation of VOC and HAP emissions shall be based on the amount of each resin used, and the percentage of VOC and HAP in each resin. The emissions for the fiberglass process are to be calculated in accordance with the requirements of 40 CFR 63 Subpart WWWW.

For painting or other processes emitting VOCs and HAPs, the emissions will be based on the amount of raw material used (such as paint and thinner) and the percent VOC and HAP in each raw material.

4. FSI must document any change in the raw materials or VOC and HAP contents

with new or updated product information. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

5. FSI shall maintain on-site records demonstrating compliance with the National Emission Standards for Hazardous Air Pollutants 40 CFR 63 Subpart WWWW. The records compiled in accordance with this permit shall be maintained by FSI as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

FSI must submit to the Department all notifications and reports in accordance with the requirements of 40 CFR 63 Subpart WWWW (40 CFR Part 63).

Section III: General Conditions

- A. Inspection - FSI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if FSI fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving FSI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions, and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing postpones the effective date of the Department's decision until the conclusion of the hearing and issuance of a final decision by the Board. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section.
- F. Permit Inspection - As required by ARM 17.8.755 Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fee - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by FSI may be grounds for revocation of this

permit, as required by that section and rules adopted thereunder by the Board.

- H. Construction Commencement - Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked.

Permit Analysis
Fiberglass Structures, Inc.
Permit #3821-00

I. Introduction/Process Description

A. Permitted Equipment

Fiberglass Structures, Inc. (FSI) owns and operates a fiberglass manufacturing facility. The facility is located in Section 16, Township 2 South, Range 24 East, in Yellowstone County, Montana. The physical address is 1202 East Railroad Avenue, in Laurel, Montana. Equipment used at the facility includes, but is not limited to the following:

- One Venus Chop Hoop Winder (HVLP non-atomizing)
- One Venus Chopper Gun (HVLP non-atomizing)
- Spray Painting System
- 3 Overhead Infra-Red Natural Gas fired heaters; 100,000 Btu each
- Associated Equipment

B. Source Description

Fiberglass Structure's Tank Division includes a process building where fiberglass tanks and other fiberglass reinforced plastic (FRP) products are produced. The manufacture of FRP at FSI utilizes thermoset resins that contain styrene. Volatile Organic Compound (VOC) emissions, primarily styrene, result from the product manufacturing process. Styrene is a listed Hazardous Air Pollutant (HAP). All materials/products produced at FSI were determined to be characterized as "corrosion-resistant and/or high strength" due to properties required for each product. The resins are non-suppressed.

Operation at FSI are "open mold" type production. The first step is fabrication of a plug, typically from wood. After generating the rough shape, the plug is coated with primer. A mold release compound (wax) is applied by hand. To make the mold, laminate (polyester resin, catalyst, and glass fibers) is then applied to the plug. The plug is removed, and the mold is then prepared for production by waxing the surface with the mold release wax.

To produce the tanks or other fiberglass products, laminate is applied to the mold. FSI conducts mostly mechanical applications, although manual applications are occasionally used. Of the two mechanical methods, the Chop Hoop Winder is the predominant equipment used at FSI's Tank Division. It is a HVLP non-atomizing spray unit, used only for the manufacture of large and medium sized tanks. The Chopper Gun is also a HVLP non-atomizing unit, used for a variety of smaller products. Both spray a shaped stream of resin and catalyst, mixing externally with glass fibers fed through a chopper wheel. Depending upon the resin type and the product, the laminate is allowed to cure for 30 minutes to 24 hours before removal from the mold. Acetone, which is not a VOC, is used for cleaning the application equipment.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

FSI shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
5. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

FSI must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, FSI shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.
6. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.
7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:

