

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

N147047159

FACILITY: Rec Boat Holdings LLC - Sport and Engineering		SRN / ID: N1470
LOCATION: 925 Frisbie St., CADILLAC		DISTRICT: Gaylord
CITY: CADILLAC		COUNTY: WEXFORD
CONTACT: Trent Burch , Compliance Technician		ACTIVITY DATE: 12/03/2018
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FCE evaluation for 2019 Fiscal Year. sgl		
RESOLVED COMPLAINTS:		

INTRODUCTION

On December 3, 2018, AQD District Staff conducted an unannounced, scheduled site inspection of the Rec Boat Holdings, LLC – Sport and Engineering (S&E) Facility (N1470), located at 925 Frisbie Street, Cadillac, Wexford County, Michigan.

The referenced Facility operates under Michigan Renewable Operating Permit (ROP) MI-ROP-N1470-2016. The referenced ROP was issued on July 6, 2016 and expires on July 6, 2021.

The last site inspection was conducted on March 25, 2017. No compliance issues were identified during the referenced site inspection.

AQD District Staff met with Trent Burch, who provided a tour of the Facility, and answered questions regarding plant operations. Records requests were submitted to the Facility on January 3, 2019, with records received from the company on January 23, 2019.

FACILITY

The Rec Boat Holdings, L.L.C – S&E facility (925 Frisbie Street, Cadillac, Wexford County, Michigan) consists of:

- the Sport Plant which builds small fiberglass "sport" boats (16-28 feet) for commercial orders, and
- the Engineering Plant where research and development activities including the construction of prototype boats, and their molds happen.

The Facility consists of three contiguous properties. 905 and 925 Frisbie Street, are part of the original permitted site and make up the Sport and Engineering Plants respectively. The third building, 926 Frisbie Street has historically been used for storage, but within the last year, water based adhesive activities have been relocated there.

Processes at the facility that emit air contaminants include the open and closed molding processes which involving the mixing and application of gelcoats and resin to construct fiberglass boat parts, cleanup activities utilizing VOC, acetone and the use of adhesives in the boat assembly process. These are summarized below:

Plant	Location	Emission Units	Flexible Groups
Sport	925 Frisbie Street	EULAMINATION1 EUGELCOAT1 EURTM EUVOCCLEANUP EUACETONECLEANUP EUSPORTMIXING EUADHESIVE	FGOPENMOLDING FGMIXING
Engineering	905 Frisbie Street	EULAMINATION2 EUGELCOAT2 EUVOCCLEANUP EUACETONECLEANUP EUENGMIXING EUENGADHESIVE	FGOPENMOLDING FGMIXING

	926 Street	Frisbie	Exempt Adhesives	
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Located in an industrial park adjacent properties include other industrial facilities. The industrial park is bounded to the north by W. 13th Street. The Rec Boat Holdings, LLC – Cruiser Facility (N1328) is located approximately 0.25 miles NE of the Facility. The Rec Boat Holdings, LLC Trailer Division Facility (N1772) is located under a half-mile to the west of the Facility. Non-industrial properties of note include St. Ann School and residential properties, located approximately 0.25 miles N-NE and 0.3 miles NE of the S&E Facility, respectively.

Production onsite began in approximately the mid to late 80's (based on permitting in 1988) at the S&E Facility, however due to a downturn in the market, activities were transferred to the company's Cruiser Facility (N1328) and the space used predominantly for storage. More recently production of the sport models has been transferred back to the S&E Facility. Which at the time of the December 3, 2018, site inspection consisted of two production lines producing approximately 10 boats a day.

Rec Boat Holdings LLC, was purchased in 2014 by Beneteau Group, a French company, but still is legally operating as Rec Boat Holdings LLC. The facility manufactures boats for the following brands:

- Four Winns,
- Wellcraft,
- Glastron,
- Genow, and
- Scarab.

Each boat constructed onsite is a custom/special order and uses one of about 50 different models/forms which with different modification choices results in over 100 different configurations.

Production begins in the lamination section of the facility and ends with finished boats in one of two pool for testing and others ready for wrapping prior to storage and shipping. The process begins with application of fiberglass (EULAMINATION1 and EULAMINATION2) and gel coats (EUGELCOAT1 and EUGELCOAT2) onto molds (FGOPENMOLDING), the finished boat component is removed from the mold and is ground along the edges and cutouts completed prior to assembly. These activities are conducted in an enclosed space and any emissions associated with the activities are released into the work environment and appear to be exempt under Rule 285 (2)(l)(vi)(B)

(l)The following equipment and any exhaust system or collector exclusively serving the equipment:

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(vi) Equipment for carving, cutting, routing, turning drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blasting, shot blasting, shot peening, or polishing ceramic artwork, leather, metals, graphite, plastics, concrete, rubber, paperboard, wood, wood products, stone, glass, fiberglass or fabric which meets any of the following:

(B) Equipment that has emissions that are released only into the general in-plant environment

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All stages of production and assembly are conducted onsite, with each boat moving thru the various stages of production with the pace dependent on the size, number of colors, and other components of the special order. Cleanup activities utilize acetone. The facility also makes use of adhesives (EUADHESIVE) during boat assembly. The largest quantity of adhesives are used to assemble the fiberglass boat components, rather than assembly of seat cushions, etc.

None of the process applications are atomized, materials are pumped with no air added. Materials used during the process include (but are not limited to) resin, gelcoat, flotation foams, adhesives and cleanup solvents. Curing occurs between each stage, and results from the chemical reaction occurs at ambient temperature.

The ROP for the facility references Resin Transfer Molding (EURTM), tooling resins discussions with facility staff, these materials are used to make the molds for the boats and are created in the Sport Plant.

Air collection devices (plenums) with filters to control any particulate generated and are vented out one of the stacks associated with the facility (three for the Sport Plant and 2 for the Engineering Plant). Each plenum gets turned on when a work area is in use. Each fabric filter is monitored, with at least a weekly check.

Gelcoat is received in 55-gallon drums weekly or biweekly, and resins by tanker on average twice per week. The onsite lab tests the materials for quality control, and maintains records documenting the chemical composition of all the materials. Every shipment of production resin (EULAMINATION, EULAMINATION2, EUGELCOAT and EUGELCOAT2) includes a certificate of analysis indicating the chemical composition of the materials. Copies of this information is maintained in the hazmat room in the Cruiser Plant.

Heat is provided by natural gas fired heaters. The facility reports not having an emergency generator or other reciprocating internal combustion engine onsite.

Weather conditions at the time of the inspection were cold with cloudy to partially cloudy skies and light winds. No visible emissions were noted from the stacks at the time of the inspection. In addition, styrene odors were not detected outside the facility.

EQUIPMENT/MATERIAL DESCRIPTION

In comparison with other facilities which operate specific pieces of equipment (ex. turbines, boilers, dehydrators) that require permitting the Rec Boat LLC – Cruiser Division consists of work stations along production lines utilizing materials which are sources of emissions. Discussions with permit staff, and a review of historic files indicated that to allow the facility the maximum flexibility, the number of independent stations under each emission unit is open, as is the location of those work stations within the facility.

Changes in the Facility since the April 25, 2017, site inspection includes an increase in production from that previously reported which has resulted in increased emissions from the past couple of years. With respect to emission units, the gelbooth was rebuilt, replacing the wood construction materials with metal. No increase in size or flow rate for the unit or it's components was reported.

PERMITTING

The referenced Facility operates under Michigan Renewable Operating Permit (ROP) MI-ROP-N1470-2016. The referenced ROP was issued on July 6, 2016 and expires on July 6, 2021. The permit history for the Facility goes as far back as 1988 (PTIs 103-88 and 109-88), with the most recent permit modification being 74-10 issued in 2010.

