



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

## **Quality Assurance Project Plan**

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### **Industrial Footprint Project**

June 2009

Publication No. 09-07-046

## Publication Information

This plan is available on the Department of Ecology's website at <http://www.ecy.wa.gov/biblio/0907046.html>

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# Quality Assurance Project Plan

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## Industrial Footprint Project

June 2009

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EPA – United States Environmental Protection Agency

SWFAP – Solid Waste and Financial Assistance Program

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## Abstract

The Washington State Department of Ecology (Ecology) received a State Innovation Grant from the United States Environmental Protection Agency (EPA) to conduct the Industrial Footprint Project. The primary goal of the project is to develop a performance measurement tool. This tool will assess the environmental, economic and social impacts of the pulp and paper sector and five pulp and paper facilities in Washington State. It will result in a numeric industrial footprint score for the sector and each facility.

We define an industrial footprint as the impact a major manufacturing facility has on the environment and community in which it's located. The footprint analysis will consist of a series of parameters common to all the pulp and paper mills. Ensuring the reliability of the data will provide regulatory and facility decision-makers with the ability to benchmark performance, assess progress toward sustainability, and make investment and compliance decisions that improve environmental impacts.

Each study conducted by Ecology must have an approved Quality Assurance Project Plan (QAPP). The plan describes the objectives of the study and the procedures to be followed to achieve those objectives. After completion of the study, a final report describing the study results will be posted to the Internet.

## Background

Ecology has the following eight principles of sustainability:

- Interdependence between ecological, economic and social factors in achieving sustainability.
- Waste can and should be eliminated
- Healthy natural systems are the basis for sustainable communities and economies.
- Future generations should be equal partners in decision making.
- Local decisions have regional and global implications.
- Incentives are necessary to create sustainable behavior
- Investment in the design phase of a process or product drives sustainable outcomes.
- Human relationships and a collaborative approach lead to sustainable solutions.

In addition to this, EPA's Innovation Strategy states that "environmental programs should address a broader range of issues than they typically do today. The goal should be greater environmental responsibility and natural resource stewardship across all of society, along with successful integration of environmental, economic, and social objectives." It also states that new approaches need to "emphasize results more than the means to achieve them, using regulatory and non-regulatory tools and working in partnership with others. In such instances, public accountability should be provided through use of meaningful performance tools".

In recognition of the need for a more sustainable society, Ecology received a State Innovation Grant from EPA to conduct the Industrial Footprint Project. With sustainability in mind, the Industrial Footprint Project will develop a performance measurement tool to assess the environmental, economic and social impacts of the pulp and paper sector and five pulp and paper facilities in Washington State.

## Project Description

We define an industrial footprint as the impact a major manufacturing facility has on the environment and community in which it's located. It is measured in sustainability terms (environmental, economic and social impacts), and includes many environmental aspects that Ecology and EPA do not directly regulate at this time, such as greenhouse gases and raw materials. Footprint measurement puts a spotlight on the need for companies to pursue "beyond compliance" opportunities. It adds rigor to the use of environmental management systems (EMSs) already in place. We hope to demonstrate that permitting, other regulatory work, and "beyond compliance" activities can be tied more directly to real environmental improvement.

For the footprint tool to be useful to Ecology, it must have the following characteristics:

- credible- to the community, the State, the facilities and EPA
- broad - includes permitted and "beyond compliance" environmental impacts and can be adapted to measure economic and social impacts
- robust- can be used as a sector or facility measure and can be used to compare similar facilities
- cost effective- data gathering and analysis costs are reasonable
- transparent- the need for proprietary data is minimized
- transferable- the tool is useful for other facilities and industries
- informative- changes the way environmental performance of facilities is evaluated

The footprint analysis will consist of a series of measures common to all the pulp and paper mills. At a minimum, the environmental indicators will include energy use, greenhouse gases, water use, waste, biological oxygen demand (BOD), total suspended solids (TSS), and nitrous oxides (NO<sub>x</sub>). The footprint will also include economic and social indicators of sustainability. Indicators will be selected by collaboration with Ecology, contractor, industry, and community stakeholders.

The sector and individual facility footprints will provide opportunity for Ecology to develop priorities. The sector baseline will help reveal if specific processes or pollutants present opportunity for improvement. The individual footprints will help reveal whether there are specific concerns within a particular facility. In both cases, Ecology will work with the partners to develop priorities for action. If time and funding allows, the top sector priority and the top priorities at two facilities will be initiated.

