TECHNICAL SUPPORT DOCUMENT (TSD)

AND STATEMENT OF BASIS

FOR THE LASCO AIR OPERATING PERMIT

July 7, 1997

TABLE OF CONTENTS

TABLE OF CONTENTS, CONTINUED

TABLES AND FIGURES:

ATTACHMENTS:

DISCLAIMER

Information contained in this Technical Support Document is for purposes of background information only and is not enforceable.

1.0 GENERAL FACILITY DESCRIPTION

Lasco's Yelm Washington facility produces bath fixtures including bathtubs, shower stalls, and whirlpools in a variety of sizes and styles.

Major structures at Lasco's Yelm facility include two large warehouse buildings, an office building, a small resin mixing/storage building, four large above-ground tanks, a rail spur, outside storage area for finished product and a propane fuel tank. The two large warehouse buildings contain all of Lasco's production operations except for bulk mixing of resin which occur in a separate mixing building. Figure 1 provides a site map and other physical details of the facility layout.

The facility emits Volatile Organic Compounds (VOCs) consisting primarily of the compound styrene, particulate dust, and minor amounts of combustion byproducts. The styrene emissions result during the production process from the curing of resin used to make Lasco's products. Particulate dust is generated during the finishing of cured parts from drilling and grinding processes. The minor amounts of combustion emissions result from combustion of natural gas to provide space heating for the two warehouse buildings which house the facility.

Bathware fixtures are produced in continuous assembly lines by laminating a mixture of thermosetting plastic resin and other inert materials on to a bathware mold. The liquid thermosetting plastic mixture is sprayed on to the mold in successive layers. Each primary layer is allowed to cure partially before the next lamination is applied. After curing of the final layer, the product is separated from the mold. The mold is then cleaned and prepared for the next cycle.

The thermosetting plastic consist of resin which contains styrene monomer. While the production process relies upon the polymerization of styrene monomer to make the final product a rigid solid, a certain amount of the styrene is emitted as a volatile. These emissions occur primarily when the thermosetting plastic mixture is being spray applied and during the initial stages of curing.

TABLE 1: EMISSIONS UNITS & IEUS

ID #	Description:	Specifications
EU1	Production Line 1: Currently used to produce products with gelcoat as the 1st lamination. Referred to as the "FRP" line. For purposes of the AOP, EU1 is a distinct production line which uses gelcoat or a vacuum-formed acrylic sheet as the 1st laminate followed by polyester resin for subsequent laminates. All processes of EU1 are located in Building #1 except for the product trim and drill booth and parts repair. Emissions include VOC and particulates from spray coating operations.	Spray Booth Modules (8 total): 2 gelcoat booths 2 barrier coat booths 4 lamination booths Fans: One, 3 hp exhaust fan per booth. Filters: 4" dry filters Stacks: 8 exhaust stacks Mixing Room: 1 small exhaust fan Note: These specifications were correct at the time of permit issuance and do not constitute compliance limits.
EU2	Production Line 2: Currently used to produce products with vacuum formed acrylic as the 1st laminate. Referred to as the "Acrylic" line. EU2 is a distinct production line which use a gelcoat or vacuum-formed acrylic sheet as the 1st laminate followed by polyester resin for subsequent laminates. All processes of EU2 are located in Building #2. Emissions include VOC and particulates from spray coating operations.	Spray Booth Modules (3 total): 3 acrylic line booths Fans: One, 3 hp exhaust fan per booth. Filters: 4" dry filters Stacks: 3 exhaust stacks Note: These specifications were correct at the time of permit issuance and do not constitute compliance limits.
EU3	Mixing Operations: VOC and particulate emissions from resin mixing operations which support both production lines. Conducted in separate mixing building.	Batch mixer, no air pollution controls.
IEU1	Bulk Resin Storage Tanks	Four, 6,000 gallon above ground resin storage tanks used to store bulk resin.
IEU2	Process Dust Emissions	Particulate dust from trimming, drilling, and abrasive forming of finished product.
IEU3	Heating Units	Natural gas fired, forced air, convection and infrared heaters used for space heating, make-up air heating and to provide heat for product curing. All less than 5 MMBtu/hr heat input.
IEU4	PVC Glue Use:	Use of PVC glue in finish plumbing of the whirlpool products.

Figure 1: Site Map

2.0 REGULATORY BACKGROUND

2.1 OVERVIEW

Lasco's Yelm facility was established by the original owner, HYTEC, in 1981 under NOC #310 which is provided in TSD Attachment 1. NOC #310 was reviewed and approved by OAPCA on 2/26/81. Based on OAPCA's records for the facility, there have been no subsequent NOC approvals issued by OAPCA for modifications to the facility after this date. Also, OAPCA's records do not indicate any modifications subsequent to NOC #310 which would have triggered applicability of a NOC. Historical records do indicate a plant expansion occurred in the mid 1980s. However, correspondence from OAPCA to HYTEC regarding this expansion indicate that OAPCA was aware of the expansion and did not consider it as a modification triggering a NOC.

NOC #310 provides unconditional approval to HYTEC to establish a Fiberglass Reinforced Plastics (FRP) plant at the Yelm site. Documentation of the application and OAPCA's review and approval of NOC #310 is sparse. The application consists of a request letter which generally describes the facility and the company's intent to establish in Yelm. OAPCA's approval consists of NOC Form 1 which is signed and stamped "APPROVED". These records comprise the verification of compliance with new source review requirements for the facility when it was established in Yelm. Based on the historical record, OAPCA's major concern with the facility was due to potential odors. The state of Washington did not have an Air Toxics regulation at this time.

Though records associated with NOC #310 indicate that review and approval of the Yelm facility was consistent with the "standard of care" which was practiced at the time, both OAPCA's approval and the associated NOC application were deficient by today's air regulatory standards in that they lacked specificity.

OAPCA's approval did not include any associated Approval Order containing emission limitations, definition of emissions units and stationary sources, and other conditions necessary for assuring compliance. Neither OAPCA's approval nor the NOC application document the facility's maximum capacity to emit. Also, there was a lack of documentation of any PSD threshold determination. These deficiencies needed to be rectified prior to issuance of Lasco's AOP.

Since approval of NOC #310 there has been only one other regulatory Approval Order issued to the Yelm facility by OAPCA. This latest regulatory Approval Order was issued on 6/20/96 under WAC 173-400-091, Voluntary limits on emissions, for approval of an enforceable limit on annual VOC emissions.

2.2 MAXIMUM CAPACITY TO EMIT/PSD

Based on review of the historical record of material usage and emissions for the facility, OAPCA's conclusion is that the Yelm facility had been a potential major PSD source of VOCs since establishment in 1981 due to maximum potential VOC emissions being greater than 250 tons per year (tpy) (The following section titled MAXIMUM CAPACITY TO EMIT/ALLOWABLE DAILY EMISSIONS in this review report documents how OAPCA determined Lasco's maximum annual capacity to emit.).

Though potential VOC emission rates are significantly greater than 250 tons per year (tpy), calculated actual emissions, based on AP-42 emission factors, have remained below 250 tons per year. Figure 2 shows actual emissions calculated by OAPCA based on actual material use records and AP-42 emission factors. Please note that the reason why AP-42 factors were used to evaluate past compliance with PSD regulations is that there have been no site specific emission factors developed for the Yelm facility based on source testing up until October of 1996. OAPCA has relied upon AP-42 factors in the past for compliance assurance matters.

OAPCA's position for purposes of issuing this AOP was that the potential to emit (PTE) assumed by the agency during review and approval of NOC #310 must have been less than 250 tpy though HYTEC's maximum capacity to emit in reality was significantly greater than 250 tpy. Had OAPCA known that Lasco's maximum capacity to emit was greater than 250 tpy in 1981, then OAPCA would have required a PSD permit application be submitted to the Washington Department of Ecology. Therefore, OAPCA's conclusion was that the approval of NOC #310 is valid only for an emission rate up to 250 tpy even though an enforceable emission limitation was not stated in this approval.

However, since PSD applicability is based on maximum potential emissions, not actual, OAPCA concluded that a federally enforceable limit on VOC emissions was needed to rectify a potential noncompliance issue with respect to PSD. EPA Region 10 recommended that this issue be resolved prior to issuing Lasco's draft AOP.

Resolution of the potential PSD non-compliance issue was accomplished prior to issuance of Lasco's draft AOP through a Regulatory Order issued by OAPCA on 6/20/96 under WAC 173-400-091, Voluntary limits on emissions. This Regulatory Order establishes an enforceable limitation on plant-wide emissions to no more than 249 tons per consecutive 12 month period. A copy of the order is provided in TSD Attachment 2 along with other pertinent information.