REGULATORY

The facility is a Major for VOCs, with the potential to emit of over 100 tons/yr. The source is also considered major for HAPs (>10 tons/yr). Two HAPs of concern identified for the site consist of styrene and methyl methacrylate (MMA). There are no control devices onsite for VOCs, therefore CAM is not applicable. In 2004, the facility took a source -wide limit of 225 ton/yr VOC, which resulted in the source becoming a non- Potential for Significant Deterioration (PSD) source.

Applicable Federal Requirements:

EMISSION UNIT	40 CFR SUBPART	TITLE
Source	Part 70	State Operating Permit Program
Source	52.21	PSD
Source	Part 63, Subpart A and WWWW	National Emission Standards for HAPs (NESHAP) Reinforced Plastic Composites Production*
FGOPENMOLDING, EUVOC CLEANUP,	Part 63, Subpart A and VVVV	NESHAP for Boat Manufacturing (compliance date August 23, 2004)

EUADHESIVE, FGMIXING		
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*Limited to manufacture of fiberglass reinforced parts for boats manufactured outside of the stationary source. At the time of the inspection, this this federal requirement had been previously determined to not be applicable. The July 14, 2015, Site Inspection report indicated that the fiberglass reinforced small parts produced at the stationary source used on boats produced at the Cruiser Plant (N1328) resulted in the Facility being subject to Subpart WWWW, but that Subpart VVVV allows a stationary source to comply with the subpart in lieu of Subpart WWWW, provided that the facility can demonstrate that compliance with Subpart VVVV would not result in an increase in organic HAP emissions. The company has previously provided documentation that there is no increase in HAPs and that they have opted to comply with Subpart VVVV.

COMPLIANCE

Since the March 25, 2017, scheduled inspection no complaints have been received or Violation Notices (VNs) issued. No Consent Orders are of record for the facility.

Compliance status for the facility had been based on information provided during the December 3, 2018, site inspection, as well as on supplemental data and reports submitted upon request or to meet permit requirements identified in MI-ROP-N1470-2016.

Permit conditions for all EUs in the ROP include: prompt reporting for deviations pursuant to General Conditions 21 and 22 of Part A of the ROP. (SC VII.1) As well as annual and semi-annual reporting of monitoring and deviations (SC VI.2 & VI.3). In addition, quarterly submittal of monthly usage and emissions totals as well as NESHAP reporting are required for some EUs at the Facility. A review of documents indicated that the facility has submitted complete and in a timely manner. These reporting requirements are summarized below:

EU/FG	QUARTERLY SUBMITTAL	SEMI-ANNUAL SUBMITTAL	ANNUAL SUBMITTAL	NESHAP REPORTING
SOURCEWIDE		Y	Y	
EULAMINATION1	Y	Y	Y	
EULAMINATION2	Y	Y	Y	
EUGELCOAT1	Y	Y	Y	
EUGELCOAT2	Y	Y	Y	
EUVOCLEANUP	Y	Y	Y	Y
EUADHESIVE	Y	Y	Y	Y
EUENGADHESIVE	Y	Y	Y	Y
EUACETONECLEANUP	Y	Y	Y	
EURTM		Y	Y	
FGOPENMOLDING		Y	Y	Y
FGMIXING*		Y	Y	Y

* FGMIXING is composed of EUSPORTMIXING and EUENGMIXING.

With respect to annual emissions monitoring, Facility representatives report that historically annual emissions have been conservatively based on the highest concentration of parameters of concern being used for all/total materials for an emission unit, and over reporting actual emissions. As a result of more recent internal discussions and audits, the facility is in the process of modifying their emissions calculations to reflect the emissions for each material used individually.

Emissions are based on chemical content of the materials, material usage and hours of operation. No verification testing is required under the permit.

High level citations to compliance with all applicable provisions of 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing exist for the following:

- FGOPENMOLDING
- FGMIXING

- EUVOCLEANUP
- EUACETONECLEANUP
- EUADHESIVE, and
- EUENGADHESIVE

Requirements under the subpart have been incorporated into the ROP, compliance with the ROP verifies general compliance with the referenced subpart.

Conditions in EULAMINATION (SC VI.3) and EUGELCOAT (SC VI.3) reference usage of a dated version of the Unified Emission Factors (UEF) Table for open Molding of Composites. The facility reports using the July 23, 2001 table, which is the most recent version found in an online search. The referenced table provides emission rates in pounds of styrene emitted per ton of resin or gelcoat processed. It should be noted that the paste waxes, the catalysts, the patch-aids or any of the other misc. additive materials used by the Facility as part of the production resins are not considered when evaluating compliance for the resins and gels. Discussions with the AQD permitting staff indicated that those materials are not used in significant quantities as are needed to produce boats.

Five stacks (three stacks for the Sport Plant, and two stacks for the engineer plant) are associated with the facility and the following EUs: EULAMINATION, EUGELCOAT, EUVOCLEANUP, EUADHESIVE, EUACETONECLEANUP and EURTM. The referenced stacks are in compliance with the permit conditions with respect to maximum exhaust dimensions and minimum height dimensions (S.C.VIII.1 through 5). Airflow thru the stack and associated plenum creates a negative pressure working environment and helps to seat the filters, which are reported to be replaced on an approximately weekly basis. At the time of the site inspection, the filters appeared to be maintained in general compliance with permit conditions.

SOURCEWIDE – Source wide conditions are conditions that apply to all permitted, and exempt equipment or processes onsite. Source wide conditions are limited to the following:

EMISSION LIMITS - Source wide emission limits include VOC limits for the calendar day and 12-month rolling totals. Totals reported as part of quarterly reporting are summarized below:

DATE	VOC (lb/calendar day)	VOC (TPY)
December 31, 2016	0*	27.63
June 30, 2017	219.17	20.11
December 31, 2017	0*	29.91
September 30, 2018	0*	34.48
LIMIT	5,267.0 (SC 1.1)	<225 (SC 1.2)

*Facility was not operating on that date.

MONITORING/RECORDKEEPING – Permit conditions, include maintenance of manufacturer chemical composition data (including the weight percent) of each component (SC VI.1). Records were found to be maintained both in the facilities QA/QC lab as well as with the environmental staff and were readily available for review upon request.

In addition, the facility is required to maintain the following monthly records, and to have records for the previous month available by the 15th day of the month (SC VI.2):

- Gallons or pounds of each material used on a daily basis, (SC VI.2a)
- Where applicable, gallons or pounds of each material reclaimed on a daily basis, (SC VI.2b)
- VOC content (weight percent) of each material determined by manufacturer's formulation or other approved method. (SC VI.2c)
- VOC emission calculation in lbs per calendar day, (SC VI.2d)
- VOC emission calculations in tons per calendar month, (SC VI.2e)
- VOC emission calculations in tons per 12-month rolling time period. (SC VI.2f)

A review of records indicate that the facility is maintaining the records required to be in compliance with the ROP. In general, the facility operates 5 days per week, with operations ranging from 10-15 hours per day.

OTHER REQUIREMENTS- If the facility manufactures fiberglass reinforced plastic composite small parts for used in the construction of boats offsite, the facility is subject to requirements under 40 CFR Part 63, Subpart WWWW, except as described in 40 CFR 63.5787(d). Based on information provided, the facility only produces components for their own use as well as the Cruiser Plant. The Facility has stated that this has not resulted in an increase in HAP emissions therefore the referenced Federal regulations do not apply at this time. (SC IX.1)

SPORT PLANT – 925 Frisbie

EUs associated with the Sport Plant include EULAMINATION1, EUGELCOAT1, EURTM, EUVOCLEANUP, EUACETONECLEANUP, FGMOLDING and FGMIXING. The first three are specific to the 925 Frisbie location. The four later reflect activities in one or more locations in the Plant. These shared processes will be addressed later in the report.