The project will generally follow the following steps:

1. Select indicators for the sector and for each facility. This will be done by researching international sustainability measurement tools, in partnership with the facilities and with input from community members and requires the development of a stakeholder involvement plan.
2. Measure the baseline footprint for the sector and the facilities using the selected indicators. This step will require evaluation and analysis of a significant amount of data.
3. Issue a carbon challenge to the sector facilities, asking them to voluntarily reduce their carbon emissions.
4. Develop priorities for the sector and each facility, working in partnership with the stakeholders.
5. Implement priority actions and measure results, if appropriate.
6. Assess the utility of this approach to improving environmental results, including identifying barriers to implementation, recommended improvements and follow-up actions.

This assessment will also include a comparison of the footprint score of one facility to itself before and during the time an EMS was put in place.

## Organization and Schedule

The following Ecology and EPA staff are involved in this project.

Table 1. Organization of project staff and responsibilities.

Staff (all are Ecology except client)	Title	Responsibilities
Angela Fritz SWFAP Industrial Section Phone: (360) 407-7393	Project Coordinator	Writes the QAPP, oversees data collection, conducts Quality Assurance (QA) review of data, analyzes and interprets data, and writes the draft report and final report.
Marc Crooks SWFAP Industrial Section Phone: (360) 407 -6934	Project Coordinator	Writes the QAPP, oversees data collection, conducts QA review of data, analyzes and interprets data, and writes the draft report and final report.
Carol Kraege SWFAP Reducing Toxic Threats Section Phone: (360) 407-6906	Ecology Project Manager	Reviews the project scope and budget, tracks progress, reviews the draft QAPP, and approves the final QAPP.
Carolyn Gangmark EPA Region X Phone: (206) 553-4072	EPA Project Manager	Clarifies scope of the project, provides internal review of the QAPP, and approves the final QAPP.
Ginna Grepo-Grove EPA Region X Phone: (206)	Quality Assurance Manager	Reviews the draft QAPP and approves the final QAPP.
William R. Kammin Phone: (360) 407-6964	Ecology Quality Assurance Officer	Reviews the draft QAPP and approves the final QAPP.

EPA – Environmental Protection Agency.

SWFAP – Solid Waste and Financial Assistance Program.

QA – Quality Assurance

QAPP – Quality Assurance Project Plan.

Table 2. Proposed schedule for completing the data collection, footprint tool, and final report.

Data and footprint tool	
Data collection completed	July 2009
Footprint tool completed	August 2009
Final report	
Author lead	Angela Fritz and Marc Crooks
Schedule	
Draft due to supervisor	August 2009
Draft due to client/peer reviewer	August 2009
Draft due to external reviewer(s)	September 2009
Final report due to EPA	October 2009

## Quality Objectives

The goal of this project is to produce a sustainability measurement tool for quantifying holistic footprint improvements, reductions and trade-offs between environmental, economic and social activities at industrial facilities and the associated industrial sector. We are testing the utility of the tool on five pulp and paper facilities in Washington State. Ensuring the reliability of the data will provide regulatory and facility decision-makers with the ability to benchmark performance, assess progress toward sustainability, and make investment and compliance decisions that improve environmental impacts.

We will analyze, display, and document data that pertains to the development of an industrial footprint. Acquired datasets will be maintained at the original level of accuracy. When modifications are necessary, explanations will accompany the changes.

## Representativeness

Five pulp and paper facilities are participating in the project:

- Boise, Inc (Boise) is a Kraft mill that produces bleached paper, fine, coated paper and corrugating medium
- Grays Harbor Paper (GHP) is a non-integrated paper mill and produces regular white writing paper and post consumer waste/process chlorine free writing paper.
- Simpson Tacoma Kraft (Simpson) is a Kraft mill that produces white top linerboard
- Nippon Paper Industries USA (Nippon) is a thermo-mechanical paper mill that produces telephone directories
- Port Townsend Paper Corporation (PTPC) is a Kraft mill that produces unbleached kraft paper, pulp, linerboard, and packaging.

We are missing a mill that uses a sulfite pulping process. With the exception of this, we have a good representation of the pulp and paper sector in the State and feel we can use data collected to build a sector footprint. The participants represent all other major types of pulp producing processes and we have a facility that purchases pulp and does not make it on site.