40 CFR 63, Subpart WWWW National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. Owners or operators of facilities that use thermoset resins and/or gel coats that contain styrene, and that are a major source of HAPs, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR 63, Subpart WWWW. Based on the information submitted by FSI, the facility is subject to the provisions of 40 CFR 63, Subpart WWWW because the facility uses thermoset resins and/or gel coats that contain styrene and is a major source of HAPs.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. FSI submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

- E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
 2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit alteration if they construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. FSI has a PTE greater than 25 tons per year of VOCs; therefore, an air quality permit is required.
 3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
 4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
 5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. FSI submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. FSI submitted an affidavit of publication of public notice for the April 26, 2006, issue of the *Laurel Outlook*, a newspaper of general circulation in the city of Laurel in Yellowstone County, as proof of compliance with the public notice requirements.
 6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
 7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
 8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the

source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving FSI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
 10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
 11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
 12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
 13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
- F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modification-- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow. This facility is not a major stationary source since it is not a listed source and the facility's PTE is less than 250 tons per year of any pollutant (excluding fugitive

emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3821-00 for FSI, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is greater than 10 tons/year for any one HAP and greater than 25 tons/year of all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is not subject to a current NSPS.
 - e. This facility is not subject to any current NESHAP standards.
 - f. This facility is subject to a current Maximum Achievable Control Technology (MACT) standard.
 - g. This source is not a Title IV affected source nor a solid waste combustion unit.
 - h. This source is an EPA designated Title V source.

FSI is subject to Title V Operating Permit requirements because the source's potential HAP emissions are above the major source threshold. FSI must obtain a Title V operating permit from the Department.

III. BACT Determination

A BACT determination is required for each new or altered source. FSI shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized.

BACT analysis was conducted for the fiberglass application and spray painting at FSI's Tank Division.

Fiberglass Application

FSI conducts mechanical, and to a minor extent manual, fiberglass resin application. The maximum VOC emissions from FSI were identified as 15.99 tpy styrene from the Chop Hoop Winder, 5.34 tpy styrene from the Chopper Gun, and up to 4.86 tpy styrene from manual applications, for a total of 26.2 tpy styrene.

The primary products at this location are fiberglass tanks, which can be classified into five product categories:

Product Type	Description
Aboveground Storage Tanks	Oil field use for salt brine and petroleum
Underground Storage Tanks	Petroleum storage
Haul Trucks – truck mounted tanks	Salt brine and petroleum storage
Stock Tanks	Ranching and agricultural
Burial Vaults	Electrical, mechanical, and funeral

Each product line is classified as “corrosion-resistant and/or high strength,” based on the desired or required properties of the tank. FSI is required to meet the open-molding emission limits in the MACT standard for corrosion-resistant and/or high strength products. The MACT standard was finalized in April 2003, and as such represents the best control for the top 12% of the industry, at that time. However, the Department requires each source to continually review the BACT options available for their source.

Control Technology for FSI can be considered as one of two broad categories: end-of pipe control to destruct VOC/HAP emissions from the facility’s three building vents, or process/raw material modifications to reduce the VOC/HAP emissions from the process.

A. Identification of VOC/HAP Control Options:

The following are potential VOC/HAP control options for FSI:

*End-of-Pipe Control:

- Thermal Oxidation – regenerative
- Thermal Oxidation – direct flame with catalytic converter
- Thermal Oxidation – direct flame
- Carbon Adsorption – regenerative granulated activated carbon (GAC)
- Carbon Adsorption – single use
- Refrigeration/Distillation

Process Modifications:

- Closed Mold
- Vapor Suppressed Resin
- Low Styrene Resin
- High Volume Low Pressure (HVLP) non-atomized

*Note: The facility-wide end-of-pipe control technologies were evaluated in the FSI – Main Plant BACT analysis in 2004. The Department determined that this evaluation met current BACT requirements and could be used for the FSI – Tank Division.

B. Eliminate Technically Infeasible VOC Options:

According to FSI, it is technically infeasible to change from open-mold to closed-mold, due to the size and curing times for the tanks.