Stacks associated with the Sport Plant and the reported stack dimensions associated with the permitted EUs are summarized below:

Stack ID	EU/FG	Actual Exhaust Dimension (inches) (5/24/1999)	Maximum Exhaust Dimension (inches)	Actual Height Above Land Surface (feet) (5/24/1999)	Minimum Height Above Land Surface (feet)
SV001C1	EURTM	56	56	80' 1 "	80
	EUVOCLEANUP	56	56	80' 1"	80.1
	EULAMINATION1 EUADHESIVE	56	71	80' 1 "	75
SV001C2	EURTM EUVOCLEANIP	60	60	80'	80
	EUADHESIVE	60	71	80'	75
	EUGELCOAT1	46	47	76.5'	75
SV001B	EUGELCOAT1	46	47	76.5'	75
	EUVOCLEANUP	45.5	45.5	76.5	76.5

EULAMINATION1 – This EU includes the creation of the fiberglass lamination of boat parts using open molds. Emission controls for this process are limited to dry filters, which per the Facility are changed out on an approximately weekly basis. The EU is part of the FG FGOPENMOLDING.

Materials associated with open molding have a relatively limited shelf life, and shipments are received on a regular basis. It should also be noted that vinyl toluene is reported to be phasing out industry wise. The Facility reports using 4 production resins, all containing styrene, but none with vinyl toluene.

Patch Resin is an additive resin (usually just gelcoat), not used in production, but for repair of scratches and in some cases holes. It should be noted that the company does track these materials, and in some cases the formulations are above limits for production resins and gelcoats, which do not apply to patch resin.

EMISSION LIMITS - Emission limits for EULAMINATION1 include VOC (including styrene and vinyl toluene) limits in pounds per hour based on a calendar day average (SC I.1) and 12-month rolling totals (SC I.2). Totals reported for the period of December 2016 through September 2018 is summarized below:

DATE	VOC (including styrene and vinyl toluene)
December 31, 2016	0.3 – 7.24
September 30, 2017	3.26 – 4.53
December 31, 2017	2.59 – 4.53

March 31, 2018	2.43 – 4.85
September 2018	2.52 – 24.75
LIMIT	92.4 pph (SC 1.1)

DATE	VOC (including styrene and vinyl toluene)
December 31, 2016	5.65
September 30, 2017	5.69
December 31, 2017	5.83
March 31, 2018	5.90
September 2018	5.99
LIMIT	163.4 TPY (SC 1.2)

In addition, EULAMINATION1 is limited to 0.0385 pounds VOC (including styrene and vinyl toluene) per pound of resin applied. (SC I.3). This value is calculated using the equation in Appendix 7 (SC VI.2). A review of records indicated that for the four production resins used by Sport Plant range from 0.0275 lb VOC (including styrene and vinyl toluene)/lb resin (F-1051-PUU resin and PA-160-PMMN resin) to 0.0385 lb VOC (including styrene and vinyl toluene)/lb resin (black barrier coat). All are in compliance with the referenced limit.

MATERIAL LIMITS- Material limits associated with EULAMINATION1 include both total usage per calendar day as well as limits for maximum styrene monomer and vinyl toluene content in different types of resins used. The daily use limits and reported use are presented below:

DATE	RESIN USAGE (LBS/CALENDAR DAY)	RESIN CONTAINING UP TO 12% VINYL TOLUENE (LBS/CALENDAR DAY)
December 2016	107.5 – 2,500	0
September 2017	1170 - 1670	0
December 2017	1,000 – 1657.3	0
March 2018	875.7 – 1844.1	0
September 2018	964.08 – 9546.62	0
LIMIT	32,620 lbs (SC II.1)	4,400 lbs (SC II.2)

With respect to chemical content, material limits for EULAMINATION1 include limits for both production resins with respect to maximum styrene monomer content (35% by weight) (SC II.3), as well as maximum vinyl toluene content (12% by weight) (SC II.4). The Facility reports that no Vinyl Toluene is used in the Sport Plant. Facility records indicate that the black barrier production resin is reported to be 35% by weight styrene, their typical production resin is reported to be approximately 29% styrene by weight. Discussions with Facility Staff indicate that the black barrier is not considered a production resin or gelcoat.

The facility reports that tooling resins are not used at the Sport Plant, only in engineering, and as such the styrene monomer content limits of SC II.5 are not applicable at this time.

OPERATION LIMITS - Permit conditions for EULAMINATION1 include the capture and storage of waste resins in closed containers and appropriately disposed of (SC III.4). Discussions with facility staff and inspection of the hazmat storage area, indicated that the materials are properly captured and that records of proper disposal are kept in compliance with the permit. No uncapped containers were visible during the site walk though.

Other operational limits associated with EULAMINATION1 include use of non-atomized application technology (SC III.1) for a minimum of 50% of the resins containing styrene used (SC III.2) and all resins containing vinyl toluene (SC III.3). The facility reports that 100 % of resins associated with the EU are applied using non-atomized application technology, in compliance with the permit conditions.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each shipment of the production and tooling resins (SC VI.1). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

In addition, the facility maintains the following records for EULAMINATION1:

- Records for each production resin used, of the pounds of VOC emitted per pound of material applied. (SC VI.2)
- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily resin usage rate in pounds per calendar day. (SC VI.5)
- Records of the total daily usage rate of resins which contain vinyl toluene (SC VI.6)
- Calculated total daily records of the actual VOC (including styrene and vinyl toluene) emission rates in pounds per hour. (SC VI.7)
- Calculated monthly total and annual 12-month rolling total of actual VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.8)
- Monthly records of non-atomized applicator usage, for total resins, and all production resins containing vinyl toluene. (SC VI.9)

The above referenced records are maintained and are available for review upon request. In addition, the facility is required to maintain records of daily usage rate of resins containing vinyl toluene. During discussions with Facility staff, vinyl toluene is being phased out in the industry. The Facility reports that no vinyl toluene is present in materials used in EULAMINATION1, and is being phased out in the industry, so conditions SC VI.6 is not applicable.

REPORTING – Permit conditions for EULAMINATION1 require reporting of semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms. In addition, the ROP conditions require quarterly submittal of monthly reports of:

- o Daily resin usage rate. (SC VII.4)
- o Hours of operation. (SC VII.4) and
- o VOC (including styrene and vinyl toluene) hourly (based on calendar day average) and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports have been determined complete and submitted on a timely basis and have been determined to be complete with reference to reporting requirements.

EURTM – The Sport Plant Resin Transfer Molding (RTM) process is used to make smaller components/parts. This “in-mold” process has little to no emissions. No pollution control device is associated with the EU. Permit conditions are limited to emission limits, material limits, monitoring and record keeping requirements, reporting requirements and stack/vent restrictions.

EMISSION LIMITS associated with EURTM are limited to 21.9 tons/year VOC (including styrene) based on a 12-month rolling time period (SC I.1).

DATE	VOC (including styrene) ton/12-month time period
December 31, 2016	0.147
June, 2017	0.265
December 31, 2017	0.295
March 31, 2018	0.314
September 2018	0.294
LIMIT	21.9 ton

MATERIAL LIMITS – Material limits associated with EURTM consist of content limits for both RTM resin and adhesive/tackifiers. These limits are summarized below:

Material		

	Maximum Total VOC Content	Maximum Styrene Monomer Content
RTM Resin	50% by weight (SC II.2)	47% by weight (SC II.1)
adhesive/Tackifier	49.6% by weight (SC II.4)	0.6% by weight (SC II.3)

A review of records provided indicate that emission limits and material limits associated with EURTM are being met at the time of the site inspection.