The sustainability indicators we will measure reflect common indicators throughout the pulp and paper sector in the State. They were selected based on representativeness for the pulp and paper sector and participating facilities, stakeholder input, and the economic feasibility of collection.

## Comparability

Each of the participating pulp and paper facilities are different from one another, including the following:

- Processes
- Raw material inputs
- Products manufactured
- Geographical influence
- Ownership type

- Size of facility
- Amount of production
- Size of community
- Customer base

We will compare each facility to its own past performance. Due to the differences, we will not compare them to one another. To facilitate comparability of a facility's footprint score over time, we will maintain consistency with the parameters and methods used to collect and calculate data at a facility as much as is possible, and with explaining those parameters, methods and assumptions used to prepare the footprint scores over time.

One objective of the project is to compare the footprint of a facility without an EMS in place to one with an EMS. Nippon certified under ISO 14001 at the end of 2007. Their 2006 data represents a non-EMS facility. The 2007 data is impacted by the EMS decision making process. To meet this objective, we will focus on this in our comparison of Nippon's 2006 and 2007 scores.

## Transferability

An objective of this data collection is to produce a footprint tool that can be used at other pulp and paper facilities. The indicators selected meet that objective.

## Precision

While we will not compare one facility's footprint score to another facility's score, we will review obvious differences between facility data submissions and compare data to best industry standards. The sole purpose of this will be to ensure consistent methods are used, to recognize and correct obvious parameter and data collection differences at the facilities.

Of the approximately 70 sustainability indicators (see Appendix B) selected for this phase of the footprint tool, the following air and water quality indicators are regulated by Ecology:

- NO<sub>x</sub> (ENV4),
- SO<sub>2</sub> (ENV5)
- Particulate (PM) (ENV6)
- Total Reduced Sulfur (TRS) (ENV10)
- BOD (ENV37)
- TSS (ENV38)
- AOX (ENV39)

For these, industry standard air and water data sampling and monitoring is defined by each facility's Air Operating Permit (AOP) and National Pollutant Discharge Elimination System (NPDES) permit (See Appendix C).

With the exception of carbon equivalents (CO<sub>2</sub>e) and Methylene ketone (MEK), all remaining air quality indicators are regulated by 40 CFR Part 63.

The remaining indicators are “beyond compliance”. Since each facility is different from the others, we expect each will have different parameters for some of the indicators, such as raw materials and waste streams. This may cause bias. As the data collection process takes place, we will refine appropriate parameters for each “beyond compliance” indicator, on an as needed basis. We will strive to have consistent parameters to the extent that is possible. We assume that each mill will self-report according to agreements made throughout the process of data collection and refining the footprint tool.

## Sensitivity

Method detection limits for the water quality indicators are outlined in 40 CFR Part 136.

Methods used to meet air quality requirements specified in each facility’s AOP are determined by reference methods found in 40 CFR Part 60 or an equivalent method approved by Ecology.

Objectives of this project include benchmarking and assessing performance and identifying priorities for improvement. It is unknown whether or not the annual data for 2006 and 2007 collected is sensitive enough to meet these objectives.

We conducted the indicator selection process with sensitivity between indicators and domains in mind. Examples include:

- If a facility does a lean/kaizen evaluation to create value for the customer and eliminate wasteful activities, and facility employees were laid off as a result, the impact would be measured in both the economic and social domains, and potentially the environmental.
- The decision to purchase new or used equipment is part of the “recyclable market creation” economic indicator. If a facility purchases used equipment, their footprint score for that indicator will be better for that indicator than if they had purchased new, since the used equipment did not require the reaping of new resources. One of the reasons this economic indicator was selected is to not only encourage more sustainably minded purchasing decisions, it also makes the tool sensitive enough to measure the potential trade off of such a purchasing decision on the environmental indicator for carbon emissions. Would the decision to purchase a used piece of equipment result in a trade off with the score in the carbon indicator?

Even with our consideration of sensitivity during the indicator selection process, it is unknown whether or not the tool will be sensitive enough to pick up changes. We will evaluate this aspect of the tool in our final report.