Based on testing performed at FSI over the past few years, vapor suppressed resin was found to be technically infeasible. FSI stated that vapor suppressed resin, which typically contains a surfactant such as wax, caused extreme problems with secondary applications of resin.

C. List all Technically Feasible Options, by Control Efficiency:

The following table lists the control technologies that were evaluated followed by the estimated cost/ton of pollutant removed.

Control Equipment	\$/Ton
HVLP Application	-NA-
Thermal Oxidation (Regenerative)	6,070
Low Styrene Resin	7,588
Vapor-phase GAC, 2 systems (Regenerative System)	9,207
Thermal Oxidation (Direct Flame w/ Catalytic Converter)	11,382
Vapor-phase granular activated carbon (GAC) (Single Use)	14,946
Thermal Oxidation (Direct Flame)	16,263
Refrigeration/Distillation	66,541

VOC control/removal efficiencies of 95 percent were assumed for each of the end-of pipe technologies reviewed.

- Granular activated carbon systems remove VOCs through absorption by the activated (heated) carbon.
- Thermal oxidation systems combust/oxidize VOCs.
- Refrigeration and distillation systems are based on cooling of the gas resulting in condensing of the VOCs and collection.

During testing at FSI over the past several years, low styrene resin was found to cause an inordinate amount of product failures that required warranty replacement and/or repairs; thereby resulting in negative economic impacts. In addition, replacement of the most common resin used at FSI, Ortho 30 (33% of the facility's total resin use) shows it is uneconomical to replace it:

Resin	Use	Unit Cost	Annual Cost	% Styrene	Emissions
Ortho 30	164,619 lbs	\$1.26/lb	\$207,420	42.7%	8,321.5 lbs
Interplastic 340 DCPD	164,619 lbs	\$1.33/lb	\$218,943	30.0%	5,284.3 lbs
DIFFERENCE	--	\$0.07/lb	\$11,523		3,037.2 lbs

The replacement cost to FSI would be $\$11,523/(\$3037/2000 \text{ lb/ton}) = \$7,588/\text{ton}$ controlled through the use of low-styrene resins. This exceeds the typical control cost required under BACT.

In addition, the use of low styrene resin was found to be technically infeasible for replacing the next most common two current resins used at FSI (AOC H550-HPA-21 and AOC H550-HPA-25). These resins, comprising 48% of the total FSI resin use, are used for products that require tensile strength above 10,000 psi. Since the low styrene replacement resin's tensile strength was below the end-user's requirements (Interplastic 340 tensile strength is 8,400 psi; AOC H550-HPA-20 is 9,900 psi), these low styrene resins were determined to be infeasible.

FSI currently operates with HVLP and proposed to continue operating with no additional controls. Based on the amount of emissions and high incremental cost per ton figures shown above, the Department concurs with that determination. No comparative VOC emission control information was found for this specific type of facility; however, this analysis is consistent with

VOC emission control analyses for other types of facilities. The Department found that the use of HVLP spray systems constitutes BACT, and the facility-wide VOC limit will include the 26.2 tpy styrene emissions from the fiberglass operations.

Spray Painting

FSI conducts spray painting inside the Tank Division, primarily on large and/or medium tanks. The paint used is a ‘speed set enamel’ paint that requires addition of a small amount of thinner such as xylene. Based on past purchase records for the Main Plant, FSI estimated that approximately 540 gallons of paint and 80 gallons of thinner would be used annually at the Tank Division at current business levels, resulting in 2.4 tpy of VOC emissions. After assessing the potential for increased business, FSI proposed a maximum of 1,080 gallons of paint and 160 gallons of thinner for a potential to emit of 4.7 tpy VOC.

Since the emissions from painting are so low, any additional controls would be cost-prohibitive. Furthermore, VOC control has not been required for other similar sources. Therefore, further BACT analysis is not required for the painting operation.