MONITORING/RECORDKEEPING - Per ROP requirements, the facility is required to maintain records of the total VOC and styrene monomer content of each shipment of resin and adhesive/tackifier (SC VI.2). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

In addition, the permittee is required to maintain the following information on a monthly basis for EURTM:

- The amount of resin used (SC VI.1a)
- The amount of adhesive/tackifier used (SC VI.1b), and
- VOC emission calculations to determine actual VOC (including styrene) in ton per month and ton per 12-month rolling time period. (SC VI.1c) (see above)

The following table summarizes select data from the above referenced recordkeeping requirements for EURTM:

DATE	Resin Used (lbs/month)	Adhesive/Tackifier Used (lbs/Month)	VOC Emissions (including Styrene) (lb/month)
December 2016	8547.12	126.9	24.68
June 2017	16761.10	241.7	59.83
December 2017	11723.02	84.60	36.97
March 2018	15,994.31	211.50	60.14
September 2018	6703.0	253.8	33.36
LIMIT	NA	NA	NA

REPORTING – Permit conditions for EURTM require semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms. The Facility has submitted the required reports in a timely basis.

EUGELCOAT1– This EU uses a type of production resin that contains boat color and it usually the first coat applied to the open boat mold in the fiberglass lamination process. Emission controls for this process are limited to dry filters. This EU consists of 2 work areas, that are operated normally between 4 AM-1 PM. This EU is part of the FG FGOPENMOLDING.

EMISSION LIMITS - Emission limits for EUELCOAT1 include VOC (including styrene) and styrene limits in pounds per hour based on a calendar day average and 12-month rolling totals. Emissions reported for the facility and their corresponding emission limits are summarized below:

DATE	VOC (including styrene) (Calendar day averages reported)	VOC (including styrene) 12-month rolling total
December 2016	1.72 – 13.38	12.47
June 2017	7.28 -15.41	14.70
December 2017	2.35 - 15.43	14.90
March 2018	6.23 – 13.31	14.56
September 2018	3.56 – 29.47	15.51
LIMIT	69.1 pph (Calendar Day Average) (SC 1.1)	122.1 TPY (SC 1.2)

DATE	STYRENE (calendar day averages reported)	STYRENE 12-month rolling total
December 2016	1.15 – 9.90	9.19
June 2017	6.54 – 11.27	11.08
December 2017	1.63 – 11.38	11.35
March 2018	4.41 – 10.02	11.09
September 2018	2.68 – 22.39	11.64
LIMIT	49.8 pph (Calendar Day Average) (SC 1.3)	88 TPY (SC 1.4)

MATERIAL LIMITS- Material limits associated with EUGELCOAT1 include both total usage per calendar day as well as limits for maximum styrene monomer content in the gel coat used onsite. The daily use and maximum styrene monomer content for the gel coat are presented below:

DATE	GELCOAT USAGE (LBS/CALENDAR DAY)	GELCOAT MAXIMUM STYRENE MONOMER CONTENT (Monthly Average)
December 2016	99.14 – 1044.87	27.72
June 2017	588.74 – 1229.16	27.81
December 2017	213 -1366.09	27.68
February 2018	333.99 – 2618.42	27.40
LIMIT	7,700 lbs (SC II.1)	30.7% By Weight (SC II.2)

OPERATION LIMITS - Permit conditions for EUGELCOAT1 are limited SC III.1, which requires the exhaust filters to be in place and operated properly. As previously noted, the facility changes out filters on a regular basis, based on visual inspection. Air flow through the plenums helps to properly seat the filters in place.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each shipment of gel coats (SC VI.2). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

Additional records maintained by the facility for EUGELCOAT1 included:

- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily gel coat usage rate in pounds per calendar day and pounds per month and the 12-month rolling total usage. (SC VI.1 & 7)
- Calculated total daily records of the Styrene and VOC (including styrene) emission rates in pounds per hour. (SC VI.5)
- Calculated monthly total and annual 12-month rolling total of Styrene and VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.5 & 6)

The above referenced records are provided in quarterly reporting by the Facility and have been determined to be complete and sufficient to verify the monitoring record keeping requirements per permit.

REPORTING – Permit conditions for EUGELCOAT1 require the following reporting requirements semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated

certification forms. These documents have been submitted in a complete and timely manner by the Facility.

In addition, the Facility is required to submit on a quarterly basis monthly report of:

- o Daily resin usage rate. (SC VII.4)
- o Hours of operation. (SC VII.4) and
- o VOC (including styrene) hourly (based on calendar day average) and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports are submitted on a timely basis, and have been determined to be complete with reference to reporting requirements.

EUADHESIVE – The Facility reports that the bulk of the adhesives in use are for putting together the fiberglass components. The Facility uses a total of 3 adhesives, two of which are for carpet and/or fabric. The other is a structural adhesive (Flexus), and makes up the greatest volume of adhesives used. No process or operational restrictions, Testing/sampling conditions or equipment parameters exist for EUADHESIVE.

Adhesive application for carpet or fabrics have historically been associated with the Sport Plant (925 Frisbie), but in winter 2017, a significant portion of the activities were relocated to the 926 Frisbie location to allow for more room for other phases of the boat manufacturing. Constructed cushions are installed at the appropriate point during the later phases of fabrication. No pollution control is associated with the activities. The facility reports that they have switched to predominantly a water-based adhesive for carpeting and fabric.

EMISSION LIMITS – Emission limits for combined VOC and acetone emissions are 530.9 lb/day (SC I.1) and 66.9 tons per 12-month rolling time period (SC I.2).

DATE	VOC & Acetone Emission (combined) (lb/day)	VOC & Acetone Emission (combined) tpy
December 2016	9.13 – 63.93	3.87*
June 2017	9.13 – 63.99	3.65*
December 2017	16.2 – 56.71	3.50*
June 2018	8.10 – 64.81	2.90
September 2018	0-0	2.87
LIMIT	530.9 lb/day (SC I.1)	66.9 tpy (SC I.2)

* reflects combined adhesive emissions for sport and engineering plants. Monthly usage for the Engineering Plant is reported to be less than 10 lbs per month.

MATERIAL LIMITS – Carpet and fabric adhesives under EUADHESIVE are limited to a maximum organic HAP content of 5% by weight. (SC II.1) The Facility reports that neither of the two carpet/fabric adhesives contain any HAPS. Quarterly reports include a statement indicating that all adhesives have HAP content of less than/equal to 5 % (not including adhesives in handheld aerosol cans). Only one adhesive is reported to contain acetone (31% by weight).

MONITORING/RECORDKEEPING – Under the present permit, daily, monthly and 12-month rolling records of: adhesive usage, hours of operation (SC VI.1) and combined VOC and acetone emissions (SC VI.3) are required. The required records are maintained and submitted quarterly. The review of the records indicated that the records were complete and verified compliance with the above referenced monitoring/recordkeeping requirements.

In addition, the facility is required to maintain records of adhesive organic HAP content (SC VI.4). Organic HAP content for the adhesive materials are required to be determined per 40 CFR 63.5758 (SC VI.4). The facility determines organic HAP content by material safety data sheets. Records reviewed indicated that organic HAPs are below the 5% organic HAP limit (SC II.1). Neither carpet/fabric adhesives used is reported to contain HAPs.

REPORTING – Permit conditions require semiannual and annual monitoring and deviations reports (SC VII.1 and VII.2) and the associated certification forms (SC VII.3). In addition, EUADHESIVE is required to the following additional reporting:

- semi-annual compliance reporting as required under 40 CFR 63.5764, (SC VII.5)
- Quarterly submittal of monthly reports of:
 - o Daily adhesive usage rate (SC VII.4)
 - o VOC and acetone content (SC VII.4)
 - o VOC and acetone emissions in lbs/day and tons per 12-month rolling time period (SC VII.4)

A review of records indicates that the required reporting is received in a timely manner and appeared to be complete.

OTHER REQUIREMENTS – Other requirements for EUADHESIVE includes a high-level citation (SC IX.1) requiring compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing. Requirements of Subpart VVVV have been incorporated into the ROP. Compliance with the ROP would indicate general compliance with the referenced subpart.