## Transparency

One of the objectives of the project is transparency. We minimized the need for proprietary data as much as possible to achieve a holistic footprint when selecting indicators. The WA State Attorney General’s Office made the final determination that two categories of proprietary data exist within the economic indicator domain:

- Wood chip purchases
- The break out of energy use by category (i.e. electricity; natural gas, propane, etc)

This data is included in the Input-Output (I/O) model calculations. Dr. William Beyers, the contractor who helped build, updates, and adapts the WA State I/O Model will receive the data from the mills and run the calculation, with the exception of the data from GHP. They do not consider this information proprietary. Other than GHP, Ecology will not receive this data or be able to produce it upon request. Dr. Beyers will provide third party review for all data received, including GHP. This provides reliability of the data.

All other data will be submitted directly to Ecology. The data and the footprint tool will be available for public review.

## Completeness

Two variations of the footprint analyses will be presented in the final report:

- Weighted
- Unweighted

For the weighted analyses, each indicator was weighted based on the best assumption of importance we could determine. For example, in the environmental indicators, we felt toxic outputs should have more weight on the footprint scores than biodiversity conservation on the facility sites. In recognition that our weighting may not be the best approach, as others will have different opinions as to what is most important, we are also presenting unweighted analyses for comparison.

For the non-weighted footprint analyses: no data gaps = 100%; 90% is the lower limit for completeness.

For the weighted footprint analyses, the number of data gaps to determine the lower limit for completeness is dependent on the indicator lacking data. More heavily weighted indicators would have greater importance to completeness than less weighted indicators. Fewer data gaps in the more heavily weighted indicators would have a greater negative impact on percent of completeness than the same number of less weighted indicator data gaps. Completeness would be determined on a case-by-case basis.

## Project Design

The objectives of this study will be met through a combination of:

- Ecology collection of data submissions mandated by each facility's individual AOP and NPDES permit.
- Facility self reporting on "beyond compliance" measures.

We will collect data for approximately 70 sustainability indicators (Appendix B). It will be collected for years 2006 and 2007.

A maximum of 8 pulp and paper facility participants is allowed, as defined by EPA State Innovation Grant EI-96028401. No preference was given to which facilities could participate. We contacted all Environmental Managers of the pulp and paper facilities in Washington State by phone. The five participating facilities joined the project.

## Sampling and Analytical Procedures

Sampling and analytical procedures for air and water quality indicators per facility, with the exception of CO<sub>2</sub>e and MEK, are presented by facility in Appendix C.

Methods used to meet water quality requirements specified in each facility's NPDES permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136. All water chemistry monitoring data required by Ecology must be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 WAC. Temperature is exempt from this requirement.

Methods used to meet air quality requirements specified in each facility's AOP are determined by reference methods found in 40 CFR Part 60 or an equivalent method approved by Ecology.

## Monitoring Procedures

Monitoring procedures for air and water quality indicators per facility, with the exception of CO<sub>2</sub>e and MEK, are presented by facility in Appendix C.

Methods used to meet water quality requirements specified in each facility's NPDES permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136. All water chemistry monitoring data required by Ecology must be prepared by a laboratory registered or accredited under the provisions of, *Accreditation of Environmental Laboratories*, Chapter 173-50 WAC. Temperature is exempt from this requirement.

Measurement and monitoring procedures used to meet air quality monitoring requirements are specified in each facility's AOP and conducted in accordance with the program of monitoring or testing required by specific emission unit conditions within the permit.

## Quality Control Procedures

Quality control for air and water quality indicators, with the exception of CO<sub>2</sub>e and MEK, are as per permit required EPA methodologies.

For "beyond compliance" indicators, we will:

- Review and correct obvious differences between facility data submissions
- Compare data to industry best standards
- Ensure third party evaluation of all data by the Gund Institute and Dr. Mathis Wackernagel, and I/O model indicator data (ECON1 – ECON5) by Dr. Beyers.

## **Data Management Procedures**

Data management for the air quality indicators, with the exception of CO<sub>2</sub>e and MEK, are outlined in the following rules and regulations, as appropriate for each pollutant:

- 40 CFR Part 52
- 40 CFR Part 60
- 40 CFR Part 63
- 40 CFR Part 64
- 173 400 WAC
- 173 401 WAC

Data management for water quality indicators are outlined in 40 CFR Part 125.27.

Unless otherwise specified, Ecology will receive all non-I/O model data from the facilities. Water quality data will originate from Ecology’s Water Quality Permit Life Cycle System (WPLCS).