IV. Emission Inventory

Source	Tons/Year	
	VOC	HAP (Styrene)
Venus Automatic Chop Hoop Winder	15.99	15.99
Venus Chopper Gun	5.34	5.34
Manual Application	4.86	4.86
Paint and Thinner	4.72	
Mold Release	0.03	
Total	30.94	26.19

Background

Venus Automatic Chop Hoop Winder (1)

VOC Emissions

Emission Factor: 3.65 lb/hr (Company Information)
 Calculations: 3.65 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 15.99 ton/yr

Venus Chopper Gun (1)

VOC Emissions

Emission Factor: 1.22 lb/hr (Company Information)
 Calculations: 1.22 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 5.34 ton/yr

Manual Application

Estimated at 22.8% of the facility’s total mechanical application use

Paint & Thinner

1,080 gallons of paint and 160 gallons of thinner was determined to be the maximum annual amount required at FSI.
 1,080 gallons x 7.6 lbs VOC/gallon = 8,208 lbs
 160 gallons x 7.6 lbs VOC/gallon = 1,216 lbs
 TOTAL PTE = 9,424 lbs or 4.7 tpy

V. Existing Air Quality

FSI's Tank Division is located in Section 16, Township 2 South, Range 24 East, in Yellowstone County. The physical address is 1202 E. Railroad Avenue, in Laurel, Montana. This area is located in the Laurel SO₂ nonattainment area. The area is considered attainment for all other criteria pollutants. The Billings CO nonattainment area was reclassified to attainment by EPA's direct final rulemaking on April 22, 2002.

VI. Ambient Air Impact Analysis

The Department believes the emissions from the facility will not cause or contribute to a violation of any ambient air quality standard. The Department determined that the impact from this permitting action will be minor.

It is important to note that the Department does not have an ambient air quality standard for styrene.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined that there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued For: Fiberglass Structures, Inc.
P.O. Box 206
Laurel, MT 59044

Permit Number: 3821-00

Preliminary Determination Issued: August 25, 2006

Department Decision Issued: September 12, 2006

Permit Final: September 28, 2006

1. *Legal Description of Site:* The facility is located in Section 16, Township 2 South, Range 24 East, in Yellowstone County, Montana.
2. *Description of Project:* The current permit action would allow the operation of a manufacturing facility that produces tanks and other fiberglass products. The process description is discussed in Section I.B. of the permit analysis of Permit #3821-00.
3. *Objectives of Project:* The objective of the project would be to generate business and revenue for the company and to continue to supply fiberglass products.
4. *Alternatives Considered:* In addition to the proposed action, the Department considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because FSI demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A listing of the enforceable permit conditions and a permit analysis, including a BACT analysis, would be contained in Permit #3821-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would not unduly restrict private property rights.
7. The following table summarizes the potential physical and biological effects of the project on the human environment. The "no-action" alternative was discussed previously.

Potential Physical and Biological Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Terrestrial and Aquatic Life and Habitats			X			Yes
B.	Water Quality, Quantity and Distribution			X			Yes
C.	Geology and Soil Quality, Stability and Moisture			X			Yes
D.	Vegetation Cover, Quantity and Quality			X			Yes
E.	Aesthetics		X				Yes
F.	Air Quality			X			Yes
G.	Unique Endangered, Fragile or Limited Environmental Resource			X			Yes
H.	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I.	Historical and Archaeological Sites			X			Yes
J.	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The Department has prepared the following comments.

A. Terrestrial and Aquatic life and Habitats

Emissions from the operation could affect terrestrial and aquatic life and habitats in the project area. However, any emissions and resulting impacts from the operation would be minor due to the location of the facility within an industrialized/commercial area, and the relatively low concentration of the pollutants emitted.

The operation will occur within an existing building and no new construction or ground disturbance to the area would be required. Overall, any impact to the terrestrial and aquatic life and habitats of the project area would be minor.

