

Statement of Basis for the Air Operating Permit—Final

Ershigs, Incorporated

Bellingham, Washington

November 14, 2014



Serving Island, Skagit & Whatcom Counties

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PERMIT INFORMATION

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SIC: 3089

NAICS: 928110

NWCAA ID: 033-V-W

EPA AFS: 53-073-0040

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1 INTRODUCTION

Ershigs, Inc. (Ershigs or the permittee) is a fiberglass fabrication shop, manufacturing specialty fiberglass piping and vessels. The facility also operates a metal shop that fabricates molds, fittings and structural components for the final products.

Ershigs, Inc. is a designated major source for the air operating permit program because the facility has the potential to emit greater than 10 tons per year of a Hazardous Air Pollutant (HAP), specifically styrene (CAS 100-42-5). Styrene, as a HAP, is a regulated air pollutant in the Washington Administrative Code (WAC) 173-401.

The purpose of this Statement of Basis is to set forth the legal and factual basis for the conditions of the AOP in accordance with WAC 173-401-700(8) and to provide background information to facilitate review of the permit by interested parties. This Statement of Basis is not a legally enforceable document.

1.1 Permit Changes in the Third Renewal

The Northwest Clean Air Agency (NWCAA) received an application for the third renewal of the Ershigs AOP on September 18, 2013. Changes specific to each permit section are listed below.

1.1.1 Overall

The entire AOP was reformatted to current Agency standard. Both the AOP and this SOB were given the new cover page.

1.1.2 General Information and Attest

The facility location information was updated to reflect the shutdown of the “C Street” operation.

1.1.3 AOP Section 1 Emission Unit Identification

Section 1 was updated to remove activities at C Street and include the metal shop.

1.1.4 AOP Section 2 Standard Terms and Conditions

Section 2 was updated with current citation dates and NWCAA standard language, which includes new and modified applicable regulations such as state greenhouse gas reporting requirements.

1.1.5 AOP Section 3 Standard Terms and Conditions for NSPS

Section 3 was updated with current NWCAA standard language consistent with the National Emission Standards for Hazardous Air Pollutants (NESHAP) that apply to the Ershigs operations. New and modified applicable regulations and updated citation dates are included.

1.1.6 AOP Section 4 and 5 Generally and Specifically Applicable Requirements

The Generally Applicable Requirements of Section 4 were reviewed and updated. Section 4 primarily lists NWCAA and Washington Administrative Code (WAC) regulations, which often lack specific methods for compliance determination and require that additional monitoring, recordkeeping and recording provisions be added to the AOP for the purpose of compliance determination. This aspect of Air Operating Permits, known as gap-filling, is discussed further in Section 4.3 of this document. Gap-filled requirements in the AOP Section 4 were modified for this renewal to be consistent with NWCAA's new format for this section.

Section 5 modifications were made to account for emission units at the metal shop that were

previously held as a separate source and removal of the C Street operation that was permanently shut down since the last permitting action.

1.1.7 AOP Section 6 Inapplicable Requirements

The number of potentially applicable requirements that were determined to be inapplicable was pared down from the previous AOP. Obviously irrelevant requirements were removed from the table of inapplicable requirements. The permit shield extends to cover the inapplicable requirements listed in Section 6 of the AOP per WAC 173-401-640.

Facility Description

1.2 General Facility Description

Ershigs, Incorporated has been in operation since the 1960s and currently has 5 manufacturing plants: Bellingham and Ridgefield, Washington, Alabama, Mississippi, as well as Ontario, Canada. Ershigs is a subsidiary of Denali Incorporated which is a privately held company founded in 1995.

Ershigs manufactures custom fiberglass reinforced plastic (FRP) composite products for a variety of industrial applications including flue gas desulfurization, wastewater treatment, and chemical manufacturing.

The Bellingham facility activities are classified under S.I.C. Code 3089, Plastic Products. The facility currently operates with approximately 100 employees; of which, about 65 employees work in the manufacturing area.

The facility sheet metal shop fabricates molds as well as provides custom fittings and structural components for the fiberglass products. The sheet metal shop has also undertaken separate custom work from the FRP products.

As shown in Figure 1, Ershigs operations are housed in 8 structures at the facility. In addition, there is outdoor storage of molds, structural components, raw materials, and occasional outdoor fabrication work.

1.3 Emission Unit Description

Volatile compound (primarily styrene) emissions sources at the facility are the handling and application of resin. In general, fiberglass and catalyzed polyester resin are applied to molds. Depending on the piece being constructed, the resin/fiberglass composite is applied via hand layup, spray layup, or filament winding layup.

Hand layup of a fiberglass part consists of application of fiberglass sheet and catalyzed resin to a mold; building up the layers to the desired thickness. Resin is applied using brushes, rollers, and squeegees.

Large pieces are generally built using spray layup of catalyzed resin with mechanical "chop gun" application of fiberglass. The chop gun provides a continuous feed of fiberglass that is chopped and wetted with resin as it is sprayed onto the mold. Workers then use rollers and squeegees to compress the material.

Ershigs also manufactures pipes and tubes of varying sizes. The mold in that case consists of a cylindrical mandrel secured between two support stocks. The cylinder rotates, and a carriage slides longitudinally back and forth, applying the resin and fiberglass until the desired tube thickness is reached. Filament winding is sometimes supplemented with spray chop applied resin/glass.

After the resin hardens the piece is removed from the mold and is trimmed, machined smooth (grinding). Grinding operations occur in the same buildings as the composite layup.

In some cases, pieces are attached together constructing the final product. Finally, the product is crated and loaded on trucks or trains for shipment.

For indoor work, styrene vapors or grinding dusts are contained within the buildings and emitted to ambient air through the building ventilation systems. The buildings are the emission units and the ventilation stacks or vents are the emission locations. Most of the vents are equipped with particulate filters.