ENGINEERING PLANT – 905 Frisbie

EUs associated with the Engineering Plant include EULAMINATION2, EUGELCOAT2, EUENGADHESIVE, EUVOC CLEANUP, EUACETONE CLEANUP, FGMOLDING and FGMIXING. The first three are specific to the 905 Frisbie location. The four later reflect activities in one or more locations in the Facility. These shared processes will be addressed later in the report.

Stacks located at 905 Frisbie includes the following:

Stack ID	EU/FG	Actual Exhaust Dimension (inches)	Maximum Exhaust Dimension (inches)	Actual Height Above Land Surface (feet)	Minimum Height Above Land Surface (feet)
SV002B	EULAMINATION2 EUENGADHESIVE EUVOC CLEANUP EUACETONE CLEANUP	43	43	47	47
SV002A	EUGELCOAT2	43	43	47	47

EULAMINATION2 – This EU includes the creation of the fiberglass lamination of boat parts. Molds and plugs using open molds. Emission controls for this process are limited to dry filters, which per the Facility are changed out on an approximately weekly basis. The EU is part of the FG FGOPENMOLDING.

Materials associated with open molding have a relatively limited shelf life, and shipments are received on a regular basis. It should also be noted that vinyl toluene is reported to be phasing out industry wide, and it is no longer a chemical component for materials used in the cruiser plant (N1328) or in the Sport Plant. However, one resin (OPTIPLUS tooling resin) is reported to have vinyl toluene concentrations of 5-10%. The Facility reports tracking as a 10% concentration.

As previously indicated the Facility makes use of a patch resin for minor repairs (scratches and holes). Patch resins are not considered a resin in the lamination process nor a gel coating. The company does track the materials, as indicated previously the formulations are above the limits for production resins and gelcoats.

EMISSION LIMITS - Emission limits for EULAMINATION2 include VOC (including styrene and vinyl toluene) limits in pounds per hour based on a calendar day average and 12-month rolling totals. Totals reported for the period of December 2016 through September 2018 summarized below:

DATE	VOC	VOC

	(including styrene and vinyl toluene)	(including styrene and vinyl toluene)
December 2016	0.94 – 3.93	3.17
June 2017	0.12 – 4.34	2.86
December 2017	0.99 – 9.33	3.65
June 2018	0.33 – 6.37	5.25
September 2018	0.17 – 8.9	5.99
LIMIT	12 pph (SC I.1)	15.5 TPY (SC I.2)

In addition, EULAMINATION2 is limited to 0.0385 pounds VOC (including styrene and vinyl toluene) per pound of resin applied. (SC I.3). This value is calculated using the equation in Appendix 7 (SC VI.2). The Facility reports that the production resin used in the Engineering plant has a lb VOC (including styrene and vinyl toluene) content per lb of resin of 0.0319. Below the permit limit.

MATERIAL LIMITS- Material limits associated with EULAMINATION2 include both total usage per calendar day as well as limits for maximum styrene monomer and vinyl toluene content in different types of resins used. The daily use limits and reported use are presented below:

DATE	RESIN USAGE (LBS/CALENDAR DAY)
December 2016	312 - 1174
June 2017	37 - 1371
December 2017	280 – 963.5
June 2018	138.0 – 1161.0
September 2018	79.00 – 1113.0
LIMIT	4,000 lbs (SC II.1)

With respect to chemical content, material limits for EULAMINATION2 include limits for production resins with respect to maximum styrene monomer content (35% by weight) (SC II.3), as well as maximum vinyl toluene content (12% by weight) (SC II.4). Facility records indicate that the black barrier resin is reported to be 35% by weight styrene but is not classified as a production resin. Their typical production resin is reported to be approximately 29% styrene by weight. Vinyl toluene is reported to not be present in production resins.

Material limits with respect to tooling resins, SC II.5 restricts EULAMINATION2 to a maximum styrene monomer content of 50% by weight. All tooling is done at the engineering plant location. The Facility reports that the maximum styrene content of tooling resins used at the Engineering Plant is 40% (OPTIPLUS tooling resin).

The Facility reports only one tooling resin in the engineering plant that contains vinyl toluene (OPTIPLUS tooling resin) at a reported 5-10%, and reports using the 10% content for tracking purposes.

DATE	RESIN CONTAINING UP TO 12% VINYL TOLUENE (LBS/CALENDAR DAY)
December 2016	175 - 293
June 2017	0 - 267
December 2017	180 - 297
June 2018	0 - 290
September 2018	165 - 292
LIMIT	332 lbs (SC II.2)

OPERATION LIMITS - Permit conditions for EULAMINATION2 include the capture and storage of waste resins in closed containers and appropriately disposed of (SC III.4). Discussions with facility staff and inspection of the hazmat storage area, indicated that the materials are properly captured and that records of proper disposal are kept in compliance with the permit. In addition, no open containers were visible during the site inspection.

Other operational limits associated with EULAMINATION2 include use of non-atomized application technology for a 50% minimum of resins used containing styrene (SC III. 1 & 2) and all resins containing vinyl toluene (SC III.1 & 3). The facility reports that 100 % of resins associated with the EU are applied using non-atomized application technology, in compliance with the permit conditions.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each shipment of the production and tooling resins (SC VI.1). The facility reports that copies of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

Records maintained by the facility for EULAMINATION2 included:

- Records for each production resin used, of the pounds of VOC emitted per pound of material applied. (SC VI.2)
- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily resin usage rate in pounds per calendar day. (SC VI.5)

The above referenced records are submitted as part of quarterly submittals, a review of which has verified compliance with the referenced SCs.

Vinyl toluene is present in tooling resins used in the Engineering plant, though it is being phased out in the industry. The following recordkeeping and monitoring requirements for resins containing vinyl toluene are being met by the Facility:

- Records of total daily usage rate of resin containing vinyl toluene. (SC VI.6)
- Calculated total daily records of the actual VOC (including styrene and vinyl toluene) emission rates in pounds per hour. (SC VI.7)
- Calculated monthly total and annual 12-month rolling total VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.8)
- Records of non-atomized applicator usage for all resins and resins containing vinyl toluene (SC VI.9)

REPORTING – Permit conditions for EULAMINATION2 include semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms. In addition, EULAMINATION2 requires quarterly submittal of monthly reports of:

- o Daily resin usage rate. (SC VII.4)
- o Hours of operation. (SC VII.4) and
- o VOC (including styrene and vinyl toluene) hourly (based on calendar day average) and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports are submitted on a timely basis, and have been determined to be complete with reference to reporting requirements.

EUGELCOAT2– This EU uses a type of production resin that contains boat color and it usually the first coat applied to the open boat mold in the fiberglass lamination process. Emission controls for this process are limited to dry filters. This EU is part of the FG FGOPENMOLDING.

EMISSION LIMITS - Emission limits for EUGELCOAT2 include VOC (including styrene) and styrene limits in pounds per hour based on a calendar day average and 12-month rolling totals. In addition, the EU has an emission limit of 15.8 ton per year Acetone (SC 1.5). Emissions reported for the facility are summarized below:

DATE	VOC (including styrene)	VOC (including styrene)
December 2016	0.19 – 3.82	2.84
June 2017	0.12 – 4.85	2.19
December 2017	0.12 – 5.19	2.08
June 2018	0.17 – 3.03	2.46

September 2018	0.16 – 3.58	2.49
LIMIT	10 pph (Calendar Day Average) (SC 1.1)	10.6 TPY (SC 1.2)

DATE	STYRENE	STYRENE
December 2016	0.16 - 6.69	2.33
June 2017	0.1 – 6.27	2.02
December 2017	0.12 – 4.52	2.33
June 2018	0.14 – 2.56	2.16
September 2018	0.13 – 2.28	2.00
LIMIT	7.0 pph (Calendar Day Average) (SC 1.3)	6.4 TPY (SC 1.4)

Acetone emissions for EUGELCOAT2 are limited to 15.8 TPY. A review of submittals for the Facility indicted that acetone emissions for EUGELCOAT2 are well below the limit with totals reported for both the calendar years of 2017 and 2018 of 0.226 ton and 0.192 ton respectively.