B. Water Quality, Quantity and Distribution

The operation would not affect water quantity or distribution in the project area. The operation would continue to take place within existing facilities and would not discharge process water as part of the project. There will be sanitary water use and discharge at the facility.

Emissions from the project could affect water quality in the project area. However, as described in Section 7.F of this EA, any emissions and resulting deposition impacts from the project would be minor due to the low concentration of the pollutants emitted and dispersion characteristics of pollutants and the atmosphere.

C. Geology and Soil Quality, Stability, and Moisture

The operation could affect the geology, soil quality, stability, and moisture of the project area. The operation would take place within existing facilities and no new construction or ground disturbance to the area would be required. However, the operation would result in minor air pollution emissions to the ambient environment. Any impact from deposition of these pollutants would be minor due to dispersion characteristics of pollutants and the atmosphere and the low concentration of the pollutants emitted.

D. Vegetation Cover, Quantity, and Quality

The operation would take place within an existing building and no new construction or ground disturbance to the area would be required. Emissions from the operation may affect vegetation cover, quantity, and quality in the project area. However, any resulting impacts from the emissions from this project would be minor.

E. Aesthetics

The operation may have moderate impacts on the aesthetic nature of the project area. Styrene has a very low odor threshold (0.32 ppm according to the EPA) and the odor does not tend to dissipate very readily. The facility is designed to provide building ventilation for the workers; however, when the exhaust fans remove the styrene from the building, it can impact nearby residents.

The operation will take place within an existing building and no new construction would be required. Visible emissions from the source would be limited to 20% opacity. Further, noise generated by the operation would be minor due to the nature of the business. Overall, the operation would have moderate impacts to the aesthetics of the immediate area.

F. Air Quality

The air quality impacts from FSI would be minor, with most of the impact on the proximate neighbors. The proposed project would result in the emission of various air pollutants, the vast majority of which is styrene, which is regulated as both a VOC and a HAP. Because FSI has the potential to emit over 10 tons per year of styrene, a HAP, the source will be classified as a major Title V source.

Permit #3821-00 would include conditions limiting the opacity, VOC and HAP emissions. Montana does not have ambient air quality standards for styrene. In addition, Montana does not have an odor regulation. Although VOC is a contributor to ozone, the low amount of emissions are not expected to cause an exceedence of any ozone air quality standard. The Department determined that the facility, operating under the limits and conditions included in this permit, will not cause or contribute to a violation of any applicable ambient air quality standard.

Based on the relatively low levels of pollutants emitted from FSI, the Department determined that ambient air impacts from this permitting action would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search identified several species of special concern in the vicinity of the project area. These species include Great Blue Heron and Double-Crested Cormorant bird rookery (200 and 40 nests, respectively), Bald Eagle, and Long-Billed Curlew. The search area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone.

FSI's tank division will be located approximately 0.75 miles northeast of the perimeter of the rookery boundary and 1.0 miles northeast of the bald eagle habitat boundary. The facility is located within the Long-billed Curlew habitat area; however, the operations will be conducted in an existing building located in an industrial/commercial area and would not be expected to disrupt any natural habitat. Due to the fact that no construction would be required, the low levels of pollutants that would be emitted by the project, and conditions that would be placed in Permit #3821-00, the Department determined that the chance of the project impacting any species of special concern would be minor.

H. Demands on Environmental Resource of Water, Air, and Energy

The operation would result in minor demands on the environmental resource of water and air, as discussed in Sections 7.B and 7.F of this EA. Because the operation is small by industrial standards, a relatively small amount of energy would be required for operation, and the resulting impact on energy resources would be minor. Overall, the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there have been several previously recorded historic or archaeological sites within the proposed area. In addition, there have been previously conducted cultural resource inventories done in the area.

SHPO recommends that any structures over 50 years of age be recorded and a determination of their eligibility for the National Register of Historic Places be made. However, neither the Department nor SHPO has the authority to require FSI to conduct a cultural resource inventory. Furthermore, although FSI will conduct its operations in an existing industrial building, the building is of relatively recent construction. Since no potentially historic structure will be altered, there is a low likelihood that cultural property will be impacted.

