Permit Amendment
Source Analysis & Technical Review

Company	**Carbon Silica Partners, LP**	Permit Number	**20081**
City	**Victoria**	Project Number	**375625**
County	**Victoria**	Regulated Entity Number	**RN100219443**
Project Type	**Amendment**	Customer Reference Number	**CN602552499**
Project Reviewer	**Miyah Calhoun**	Received Date	**June 20, 2024**
Site Name	**Fiberglass Tank Manufacturing Facility**		

Project Overview

Carbon Silica Partners, LP, dba Diamond Fiberglass, is an existing site which operates facilities associated with manufacturing of fiberglass reinforced plastic (FRP) tanks. Diamond Fiberglass has submitted an amendment application to re-distribute existing permit limits to more efficiently conduct production. Two changes have been proposed to their facility:

1. The first of these is the addition of two stacks onto their main production building, which is currently authorized as a group source.
2. Additionally, there is an existing warehouse on the site that Diamond Fiberglass wishes to convert into a production building for the manufacture of small parts such as tank flanges.

Planned maintenance, startup, and shutdown (MSS) activities are either included in the authorized emissions for the permit, qualify as de minimis sources under 30 TAC § 116.119, or meet the requirements for a PBR under 30 TAC Chapter 106

Emission Summary

Air Contaminant	Current Allowable Emission Rates (tpy)	Proposed Allowable Emission Rates (tpy)	Change in Allowable Emission Rates (tpy)
PM *	0.06	0.00	-0.06
PM_{10} *	0.06	0.00	-0.06
$PM_{2.5}$ *	0.06	0.00	-0.06
VOC (including styrene) and Exempt Solvent	58.36	58.36	0.00

* The emissions from the trimming operations have been historically accounted for under PBR 106.265. Due to the PBR authorization, these emissions have been eliminated from the permit.

Federal Rules Applicability

Requirement	
Subject to NSPS?	**No**
NSPS does not apply to this facility type because there are no NSPS promulgated for FRP manufacturing facilities.	
Subject to NESHAP?	**No**
NESHAPs does not apply to this operation since the facility does not emit any air contaminants regulated under 40 CFR Part 61.	
Subject to NESHAP (MACT) for source categories?	
The site is subject to 40 CFR 63 Subpart WWWW for Reinforced Plastics Production.	
Nonattainment review applicability: The site is located in Victoria County which is an attainment county. Therefore, nonattainment review is not applicable.	
PSD review applicability: The site conducts FRP manufacturing operations which is not included as a named source in 40 CFR 52.21(b)(1)(i)(a) and emits less than the federal threshold of 250 tpy for “unnamed sources”; therefore, PSD review is not applicable.	

Title V Applicability - 30 TAC Chapter 122 Rules

Requirement
Title V applicability: The site is a major source for HAPs (styrene > 25 tpy) and currently operates under Federal Operating Permit No. 2714.
Periodic Monitoring (PM) applicability: The site is a major source of HAPs and PM is applicable. Compliance with the MAERT and special conditions is demonstrated through detailed recordkeeping of daily and annual gelcoat, resin and cleaning solvent usage, VOC, exempt solvent (ES), and styrene content of materials used, and daily hours of operation.
Compliance Assurance Monitoring (CAM) applicability: The site will be subject to Chapter 122; however, there are no add on controls at the site; therefore CAM is not applicable.

Process Description

Diamond Fiberglass Fabricators manufactures FRP storage tanks used at oil and gas facilities, wastewater treatment facilities, and chemical storage facilities. The tanks are formed through the use of various resins applied over fiberglass strands, mats, and roving. Gelcoats are used on the exteriors of the tanks to provide a durable, colored finish.

Resins and gelcoats are received in totes and stored in a warehouse. Acetone and other solvents are received in steel drums and kept sealed when not in use. The resins and gelcoats are pumped directly from the totes to the application process equipment. The facility utilizes three separate resin application methods: filament winding, non-atomized chop spray, and manual layup. Resins are mixed with catalyst and then applied with fiberglass filaments onto an open mold to form the tank shells, bottoms, and tops. Steel mandrels and molds provide a firm, consistent finishing surface. The manufacturing process results in emissions of VOC, primarily styrene and ES (acetone), and small amounts of particulate matter (PM) from the trimming and grinding process. All emissions from the FRP operations within the fiberglass building are routed to three fiberglass building stacks (EPNs S-1, S-2, and S-3).

The production of each fiberglass tank requires three main processes: construction of the tank shell, construction of the tank top and bottom, and assembly and outfitting of the final tank. Each of these processes may operate independently. The tank shell is the main component of each fiberglass storage tank. Tank molds are treated with either a mylar type material or a non VOC emitting mold release agent to facilitate removal of the part from the mold. Several layers of catalyzed resin and fiberglass filaments are applied to a mold by either filament winding or non-atomized chop spray in order to construct the tank shell. After the appropriate number of layers has been applied, the tank shell is left on the mandrel to cure.