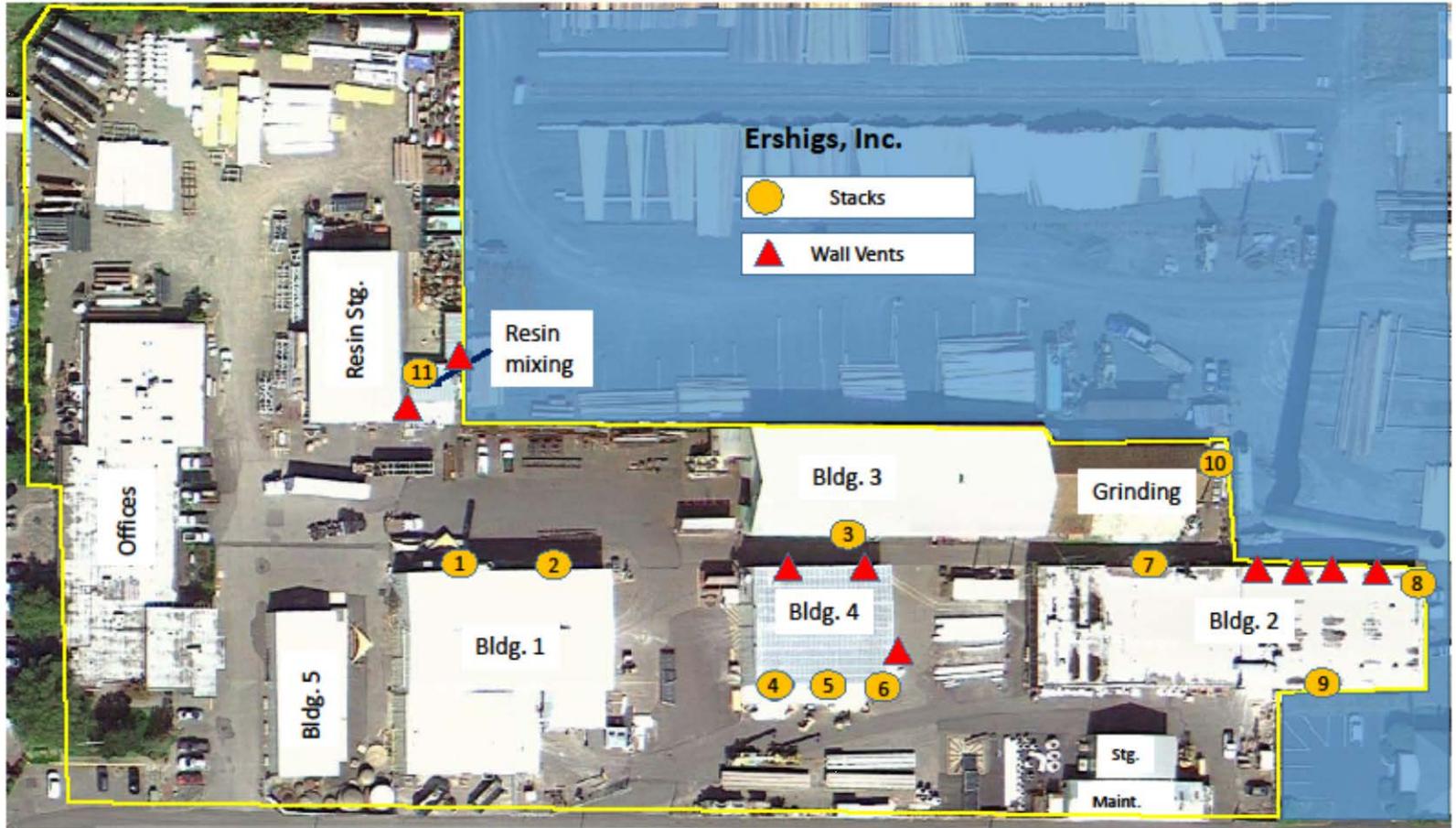


Figure 1 An aerial photograph of the Ershigs facilities identifying emission points (See Table 2-1 for a description)

Outdoor composite layup and grinding operations release the styrene and particulate emissions directly to ambient air and are considered fugitive emission sources.

The plasma arc cutting table at the metal shop is an emission unit. Emissions are controlled by a cartridge filter.

Table 2-1 lists emission units and activities included within the Ershigs AOP. Stacks are numbered and identified in Figure 1.

Table 2-1 Significant emission units identification

Emission Unit Process Name	Emission Points	Control Device	Process Description
Hand layup including infusion molding and resin mixing	Building 1 - Stack 1 Building 2 – Stacks 2,3,4 Building 2 – Wall Fan Building 4 – Wall Fans Building 4 – Stacks 5 & 6	None None None None None	Hand layup is a fiberglass fabrication process in which reinforcing fibers are manually applied to a mold wetted with catalyzed resin mix. Reinforcing material and resin mix are layered to build laminate thickness. Squeegees, brushes, and rollers are used to smooth, compact, and shape the product. Hand layup activities emit styrene and smaller quantities of volatile organic compounds released from the resin mixture and cleanup solvent.
Spray layup including infusion molding and resin mixing	Building 1 – Stack 1 Building 2 – Stacks 2,3,4 Building 2 – Wall Fan Building 4 – Wall Fans Outside Areas	None None None None None	Spray layup is an open mold fiberglass fabrication process which uses mechanical spraying and chopping equipment for application of resin and reinforcing material. Spray layup activities emit styrene and smaller quantities of volatile organic compounds released from the resin mixture and from cleanup solvents.
Filament winding layup including infusion molding and resin mixing	Building 1 – Stack 1	None	Filament winding is the process of applying resin-impregnated fibers onto a rotating mandrel surface. Filament winding layup activities emit styrene and smaller quantities of volatile organic compounds released from the resin mixture and from cleanup solvents.

Emission Unit Process Name	Emission Points	Control Device	Process Description
Cleanup solvent use	Building 1 - Stack 1 Building 2 – Stacks 2,3,4 Building 2 – Wall Fan Building 4 – Wall Fans Building 4 – Stacks 5 & 6	None None None None None	Diacetone alcohol (DAA, CAS# 123-42-2) is used in small quantities throughout the layup areas of the facility to wipe parts and to clean tools. Tool cleaning is conducted in unheated non-aerated basins that are equipped with lids. DAA does not contain any HAP.
Composite grinding/sanding	Building 1 – Bag Filter Building 2 – Wall Fans Building 3 – Bag Filter Building 4 – Wall Fans Outside Areas	Bag Filter None Bag Filter None None	Semi-finished products are ground and sanded as they are prepared for final assembly. Polymer and glass fiber dusts are emitted from these grinding and sanding operations.