Figure 2: Actual Historical Emissions

2.3 EMISSIONS LIMITS

As stated previously, neither OAPCA's Form 1 indicating approval nor the application for NOC #310 contain any emission limitations for VOC emissions. This deficiency caused issues with respect to several regulations. As discussed previously, the PSD issue was resolved by establishing an annual limitation on VOC emissions through issuance of a Regulatory Order pursuant to WAC 173-400-091. However, this action did not resolve all the problems associated with the deficiency.

Lack of shorter time frame emissions limits in the NOC #310 approval was also a deficiency recognized by OAPCA. There were two main reasons for OAPCA's position. One, VOCs are precursors to ozone and protection of the ambient ozone standards require emission limits a on shorter averaging time than annual. Two, styrene, the predominant VOC emitted, is an air toxic with acute health impacts that can occur from short term exposures to elevated styrene concentrations.

OAPCA concluded that rectifying this deficiency could be accomplished by establishing a daily VOC emissions limit. After consultation with EPA Region 10, it was concluded that establishment of such a limit in the AOP could be justified as "gap-filling" for purposes of rectifying deficiencies with the NOC #310 approval. As a result, condition E3.i was included in the permit. This condition limits Lasco's VOC emissions to no more than 3419 pounds per day.

2.4 EMISSIONS UNITS, STATIONARY SOURCES, AND INSIGNIFICANT EMISSIONS UNITS

NOC #310 did not distinguish stationary sources or emissions units located at the facility. This was considered by OAPCA a deficiency since New Source Review (NSR) requirements for minor modifications in the State of Washington depend upon distinguishing what equipment constitutes emissions units and what are the stationary sources at the facility. For this reason, emissions units and stationary sources were identified in Section II, the facility description section of the permit. In addition condition E.3.d specifically stipulates what constitutes the stationary sources for Lasco.

As defined in the permit, buildings #1 and #2 are considered as separate stationary sources. This distinction is consistent with current permitting practices in OAPCA's jurisdiction and in the state of Washington, and is consistent with the definition of a stationary source in WAC 173-400. WAC 173-400-030 (74) defines stationary sources as, "any building, structure, facility or installation which emits or may emit any contaminant.". Buildings #1 and #2 are separate buildings and, therefore, should be considered as separate stationary sources.

The facility contains two major emissions units. Emissions Unit #1 (EU1) is contained primarily in Building #1, or Stationary Source #1 (SS1). Emissions Unit #2 (EU2) is contained primarily in Building #2, or Stationary Source #2 (SS2). Both EU1 and EU2 are assembly lines containing several distinct areas where emissions result. EU1 contains five distinct spray booths and twelve associated exhaust stacks. EU2 also contains several spray booths and stacks. A detailed description of both emissions units is provided in the Process Descriptions section of this document.

For purposes of this permit, the entire production line from mold preparation through final product storage is considered as part of the emissions unit. For this reason, functions associated with EU1 and EU2 are contained within each of the two buildings or stationary sources. OAPCA believes that defining the entire production line as an emissions unit is consistent with current permitting practices at OAPCA and with the definition of emissions unit contained in WAC 173-400. Under WAC 173-400-030(23), emissions unit is defined as, "any part of a stationary source which emits or would have the potential to emit any air pollutant subject to regulation...".

Both EU1 and EU2 contain resin spray layup areas made up of modular spray booth segments. OAPCA considers individual spray booth segments as control devices associated with the emissions unit.

Insignificant emissions units and activities at the facility include gas fired make-up air space heaters, gas fired radiant space heaters, four, 6,000 gallon bulk resin storage tanks, process dust emissions from trimming, drilling and abrasive forming of finished products, minor uses of materials containing VOCs such as PVC glue, cans of spray paint, and minor amounts of cleaning solvents, an above ground propane storage tank, and use of fork lifts.

The four, 6,000 gallon bulk resin storage tanks are insignificant on the basis of size according to WAC 173-401-533(c). This section defines storage tanks less than 10,000 gallons in capacity and storing volatile organic liquids with a vapor pressure of less than 80mm Hg at 21°C as insignificant emissions units. According to the MSDS contained in Lasco's application, the vapor pressure of resin is less than 4mm Hg.

Natural gas fired space heaters for heating the work areas are insignificant on the basis of size according to WAC 173-401-533(e). This section defines combustion sources less than five million Btu/hr exclusively using natural gas, butane, or propane as insignificant. Attachment 6 includes a listing of space heaters and corresponding heat rates for Lasco's Yelm plant.

2.5 MAXIMUM CAPACITY TO EMIT/ALLOWABLE DAILY EMISSIONS

The following discussion describes Lasco's maximum capacity to emit, the use of "allowable daily emissions" in Lasco's AOP, and documents the approach and basis used to determine both maximum capacity to emit and allowable daily emissions. Lasco's daily emissions of styrene are limited by condition E.3.i. Annual emissions are limited by condition E.2. Lasco's allowable daily and annual VOC emissions limits are as follows:

TABLE 2: ALLOWABLE VOC EMISSIONS

DAILY LIMIT	3419 pounds per day (1.71 tons per day)
ANNUAL LIMIT	249 tons per 12 consecutive month period

2.5.a USE OF ALLOWABLE EMISSIONS IN AOP

Allowable daily emissions for the Lasco facility represents the maximum daily emission rate that was reviewed and approved by OAPCA at the time of permitting the facility. Daily emissions above the allowable daily emission rate would trigger requirements for a Notice of Construction since this rate would be higher than the rate which was reviewed and approved by the local air authority at the time the facility was permitted. An allowable daily emission rate was determined during review of Lasco's AOP application, and incorporated into Lasco's AOP by condition as a daily emission limitation.

The purpose of establishing the limit was to protect ambient ozone standards from increases in VOC emissions triggering an ambient air quality impacts assessment, and to protect the public health and welfare from increases in air toxic emissions triggering a health based review under WAC 173-460. The regulatory basis for incorporating the limit was to rectify past NOC approval deficiencies under WAC 173-400-110 and Article 7 of Regulation 1.

The daily limit is in terms of pounds of pollutant per day. Compliance verification is achieved through monitoring daily styrene monomer input rate and comparing this with the maximum daily styrene rate which complies with the daily emission limitation.

Based on approved emission factors, Lasco can calculate the maximum daily styrene monomer input rate which complies with the allowable emission rate. Daily styrene monomer input can be in-directly monitored based on direct monitoring of daily resin and gel coat usage, and the percent of styrene monomer obtained from corresponding MSDS and "Certificates of Analysis" from resin and

gelcoat providers. In this way, verification of compliance with the daily allowable limit is accomplished through material use monitoring.

2.5.b BASIS FOR DAILY ALLOWABLE

Lasco's allowable daily emission rate established through this AOP constitutes the daily emission rate that was reviewed and approved by OAPCA during New Source Review (NSR) at the time the facility was permitted. However, determining appropriate allowable daily emission rate was not straight forward as emission rates reviewed and approved by OAPCA when the facility was permitted were not contained in the records on file with either OAPCA or Lasco.

The latest NOC approved by OAPCA for the facility, NOC #310, was issued 2/26/81 to HYTEC, the original owner of the plant. Record of this NOC does not contain adequate documentation on emission rates or material throughput approved through this action. Other documentation from inspection reports, registration reports and enforcement actions, also, do not identify what maximum emission rates were approved for Lasco.

Because of the lack of data on what was approved by the authority, the only assumption that could be made was that OAPCA gave approval for the plant, as designed, to emit up to its maximum capacity to emit. Therefore, the basis used for determining allowable emissions in this permit was that OAPCA's approval through NOC #310, issued 2/26/81, was approval for the plant to emit up to its maximum physical capacity.

2.5.c CALCULATING MAXIMUM CAPACITY TO EMIT

Maximum capacity to emit on a daily basis was approximated based on records of actual operating schedules, production rates, corresponding actual material usage rates and site specific emission factors. This approach was taken rather than an engineering approach since "bottlenecks" in the production lines which limit the potential to emit are not readily apparent.

OAPCA's file on Lasco contains emissions and operating records as part of the emissions inventory. The choice of what year or years to use was limited by the quality of this data. Though approval to construct the facility was granted in 1981, full operation of the facility did not occur until after 1987 when Lasco acquired the facility from HYTEC. Also, though annual emissions records are complete back to 1981, records on operating schedule up to 1990 appear to reflect the general plant operating schedule rather than the operating schedule of the production lines themselves. For these reasons, data from 1990 through 1995 was used.