Dr. Beyers will receive all I/O model data and run the calculation, with the exception of GHP. He will report the outcome of the model to Ecology, Earth Economics and Redefining Progress. Ecology will receive the I/O data from GHP and run that calculation with assistance from Dr. Beyers if necessary. Ecology will report the outcome of the GHP model to Dr. Beyers, Earth Economics and Redefining Progress. The outcome of the I/O model is the parameter for indicators ECON1 – ECON5.

Ecology will send one facility’s data to Redefining Progress. Redefining Progress will put this data into the draft footprint tool and make adjustments to the tool as necessary.

## **Audits and Reports**

### **Audits**

EPA conducts audits of water and air quality data, with the exception of CO<sub>2</sub>e and MEK.

### **Reports**

Angela Fritz, Marc Crooks, and Carol Kraege will issue a final report. It will include a Quality Assurance section that describes data quality. The final report will undergo peer review prior to publication.

## **Data Verification**

Project staff will review the footprint analysis to verify the methods and protocols specified in the QAPP were followed.

The project manager and project coordinators will review the data, footprint tool and narrative to determine if the results met the quality objectives for representativeness, comparability, precision, sensitivity, transparency, reliability, and completeness.

After this review, we will present the draft facility footprints (containing all non-proprietary data) to all stakeholders (including Ecology staff, EPA, the Gund Institute, Dr. Mathis Wackernagel, and the public) for review by way of the Industrial Footprint Project webpage (put in address) and public meetings. Ecology will make adjustments to the tool or make next steps recommendations as necessary based on this external audit.

## **Data Quality (Usability) Assessment**

Redefining Progress will put one facility's data into the draft footprint tool and, working with Ecology and Earth Economics, make adjustments to the tool as necessary.

Ecology will put the remaining facilities data into the draft footprint tool, working with Earth Economics and Redefining Progress as necessary.

# Appendices

## Appendix A. Glossary, Acronyms, and Abbreviations

**Air Operating Permit (AOP):** Tool for applying regulatory Title V of the Clean Air Act individual, major sources of air pollution. Regulatory requirements may include emission limits; work practice standards; monitoring; recordkeeping, and reporting requirements. The permit combines all the applicable requirements into a single document for each source. This enables the permit holder to more easily identify permit conditions and rules. The Air Operating Permit program also requires sources to submit periodic reports certifying compliance with permit terms and conditions.

**Beyond compliance:** Voluntary reporting of information not required by regulation, law or a legal order.

**Biological Oxygen Demand (BOD):** A commonly used metric for measuring the quantity of organic oxygen-demanding material in water. BOD is determined from laboratory analyses of wastewater; BOD5 indicates that the wastewater test results are reported on the fifth day.

**Title 40 (40 CFR):** Title 40 is the section of the CFR that deals with protection of the environment and our mission of protecting human health and the environment.

**Indicator:** Parameter used to measure sustainability

**Industrial footprint:** The impact a major manufacturing facility has on the environment and the community in which it's located, by measuring environmental, economic, and social impacts

**Nitrous Oxide (NO<sub>x</sub>):** The generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. However, one common pollutant, nitrogen dioxide (NO<sub>2</sub>) along with particles in the air can often be seen as a reddish-brown layer over many urban areas. It is one of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems; reacts to form nitrate particles, acid aerosols, as well as NO<sub>2</sub>, which also cause respiratory problems; contributes to formation of acid rain, nutrient overload that deteriorates water quality, atmospheric particles that cause visibility impairment most noticeable in national parks, and global warming; reacts to form toxic chemicals.

**National Pollutant Discharge Elimination System (NPDES):** National program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements under the Clean Water Act. The NPDES program regulates discharges from wastewater treatment plants, large factories, and other facilities that use, process, and discharge water back into lakes, streams, rivers, bays, and oceans.

**Particulate Matter (PM):** Complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Particles 10 micrometers in diameter or smaller generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particle pollution is grouped into two categories: "Inhalable coarse particles," such as those found near roadways

and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter; "Fine particles," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air.