1.4 Odors and Other Nuisance Emissions

Ershigs is a potential odor source. Styrene is a colorless liquid that has a sweet smell¹. According to the EPA, indoor air is the principal route of styrene exposure for the general population. Average indoor air levels of styrene are in the range of 1 to 9 µg/m³, attributable to emissions from building materials, consumer products, and tobacco smoke¹. The odor threshold for styrene is 0.32 parts per million (ppm)² or 1.47 mg/m³. Regulatory action levels (the concentration of a substance to which most workers can be exposed without adverse effects) for workers exposed to styrene are orders of magnitude higher. The American Conference of Governmental and Industrial Hygienists' threshold limit value of 85 mg/m³ expressed as a time-weighted average is one of the lowest action levels for styrene. Outdoor operations have particular potential as odor sources since the vapors are released at ground level with little opportunity for dispersion.

1.5 Insignificant Emission Units

Emission units or activities present at Ershigs are determined to be categorically insignificant or insignificant on the basis of size or production rate (see Section 6 of this document).

1.6 Potential Emissions

In their initial application (1995), Ershigs included a table of their potential emissions. They estimated that their annual maximum usage, based on full production capacity and three

¹ Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological Profile for Styrene. U.S. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1992.

² J.E. Amooore and E. Hautala. Odor as an aid to chemical safety: Odor thresholds compared with threshold limit values and volatilities for 214 industrial chemicals in air and water dilution. Journal of Applied Toxicology, 3(6):272-290. 1983.

operating shifts, would be approximately 734 tons of resin. Emission factors of styrene from resin usage differ, based on styrene content and application method. Based on recent annual emission inventories and documents obtained during annual inspections, the maximum emission factor on a monthly averaged basis, used by Ershigs was 126 lb of styrene per ton of resin used. Based on the above information, the potential to emit styrene is approximately 46 tons per year.

There are no combustion sources at Ershigs (except water heaters and space heaters that are insignificant emission units), and therefore no emissions of NO_x, CO, SO₂ or GHG. Emissions of particulate matter come from grinding. Potential PM emissions are about 11 tons per year (see Section 3.2.1).

1.7 Emissions Inventory

Ershigs calculates their emissions of styrene using the equations contained in Table 1 of 40 CFR 63 Subpart WWWW. These equations give emission factors of lb of styrene per ton of resin used, and depend on the method of application of the resins and the styrene content of the resins. Ershigs report their annual emissions inventory to the NWCAA by April 15 for the previous calendar year.

Emissions reported by Ershigs are shown in Table 2-1 and Table 2-2 below. Emissions are currently reported to Washington Department of Ecology.

Table 2-2 Ershigs Annual Criteria Air Pollutant Emissions (tons)

	2008	2009	2010	2011	2012	2013
TSP	1.4	1	1	1	1	1
PM ₁₀	0	0	0	0	0	0
SO ₂	0	0	0	0	0	0
NO _x	0	0	0	0	0	0
VOC	31.1	20	16.4	25	28.8	19.3
CO	0	0	0	0	0	0

Table 2-3 Ershigs Annual Toxic Air Pollutant Emissions (pounds)

	2008	2009	2010	2011	2012	2013
Diacetone alcohol	11,184	11,184	11,184	11,184	11,180	11,184
Methyl methacrylate	441	442	220	292	228	831
Styrene	49,665	28,705	21,190	36,882	33,880	25,223
Cumene	0.7	10	86	0	0	0
Cylcohexanone	1.8	25	215	514	294	350
Methyl isobutyl ketone	3.6	50	428	514	364	350
Trimethyl benzene	1.8	25	215	514	364	350
Xylene	0.7	10	86	0	0	0

1.8 Permitting History

Ershigs was identified as a pollutant source and registered with the agency around 1970. However, no permitting actions were undertaken at the facility until the inception of the Title 5 air operating permit (AOP) program in 1995.

The facility was originally issued AOP 001 on March 17, 1997.

The first revision (an administrative amendment, also numbered AOP 001) was issued on May 27, 1999 to document company personnel changes.

Ershigs applied for an AOP renewal on August 10, 2001 and provided additional information on May 17, 2001. The permit (AOP 001R1) was issued on February 3, 2003. That permit expired on February 3, 2008.

Ershigs applied for AOP renewal on July 16, 2007. The permit (AOP 011R2) was issued September 21, 2009. That permit expires on September 21, 2014.

The facility applied for AOP renewal on September 18, 2013 with an addendum received on March 12, 2014.

1.8.1 C Street Facility

In 2005, Ershigs applied for a minor NSR permit for additional FRP operations at the “C Street” facility. That permit (Order of Approval to Construct – OAC 932) was issued September 12, 2005. In 2007, Ershigs applied for a permit to expand operations at the C Street facility. OAC 1014 was issued on March 18, 2008, superseding OAC 932.

The C Street facility was permanently shut down in 2013, voiding OAC 1014.

1.8.2 Sheet Metal Shop

In 2005, the facility applied for a NSR permit for a plasma arc cutting table. OAC 926 was issued on June 28, 2005 for that operation. On October 20, 2006 OAC 926a was issued, superseding OAC 926, to include provisions for a laser cutting table at the facility.

Historically, the sheet metal shop has been excluded from the Title V source in prior permits. As part of the AOP renewal process, the separation of the sheet metal shop was again reviewed by the agency.

WAC 173-401-200 states that a major source for AOP purposes means any stationary source (or any group of stationary sources) that are located on one or more contiguous or adjacent properties, are under common control by the same person (or persons under common control), and are part of the same SIC major industrial grouping. The sheet metal shop is assigned a different standard industrial code (SIC 3444) than the FRP manufacturing side of the facility (SIC 3089). However, in accordance with EPA guidance, under current operations, it is a support facility for the fiberglass operations and is therefore required to be included in the stationary source.

The facility provided an addendum on March 12, 2014 incorporating the sheet metal shop into the AOP renewal application.

OAC 926b was issued on June 25, 2014, superseding OAC 926a, to remove provisions for the laser cutting table that had been permanently removed from the facility.

1.9 Compliance History

NWCAA conducts unannounced inspections at all major sources at least annually, and responds to citizen complaints when the facility is named as a potential source of undesirable air emissions. The agency response may involve a site visit as well as general surveillance

around the plant.

1.9.1 Enforcement Actions

Ershigs is required to notify NWCAA if excess emissions are released to the atmosphere or if the facility deviates from AOP terms. Annual site inspections by the agency evaluate facility emissions, monitoring, recordkeeping, and reporting against AOP requirements. NWCAA then makes a determination as to whether there are any violations of AOP terms. If a violation is determined to have occurred, enforcement action may be taken. This may include issuance of a Notice of Violation (NOV), reporting in the Aerometric Information Retrieval System (AIRS) database, and possible listing with EPA Region 10 as a High Priority Violation (HPV). The source is then tracked until it returns to compliance.