MATERIAL LIMITS- Material limits associated with EUGELCOAT2 include both total usage per calendar day as well as limits for maximum styrene monomer content in the gel coat used onsite. The daily use and maximum styrene monomer and VOC content for the gelcoat are presented in the tables below:

DATE	GELCOAT USAGE (LBS/CALENDAR DAY)
December 2016	17 - 321
June 2017	9 - 311
December 2017	14 - 284
June 2018	19.0 – 286.5
September 2018	9.0 – 307.00
LIMIT	1,726 lbs (SC II.1)

MATERIAL TYPE	MAXIMUM STYRENE MONOMER CONTENT (% By Weight)	HIGHEST REPORTED STYRENE MONOMER CONTENT (% By Weight)	MAXIMUM VOC CONTENT (% By Weight)	HIGHEST REPORTED VOC CONTENT (% By Weight)
White Gelcoat	27.0% (SC II.2)	24.56%	30.0% (SC II.3)	29.56%
Non-White pigmented gelcoat	31.0% (SC II.4)	31%	40.0% (SC II.5)	35%
Tooling Gel	43.0% (SC II.6)	43%	48.0% (SC II.7)	48%

Note that the Facility reports that some of the materials have lower contents, but that for tracking purposes the Facility uses the maximum allowed content.

OPERATION LIMITS - Permit conditions for EUGELCOAT2 are limited SC III.1, which requires the exhaust filters to be in place and operated properly. As previously noted, the facility changes out filters on a regular basis, based on visual inspection. Air flow thru the plenums helps to properly seat the filters in place.

MONITORING/RECORDKEEPING – Per ROP requirements, the facility is required to maintain records of the chemical composition of each shipment of gel coats (SC VI.2). The facility reports that copies

of certificates of analysis are received for each shipment of resins and gelcoats, and copies were available for review, in compliance with the permit.

Additional records maintained by the facility for EUGELCOAT2 included:

- Records of the appropriate emission factor, application method, applicable monomer content and dated version of the UEF table for each resin. (SC VI.3)
- Records of hours of operation per calendar day. (SC VI.4)
- Records of the total daily gel coat usage rate in pounds per calendar day and pounds per month and the 12-month rolling total usage. (SC VI.1)
- Calculated total daily records of the Styrene and VOC (including styrene) emission rates in pounds per hour. (SC VI.5)
- Calculated monthly total and annual 12-month rolling total of Styrene and VOC (including styrene and vinyl toluene) emission rates determined at the end of each calendar month. (SC VI.6)

The above referenced monitoring and recordkeeping conditions for EUGELCOAT2 have been verified through review of quarterly submittals by the Facility.

- The identity of each acetone containing material used and it’s acetone content. (SC VI.7(a) & (b))
- Calculated monthly total and annual 12-month rolling total of Acetone emissions determined at the end of each calendar month. (SC VI.7(c))

In addition to VOC and styrene contents, the Facility monitors and records the use of acetone containing materials and the acetone emissions associated with the usage. These records are submitted as part of quarterly submittals.

REPORTING – Permit conditions for EUGELCOAT2 require the following reporting requirements:

- semiannual and annual monitoring and deviations reports (SC VII.1, VII.2 and VII.3) and the associated certification forms,
- Quarterly submittal of monthly reports of:
 - o Daily resin usage rate. (SC VII.4)
 - o Hours of operation. (SC VII.4) and
 - o Styrene and VOC (including styrene) hourly (based on calendar day average) monthly and 12-month rolling total emission rate. (SC VII.4)

As previously indicated, facility reports are submitted on a timely basis, and have been determined to be complete with reference to reporting requirements.

EUENGADHESIVE – This EU includes adhesive application activities such as carpet or fabric adhesives associated with the Engineering Plant. No pollution control is associated with the activities. The facility reports that they have switched to a water-based adhesive for carpeting and fabric. With solvent-based adhesives used for limited components.

EMISSION LIMITS – Emission limits for combined VOC and acetone emissions are 6.5 lb/day (SC I.1) and 0.8 tons per 12-month rolling time period (SC I.2).

DATE	COMBINED VOC and ACETONE (LBS/DAY)	COMBINED VOC and ACETONE (TPY)
December 2016	1.27 – 2.54	0.023
June 2017	1.27	0.039
December 2017	1.13	0.032
June 2018	1.13	0.043
September 2018	1.13	0.041
LIMIT	6.5 lb/day (SC I.1)	0.8 TPY (SC I.2)

MATERIAL LIMITS – Carpet and fabric adhesives under EUENGADHESIVE are limited to a maximum organic HAP content of 5% by weight. (SC II.1) A total of 3 different adhesives (2 carpet/fabric and 1 fiberglass bonding) are reported to be used at the facility. A review of the facility records indicate that no organic HAPs are in the carpet/fabric adhesives. Acetone is present in the fiberglass bonding adhesive at 31% by weight.

MONITORING/RECORDKEEPING – Under the present permit, daily, monthly and 12-month rolling records of: adhesive usage, hours of operation (SC VI.1) and combined VOC and acetone emissions (SC VI.3) are required.

In addition, the facility is required to maintain records of adhesive organic HAP content (SC VI.4). Organic HAP content for the adhesive materials are required to be determined per 40 CFR 63.5758 (SC VI.4). The facility determines organic HAP content using material safety data sheets. Records reviewed indicated that organic HAPs are below the 5% organic HAP limit for the carpet/fabric adhesives. (SC II.1).

REPORTING – Permit conditions require semiannual and annual monitoring and deviations reports (SC VII.1 and VII.2) and the associated certification forms (SC VII.3). In addition, EUENGADHESIVE is required to submit:

- semi-annual compliance reporting as required under 40 CFR 63.5764, (SC VII.5)
- Quarterly submittal of monthly reports of:
 - o Daily adhesive usage rate (SC VII.4)
 - o VOC and acetone content (SC VII.4)
 - o VOC and acetone emissions in lbs/day and tons per 12-month rolling time period (SC VII.4)

A review of submitted documents indicated that the documents were complete and submitted in a timely manner.

OTHER REQUIREMENTS – Other requirements for EUENGADHESIVE includes a high-level citation (SC IX.1) requiring compliance with National Emission Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing. Requirements under the subpart have been incorporated into the ROP, compliance with the ROP verifies general compliance with the referenced subpart.

MULTIPLE LOCATIONS –

The following EUs and FGs reflect activities that are conducted at more than one location associated with the Facility. These include EUVOCLEANUP, EUACETONECLEANUP, FGOPENMOLDING, FGMIXING and Source-Wide Conditions.

Stacks associated with the above referenced EUs and FGs include the following:

Stack ID	EU/FG	Actual Exhaust Dimension (inches)	Maximum Exhaust Dimension (inches)	Actual Height Above Land Surface (feet)	Minimum Height Above Land Surface (feet)
SV002A	EUVOCLEANUP	43	43	47	47
SV002B	EUVOCLEANUP EUACETONECLEANUP	43	43	47	47
SV001B	EUVOCLEANUP	45.5	45.5	76.5	76.5
SV001C1	EUVOCLEANUP	55.5	56	80' 1"	80.1
SV001C1	EUACETONECLEANUP	55.5	71	80' 1"	75
SV001C2	EUVOCLEANUP	60	50	80	80
SV001C2	EUACETONECLEANUP	60	71	80	75

EUVOCLEANUP – This EU includes activities associated with VOC based cleanup solvent usage. Pollution control devices associated with this EU includes dry filters. The facility reports only using

acetone and “3680 cleaner”. Emission control associated with the activities is by dry fabric filters. No emission limits, operational limits or testing requirements exist for the referenced EU.