The Department determined that due to the age of the existing building and the lack of any land disturbance, the chance of the project impacting any cultural or historic sites would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the operation. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined in Permit #3821-00.

8. The following table summarizes the potential economic and social effects of the project on the human environment. The "no-action" alternative was discussed previously.

Potential Economic and Social Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Social Structures and Mores			X			Yes
B.	Cultural Uniqueness and Diversity				X		Yes
C.	Local and State Tax Base and Tax Revenue			X			Yes
D.	Agricultural or Industrial Production			X			Yes
E.	Human Health			X			Yes
F.	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G.	Quantity and Distribution of Employment			X			Yes
H.	Distribution of Population				X		Yes
I.	Demands for Government Services			X			Yes
J.	Industrial and Commercial Activity			X			Yes
K.	Locally Adopted Environmental Plans and Goals				X		Yes
L.	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The Department has prepared the following comments.

A. Social Structures and Mores

The operation would not have any effect on any native or traditional lifestyles or communities (social structures or mores) of the proposed area of operation because the project is small by industrial standards. The predominant use of the surrounding area is industrial/commercial and would not change as a result of the project. However, there is a residential area several hundred feet away that is potentially impacted by styrene odor from the facility. FSI can be considered to have a minor impact on social structure and mores.

B. Cultural Uniqueness and Diversity

The operation would not have any effect on cultural uniqueness and diversity of the proposed area of operation because the project is small by industrial standards. The predominant use of the surrounding area would not change as a result of the project.

C. Local and State Tax Base and Tax Revenue

The project would have a minor impact on the local and state tax base and tax revenue. The project is small by industrial standards; thus, any economic impact to the area would be minor. There would be 10 employees required for this facility.

D. Agricultural or Industrial Production

FSI would have a minor impact on local industrial production. FSI would operate in an existing industrial building, located in an area that is predominantly industrial/commercial, although there is a nearby residential area. There will not be any change in agricultural production, other than indirectly due to sales of stock tanks. There will be a minor change in local industrial production, due to FSI production directly, as well as indirectly due to sales of tanks to oil & gas well facilities.

E. Human Health

There may be minor effects on human health due to the emission of pollutants. However, Permit #3821-00 incorporates conditions to ensure that the facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

Because the facility would operate in an existing building located in a mixed area that is predominantly industrial/commercial, the project would not affect any access to or quality of any recreation or wilderness activities in the area.

G. Quantity and Distribution of Employment

FSI will employ 10 people in the Tank Division. Therefore, the project would have a minor impact on the quantity and distribution of employment in the area.

H. Distribution of Population

FSI is located near Billings, which is the largest city in Montana. Therefore, the employment of 10 people would not have an impact on the distribution of population in the project area.

I. Demands for Government Services

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor.

J. Industrial and Commercial Activity

The operation would result in a minor impact on local industrial and commercial activity. Although FSI would operate in an existing building and would require no new construction, the operations will require 10 permanent employees.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the project. The state standards would be protective of the project area.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area due to the relatively small size of the operation. Due to the relatively small size of the project, the industrial production, employment, and tax revenue (etc.) would be slightly impacted by the project. In addition, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3821-00.

Recommendation: An EIS is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the continued operation of a manufacturing facility. Permit #3821-00 includes conditions and limitations to ensure that the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA, there are no significant impacts associated with the project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Natural Heritage Program, National Resource Information System (NRIS) and Montana Historical Society, State Historic Preservation Office (SHPO).

Individuals or groups contributing to this EA: Department of Environmental Quality Permitting and Compliance Division (Air Resources Management Bureau), Montana Natural Heritage Program, State Historic Preservation Office.

EA prepared by: Christine Weaver
Date: 08/08/06