NWCAA has issued no enforcement actions to Ershigs operations in the past 5 years. The last enforcement action taken against the Ershigs was a 2007 NOV that was discussed in the previous AOP SOB. At the time of this permit issuance, there are no pending enforcement actions.

1.9.2 Compliance Reports

The Ershigs AOP requires semiannual and annual reports to be submitted to the NWCAA as part of the facility's ongoing compliance demonstration. In addition, permit deviations must be reported within 30 days of the end of the month in which the deviation was discovered. Semiannual and annual reports submitted by Ershigs are certified by the responsible official. Certification of the truth and accuracy of reported information by the responsible official is required at least semiannually. Annually, the responsible corporate official certifies compliance with all applicable requirements in the AOP term by term and whether the facility was fully or intermittently in compliance with each term.

2 BASIS OF REGULATION APPLICABILITY

2.1 40 CFR 63—National Emission Standards for Hazardous Air Pollutants (NESHAP)

Ershigs is a major source of hazardous air pollutants (HAPs) because it has the potential to emit greater than 10 tons per year of styrene.

40 CFR 63 Subpart A – General Provisions: NESHAP General Provisions apply to “affected sources”. The affected sources at Ershigs are fiberglass products as defined in 40 CFR Part 63 Subpart WWWW (National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production). NESHAP Subpart A requirements are listed in Section 3 of the AOP as generally applicable to affected sources. 40 CFR 63 Subpart WWWW specific requirements are listed in Section 5 of the AOP.

2.2 Compliance Assurance Monitoring (CAM)

40 CFR 64 – Compliance Assurance Monitoring: Ershigs is not subject to the CAM rule. The CAM rule under 40 CFR 64 requires owners or operators of subject sources to conduct monitoring that satisfies specific criteria established in the rule to provide a reasonable assurance of compliance with applicable requirements. Monitoring focuses on emission units that rely on pollution control equipment to achieve compliance. The CAM rule coordinates existing monitoring requirements with additional monitoring if current requirements fail to specify adequate detail. CAM applies to units that meet all three of the following criteria: (1) are subject to an emission limit, other than an emission limit from a NSPS or NESHAP that was proposed after November 15, 1990 (2) use an add-on control device to meet the emission limit, and (3) have potential pre-control device emissions that would classify the unit as a major source (referred to as an “uncontrolled major source”).

The emission units at Ershigs are fiberglass application operations and finishing operations creating particulate matter. CAM does not apply to fiberglass operations because they are subject to a NESHAP regulation (40 CFR Part 63 Subpart WWWW). CAM is not applicable to the particulate sources because the pre-control emissions are below the uncontrolled major source thresholds (see additional discussion below in Section 3.2.1).

2.2.1 CAM applicability determination for the grinding room

Grinding at Ershigs takes place mostly inside the grinding room (see Figure 1). Emissions from the grinding room are controlled by a baghouse. According to information provided by Ershigs, the dust collected by the baghouse is 150 lb, once per two weeks, with the baghouse operating six hours per day. In other words, the baghouse collects 150 lb per 60 hours of operation. It has therefore a potential to collect $(8760/60)*150=21,900$ lb per year. Conservatively assuming the baghouse to be 99% efficient, the process potential uncontrolled emissions are 22,121 lb per year, or about 11 tons of PM. This is below what would classify the unit as an uncontrolled major source, therefore the CAM rule does not apply.

2.2.2 CAM applicability determination for plasma cutter cartridge filtration system

The plasma cutter (Building 3) at Ershigs is controlled by a cartridge filtration system. According to information provided by Ershigs, the dust collected by the filtration system is 298 lb per year, with the cartridge filtration system operating five hours per day. In other words, the cartridge filtration system collects 298 lb per 1,250 hours of operation. It has therefore a potential to collect $(8760/1250)*298=2,088$ lb per year. Conservatively

assuming the baghouse to be 99% efficient, the process potential uncontrolled emissions are 2,110 lb per year, or about 1.1 tons of PM. This is below what would classify the unit as an uncontrolled major source, therefore the CAM rule does not apply.

2.3 Risk Management Plan (RMP)

40 CFR 68 – Chemical Accident Prevention Provisions: Ershigs is not subject to the provisions of this program at the time of permit renewal. The goal of 40 CFR 68 and the Risk Management Program (RMP) it requires is to prevent accidental release of substances that can cause serious harm to the public and the environment and to mitigate the severity of releases if they do occur. If a tank, drum, container, pipe, or other process at a facility contains any of the regulated toxic and flammable substances listed in 40 CFR 68.130 in an amount above the “threshold quantity” specified for that substance, the facility operator is required to develop and implement a risk management program. At the time of permit renewal, Ershigs states that no substance listed in 40 CFR 68.130 is maintained at the facility at or above threshold quantities. Ershigs will certify in the annual compliance certification that, should the facility become subject to the regulation, Ershigs will comply with the requirement to submit a Risk Management Plan according to the requirements of 40 CFR 68.

2.4 New Source Review (NSR)

2.4.1 Basic Information

New Source Review (NSR) requires stationary sources of air pollution to acquire permits before they begin construction. NSR is also referred to as construction permitting or preconstruction permitting.

There are three types of NSR permits. A source may have to acquire one or more of these permits:

- Prevention of Significant Deterioration (PSD) permits, which are required for new major sources or a major source making a major modification in an attainment³ area;
- Nonattainment NSR permits, which are required for new major sources or major sources making a major modification in a nonattainment area; and
- Minor source permits, which are required for sources that emit pollutants below the major source threshold but above the minor source threshold. It is generally the case that a major new or modified source will also require minor NSR permitting that covers a different subset of pollutants.

Permits are legal documents that the source must follow. Permits specify what emission limits must not be exceeded and how the source is to demonstrate compliance with the set limits. Permits may contain conditions to ensure that the source is built according to the permit application upon which the permitting agency relies for air impact analysis. For example, the permit may specify a stack height that was used by the permitting agency to determine compliance with air pollutant limits. Some limits in the permit may be specified at the request of the source to keep them from being subject to other requirements. For example, the source may take limits in a minor NSR permit to keep the source out of PSD. To assure that sources follow permit requirements, permits also contain monitoring, recordkeeping, and reporting (MR&R) requirements.