PROCESS/OPERATIONAL LIMITS – Permit conditions for EUVOCLEANUP include the recovery and reclaim of a minimum of 48 percent by weight of all VOC based cleanup solvents (SC III.1). Discussions with Facility staff confirmed that the Facility exceeds the minimum 48 percent solvent recovery and reclaim with 100% of the “3680” cleaner being reclaimed, and > than 48 percent of the acetone used by the facility being reclaimed.

All waste cleanup solvents, rags/wipe down cloths, etc. Shall be captured and store in closed containers and disposed of in an appropriate method (SC III.2). No used rags were noted to be laying around or piled in the facility that would indicate improper capture, storage and disposal of cleanup solvent cloths.

In addition, the permittee is required to store organic HAP containing solvents (used for removing cured resin or gel coat) in covered containers, with no visible gaps at all times when equipment being cleaned is being placed in or removed from the container (SC III.3). At the time of the inspection no open or partially open containers were noted.

In addition, containers with a capacity greater than 2-gallons, the distance from the top of the container to the surface of the solvent must be no less than 0.75 times the diameter of the container. (SC III.4) This distance was not verified as part of the site inspection. Facility staff indicated that the 3680 is shipped in a 55-gallon drum. It is then transported to the wash stations in pails with a lid. All of the flush containers for the gelcoat applicators are safety cans with a lid and are typically 2-gallon containers. They don't fill those over about half full since the gel applicator is submerged in the containers when not in use. Review of the applicable federal reg indicated that the condition was only applicable for containers being used for cleanup, the solvent level restriction is not applicable to the solvent storage container (AKA the 55-gallon drum).

MATERIAL LIMITS – Permit conditions include VOC based cleanup solvent usage in lbs/yr (SC II.1) and a maximum organic HAP content of 5% for cleaning solvent used for routine flushing of resin and gel coat applications (SC II.2). There is no organic HAP limit for removal of cured resin or gel from the application equipment. (SC III.5)

DATE	VOC based Solvent Usage (lbs/year)
December 2016	18,781
June 2017	19,271
December 2017	18,479
June 2018	14,832
September 2018	15,469
LIMITS	937,500 (SC II.1)

VOC content of the 3680 cleanser is 12.24% by weight. A review of the manufacturer chemical data for solvents used indicated that the manufacturer claims maximum organic content of cleaning fluid of less than 5% by weight. (SC II.2)

MONITORING/RECORDKEEPING –The organic HAP content of cleaning solvents (SC II.2) may be determined using the various methods identified in 40 CFR 63.5758 (SC VI.3). In addition to test Method 311, Method 24 or ASTM D1259-85, the permittee may use info from the supplier or manufacturer, or other methods approved by the administrator (SC VI.3). The Facility reports using the manufacturer material data sheets for content information.

The permittee is required to visually inspect on a monthly basis any containers which contain an organic HAP containing solvent to verify that the covers have no visible gaps and document the inspections, any repairs and corrective actions. (SC VI.2) The required inspection is reported to be completed as part of the weekly safety inspection conducted onsite.

In addition, the facility is required to maintain the following monthly records, and to have records for the previous month available by the 15th day of the month (SC VI.1):

- Identity of each cleanup solvent used (SC VI.1a)

- Gallons or pounds of each cleanup solvent used, (SC VI.1c)
- Gallons or pounds of each cleanup solvent reclaimed, (SC VI.1d)
- VOC content of each cleanup solvent used (SC VI.1b)
- Calculations determining the percent by weight of all VOC-based cleanup solvent recovered and reclaimed per calendar month. (SC VI.1e)
- Calculations determining the cleanup solvent usage rate in pounds per calendar month, (SC VI.1f)
- Calculations determining the cleanup solvent usage rate in pounds per 12-month rolling time period at the end of each calendar month. (SC VI.1f)

Review of quarterly reports as well as Facility tracking spreadsheets verify that the required records are kept and maintained by the facility in compliance with the permit.

REPORTING - In addition to the general semi-annual and annual reporting requirements under the ROP (SC VII.1, VII.2 and VII.3), the Facility is required to semi-annually report compliance per 40 CFR 63.5764 (SC VII.5.) and report all required calculations on a quarterly basis (SC VII.4).

Reports have been received by the District office and appear to be complete and submitted in a timely manner.

OTHER REQUIREMENTS- The ROP contains a high-level citation, requiring the permittee to comply with all applicable provisions of 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing (SC IX.1). The facility reports compliance with respect to open molding through use of compliant materials (40 CFR 63.5713).

EUACETONECLEANUP – This activity reflects acetone based solvent cleanup activities for the greater facility. The facility reports the solvents used at the time of the site inspection to be 100% acetone. The material is shipped in bunged drums for use. No pollution control is associated with the activities.

OPERATION RESTRICTIONS – Operational/process restrictions for EUACETONECLEANUP include the appropriate capture, storage and disposal all waste cleanup solvents, in compliance with applicable rules (SC III.2). Acetone for recycle/reclaim is stored in bunged drums with lidded capture funnels. To control fugitive emissions to the atmosphere. No open storage containers or waste containers were noted at the time of the inspection, in compliance with permit conditions.

MATERIAL LIMITS – No material limits exist for EUACETONECLEANUP, however the permittee is required to recover and reclaim a minimum of 48% by weight of the acetone used (SC III.1). Records indicated the following :

Month	VOLUME ACETONE USED (lb/month)	Evaporative Loss (lb/month)	PERCENT RECLAIMED
December 2016	3097	1515	51.1%
June 2017	5116	2447	52.2%
December 2017	4374	1893	56.7%
June 2018	3984	1985	52.2%
September 2018	5276*	2490	53.7%

*12-month rolling total for month is 53,668 lbs or 26.83 tons).

EMISSION LIMITS – Emission limits for EUACETONECLEANUP are limited to tons per year, based on a 12-month rolling time period, as determined at the end of each calendar month. (SC I.1)

DATE	ACETONE EMISSIONS (TPY)
December 31, 2016	9.49
June 30, 2017	10.86
December 31, 2017	11.73
June 2018	11.86
September 2018	

	12.57
LIMIT	150 (SC I.1)

MONITORING/RECORDKEEPING – Record keeping requirements include:

- monthly and 12-month rolling totals for acetone used, recovered and reclaimed (SC VI.1).
- monthly totals in pounds of acetone purchased and the amount sent off site for either recycling or disposal (SC VI.2)
- monthly and 12-month rolling totals for the amount of acetone lost as fugitive to the atmosphere by the mass balance method in Appendix 4 of the ROP (SC VI.3)

The referenced information is submitted as part of quarterly reporting requirements for the EU. Records indicated that the information provided show compliance with the referenced monitoring and recordkeeping requirements.

REPORTING – Reporting requirements for EUACETONECLEANUP includes semiannual and annual monitoring and deviations reports (SC VII.1 and VII.2) and the associated certification forms (SC VII.3). Quarterly reporting requirements for EUACETONECLEANUP includes reporting the total amount of atmosphere lost to the atmosphere on a monthly and 12-month rolling time period. (SC VII.4) Required reports are submitted in a timely basis and appear to be complete.

FGOPENMOLDING – This flexible group includes conditions pertaining to HAPS requirements for all open molding operations which utilize:

- Production resin,
- Tooling resin,
- Pigmented gel coat,
- Clear gel coat, and
- Tooling gel coat, including the application of gel coat or skin coat layers (applied before lamination by closed molding)

Materials associated with open molding have a relatively limited shelf life, and shipments are received on a regular basis. It should also be noted that vinyl toluene is reported to be phasing out industry wise but remains to be a component of interest for the FG.

Emission units associated with this flexible group include EULAMINATION1, EULAMINATION2, EUGELCOAT1 and EUGELCOAT2. Pollution controls associated with the flexible group are limited to fabric mat or panel filters, which are changed out on an approximately weekly basis.