For these years, emissions were calculated separately for the gel

coat, lamination coats, and barrier coats using mid range AP-42 emission factors (see spread sheet). The following formula was used:

$$\begin{aligned} &(\text{tons gel coat actual}) * (\%\ \text{monomer}_{\text{gel coat}}) * (EF_{\text{gel coat}}) \\ +\ &(\text{tons resin}_{\text{lamination}}\ \text{actual}) * (\%\ \text{monomer}_{\text{resin}}) * (EF_{\text{resin}}) \\ +\ &(\text{tons resin}_{\text{barrier}}\ \text{actual}) * (\%\ \text{monomer}_{\text{barrier}}) * (EF_{\text{resin}}) \end{aligned}$$

$$= \quad \text{Actual Annual Emissions}$$

The emission factors used in this equation were based on the recent Lasco source tests conducted in June of 1996.
For each year, actual annual emissions were divided by an annual capacity factor to approximate annual maximum capacity to emit:

$$\text{Annual Max Capacity to Emit} = \text{Actual Annual Emissions}_{199n}/CF_{199n}$$

Annual capacity factors were obtained from reported operating schedule data which accompanies the Lasco's annual inventory submittal. Annual maximum capacity to emit was then divided by 365 to approximate the daily maximum capacity to emit:

$$\text{Daily Max Capacity to Emit} = \text{Annual Max Capacity to Emit}/365$$

Theoretically, the maximum annual capacity to emit results should be identical for all years. This, however, was not the result due to inaccuracies in the operating schedule data used.

It was assumed that the highest result best approximated the real maximum capacity to emit. For this reason, the highest, maximum annual capacity to emit was chosen. The highest, maximum annual capacity to emit was 624 tons per year based on the year 1995.

Therefore, Lasco's allowable daily emission rate for VOCs is:

(381 tpy)*(2000 lbs/ton)/365 = 3419 pounds per day VOCs

Allowable Daily VOC Emissions	= 3419 lbs/day = 1.71 tpd

This approach relies on the assumption that the plant's maximum capacity to emit has not changed significantly since the NOC was approved. OAPCA believes this is a good assumption since no records indicate that any changes at the plant triggered NSR since the approval in 1981.

2.6 COMPLIANCE WITH GENERAL OPACITY AND GRAIN LOADING STANDARDS

The emission units at Lasco Yelm are subject to opacity standards under OAPCA 1.9.03(a)&(b)$_{(9/8/93)}$ and WAC 173-400-

040(1)(a)&(b)$_{(8/20/93)}$, and grain loading standards for process units under OAPCA 1.9.05 (a)$_{(9/8/93)}$ and WAC 173-400-060$_{(2/19/91)}$. Condition G1 in the AOP contains the general opacity standards while condition G10 contains the grain loading standards. Direct monitoring of either opacity or grain loading is neither required by these regulations nor appropriate for compliance assurance monitoring. Historical records do not indicate any compliance problems with respect to meeting these general opacity and grain loading standards. This is due to the fact that Lasco's emissions units are process units which emit only VOC and particulates from overspray. The VOC component of the emissions stream does not exhibit opacity and the particulate component is easily controlled in the spray booths using dry filters. For this reason, assuring compliance with the general opacity and grain loading standards for process units involves monitoring the condition of spray booth filters. This is required by condition E1 in the AOP. Condition E1 requires Lasco to monitor the condition of the spray booth filters on a daily basis. Failure to meet these monitoring requirements would constitute a violation of condition E1.

3.0 PERMIT FLEXIBILITY PROVISIONS/P2

3.1 GENERAL

Flexibility provided by Lasco's AOP is facilitated through condition E3, NOTICE OF CONSTRUCTION APPROVAL. This condition provides conditional approval for certain changes subject to minor new source review (NSR) requirements under OAPCA's new source review regulations, and assures compliance with those requirements. Through condition E3, Lasco is allowed to make certain modifications provided the requirements of condition E3 are met.

Flexibility is accomplished by condition E3 in the following ways:

1. A broad spectrum of changes subject to minor NSR requirements are approved under condition E3.

2. This approval becomes final upon issuance of Lasco's AOP and is valid for the permit term provided the requirements of the condition are met.

3. Time and workload associated with minor NSR is saved in that the approval applies to large group of changes. This "batch" approval of a group of changes saves time compared to case by case review and approval of individual changes which is the standard process for minor NSR.

4. The condition provides approval in advance of determining the need for a modification. This allows Lasco to implement changes more quickly since lead time for complying with

minor NSR requirements has already been completed.

Condition E3 assures compliance with all applicable minor NSR requirements. The condition was crafted to be functionally identical to OAPCA's and the State of Washington's standard NSR process.

3.2 COMPLIANCE WITH PROCEDURAL NSR REQUIREMENTS

Compliance with procedural minor NSR requirements like public noticing and consideration of public comments was accomplished during review and issuance of Lasco's AOP. Included with the public notice of issuance of Lasco's draft AOP was notice of OAPCA's Final Determination to approve the modifications eligible for approval under condition E3.

3.3 COMPLIANCE WITH BACT

Compliance with NSR requirements for BACT is accomplished through subsection E3.g. Subsection E3.g makes it a requirement that new, modified and replaced equipment approved under the condition incorporate BACT and specifies what control technology and methods constitute BACT.

For purposes of approvals to construct granted under this condition, BACT includes the following:

1. Implementation of a P2 program which meets the requirements of subsections E3.a and E3.b.

2. New, modified or replaced spray booths shall be designed, installed and operated such that overspray and fugitive emissions are captured, controlled with a filter to remove particulates, and exhausted through a vertical stack.

3. Height of exhaust stacks for new spray booths shall be at least 1.3 times the height of the highest point of the building roof line.

4. High-volume-low-pressure (HVLP), airless, air-assisted airless, or electrostatic spray equipment shall be used in new, modified or replaced production lines. For touch-up and repair, a hand-held, air-atomized spray gun which has a container for resin as part of the gun may be used.

5. New, modified or replaced product grinding and finishing stations shall be controlled with a dust collection device capable of achieving 98% control of 10 microns or larger airborne dust.

6. For all new, modified or replaced production lines, the

weight loss from VOC emissions shall not exceed sixty (60) grams per square meter of exposed surface area during resin polymerization.

7. Percent by weight of styrene monomer in resin and gel coat used in new, modified or replaced production lines shall not exceed the following limits:

TABLE 3: MATERIAL SPECIFICATIONS

Polyester Resin Materials	Monomer Content Limit For Material as Applied (by weight percent)
General Purpose Polyester Resin: Materials that are not corrosion resistant, fire retardant, high strength, vapor suppressed, or gel coats.	35
Corrosion-Resistant: Polyester resin materials used to make products for corrosion resistant applications such as tooling, fuel or chemical tanks and boat hulls.	48
Fire-Retardant: Polyester resin materials used to make products that are resistant to flame or fire.	42
High-Strength: Polyester resin materials which have casting tensile strength of 10,000 psi or more and which are used for manufacturing high performance products like boats and skis.	48
Clear Gel Coat: A clear, polyester resin surface coating that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.	50
Pigmented Gel Coat: A pigmented, polyester resin surface coating that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.	45

In addition to the requirement to implement a P2 program, requirements from South Coast Air Quality Management District's (SCAQMD) Rule 1162 were incorporated into this BACT determination. The BACT determination provided under this condition is required to be reviewed on an annual basis and revised if necessary to reflect new technology which constitutes BACT. This is accomplished through subsection E3.o which requires, on an annual basis, that OAPCA approve a request for extension of the approval granted by condition E3. OAPCA's approval of the request for extension is contingent on finding that the requirements of the condition still constitute BACT and assure compliance with all applicable requirements for the approved new installations, replacements and modifications. If OAPCA makes a finding to the contrary, permit modifications would be necessary to re-establish the approval granted by the condition.

3.4 COMPLIANCE WITH MONITORING REQUIREMENTS, GENERAL

The monitoring, record keeping and reporting requirements established in both conditions E2 and E3 were crafted to generically apply to FRP industries. In addition, subsection

E3.1 limits the approval to only those actions which do not require any change in the monitoring, record keeping, or reporting requirements of the permit to assure compliance with all terms and conditions of the permit.

3.5 MAINTENANCE OF AMBIENT AIR QUALITY STANDARDS

Compliance with ambient standards such as the National and state Ambient Air Quality Standards, and protection of health from impacts due to hazardous air pollutant (HAP) emissions are also assured through compliance with the requirements of condition E3. Compliance is accomplished through subsection E3.i simply by assuring that approved changes do not result in any plant-wide increase in criteria or hazardous air pollutant emissions as compared to the daily allowable emissions rate. Actions subject to NSR which would result in an emissions increase are not eligible for the approval granted by condition E3 and must go through OAPCA's standard NSR process for approval.