³ An attainment area means a geographic area designated by EPA at 40 CFR 81 as having attained the National Ambient Air Quality Standard for a given criteria pollutant (Reference: WAC 173-400-030 (9)).

The area under the NWCAA's jurisdiction is currently designated as being in attainment for all pollutants. Therefore, nonattainment NSR permits are not required for any projects.

2.4.2 Permitting Authorities

In Washington State NSR permits are issued by local air pollution control agencies or the Washington State Department of Ecology (Ecology). The EPA issues permits in special cases. Ecology and local air pollution control agencies have their own permit programs that are approved by EPA in the State Implementation Plan (SIP). In general, in the NWCAA jurisdiction, which encompasses Island, Skagit, and Whatcom Counties, Ecology issues major NSR permits (PSD permits) and NWCAA issues minor NSR permits (Orders of Approval to Construct, or OACs).

2.4.3 Prevention of Significant Deterioration (PSD)

Up to the issuance date of this AOP renewal, Ershigs has not qualified as a major source under the PSD program (40 CFR 52.21) for any new projects undertaken since the establishment of the PSD program.

Before a major source can be constructed or modified in an area that meets all the health-based ambient air requirements (i.e. in an attainment area), the owner or operator must demonstrate that the project will not cause or contribute to violations of any ambient air quality standard or air quality increment through the PSD permitting program. Also, the owner or operator must demonstrate that the project will not cause significant deterioration in nearby Class I Areas (parks and wilderness areas).

2.4.4 Minor New Source Review

New or modified sources of air pollution are required to obtain a permit from the NWCAA before beginning construction. Permits are referred to as Orders of Approval to Construct (OACs) and contain requirements to minimize air pollution impacts on the environment. The type of activity, the size of the operation, and the kinds of pollutants emitted determine permit conditions.

Table 3-1 lists the minor NSR permits issued to the Ershigs facility and the current status of each.

Table 3-1 Ershigs Minor NSR Permits

Permit ID.	Date Issued	Equipment/Sources	Status
932	9/12/05	C-Street infusion molding operation	Superseded by 1014
1014	3/18/08	C-Street operation expansion	Permanently shutdown 2013
926	6/28/05	Plasma arc cutting table	Superseded by 926a
926a	10/20/06	Plasma arc cutting table operation expansion	Superseded by 926b
926b	06/27/14	Plasma arc cutting table modification	Currently applicable

2.4.5 Other Federal New Source Review Programs

The entire jurisdiction of NWCAA is designated as in attainment for all criteria pollutants. For this reason no other federal new source review programs for new or modified sources of air pollution are applicable.

2.5 Greenhouse Gas (GHG) Regulation

Greenhouse gases are chemicals that contribute to climate change by trapping heat in the atmosphere. The greenhouse gases (GHG) recognized by EPA and Ecology are: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). "Hydrofluorocarbons" or "HFCs" means a class of greenhouse gases primarily used as refrigerants, consisting of hydrogen, fluorine, and carbon.

2.5.1 40 CFR 98, Federal Mandatory Greenhouse Gas Emission Inventory Regulation

This regulation does not apply to Ershigs at the time of this permit renewal because GHG emissions from stationary sources at Ershigs do not exceed the 25,000 metric ton CO₂ equivalents⁴ (CO₂e). If at some point GHG emissions from stationary sources at the Ershigs facility do exceed 25,000 metric tons CO₂e, then the facility will become subject to this rule. This regulation is implemented in its entirety by the EPA and is specifically excluded from appearing in a Title V air operating permit.

2.5.2 Chapter 173-441 WAC, Reporting of Emissions of Greenhouse Gases

This rule requires greenhouse gas reporting for owners or operators of a source that emits at least 10,000 metric tons of greenhouse gases annually. Ershigs is not an effected source under this rule. The rule is similar to the existing Federal Mandatory Greenhouse Gas Emission Inventory Regulation (40 CFR 98).

⁴ CO₂e is the sum of metric tons per year of each greenhouse gas multiplied by the global warming potential (GWP) of the gas. For example, CO₂ has a GWP of 1, and methane has a GWP of 21. Then 100 tons of CO₂ and 10 tons of methane have a CO₂e of: 100*1 + 10*21 = 100 + 210 = 310.

3 GENERAL ASSUMPTIONS OF THE PERMIT

3.1 Permit Content

The permit contains (1) standard terms, (2) generally applicable conditions for the type of facility permitted, and (3) specifically applicable conditions originating from approvals to construct and any regulatory orders referencing the facility. Applicable requirements that were satisfied by a single past action on the part of the source are not included in the permit but are discussed in this Statement of Basis. An example would include performance testing to demonstrate compliance with applicable emission limitations as a requirement of initial startup. Regulations that require action by a regulatory agency, but not of the regulated source, are not included as applicable permit conditions.

3.2 Federal Enforceability

Federally enforceable requirements are terms and conditions required under the Federal Clean Air Act or under any of its applicable requirements such as NSPS or NESHAP. Local and state regulations may become federally enforceable by formal approval and incorporation into the State Implementation Plan (SIP) or through other delegation mechanisms. Federally enforceable requirements are enforceable by the EPA and citizens of the United States. All applicable requirements in the permit including Standard Terms and Conditions, Generally Applicable Requirements, and Specifically Applicable Requirements are federally enforceable unless identified in the permit as enforceable only by the state (i.e., labeled as “state only”). Chapter 173-401 WAC is not federally enforceable although the requirements of this regulation are based on federal requirements for the air operating permit program. Upon issuance of the permit, the terms based on Chapter 173-401 WAC will become federally enforceable for the source.

Most rules and requirements are followed by a date in parentheses. Two different versions (identified by the date) of the same regulatory citation may apply to the source if federal approval/delegation lags behind changes made to the Washington Administrative Code (WAC) or the NWCAA Regulation. The date associated with a WAC regulation denotes the “State Effective Date” of the regulation. For SIP-approved WAC regulations (identified by the absence of the “state only” designation), the date represents the “State Effective Date” of the regulation version that was SIP-approved. For NWCAA regulations, the date represents the most recent Board of Directors adoption date, which is identified as the “Passed” or “Amended” date in the NWCAA Regulation. For SIP-approved NWCAA regulations (also identified by the absence of the “state only” designation), the parenthetical date represents the “Passed” or “Amended” date of the regulation version that was SIP-approved. The date associated with an OAC or PSD permit represents the latest revision date of that order. For a federal rule, the date is the rule’s most recent promulgation date.