**Sulfur Dioxide (SO<sub>2</sub>):** Belongs to the family of sulfur oxide gases (SO<sub>x</sub>). These gases dissolve easily in water. Sulfur is prevalent in all raw materials, including crude oil, coal, and ore that contains common metals like aluminum, copper, zinc, lead, and iron. SO<sub>x</sub> gases are formed when fuel containing sulfur, such as coal and oil, is burned, and when gasoline is extracted from oil, or metals are extracted from ore. SO<sub>2</sub> dissolves in water vapor to form acid, and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and their environment. It can be transported over long distances, contributes to respiratory illness, particularly in children and the elderly, and aggravates existing heart and lung diseases. It contributes to the formation of acid rain and contributes to the formation of atmospheric particles that cause visibility impairment, most noticeably in national parks. High levels of SO<sub>2</sub> emitted over a short period, such as a day, can be particularly problematic for people with asthma.

**Sustainability:** Development that meets the needs of the present without compromising the ability of the future generations to meet their own needs; Dept of Ecology guiding principles of interdependence between ecological, economic, and social factors; concept of waste can and should be eliminated; healthy natural systems are the basis for sustainable communities and economies; future generations should be equal partners in decision making; local decisions have regional and global implications; incentives are necessary to create sustainable behavior; investment in the design phase of a process of product drives sustainable outcomes; and human relationships and collaborative approach lead to sustainable solutions

**Toxic Release Inventory (TRI):** A publicly available EPA database that contains information on toxic chemical releases and waste management activities reported annually by certain industries as well as federal facilities.

**Total Reduced Sulfur (TRS):** Highly malodorous emissions of reduced sulfur compounds, including hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide

**Total Suspended Solids (TSS):** A measure of the total amount of solid matter in water. It includes all sediments and other constituents that are suspended in water. TSS is measured by filtering water and then weighing the sediment remaining on the filter.

## Acronyms and Abbreviations

Following are acronyms and abbreviations used frequently in this report.

AOP	Air Operating Permit
ASTM	American Society for Testing and Materials
BACT	Best available control technology
BLS	Black liquor solids

BOD	Biological Oxygen Demand
Boise	Boise Inc, Wallula WA mill
CA	Corrective action
CAM	Compliance Assurance Monitoring
CCA	Clean Condensate Alternative
CCT	Condensate collection tank
CEM	Continuous Emissions Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub> e	Carbon equivalents
COMS	Continuous Opacity Monitoring System
CMS	Continuous Monitoring System
DMR	Daily Monthly Report
Ecology	Washington State Department of Ecology
ECON	Economic domain indicator
EMS	Environmental Management System
ENV	Environmental domain indicator
EPA	United States Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESP	Electrostatic precipitator
EU	Emission unit
FSC	Forest Stewardship Council
GHG	Greenhouse gas
GHP	Grays Harbor Paper, Hoquiam WA mill
HAP	Hazardous Air Pollutant
HR	Human Resource Department
I/O	WA State Office of Financial Management's Input-Output Model
IEU	Insignificant Emission Unit
IPT	Initial Performance Test
ISO	International Standard for Organization
LK	Lime kiln
LVHC	Low-volume, high-concentration
MACT	Maximum Achievable Control Technology
MEK	Methylethyl ketone
NCASI	National Council for Air and Stream Improvement
NCG	Noncondensable gas
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NIPPON	Nippon Paper Industries USA, Port Angeles WA mill
NO <sub>x</sub>	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
NSPS	New source performance standards
NSR	New source review
O&M	Operation and Maintenance
ORCAA	Olympic Region Clean Air Authority
PC	Post-Consumer Wood Waste
PM	Particulate Matter
PSD	Prevention of Significant Deterioration

PTPC	Port Townsend Paper Corporation, Port Townsend WA mill
QIP	Quality Improvement Plan
QA	Quality assurance
QAPP	Quality Assurance Project Plan
RCW	Regulatory Code of Washington
RM	Reference Method
SFI	Sustainable Forestry Initiative
SIMPSON	Simpson Tacoma Kraft, Tacoma WA mill
SIP	State Implementation Plan
SSM	Startup, Shutdown, and Malfunction
SWFAP	Solid Waste and Financial Assistance Program
SO <sub>2</sub>	Sulfur Dioxide
SOC	Social domain indicator
TRI	Toxic Release Inventory
TRS	Total Reduced Sulfur
TSS	Total Suspended Solids
VOC	Volatile organic compound
WAC	Washington Administrative Code
WPLCS	Water Quality Permit Life Cycle System