Assuring there is no net increase in plant-wide emissions compared to the daily allowable emissions rate assures that the approval to construct will not result in degradation of air quality and compliance with NSR requirements regarding attainment and maintenance of the Washington and Federal ambient air quality standards.

3.6 COMPLIANCE WITH THE WASHINGTON AIR TOXICS REGULATION

There are two separate applicability sections in the Washington Air Toxics Regulation, WAC 173-460.

Subsection 030 defines the categories of sources which are subject to the regulation as well as exemptions. Fiberglass Reinforced Plastics (FRP) industries fall under major SIC code 30 which is listed as a subject source category under subparagraph 030(1)(b)(i)(D). This means that WAC 173-460, in general, may apply to new sources and modifications at the Lasco facility.

Subsection 040, subparagraphs (1) defines the types of actions for which new source review (NSR) of air toxics is required. This subparagraph specifies that NSR is required for new and modified sources of air toxics provided that:

1. NSR applies only to the affected emission unit(s) and contaminants emitted from the emissions unit(s); and,

2. NSR of a modification is limited to the emission unit(s) proposed to be modified and the air toxics whose emissions would increase as a result of the modification.

Subsection 040, subparagraph (2) defines actions which are exempt from NSR under the regulation. The following actions are defined as exempt from NSR:

1. routine maintenance and replacement of air pollution control equipment;

2. minor process changes that do not increase capacity and total toxic air pollutant emissions do not exceed the "small quantity emission rates" listed in the regulation under subsection 080; and,

3. minor changes in raw material composition where the total toxic air pollutant emissions do not exceed the "small quantity emission rates".

Under subsection 040, subparagraphs (4)(a) through (c), the new air toxic source or modification subject to NSR is required to use Best Available Control Technology For Air Toxics (BACT) and demonstrate compliance with Ambient Impact Requirements under subsections 070, 080, and 090.

The ambient impact requirements in WAC 173-460 require a quantification of air pollutant emissions, and, if emissions are greater than the small quantity emission rates specified under subsection 080, a demonstration that projected ambient impacts are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects.

Subsection 080, subparagraph (2) defines the requirements and criteria for demonstrating ambient impact compliance. The requirements call for an "incremental" analysis of the ambient impacts with respect to the "source". The subparagraph reads, "The owner or operator shall use dispersion modeling to estimate the maximum incremental ambient impact of each Class A TAP from the source.....". Incremental means the net increase above the previous level of emissions at the source. Provided that total emissions from a source will not increase above its actual historical emission rate, there is no likelihood of an incremental increase in emissions and likewise no increase in ambient impact. Therefore, an ambient impact analysis of air toxics is only required if net emissions from the source will increase from the action.

According to subsection 030 of the regulation, WAC 173-460 applies to the Lasco facility. Therefore, new sources and modifications at Lasco are subject to the NSR for air toxics under WAC 173-460.

For all actions subject to NSR for air toxics, BACT applies. Permit condition E.3.g, Notice of Construction Approval, covers this requirement by defining BACT for the 18 month period following permit issuance. In other words, the condition will define the technology which constitutes BACT.

Condition E.3.n requires Lasco to request in writing extension of the approval to construct provided by condition E3. This allows

OAPCA an opportunity to review BACT and revise the condition defining BACT if necessary. If new control technologies are available and meet the definition of BACT, the condition will be revised to include these new technologies as BACT for future installations and modifications.

The ambient impact requirements of WAC 173-460 apply only to incremental increases in air toxic emissions with respect to the source. The term source is defined in WAC 173-400 and means essentially all the emission units and quantifiable fugitive emissions located at one facility.

In Lasco's case, the AOP will establish a daily limit on emissions which is equivalent to Lasco's current, maximum capacity to emit. Currently, under maximum production scenarios, Lasco's actual emissions can reach this maximum daily rate. Therefore, the maximum daily emissions limit established in this permit, which is based on Lasco's maximum daily capacity to emit, is used as a baseline for determining whether a net emissions increase results from a certain action.

Condition E.3.i provides approval only for changes where the combined emissions from stationary sources 1 and 2 do not exceed the maximum daily allowable emissions limit established in this permit. When this criteria is satisfied there is no increase in emissions with respect to the "source" and the ambient impact analysis requirement in WAC 173-460 is not triggered.

In summary, the advanced NSR condition, condition E3, provides for compliance with WAC 173-460 by insuring BACT and compliance with ambient impact requirements. BACT as approved by OAPCA for the categories of changes which qualify for approval under the condition is defined in the condition itself and will be updated annually as needed to incorporate new technologies which may become available. The ambient impact requirements are complied with since the condition provides approval **only** for actions which will not result in a net increase in air toxic emissions.

3.7 POLLUTION PREVENTION PROVISIONS

Implementation of a P2 program which meets the requirements of E3.a and E3.b is a prerequisite for the flexibility provided by condition E3. In addition, once flexibility is exercised, implementation of the P2 plan becomes an enforceable requirement.

Condition E3 specifies that the approval to construct granted under the condition will cease if OAPCA determines the P2 program is not adequate. This provision is stated in the main body of the condition as follows, "Approval to construct in accordance with this condition shall remain in effect until written notification from OAPCA that the permittee's P2 program does not adequately meet the criteria set forth in E3.a or E3.b.". Subsections E3.a and E3.b establish the criteria for P2 program

adequacy by defining programmatic requirements as well as performance goals.

Condition E3 also specifies that implementation of a P2 program which meets the requirements of E3.a and E3.b becomes an enforceable requirement once any construction approved under the condition is completed. This provision is stated in the main body of condition E3 as follows, "Upon completion of any action approved under this condition, the conditions identified in E3.a through E3.r shall constitute the enforceable Conditions of Approval and shall become enforceable through the duration of the permit term.".

Subsection E3.a requires initial program submittal no later than 4 months after permit issuance and specifies the required P2 program elements. The P2 program description must contain a description of all the required program elements. Compliance with E3.a requires not only having the required program elements in the program documentation, but also implementation of all prescribed program elements according to the plan.

Subsection E3.b contains P2 performance requirements and goals. E3.b requires that the P2 program result in, "...thorough investigation of applicable P2 techniques and appropriate implementation of those P2 techniques found to be technically feasible, economically viable and likely to result in air pollutant emission reductions.". For purposes of determining compliance with this requirement, E3.b establishes performance goals and stipulates that compliance with the established performance goals constitutes compliance with E3.b. The established performance goals are in terms of percent reduction in emissions per unit of production. Goals of 1.0% by the end of year three of the permit and 2.0% by the end of year five of the permit were established.

For the FRP industry, percent reduction in emissions per unit production may be achieved by three different mechanisms. One, emissions may be reduced simply by reducing waste and overspray. This mechanism is referred to as the "Overspray and Waste Reduction" mechanism in Table 5 of the permit. Two, emissions may be reduced by reducing the amount of styrene contained in the gel coat and resin used. This mechanism is referred to as the "Styrene Economy" mechanism in Table 5 of the permit. Improved styrene economy can be achieved by reducing the amount of styrene or by adding inert fillers to the resin and gel coat used. The last mechanism includes techniques or chemical agents which increase the percentage of styrene retained in the product thereby reducing the percent of available styrene emitted. This mechanism is referred to as "Improved Emission Factor" mechanism in Table 5 of the permit. Regardless of how the reductions are achieved, they may be accumulated and accounted for as credit towards attaining the performance goals. However, verification and monitoring of progress in each of these three areas are

different.

The amount of overspray and waste for a particular period of time is determined based on material use and production monitoring records. The amount of materials actually used is monitored directly and compared to the amount of material that should have been used during the same period based on Lasco's design standards and the number and type of marketable units produced. The percent difference in actual usage and design usage determines the percent of overspray and waste for the period. This measure of overspray and waste accounts for, in aggregate, emission reductions from both waste due to rejected product as well as overspray and trimming waste.

Lasco is already using this approach to manage operator efficiency, and has a database of design material usage rates for all products currently being produced at the Yelm facility. Lasco also has historical record of how the Yelm facility rated in terms of meeting the company's design material use standards. Records for the period from 5/95 through 4/96 were used to establish the baseline for measuring improvement in the area of overspray and waste reduction. These historical records are provided in TSD Attachment 3.