3.3 Gap Filling

Title V of the Federal Clean Air Act is the basis for the EPA’s 40 CFR 70, which is the basis for the State of Washington air operating permit regulation, Chapter 173-401 WAC. Title V requires that all air pollution regulations applicable to the source be called out in the AOP for that source. Title V also requires that each applicable regulation be accompanied by a federally enforceable means of “reasonably assuring continuous compliance.” Some of the older general regulations and federal NSPS do not have monitoring, recordkeeping and reporting requirements that are sufficient to reasonably assure continuous compliance with emission limitations. Title V, 40 CFR 70, and WAC 173-401-615 all contain a “gap-filling”

provision for that situation⁵. The permitting agency is required to create MR&R requirements that fill the gap and to incorporate those requirements into the air operating permit. For instance, nuisance rules and opacity requirements have site-specific gap-filled obligations for the source. If a requirement has been gap-filled in the AOP, the MR&R for that term will state “Directly Enforceable” above the gap-filled text.

On August 19, 2008, the U.S. Court of Appeals vacated EPA’s 2006 interpretive rule that prohibited states from enhancing monitoring in Title V permits. As a result, permitting authorities again must ensure that monitoring in each permit is sufficient to assure compliance with the terms and conditions of the permit.

For the Ershigs AOP, gap-filling has been implemented in Section 4 which contains the requirements applicable to all the facility emission sources.

A Ventilation and Odor Control Plan was provided to the NWCAA by Ershigs in August, 1991 as part of an odor nuisance enforcement action. This plan, current plant operating and maintenance procedures, and EPA guidance on monitoring, recordkeeping and reporting were used to develop most of the monitoring, recordkeeping, and reporting provisions in Table 4-1 of the permit. The requirements generally prescribe investigation of nuisance emissions, precautions to be taken when the operators can grind or perform layup activities on parts out of doors, and ventilation and control equipment operation requirements during working hours.

Composite layup is conducted in buildings 1, 2 and 4. These buildings are equipped with ventilation systems that maintain a slight building vacuum in order collect and release volatile chemical vapors (including styrene) through elevated stacks. Monitoring these emission points for proper operation and maintenance and for best available odor control is accomplished by requiring Ershigs to monitor internal building vacuum. Keeping the buildings at negative pressure assures that the ventilation systems are operating and that styrene vapors are collected and dispersed.

Particulate matter emitted from grinding and sanding operations is typically of a size that emissions should be readily observed by the human eye. Compliance with opacity and particulate emission limitations is assured via monthly monitoring by visually observing and recording whether there are any emissions from stacks. If any visible emissions are observed during the monthly check or at any other time, immediate corrective action is triggered or, if visible emissions cannot be eliminated, monitoring by the Washington Department of Ecology Method 9A must be performed.

With regard to mass particulate emission rates, a zero percent opacity action level will likely ensure that emissions are less than the 0.1 grains/dscf emission standard. This approach is taken because proper operation of the facility presently results in zero opacity. The monitoring period is once-per-month for plantwide emissions, however, there is a continuous obligation for compliance. If greater than zero percent opacity is observed from any emission point at any time and no corrective action is taken or Method 9A monitoring is not implemented, then there would be a violation of the permit monitoring terms.

Requirements related to fugitive emissions are monitored by limiting outdoor grinding and

⁵ WAC 173-401-615(1) Monitoring. Each permit shall contain the following requirements with respect to monitoring: (b) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to subsection (3) of this section. Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Recordkeeping provisions may be sufficient to meet the requirements of this paragraph; and

(c) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods.

layup operations and keeping containers of volatile materials closed.

The majority of the facility grounds are paved and traffic dust has not historically been a problem.

Requirements related to nuisance emissions are monitored by responding to complaints received from the NWCAA or the public, by checking for mechanical or operational problems that may cause nuisance, taking actions to reduce emissions that may cause nuisance odors, and recording and reporting any actions taken. The facility is subject to enforcement action if the NWCAA confirms the presence of a nuisance caused by Ershigs, irrespective of the monitoring, recordkeeping and reporting requirement.

3.4 Future Requirements

Applicable requirements promulgated with future effective compliance dates may be included as applicable requirements in the permit. Some requirements that are not applicable until triggered by an action, such as the requirement to file an application prior to constructing a new source, are addressed within the standard terms and conditions section of the permit.

There are presently no pending applications to construct or modify the facility that would trigger New Source Review. Ershigs has certified in the permit application that the facility will meet any future applicable requirements on a timely basis.

3.5 Compliance Options

Ershigs did not request emissions trading provisions or specify more than one operating scenario in the air operating permit application; therefore, the permit does not address these options as allowed under WAC 173-401-650. This permit does not condense overlapping applicable requirements (streamlining) nor does it provide any alternative emission limitations beyond those available in applicable federal regulations.

Specifically, 40 CFR 63.5810 allows affected sources to use one of the following methods for demonstrating compliance:

- (a) Demonstrate that an individual resin or gel coat, as applied, meets the applicable emission limit in Table 3 or 5 to subpart WWWW.*
- (b) Demonstrate that, on average, the source meets the individual organic HAP emissions limits for each combination of operation type and resin application method or gel coat type.*
- (c) Demonstrate compliance with a weighted average emission limit.*
- (d) Meet the organic HAP emissions limit for one application method and use the same resin(s) for all application methods of that resin type.*

Ershigs has chosen to comply with the weighted average emission limit option (c) above. However, the facility has request that all the options be included in the permit for operational flexibility. The permit allows Ershigs to use any of the options (a)-(d) shown above.

4 PERMIT ELEMENTS AND BASIS FOR TERMS AND CONDITIONS

4.1 Permit Organization

The Ershigs Air Operating Permit (AOP) is divided into the following sections:

Permit Information

Attest

Table of Contents

Section 1 Emission Unit Identification

Section 2 Standard Terms and Conditions

Section 3 Standard Terms and Conditions for NSPS and NESHAP

Section 4 Generally Applicable Requirements

Section 5 Specifically Applicable Requirements

Section 6 Inapplicable Requirements

4.2 Permit Information and Attest

4.2.1 Permit Information

The Permit Information page identifies the source and provides general information relevant to the permit such as the facility address, the responsible corporate official, the permit issuance date and the permit expiration date, and the agency personnel responsible for permit preparation, review, and issuance.