EMISSION LIMITS – Emission limits associated with FGOPENMOLDING are limited to organic HAPs on a kilogram/12-month rolling time period and is determined using a calculation/equation contained in 40 CFR Part 63, Subpart VVVV (Appendix 7 of the ROP) (SC I.1). It should be noted that the Facility uses this emissions averaging option to show compliance with the organic HAPs limits under the referenced subpart. The Facility monthly determines the HAP limit for the 12-month rolling time period. The referenced information is reported semi-annually for the facility and is received in a timely manner.

DATE	Organic HAP Emission Limit (Calculated)	Organic HAP Emissions (12-month rolling total) (Calculated)
December 31, 2016	25,097 Kg/Yr	19,674 Kg/Yr
June 30, 2017	26,867 Kg/Yr	20,964 Kg/Yr
December 31, 2017	27,884 Kg/Yr	21,532 Kg/Yr
June 30, 2018	28,759 Kg/Yr	23,810 Kg/Yr

MATERIAL LIMITS – The facility reports demonstrating compliance with organic HAP requirements under 40 CFR Part 63, Subpart VVVV using emissions averaging option (40 CFR 63.5707) rather than the compliant material option (40 CFR 63.5701(b)). Therefore, organic HAP material limits under SC II.1 through II. 9 are not applicable.

MONITORING/RECORDKEEPING – FGOPENMOLDING monitoring and recordkeeping requirements include both general requirements, as well as supplemental requirements depending on whether the Facility is using Emissions averaging or compliant materials methods to show compliance with the organic HAP limits. General requirements include the following:

- If filled resins are used, the equation in Appendix 7 must be used to demonstrate compliance for the filled material on an as applied basis. (SC VI.16)
- Open molding production resins and tooling resins shall be recorded by amount applied by atomized and non-atomized methods. (SC VI.19)
- The permittee will maintain records of the total amounts of open molding production resin, pigmented gel coats, clear gel coats, tooling resin and tooling gel coat used per month and the weighted average organic HAP content for each operation as a weight percent. (SC VI. 18)
- The permittee is required to keep a copy of each notification and report submitted pursuant to the Subpart VVVV and is required to keep copies of all supporting documentation. (SC VI.17)

The above referenced recordkeeping requirements are submitted as part of the Facilities semi-annual reporting. Copies of the documents and supporting documentation are maintained by the company in compliance with permit conditions.

Monitoring/Recordkeeping requirements for FGOPENMOLDING for emissions averaging include the following:

- When using emissions averaging to comply with the organic HAP limit for SC I.1 the permittee must prepare an implementation plan per 40 CFR 63.5707. (SC VI.1)

The Facility has a prepared implementation plan, a copy of which is submitted as an appendix with the semiannual reporting.

- When using emissions averaging option, the organic HAP emissions are to be calculated on a 12-month rolling average per the equation in appendix 7. (SC VI. 2)
- The permittee shall use the equation in appendix 7 at the end of each month to determine the weighted average MACT model point value for each open molding resin and gel coat operation used in the emissions averaging. (SC VI.3)
- The equations in appendix 7 will be used to determine the MACT Model point value for each resin and gel coat used in each operation. (SC VI.4)
- The permittee shall maintain records of the calculation performed to demonstrate compliance based on MACT model point values as described in SC VI. 2, 3 &4. (SC VI.8)

The facility provides the above referenced documentation and records on a monthly basis as part of their semi-annual reporting. In compliance with permit and subpart requirements. In order to complete the required calculations, the Facility maintains the following records as required by permit:

- The permittee shall maintain records of the organic HAP content of each resin and gel coat. (SC VI.5)
- The permittee shall maintain records of the amount of each resin and gel coat that is used per month. (SC VI. 6).

The Facility only uses non-atomized application methods for production and tooling resins and is not required to maintain records of application methods. (SC VI.7)

REPORTING - Permit conditions require semiannual and annual monitoring and deviations reports (SC VII.1, 2 &3) and the associated certification forms. In addition, FGOPENMOLDING is required to submit:

- semi-annual compliance reporting as required under 40 CFR 63.5764, (SC VII.4)
- The implementation plan prepared for all open molding operations which use emissions averaging option to demonstrate compliance. (SC VII.5)

A review of submitted documents indicated that the documents were complete and submitted in a timely manner.

OTHER REQUIREMENTS- As previously indicated, this flexible group contains a high-level citation for 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing. (SC IX.1) Requiring compliance with the referenced subpart. Requirements under the subpart have been incorporated into the ROP, compliance with the ROP verifies general compliance with the referenced subpart.

FGMIXING – Includes EURESINMIXING and EUGELCOATMIXING. This flexible group is defined as any operation in which resins, gelcoats, putties and poly-putties are combined with additives including but not limited to fillers, promoters or catalysts. No pollution control devices are associated with this flexible group.

This FG contains no emission or material limits, as well as no testing/sampling requirements.

OPERATION LIMITS – With reference to FGMIXING, all resin and gelcoating mixing containers (including putties and poly-putties) of 208 liters or greater must have a well-fitting cover with no visible gaps in place at all times except when materials or equipment are being added or removed. (SC III.1) During the December 3, 2018, site inspection AQD Staff noted that the referenced materials are stored in sealed drums and/or tanks and that workstations utilizing putties utilized a vinyl or membrane and were sealed in such a manner that the materials were not exposed to the atmosphere, in compliance with the permit conditions.

MONITORING/RECORDKEEPING – Condition SC VI.1 requires a monthly visual inspection of all mixing containers to ensure the covers have no visible gaps. Documentation of the inspections as well as a description of any repairs or corrective actions is required under SC VI.2. Documentation of the visual inspections is maintained by the Facility. In addition, no uncovered mix containers were noted during the most recent site inspection.

REPORTING - In addition to the general semi-annual and annual reporting requirements under the ROP (SC VII.1, VII.2 and VII.3), the Facility is required to semi-annually report compliance per 40 CFR 63.5764 (SC VII.4.). Reports are submitted in a timely manner, and review indicated that they are complete.

OTHER REQUIREMENTS- This flexible group contains a high level citation for 40 CFR Part 63, Subparts A and VVVV for Boat Manufacturing. (SC IX.1) Requirements under the referenced subpart have been incorporated into the ROP, compliance with the ROP verifies general compliance with the referenced subpart.

SUMMARY

On December 3, 2018, AQD District Staff conducted an unannounced, scheduled site inspection of the Rec Boat Holdings, LLC – Sport and Engineering (S&E) Facility (N1470), located at 925 Frisbie Street, Cadillac, Wexford County, Michigan.

The referenced Facility operates under Michigan Renewable Operating Permit (ROP) MI-ROP-N1470-2016. The referenced ROP was issued on July 6, 2016 and expires on July 6, 2021.

The last site inspection was conducted on March 25, 2017. No compliance issues were identified during the referenced site inspection.

AQD District Staff met with Trent Burch, who provided a tour of the Facility, and answered questions regarding plant operations. Records requests were submitted to the Facility on January 3, 2019, with records received from the company on January 23, 2019.

The Rec Boat Holdings, L.L.C – S&E facility (925 Frisbie Street, Cadillac, Wexford County, Michigan) consists of the Sport Plant which builds small fiberglass "sport" boats (16-28 feet) and includes the Engineering Plant where research and development activities occur. The Facility consists of three contiguous properties. Processes at the facility that emit air contaminants include the open and closed molding processes which involving the mixing and application of gelcoats and resin to construct fiberglass boat parts, cleanup activities utilizing VOC, acetone and the use of adhesives in the boat assembly process. The last site inspection was conducted on March 25, 2017. No compliance issues were identified during the referenced site inspection. Based on information obtained as part of the site inspection and subsequent records review it appears that the facility is operating in general compliance with their ROP.

NAME _____

DATE _____

SUPERVISOR_____