Styrene economy is measured in terms of the amount of available styrene per volume of material as applied and is based on material use and production monitoring. Improvements in styrene economy account for reductions in styrene per unit production such as reductions in styrene usage due to changing the composition of the resin or gel coat as applied, using CO2 foaming to "stretch" the use the resin as applied, and minimizing styrene usage by increasing the amount of inert fillers. Again, historical records for the period from 5/95 through 4/96 were used to establish the baseline for determining progress. These records are provided in TSD Attachment 3.

Improvements to the emission factor are measured in terms of the amount of styrene emitted per available styrene monomer as determined through source testing. Emission factor improvements account for P2 techniques which aim at "locking up" the styrene in the product before it is emitted, use of vapor suppressants, and others. Progress is determined relative to the baseline year emission factor and is based on source testing results. The baseline year emission factor is the emission factor based on stack testing performed in 1996 prior to issuance of Lasco's draft AOP. A summary of the 1996 source testing results is provided in TSD Attachment 4.

3.8 MONITORING SPECIFICS

Monitoring compliance with daily and annual emissions limits and P2 monitoring is accomplished indirectly by monitoring material inputs and outputs, material composition, and production rate.

Conditions E.2.c and E.3.p contain monitoring requirements which are specific to verifying compliance with the daily annual emission limits. Material flows monitored include resin, gelcoat, and resin and gelcoat additives. Production is monitored in terms of the number of marketable units produced.

In general, daily emissions are computed by multiplying the amount of styrene monomer used per day times the appropriate plant specific emission factor. The plant specific emission factors were determined based on recent source testing conducted in June of 1996. The amount of styrene monomer used is computed by multiplying the amount of resin and gelcoat used, times the percent composition of styrene monomer in those materials respectively. The amount of styrene monomer in the resin and gelcoat used by Lasco is verified in the Material Safety Data Sheets (MSDS) and "Certificates of Analysis" which accompany shipments of these materials. The amount of resin and gelcoat used is monitored by Lasco and is used as the basis for computing daily emissions.

$$Emissions_{lbs/day} = \Sigma_i (Usage_{i,\ lbs/day}) * (\%\ Styrene_i) * (EF_i)$$

Where:

1. Subscrip "i" denotes the specific process and material: gelcoat, barrier coat, lamination coats.
2. EF_i denotes the plant specific emission factor for process "i".

Therefore, material use monitoring is important in determining compliance with emissions limits and determining P2 progress.

On a daily basis, monitoring is conducted and the data is input into Lasco's computer system. Lasco's computer system stores the data in a database, and on a monthly basis, computes certain production parameters which are used to evaluate the plant's production and material use efficiency.

Bulk polyester resin is stored in four, 6,000 gallon storage tanks located outside and to the east of buildings 1 and 2. These tanks are referred to as the "bulk tanks". The daily input and output of resin from these tanks is determined daily through tank level monitoring.

Resin is pumped from the bulk tanks to the mixing building where fillers are added in a batch mixer. After a batch is mixed, the resin is pumped to one of three "day tanks" which are located in the mixing room of building 2. The day tanks keep the mixture agitated and at the proper temperature for application. The resin is circulated from each day tank in a continuous loop to a specific spray booth for use.

Resin comes to the Yelm plant by either rail cars or tanker

trucks and is off-loaded directly into either of the four bulk tanks. The amount of resin received during a shipment is determined by measuring tank levels before and after off-loading and converting the difference into gallons using a conversion chart which relates the tank's level with the volume in gallons of material stored. The amount of resin off-loaded in gallons is then converted to pounds using a resin density provided in the "Certificate of Analysis" or Material Safety Data Sheet (MSDS) which accompanies the shipment.

Bulk tank levels are measured each day to determine resin usage since the last reading. In a similar fashion as discussed above, the displacement in tank level is converted to volume in gallons and then pounds. This monitoring accounts for the material outflow from the bulk tanks.

At the mixing building, fillers are added to the raw resin in a batch mixer according to the required material specifications for the particular batch. For example, a barrier coat batch is different compared to a laminant coat batch. The amount of each particular filler is weighed and the composition of the batch is verified by comparing the material's measured density to the computed density based on the formula for the mixture. After mixing the mixture of resin and fillers is pumped to a specific day tank.

The level of material remaining in each day tank at the end of the last shift is measured daily using a dip stick. The day tank level in inches is then converted to gallons using a tank conversion chart which relates tank level to volume, and then to pounds using the density of the mixture. Finally, the amount of raw resin remaining in the day tank is computed by "backing-out" the amount of fillers added.

The amount of resin usage in pounds on a daily basis can then be computed by the following formula:

RESIN MONITORING

$$\text{Bulk Tanks}_{\text{daily output}} - \text{Day Tanks}_{\text{pounds remaining}} = \text{Daily Usage}$$

where:

1. $\text{Bulk Tanks}_{\text{daily output}}$ is the total daily amount of raw resin output from the bulk resin storage tanks, in units of pounds.

2. $\text{Bulk Tanks}_{\text{daily output}} = \Sigma_{i=1 \text{ to } 4} \text{ Bulk Tank}_{i,\text{ beginning}} - \text{Bulk Tank}_{i,\text{ end}} + \text{Bulk Tank}_{i,\text{ inputs}}$

3. $\text{Day Tanks}_{\text{pounds remaining}}$ is the total remaining amount of raw resin left in the day tanks at the end of the day, in units of pounds.

4. Pounds computed from volume in gallons using known density of the raw resin and known amount of fillers added.

5. Volume in gallons computed using the tank's unique level to volume conversion chart.

6. Tank level measured directly.

Gelcoat is stored in portable drums, primarily 55 gallon drums. The amount of gelcoat usage is monitored daily by taking a daily inventory of drums storing gelcoat. Partially used drums are accounted for by measuring the remaining level in the drum and computing the amount of gelcoat used.

Lasco currently monitors unit production for purposes of evaluating plant performance. Monitoring unit production also will provide useful information for purposes of evaluating pollution prevention (P2) status and improvements. The number per day of marketable units produced is monitored and input into Lasco's computer database along with daily material use data. On a monthly basis this information is used to compute efficiency parameters such as the amount of material used per unit, the amount of waste per marketable unit, and the amount of material per unit. These parameters are then compared to Lasco's standard rates which reflect optimal efficiency and performance.

Other parameters will be computed for purposes of evaluating progress towards P2 goals. The pounds of available styrene used per volume of material applied will be computed to track the Lasco's progress towards reducing styrene in the process. The

volume of waste per volume of useful product produced will be computed to track Lasco's progress towards improving spray application efficiency. The pounds of styrene emitted per pound of available styrene in the process will be computed periodically after source testing to evaluate improvements in the styrene emission factor.

4.0 REGULATORY BASIS FOR CONDITIONS, COMPREHENSIVE LIST

The following table provides the regulatory basis for each permit condition.

TABLE 4: STATEMENT OF REGULATORY BASIS

CONDITION REGULATORY BASIS	STATEMENT OF BASIS
S1.1 DUTY TO COMPLY WAC 173-401-620(2)(a) WAC 173-401-620(2)(b)	Legal Basis: WAC 173-401-620(2)(a)&(b) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.2 COMPLIANCE MAINTENANCE WAC 173-401-630(3)	Legal Basis: WAC 173-401-630(3) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.3 COMPLIANCE SCHEDULES OAPCA 1.3.29 WAC 173-401-730(1)(d)	Legal Basis: OAPCA 1.3.29 (local only) requirements apply to all regulated sources in OAPCA's jurisdiction. Factual Basis: Lasco is a regulated source.
S1.4 DUTY TO PROVIDE INFORMATION WAC 173-401-620(2)(e)	Legal Basis: WAC 173-401-620(2)(e) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.5 INSPECTION AND ENTRY WAC 173-401-630(2) OAPCA 1.3.01(e)	Legal Basis: WAC 173-401-630(2) OAPCA 1.3.01(e) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.6 CERTIFICATION OF REPORTS WAC 173-401-630(1)	Legal Basis: WAC 173-401-630(1) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.7 EXCESS EMISSIONS DUE TO AN EMERGENCY WAC 173-401-645 WAC 173-401-615(3)(b)	Legal Basis: WAC 173-401-645, WAC 173-401-615(3)(b) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S1.8 UNAVOIDABLE EXCESS EMISSIONS WAC 173-400-107 OAPCA 1.9.15 (state/local only)	Legal Basis: WAC 173-400-107, OAPCA 1.9.15 (state/local only) requirements apply to all regulated sources. Factual Basis: Lasco is a regulated source.
S1.9 NEW SOURCE REVIEW WAC 173-400-110 OAPCA 1.7	Legal Basis: WAC 173-400-110 and OAPCA 1.7 requirements apply to the construction of new sources and emissions units. Factual Basis: Future expansions and modifications at Lasco may trigger these NSR regulations.
S1.10 FEDERAL CHLOROFLOUROCARBON (CFC) REQUIREMENTS 40 CFR Part 82, subpart F	Legal Basis: 40 CFR Part 82, subpart F applies to all facilities where there are refrigeration or air conditioning units. Factual Basis: Lasco's Yelm facility contains refrigeration and air conditioning units which may need servicing during the permit term.