4.2.2 Attest

The Attest page provides authorization for the source to operate under the terms and conditions contained in the permit.

4.3 AOP Section 1 Emission Unit Identification

The Emission Unit Identification section lists emission units, emission unit description, and air pollution controls.

4.4 AOP Section 2 Standard Terms and Conditions

The Standard Terms and Conditions section contains administrative requirements and prohibitions that do not have ongoing compliance monitoring requirements. Regulations that give legal authority to the standard terms and conditions are cited for each topic. At times, requirements are paraphrased; the language of the cited regulation takes precedence over the paraphrased summary. For understanding and readability, the terms and conditions have been grouped by function. Similar requirements from the State and the NWCAA are grouped together where possible. Requirements that are not applicable until triggered are also included. An example of these would be the requirement to file a "Notice of Construction and Application for Approval."

4.5 AOP Section 3 Standard Terms and Conditions for NESHAP

This section contains the generally applicable requirements from Subpart A of 40 CFR 63. These requirements, which consist mainly of recordkeeping, reporting, and general testing and operation and maintenance standards, apply generally to emission units that are subject

to the federal requirements under the NESHAP.

4.6 Introduction to AOP Sections 4 and 5: Generally and Specifically Applicable Requirements

Requirements that limit emissions and broadly apply to all sources within the jurisdiction of the NWCAA are identified in Section 4 - Generally Applicable Requirements. Requirements that limit emissions and apply specifically to emission units at Ershigs are identified in Section 5 - Specifically Applicable Requirements. The first column of the tables in these sections contains the term number. The second column identifies the regulatory citation. The third column provides a brief description of the applicable requirements for informational purposes and is not itself enforceable. The fourth column identifies monitoring, recordkeeping, and reporting requirements in accordance with WAC 173-401-605(1), - 615(1) and (2). If appropriate, test methods associated with an applicable requirement or in accordance with WAC 173-401-615(1)(a) are included in this column.

Many generally applicable requirements do not specify test and/or monitoring methods within the text of the regulation or statute. Since WAC 173-401-615 requires that the permit require monitoring and recordkeeping adequate to demonstrate compliance with requirements, legally enforceable site-specific monitoring methods were established (“gap-filled”) based on the characteristics of the facility, the nature of the underlying requirement, the requirements of WAC 173-401-615, and EPA guidance on monitoring. Sections 5.7 and 5.8 below provide a discussion of the basis for including gap-filled MR&R requirements.

Requirements pertaining to operation and maintenance, nuisance, fugitive emissions and odor may be met through adherence to operation and maintenance (O&M) manuals and timely complaint response and follow-up corrective action.

The following discussion of permit terms provides some information on how the facility demonstrates compliance with these terms.

4.7 AOP Section 4 Generally Applicable Requirements

Section 4 - Generally Applicable Requirements of the AOP identifies requirements that apply broadly to the facility. These requirements are normally not called out in NOC approvals (i.e., OACs). Instead, they are general air pollution rules found in the NWCAA Regulation or the WAC.

Some of the conditions in this section contain terms that are not well defined or list MR&R for which the rationale is not readily apparent. These items are discussed below.

4.7.1 General Nuisance and Odor (Permit Terms 4.2 - 4.3 and 4.15 – 4.18)

NWCAA Regulations and the WAC contain requirements regarding odors and other emissions deemed to be a “general nuisance”. Emissions of air contaminants that damage human health, plant or animal life, or otherwise interfere with the “enjoyment of life and property” are prohibited. These rules, however, do not include specific monitoring, recordkeeping, or reporting requirements. Therefore, per the requirements of WAC 173-401-615, the MR&R for AOP terms 4.2-4.3 and 4.15-4.18 were “gap-filled” with MR&R requirements. The gap-filled MR&R require Ershigs to inspect potential sources of nuisance emissions upon receipt of a complaint, repair problems found, document the inspection and subsequent work, and notify NWCAA if repairs cannot be made in a timely fashion. Since the MR&R requirements were generated as part of the Air Operating Permit, the MR&R is denoted as “Directly Enforceable”, which establishes the language as enforceable conditions.

4.7.2 Fugitive Emission Standards (Permit Terms 4.4 - 4.5)

Permit conditions that limit fugitive emissions refer to permit terms 4.4 - 4.5, which require the facility to perform grinding work indoors. If work needs to be performed outside, Ershigs must use plastic sheets to capture dust. Dust needs to be vacuumed off or otherwise removed when work is finished. Any outdoor grinding activities need to be recorded in a logbook.

4.7.3 Opacity Standard (Permit Terms 4.6 – 4.14)

The generally applicable opacity requirement limits any source at the facility to 20% opacity according to Ecology Method 9A; however, these limits are not accompanied by specific MR&R. Consequently, the MR&R for this term is gap-filled. Because there are many emission units with more stringent specifically applicable opacity requirements at 5% or 10% opacity by EPA Method 9 or Ecology Method 9A and in order to standardize the facility-wide response to visible emissions, the MR&R for the opacity standard is written such that any visible emissions require immediate action with increasing stages of monitoring, depending on the situation. Any observed visible emissions (VE) require that one of three steps be taken within 24 hours: correct the problem, shut the unit down, or a certified reader shall determine the opacity according to EPA Method 9, which is a six-minute standard. If any three minutes during the six-minute observation or if the EPA Method 9 test itself shows emissions in excess of any standard, an Ecology Method 9A reading must be taken, if applicable. If a certified VE reader is unavailable to read the emissions, NWCAA will assume that all opacity standards have been exceeded. Observations and actions taken must be recorded and made available at the facility for inspection. The MR&R requirement for opacity and particulate matter standards is written to allow reduced opacity observation length when the opacity levels are clearly below the standard.

If opacity is observed, Ershigs has three options: (i) to take corrective action that returns opacity to non-visible level as soon as practicable, (ii) to have a certified VE reader determine the opacity according to EPA Method 9 and daily thereafter until opacity is shown to be less than applicable limits⁶, or (iii) shut the unit down until corrective actions can be taken.

If opacity is greater than an applicable emission standard, immediate corrective action is required and an upset condition must be reported to NWCAA. All Method 9 or 9A opacity readings must be taken by an individual holding a valid Certification of Completion for Plume Evaluation Training from Ecology or other authorized training facility.

This MR&R is meant to capture all possible exceedances of any applicable opacity standard while providing a consistent set of steps to be taken when any opacity is observed at the facility.