Tank tops and bottoms are constructed by applying numerous layers of resin and fiberglass by non-atomized chop spray application onto a mold or set on a rotating table. Rollers may be used between layers to remove air pockets and compress fiberglass and resin for additional strength.

After a tank shell has been fabricated but still on the mandrel, manual trimming and grinding with hand tools is performed to prepare the tank shell for the addition of the top and bottom parts. Tank tops and bottoms are attached to the tank shell using manual and non-atomized chop spray application methods. After assembly, a tank is ready for final outfitting which includes installation of valves, hatches, and manholes. Some additional trimming, grinding, and manual application of resin and fiberglass are required during the outfitting of a tank. Colored gelcoats are applied by a non-atomized spray application process if a specific tank color is required.

Cleanup of resin and gelcoat application equipment is currently done with acetone (exempt solvent) and other low vapor pressure solvents. Solvent is sprayed through the application equipment and dispensed into a bucket. Following this solvent flush, the application equipment is submerged in the bucket to further clean the equipment and reduce emissions. Hand tools are also submerged in solvent for cleaning. The low vapor pressure solvents are reclaimed and reused until too dirty to serve as effective cleaners. Spent solvent is placed in closed drums until proper disposal.

Project Scope

Diamond Fiberglass has proposed operational flexibility to be able to utilize the proposed "flange shop" or their main production building as is prudent based on demand and other factors that influence production. There are no overall increases in annual emission rates proposed under this amendment or changes to air contaminants from those represented in the current active MAERT. Diamond proposes that the sitewide emission rates remain the same; however, authorize both the main production building as well as the flange shop.

Best Available Control Technology

Source Name	EPN	Best Available Control Technology Description
Fiberglass Tank Manufacturing Operations	S-1, S-2, S-3, STK-4, and STK-FLNG	• The plant will use resins and gelcoats that meet the monomer limitations in 40 CFR Part 63, Subpart WWWW. Compliance with these HAP content limits will be demonstrated in the recordkeeping through the weighted average emission limit method for HAP content calculation in that regulation (40 CFR § 63.5810(c). MACT WWWW Compliance Demonstration for a demonstration of compliance with this rule based on the HAP content and usage rates presented in the emissions calculation section of this application. • Use of proper ventilation design to minimize styrene odor. 100% capture of monomer emissions to minimize fugitive emissions. • Use high transfer efficiency spray application equipment. Airless, HVLP spray equipment, fluid impingement technology, non-atomized application equipment, brushes, or rollers. Implementation of ACMA controlled spray techniques, including operator training, spray gun calibration and the use of overspray containment flanges on molds may be required to achieve acceptable impacts. • Good housekeeping and best management practices. Acetone replacement compounds should have a vapor pressure less than 1.0 mmHg at 40□C. Aqueous cleaners should have a VOC content less than 5.0% by weight. See applicable 40 CFR Part 63 requirements regardless of whether the requirements are directly applicable

Impacts Evaluation

Was modeling conducted? **Yes** Type of Modeling: **Screen3**

Is the site within 3,000 feet of any school? **No**

Additional site/land use information:

The site is located within a primarily industrial area with the nearest off-site receptor (business/industry) located approximately 95 feet from the south and east property lines. Residential use is located approximately 2,500 feet to the east.

Summary of Modeling Results

Diamond Fiberglass performed a Modeling and Effects Review Applicability (MERA) evaluation to characterize the proposed increase in short-term emissions. Diamond Fiberglass evaluated all of the air pollutants from each source on a short-term basis. For the short-term emissions, several of the air pollutants had no increases (Step 1) or met the de minimis criteria outlined in Step 2 of the MERA and therefore, the MERA analysis was complete for those pollutants. For those compounds that did not meet Step 2, the MERA evaluation continued.

Screen3 modeling was performed using a unitized emission rate of 1 lb/hr to predict a generic short-term impact for the worst-case stack in the main building and flange shop. The generic impact for the worst-case EPN was then multiplied by the proposed pollutant specific emission rates from the EPN to calculate a maximum predicted off-property concentration for each pollutant. The emissions for the remaining compounds resulted in impacts that are less than their effects screening level (ESL) consistent with Step 7 of the MERA..

All of the chemicals under evaluation met the criteria of the MERA evaluation. Given this, no short- or long-term adverse health effects are anticipated to occur among the general public as a result of exposure to the proposed emissions from this facility.

Miyah Calhoun	March 5, 2025	Sabrina Coty-Butler	March 5, 2025
Project Reviewer Miyah Calhoun	Date	Team Leader Sabrina Coty-Butler	Date