CONDITION	STATEMENT OF BASIS
S1.11 ASBESTOS REQUIREMENTS REGULATORY BASIS 40 CFR Part 61, Subpart M OAPCA 1.14	Legal Basis: 40 CFR Part 61, Subpart M and OAPCA 1.14 apply to removal of asbestos containing materials. Factual Basis: Lasco will need to comply with these regulations if asbestos containing material will be removed.
S2.1 PERMIT RENEWAL AND EXPIRATION WAC 173-401-610 & (620)(2)(j)	Legal Basis: WAC 173-401-610 & (620)(2)(j) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.2 DUTY TO SUPPLEMENT WAC 173-401-620(2)(e)	Legal Basis: WAC 173-401-620(2)(e) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.3 PERMIT ACTIONS WAC 173-401-620(2)(c)	Legal Basis: WAC 173-401-620(2)(c) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.4 ANNUAL FEES WAC 173-401-620(2)(f) OAPCA 1.6	Legal Basis: WAC 173-401-620(2)(f), OAPCA 1.6 requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.5 EMISSIONS TRADING WAC 173-401-620(2)(g)	Legal Basis: WAC 173-401-620(2)(g) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.6 SEVERABILITY CLAUSE WAC 173-401-620(2)(h)	Legal Basis: WAC 173-401-620(2)(h) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.7 PERMIT APPEALS WAC 173-401-620(2)(i)	Legal Basis: WAC 173-401-620(2)(i) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.8 REOPENING FOR CAUSE WAC 173-401-730	Legal Basis: WAC 173-401-730 requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.9 CHANGES NOT REQUIRING PERMIT REVISION/OFF PERMIT CHANGES WAC 173-401-722 & 724	Legal Basis: WAC 173-401-722 & 724 requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.10 PERMIT MODIFICATIONS WAC 173-401-720 & 725	Legal Basis: WAC 173-401-720 & 725 requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S2.11 PROPERTY RIGHTS WAC 173-401-620(2)(d)	Legal Basis: WAC 173-401-620(2)(d) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S3.1 GENERAL RECORD KEEPING WAC 173-401-615(2) OAPCA 1.3.11	Legal Basis: WAC 173-401-615(2), OAPCA 1.3.11 requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S3.2 MONITORING REPORTS WAC 173-401-615(3)(a)	Legal Basis: WAC 173-401-615(3)(a) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
S3.3 REPORTING OF DEVIATIONS FROM PERMIT CONDITIONS WAC 173-401-615(3)(b) OAPCA 1.9.15(a)	Legal Basis: WAC 173-401-615(3)(b), OAPCA 1.9.15(a) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.

CONDITION	STATEMENT OF BASIS
S3.4 ANNUAL INVENTORY REGULATORY BASIS OAPCA 1.13 WAC 173-400-105(1)	Legal Basis: OAPCA 1.13, WAC 173-400-105(1) requirements apply to all regulated sources. Factual Basis: Lasco is a regulated source.
S3.5 ANNUAL COMPLIANCE CERTIFICATION WAC 173-401-630(5)	Legal Basis: WAC 173-401-630(5) requirements apply to all Title V sources. Factual Basis: Lasco is a Title V source.
G1. GENERAL OPACITY LIMIT: 20% opacity standard WAC 173-400-040(1)(a)&(b) OAPCA 1.9.03(a)&(b) WAC 173-401-615	Legal Basis: WAC 173-400-040(1)(a)&(b), OAPCA 1.9.03(a)&(b) requirements apply to all sources in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction.
G2. EMISSIONS DETRIMENTAL TO PERSONS OR PROPERTY WAC 173-400-040(5) OAPCA 1.9.23 WAC 173-401-615	Legal Basis: WAC 173-400-040(5), OAPCA 1.9.23 requirements apply to all sources in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
G3. FALLOUT WAC 173-400-040(2) OAPCA 1.9.23 WAC 173-401-615	Legal Basis: WAC 173-400-040(2), OAPCA 1.9.23 (state/local only) requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
G4. FUGITIVE EMISSIONS CONTROL WAC 173-400-040(3)(a) WAC 173-401-615	Legal Basis: WAC 173-400-040(3)(a) requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
G5. ODORS WAC 173-400-040(4) OAPCA 1.9.11 (state/local only) WAC 173-401-615	Legal Basis: WAC 173-400-040(4), OAPCA 1.9.11 (state/local only) requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
G6. SULFUR DIOXIDE WAC 173-400-040(6) WAC 173-401-615	Legal Basis: WAC 173-400-040(6) requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction.
G7. CONCEALMENT AND MASKING WAC 173-400-040(7) OAPCA 1.9.12 WAC 173-401-615	Legal Basis: WAC 173-400-040(7), OAPCA 1.9.12 requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.

CONDITION	STATEMENT OF BASIS
G8. FUGITIVE DUST CONTROL REGULATORY BASIS WAC 173-400-040(8)(a) OAPCA 1.9.05(c) WAC 173-401-615	Legal Basis: WAC 173-400-040(8)(a), OAPCA 1.9.05(c) requirements apply to all sources located in OAPCA's jurisdiction. Factual Basis: Lasco is a source located in OAPCA's jurisdiction. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
G9. GENERAL EMISSION STANDARDS FOR COMBUSTION UNITS WAC 173-400-050(1) OAPCA 1.9.05 (a) WAC 173-401-615	Legal Basis: WAC 173-400-050(1), OAPCA 1.9.05 (a) requirements apply to all combustion sources located in OAPCA's jurisdiction. Factual Basis: The Lasco facility includes IEUs which are combustion sources.
G10. GENERAL EMISSION STANDARDS FOR PROCESS UNITS WAC 173-400-060 OAPCA 1.9.05(a) WAC 173-401-615	Legal Basis: WAC 173-400-060, OAPCA 1.9.05(a) requirements apply to all process units located in OAPCA's jurisdiction. Factual Basis: The Lasco facility includes process units. The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements.
E1. OPERATION AND MAINTENANCE OF AIR POLLUTION CONTROL EQUIPMENT OAPCA 1.9.16 WAC 173-401-615	Legal Basis: OAPCA 1.9.16 (local only) requirements apply to all sources in OAPCA's jurisdiction. Factual Basis: The compliance assurance measures required by this condition are necessary to assure compliance with applicable requirements. The prescribed operating conditions for pollution control equipment stated in condition E1 are those necessary for determining that control equipment is adequately operated and maintained.
E2 POTENTIAL TO EMIT LIMITATION OAPCA Regulatory Order dated June 20, 1996 pursuant to WAC 173-400-091	Legal Basis: OAPCA issued a regulatory order pursuant to WAC 173-400-091 for purposes of limiting Lasco's maximum capacity to emit below the PSD major source threshold. Factual Basis: Though actual emissions have remained below PSD major source threshold, Lasco's maximum capacity to emit is greater than 250 tons per year. Lasco submitted an application for a voluntary limit on air emissions for purposes of establishing the Yelm facility as a minor source with respect to PSD. OAPCA issued a regulatory order in June of 1996 which effectively limits Lasco Yelm's emissions to 249 tons per year. The order contains compliance assurance provisions as well as the emission limit.
E3. NOTICE OF CONSTRUCTION APPROVAL Article 7 of Regulation 1, WAC 173-400-110 through 114, and WAC 173-460	Legal Basis: Condition meets all procedural, analysis, and control technology requirements for new source review contained in OAPCA Article 7 of Regulation 1, WAC 173-400, and WAC 173-460. Public noticing and comment requirements will be met during the Title 5 permit review period. Top down BACT analysis included in TSD for support of BACT requirements in condition. Factual Basis: The condition approved certain actions subject to NSR provided that Lasco implement a P2 program for air pollutant emission reductions, that the actions comply with BACT, there is no emissions increase, and several other conditions. Lasco has the option to exercise flexibility under this condition or not to.

5.0 PROCESS DESCRIPTIONS

5.1 GEL COATED LINE

Operation A1: Mold Preparation

This area is the beginning of the manufacturing cycle on the conveyor. Bare molds are cleaned, repaired if necessary, waxed and polished prior to gel coating.