Permit terms 4.9-4.15 list particulate matter limits in grains/dscf. Opacity monitoring has been chosen as a surrogate to performing Method 5 tests, with the facility taking corrective action if visible emissions are noted. Based on historical inspections and permitting actions, the NWCAA has determined that Ershigs is unlikely to exceed the particulate matter limits if there are no visible emissions.

4.8 AOP Section 5 Specifically Applicable Requirements

This section contains tables that list applicable requirements that specifically apply to emission units. The emission limits in Section 5 are based on federal NESHAP requirements

⁶ If EPA Method 9 shows emissions in excess of an applicable standard, determine opacity according to Ecology Method 9A

and best available control technology (BACT) determinations made as part of minor NSR and established by OAC conditions. The format and organization of this section are the same as for the generally applicable requirements.

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for the reinforced plastics composites industry, first promulgated on April 21, 2003 and subsequently amended on August 25, 2005 and again on April 20, 2006, gives four options to sources such as Ershigs for complying with the standards for open molding (see 40 CFR §63.5810).

Ershigs has requested that all four compliance methods allowed in 40 CFR §63.5810 be included in the AOP to allow for maximum operational flexibility (AOP term 5.1.2).

In practice, Ershigs has chosen to comply with the standards for open molding using the methods set forth in 40 CFR 63.5810(c). This option allows Ershigs to demonstrate compliance with a weighted average emissions limit for all open molding operations. The weighted averages are calculated on a rolling 12-month period average. The calculation is done in three steps:

1. First calculate the weighted average emissions limit. This is calculated as the sum of each emissions limit⁷ multiplied by the amount of each corresponding material used divided by the total material used.
2. Calculate a weighted average emissions factor. The process is similar to step 1 above but uses the equations in Table 1 to Subpart WWWW of Part 63 to 40 CFR to estimate actual emissions.
3. Compare the weighted average emissions limit to the weighted average emissions factor. If the emissions factor is less than or equal to the emission limit, Fibrex would be in compliance.

In addition, Table 4 to Subpart WWWW of Part 63 to 40 CFR includes work practice standards with which Ershigs must comply. These work practice standards are included in AOP term 5.1.3.

4.9 AOP Section 6 Inapplicable Requirements

Washington Administrative Code 173-401-640 allows a determination regarding the applicability of requirements with which the source must comply. Section 6 of the permit lists requirements deemed inapplicable based on the applicability of the cited regulation.

⁷ The emissions limit is found on Table 3 to Subpart WWWW of Part 63 to 40 CFR, and depends on the operation type and the application method for the resin.

5 INSIGNIFICANT EMISSION UNITS/ACTIVITIES

Categorically exempt insignificant emissions units listed in WAC 173-401-532 are present at Ershigs. These categorically exempt emissions units normally have low emissions and are considered insignificant by regulation and not of sufficient importance to list in the permit.

Some emission units and activities are considered insignificant according to WAC 173-401-533 based on size or maximum rated capacity. Other emission units or activities generate only fugitive emissions for which there are no specifically applicable requirements. These activities are categorized as insignificant by Chapter 173-401-530(1)(d) WAC.

All insignificant emission units are subject to AOP Section 4 – Generally Applicable Requirements. Insignificant emission units and activities at the facility are listed in the following table; definitions of abbreviations used in the table are listed at the end of the table.

Table 6-1 Insignificant Emission Units and Activities

Exempt Unit	WAC Citation	Comment
Room vents	WAC 173-401-532(9)	Vents from rooms, buildings and enclosures that contain permitted emissions units or activities from which local ventilation, controls and separate exhaust are provided.
Facility vehicles	WAC 173-401-532(10)	Internal combustion engines for propelling or powering a vehicle.
General plant upkeep	WAC 173-401-532(33)	Plant upkeep including routine housekeeping, preparation for and painting of structures or equipment, roof repairs (tar application), applying insulation to buildings in accordance with applicable environmental and health and safety requirements and paving or stripping parking lots.
Propane storage tank with two hundred and fifty gallon capacity	WAC 173-401-533(d)	Operation, loading and unloading storage of butane, propane, or liquefied petroleum gas (LPG), storage tanks with vessel capacity under forty thousand gallons.
Space heaters and hot water heaters	WAC 173-401-533(r)	Space heaters and hot water heaters using natural gas, propane, or kerosene and generating less than five million Btu per hour

6 PUBLIC DOCKET

Copies of this permit as well as the permit application and any technical support documents are available online at www.nwcleanair.org and at the following location:

Northwest Clean Air Agency
1600 South Second Street
Mount Vernon, WA 98273-5202

7 DEFINITIONS AND ACRONYMS

Definitions are assumed to be those found in the underlying regulation. A short list of definitions has been included to cover those not previously defined.

An "applicable requirement" is a provision, standard, or requirement in any of the listed regulations or statutes as it applies to an emission unit at a stationary source.

An "emission unit" is any part or activity of a stationary source that emits or has the potential to emit pollutants.

A "permit" means for the purposes of the air operating permit program an air operating permit issued pursuant to Title 5 of the 1990 Federal Clean Air Act.

"Technology-Based Emission Standard" means a standard, the stringency of which is based on determinations of what is technologically feasible considering relevant factors.

"State" means for the purposes of the air operating permit program the NWCAA or the Washington State Department of Ecology.

The following is a list of Acronyms used in the Air Operating Permit and/or Statement of Basis:

AOP	Air Operating Permit
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
dscf	dry standard cubic foot
EPA	The United States Environmental Protection Agency
FCAA	Federal Clean Air Act
HAP	Hazardous Air Pollutant
ISO	International Standards Organization
MACT	Maximum Achievable Control Technology
MR&R	monitoring, recordkeeping and reporting
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NOC	Notice of Construction
NOX	nitrogen oxides
NSPS	New Source Performance Standard
NSR	New Source Review
NWCAA	Northwest Clean Air Agency
OAC	Order of Approval to Construct
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
ppmvd	parts per million by volume (dry basis)
RCW	Revised Code of Washington
SIP	State Implementation Plan
SOB	Statement of Basis
STP	Standard temperature and pressure; according to NWCAA regulations, standard conditions are a temperature of 20 degrees C (68 degrees F) and a pressure of 760 mm (29.92 inches) of mercury.

SO2	sulfur dioxide
WAC	Washington Administration Code
WDOE	Washington Department of Ecology