Operation A2: Gel Coat Spray

A highly pigmented and filled polyester resin gel coat is sprayed on the male bathtub/shower mold through the center nozzle of a three nozzle airless spray gun. The gel coat is supplied by air driven pumps from 55 gallon drums. The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer. The line is flushed with virgin resin when there is a change in gel coat color.

Acetone is used in this area for cleaning gun tips.

Operation A3: Barrier Coat Spray

A highly pigmented polyester resin barrier coat is sprayed on the previously gel coated bathtub/shower mold through the center nozzle of a three nozzle airless spray gun. The barrier coat resin is mixed with calcium carbonate by a Hy-Solve disperser and then is delivered to the holding tank. The highly filled barrier coat resin is supplied to the gun, from the holding tank, by an air driven pump.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation A4: Lamination I Spray

A highly pigmented and filled fiberglass reinforced laminate is sprayed on the previously barrier coated bathtub/shower mold through the center nozzle of a three nozzle airless spray gun. The laminate resin is mixed with calcium carbonate by a Hy-Solve disperser and delivered to the holding tank. The highly filled laminate resin is supplied to the gun, from the holding tank, by an air driven pump. The gun has a fiberglass chopper unit mounted on top and is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation A5: Laminate I Roll and Trim

In this are, the first lamination is rolled out with disc rollers. Corrugated fiber board for sandwich construction reinforcing is applied to key parts of the laminate prior to curing. The edges of the cured parts are knife trimmed while traversing this area.

A non-VOC liquid emulsifier is used in the cleaning of the rollers.

Operation A6: Lamination II Board and Prep

Wood and other reinforcing materials are laid, but not applied, on the part at this location so they will be ready for application of the second lamination.

Operation A7: Lamination II Spray

A highly pigmented and filled fiberglass reinforced laminate is sprayed on the previously laminated bathtub/shower mold through the center nozzle of a three nozzle airless spray gun.

The laminate resin is mixed with calcium carbonate by a Hy-Solve disperser and is then delivered to the holding tank. The highly filled laminate resin is supplied to the gun from the holding tank by an air driven pump. The gun has a fiberglass chopper unit mounted on top which is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide

(MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation A8: Laminate III Spray

A third layer of highly pigmented and filled fiberglass reinforced laminate is sprayed on the previously laminated bathtub/shower mold through the center nozzle of a three nozzle airless spray gun.

The laminate resin is mixed with calcium carbonate and aluminum trihydrate by a Hy-Solve disperser and is then delivered to the holding tank. The highly filled laminate resin is supplied to the gun from the holding tank by an air driven pump. The gun has a fiberglass chopper unit mounted on top which is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation A9: Laminate III Roll and Trim

In this area, the second lamination is rolled out with disc rollers and the edges are knife trimmed.

A non-VOC liquid emulsifier is used in the cleaning of the rollers.

Operation A10: Curing Tunnel #2

The part transits through this elevated temperature room to cure the second laminate and to thoroughly harden all the thermoset polyester materials. Heat is introduced to the room by a 100% fresh air direct fired make-up air heater using natural gas as fuel.

Operation A11: Part De-mold

The cured bath fixture is loosened from the mold and transported to the grinding booth.

Operation A12: Trim Booth

This is a two sided booth with a top and a catch basin below the grated floor. Finished bathtub/shower units are trimmed by air powered equipment (primarily grinders and drills). The booth maintains a negative pressure with respect to the surrounding area, thus essentially no dust escapes the booth. The lighter grinding dust is controlled by the use of a bag type dust collector.

Operation A13: Inspection

The parts are checked for structural weaknesses, dimensional tolerances and finish flaws. The parts are also weighed for material control purposes. The unit is routed to the warehouse, if accepted, or to parts repair if minor touch-ups are needed.

Operation A14: Part Repair

Parts are routed here for touch-up repair of minor defects and are then inspected and forwarded to the warehouse.

Operation A15: Mixing Room

Virgin polyester resin is mixed with Hydrated Alumina, and/or mineral fillers, Titanium Dioxide Pigment and microspheres in a closed 500 gallon tank with a 20 hp Hy-Solve disperser. The newly mixed high filled resin is pumped directly to the holding tanks which are located in the same room. Virgin resin is supplied to the disperser from a 7000 gallon storage tank by pumping through a closed loop piping system. Fillers are manually loaded into the mixer. The dust generated in this area is collected by a bag type dust collector.

Operation A16: Mold Repair

Defective molds (cracked or scratch, etc.), from the production line, are brought to this area for repair. Cracked molds are repaired with tooling resins and gel coats. Mold surfaces are wet and dry sanded, rouged (rubbing compound), buffed, waxed and polished before going back to the production line.

5.2 ACRYLIC WHIRLPOOL MANUFACTURING

Operation B1: Vacuum Forming

Solid acrylic sheet stock is fed into an automatic forming machine which heats the sheet to soften it. The sheet is then

moved to the mold and is vacuum formed into the mold cavity. After a brief cooling period the formed shell is de-molded and placed on a transport fixture.

Operation B2: Loading

Formed acrylic shells are positioned on a support fixture mounted on a cart. The cart is pulled by a mechanical overhead conveyor.

Operation B3: Laminate I Spray

A highly pigmented and filled fiberglass reinforced laminate is sprayed on the shell through the center nozzle of a three nozzle airless spray gun. The gun has a fiberglass chopper unit mounted on top and is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation B4: Laminate 2 Spray

A highly pigmented and filled reinforced laminate is sprayed on the previously laminated shell through the center nozzle of a three nozzle airless spray gun.

The highly filled laminate resin is supplied to the gun, from the holding tank, by an air driven pump. The gun has a fiberglass chopper unit mounted on top, which is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation B5: Ambient Cure

The part transits through this ambient temperature area to cure the lamination and to thoroughly harden all the thermoset polyester materials. The cured part is removed from the fixture and transported to the part removal area.

Operation B6: Part Removal

The cured bath fixture is loosened, remove and transported to the drilling and trimming area.

Operation B7: Trim & Drill

Fully cured units are net-trimmed by air power equipment (primarily grinders and drills).

Trimmed parts, directly from the trimming area or storage area, are drilled at this station to provide holes for drainage and piping connections. Some units requiring bottom boards, are also installed at this location.

Operation B8: Assembly

The drilled finished whirlpools are placed on a gravity conveyor where the pipes and pumps are installed. Controls for the water pump and water temperature are also installed.

Operation B9: Hydrostatic Test

Completely assembled whirlpools are tested by circulating water to insure there are no leaks prior to shipping the units to the customer.

5.3 ACRYLIC MODULES MANUFACTURING

Operation C1: Vacuum Forming

Solid acrylic sheet stock is fed into an automatic forming machine which heats the sheet to soften it. The sheet is then moved to the mold and is vacuum formed into the mold cavity. After a brief cooling period the formed shell is de-molded and placed on a transport fixture.

Operation C2: Loading

Formed acrylic shells are positioned on a support fixture mounted on a cart. The cart is pulled manually and transferred to spray stations.

Operation C3: Laminate I Spray

A highly pigmented and filled fiberglass reinforced laminate is sprayed on the shell through the center nozzle of a three nozzle airless spray gun. The gun has a fiberglass chopper unit mounted

on top and is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation C4: Laminate II Spray

A highly pigmented and filled reinforced laminate is sprayed on the previously laminated shell through the center nozzle of a three nozzle airless spray gun.

The highly filled laminate resin is supplied to the gun, from the holding tank, by an air driven pump. The gun has a fiberglass chopper unit mounted on top, which is driven by an air motor.

The two side nozzles of the spray gun deliver catalyst from a pressure pot. The catalyst is a methyl ethyl ketone peroxide (MEKP) solid dissolved in dimethylphalate (DMP) which is a carrier vehicle.

The volatile portion of resin is styrene monomer, a reactive diluent of the resin system, which polymerizes with the polyester resin solid to become part of the finished product. The catalyst is neutralized by the polymeric reaction and locked within the polymer.

Acetone is used in this area for cleaning gun tips.

Operation C5: Ambient Cure

The part transits through this ambient temperature area to cure the lamination and to thoroughly harden all the thermoset polyester materials. The cured part is removed from the fixture and transported to the part removal area.

Operation C6: Part Removal

The cured bath fixture is loosened, remove and transported to the drilling and trimming area.

Operation B7: Trim & Drill

Fully cured units are net-trimmed by air power equipment

(primarily grinders and drills). The booth maintains a negative pressure with respect to the surrounding air and thus, essentially no dust escapes the booth.

Trimmed parts, directly from the trim booth or storage area, are drilled at this station to provide holes for drainage and piping connections. Some units requiring bottom boards are also installed at this location. Dust is controlled by the use of a cartridge type dust collector.

Operation C8: Quality Inspection

The parts are checked for structural weaknesses, dimensional tolerances and finish flaws. The parts are also weighed for material control purposes. The units are routed to the warehouse, if accepted, or to parts repair if minor touch-ups are needed.

Figure 3: Emission Unit 1

Figure 4: Emission Unit 2

TABLE 5: STACKS AND EXHAUST RATES

EMISSION UNIT #	STACK #	SERVICING	FAN POWER (hp)	AIR FLOWRATE (dscfm)
EU1, FRP Line	1	gelcoat spray booth	3	15,588 (6/96 stack test)
EU1, FRP Line	2	gelcoat spray booth	3	16,077 (6/96 stack test)
EU1, FRP Line	3	barrier coat spray booth	3	10,790 (6/96 stack test)
EU1, FRP Line	4	barrier coat spray booth	3	15,664 (6/96 stack test)
EU1, FRP Line	5	lam 1 spray booth	3	9,916 (6/96 stack test)
EU1, FRP Line	6	lam 1 spray booth	3	11,429 (6/96 stack test)
EU1, FRP Line	7	lam 2 spray booth	3	10,372 (6/96 stack test)
EU1, FRP Line	8	lam 2 spray booth	3	9,844 (6/96 stack test)
EU1, FRP Line	9	lam 3 spray booth	3	13,650 (6/96 stack test)
EU1, FRP Line	10	lam 3 spray booth	3	14,465 (6/96 stack test)
EU1, FRP Line	11	mixing room exhaust	<1	flowrate not measured
EU2, Acrylic Line	11 through 16	Acrylic Line spray booths	3/booth	flowrates not measured

ATTACHMENT 1: NOC #310

fn: LASCO.TSD
7/7/97

ATTACHMENT 2: 091 ORDER

fn: LASCO.TSD
7/7/97

OAPCA REGULATORY ORDER

6/20/96

APPLICANT: LASCO BATHWARE
REQUEST: Voluntary Limit on Emissions in accordance with Chapter 173-400-091, *Voluntary Limits on Emissions*.
EQUIP: Equipment associated with fiberglass reinforced plastics production.
LOCATION: 801 Northern Pacific
Yelm, WA 98598

ORDER OF APPROVAL

This Order of Approval is issued in accordance with Olympic Air Pollution Control Authority's (OAPCA) Regulation 1, and Chapter 173-400-091, *Voluntary Limits on Emissions*. Approval is hereby granted, as provided in Article 7 of OAPCA Regulation 1 and Chapter 173-400-091 WAC, to establish emissions limitations at **LASCO Bathware**, at the above indicated location, in accordance with the conditions stated in this Regulatory Order. Compliance with this order and its conditions does not relieve the owner or operator from compliance with OAPCA Regulation 1, RCW 70.94 or any other emissions control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING CONDITIONS:

1. **VOC LIMITATION:** Cumulative emissions of styrene and other volatile organic compounds (VOC) shall not exceed 249 tons for any 12 consecutive month period. The following compliance assurance measures shall apply:

a. **Compliance Verification:** LASCO shall verify compliance with the VOC limit on a monthly basis by computing the facility's actual cumulative VOC emissions over the previous 12 consecutive month period. Actual emissions shall be calculated based on representative emission factors, actual material use records, and appropriate procedures as approved by OAPCA.

b. **Monitoring:** Daily usage of materials containing VOC shall be monitored. Monitoring methods shall be approved by OAPCA and updated as necessary to assure compliance with the VOC limit.

c. **Emission Factors:** Emission factors used for compliance verification shall be approved by OAPCA and shall be updated as necessary to assure compliance with the VOC limit.

d. **Records:** The records identified in (i) through (iv) below shall be kept on-site for a period of not less than 5 years and made available to OAPCA, DOE, or EPA upon request. All records shall be complete and available within 30 days from the end of the specified reporting period. Records requiring certification for truth and accuracy by a

responsible official shall be accompanied by a completed Certification form (standard Certification form attached).

i. Material Safety Data Sheets (MSDS) and purchase invoices for all materials used at the facility containing VOC. Purchase invoices shall reference corresponding MSDS for the VOC containing materials listed on the invoice.

ii. Daily record of the amount, by type, of VOC containing materials used during the previous business day.

iii. Monthly record of the amount of VOC emitted during the previous month and previous 12 consecutive month period. VOC emission records shall be approved and certified as being true and accurate by LASCO's designated responsible official.

e. **Reporting:** LASCO shall submit a Compliance Report to OAPCA no later than 30 days from the end of each six month period commencing six months from the date of issuance of this order. The Compliance Report, including all supporting data and attachments, shall be certified as being true and accurate by LASCO's designated responsible official. Certification shall be accomplished by including a completed Certification form with the submittal (standard Certification form attached). The Compliance Report shall include the following information:

i. Statement as to the status of compliance during the reporting period.

ii. Monthly VOC emission totals for each month during the reporting period.

iii. Except for the initial Compliance Report, 12 consecutive month VOC emission totals for the 12 months previous to each month during the reporting period.

CERTIFICATION FORM

1. Facility/Source Name: _____
2. Company Name (if different): _____
3. OAPCA Source ID #: _____, Facility SIC Code _____
4. Unified Business Identification Number: _____
5. Company Owner: _____
6. Parent Company: _____
7. Environmental Contact for this submittal:

_____
name, title, phone #

8. Mailing Address:

_____

_____

9. **Identification of Report Covered by this Certification:** *Identify the exact report which is certified as being true and accurate under this Certification Form. Please identify the period of time covered by the report and specify any extraneous materials which are not covered by the certification.*

a. Specify the period of time covered by the report:

_____

_____

b. Specify the Type or Name of Report:

[ ] Certification of Compliance Report (semi-annual)
[ ] Compliance Schedule (30 days after triggering per G2)
[ ] Excess Emissions Status Reports (Required weekly for the duration of excess emissions event. Status Report must include daily Excess emissions reports per condition G5)
[ ] Annual Emissions Inventory (must include calculations and supporting data)
[ ] Stack Testing Results (Within 60 days from conducting the testing)
[ ] Other. Specify: _____

_____

c. Please specify by page number any sections of the report not covered by this certification which are provided as background information and are not necessary to support the statements and information which are certified: _____

_____

_____

_____

10. **Certification:**

By my signature below, I certify that all information and statements in the accompanying report, which is identified in item #9 above, including all attachments are true, accurate, and complete to the best of my knowledge.

_____
signature, date

_____
title

_____
printed name

PUBLIC NOTICE
OLYMPIC AIR POLLUTION CONTROL AUTHORITY (OAPCA)
APPROVAL OF VOLUNTARY LIMIT ON AIR POLLUTANT EMISSIONS

LASCO Bathware
801 Northern Pacific
Yelm, WA 98598

ACTION: Pursuant to Chapter 173-400-091 WAC, *Voluntary Limits on Emissions*, and OAPCA's Regulation 1, notice is hereby given that LASCO Bathware has filed a request to establish an enforceable limit on potential emissions of volatile organic compounds (VOC) from existing air pollution sources at the above indicated facility. Final approval of the limitation will establish the facility as a minor source under the *Prevention of Significant Deterioration (PSD) Program (Code of Federal Regulations, 40 CFR 52.2)* thereby eliminating the requirement to obtain a PSD permit.
PRELIMINARY DETERMINATION: OAPCA has completed a preliminary review of the request and has determined that it should be conditionally approved.

PUBLIC COMMENT: A copy of the request and OAPCA's Draft Regulatory Order for approval of the request are on file and available for inspection at the Yelm Timberline Library located at 105 Yelm Ave. W. in Yelm, and at the OAPCA office at 909 Sleater-Kinney Rd SE Suite #1 in Lacey. Anyone desiring to make comments shall submit a written statement to the OAPCA within thirty (30) days of this notice.

Published by Charles Peace, OAPCA Control Officer. (360) 438-8768 Extension 100

ATTACHMENT 3: HISTORICAL RECORD OF MATERIAL USAGE

fn:091LASCO.PD
6/20/96

NOTE

This material has been identified as confidential by Lasco.

fn:091LASCO.PD
6/20/96

ATTACHMENT 4: APPROVED SOURCE TEST PROTOCOL

fn:091LASCO.PD
6/20/96

ATTACHMENT 5: SUMMARY OF RESULTS FROM JUNE 1996 SOURCE TEST

fn:091LASCO.PD
6/20/96

ATTACHMENT 6: OTHER INFORMATION

fn:091LASCO.PD
6/20/96