### *Units of Measurement*

ADMT or ADT	air dried metric ton of production
avg	average
BTU	British thermal units
D	day
dscf	dry standard cubic foot
F	Fahrenheit
g	g
gpm	gallon per minute
gr	grain
kg	kilogram
KGD	thousand gallons per day
ℓ or l	liter
lb	pound
MDT	metric dry ton
mg	milligrams
MGD	million gallons per day
MJ	megajoules
mL	milliliter
MMBTU	million British thermal units
mth	month
MW	megawatt
ODTP	oven dried ton of pulp
pg	picograms
ppm	parts per million

ppmdv	part per million dry volume
qtr	quarter
SU	standard unit
typ	tons per year
ug	micrograms
wk	week
yr	year

## Appendix B. Industrial Footprint Project Indicators

Environmental Indicator Domain					
Identifier	Set	Parameter (Indicator)	Source of data	Units (annual)	Comments
<b>Air Quality</b>					
ENV1	<i>Air Quality</i>	Polycyclic Aromatic Hydrocarbon (PAH) emissions	Facility environmental records	Pounds per air dried metric tons of production (lbs/ADMT)	Includes the following PAHs: Benz(a)anthracene, Benz(o)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(ghi)perylene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene
ENV2	<i>Air Quality</i>	Formaldehyde emissions	Facility environmental records or Ecology collect from Toxics Release Inventory (TRI)	lbs/ADMT	
ENV3	<i>Air Quality</i>	Chloroform emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV4	<i>Air Quality</i>	NO <sub>x</sub> emissions	Ecology or local air authority records	lbs/ADMT	Sampling and methods defined by facility AOP

<b>Environmental Indicator Domain</b>					
<b>Identifier</b>	<b>Set</b>	<b>Parameter (Indicator)</b>	<b>Source of data</b>	<b>Units (annual)</b>	<b>Comments</b>
ENV5	<i>Air Quality</i>	SO <sub>2</sub> emissions	Ecology or local air authority records	lbs/ADMT	Sampling and methods defined by facility AOP
ENV6	<i>Air Quality</i>	Particulate matter (PM) emissions	Ecology or local air authority records	lbs/ADMT	Sampling and methods defined by facility AOP
ENV7	<i>Air Quality</i>	Carbon dioxide emissions	Facility environmental records or stack tests	lbs/ADMT and per pollutant	
ENV8	<i>Air Quality</i>	Total emissions compared to permit limit	Ecology or local air authority records	Ratio of emissions to permit level	
ENV9	<i>Air Quality</i>	Total greenhouse gas (GHG) emissions in carbon equivalent units	Facility records calculated by GHG tool	lbs CO <sub>2</sub> e per ADT	Using the World Resources Institute GHG tool for the pulp and paper sector. Approved by the International Panel for Climate Change and used by The Climate Registry.
ENV10	<i>Air Quality</i>	Total reduced sulfur (TRS) emissions	Ecology or local air authority records	lbs/ADMT	Sampling and methods defined by facility AOP
ENV11	<i>Air Quality</i>	MEK emissions	Facility environmental records	lbs/ADMT	
ENV12	<i>Air Quality</i>	Lead emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	

<b>Environmental Indicator Domain</b>					
<b>Identifier</b>	<b>Set</b>	<b>Parameter (Indicator)</b>	<b>Source of data</b>	<b>Units (annual)</b>	<b>Comments</b>
ENV13	<i>Air Quality</i>	Mercury emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV14	<i>Air Quality</i>	Acetaldehyde emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV15	<i>Air Quality</i>	Propionaldehyde emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV16	<i>Air Quality</i>	Hydrochloric acid emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV17	<i>Air Quality</i>	Barium emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
ENV18	<i>Air Quality</i>	Manganese emissions	Facility environmental records or Ecology collect from TRI	lbs/ADMT	
<b>Energy Consumption</b>					

<b>Environmental Indicator Domain</b>					
<b>Identifier</b>	<b>Set</b>	<b>Parameter (Indicator)</b>	<b>Source of data</b>	<b>Units (annual)</b>	<b>Comments</b>
ENV19	Energy Consumption	Net consumption of purchased electricity and fuel	Facility purchasing or energy department records	Consumed megajoules (MJ) minus sales in MJ	Conversion to MJ. There are a variety of on-line tools for energy conversions. See, e.g.: <a href="http://www.rprogress.org/energyfootprint/calculators/?id=1">http://www.rprogress.org/energyfootprint/calculators/?id=1</a>
ENV20	Energy Consumption	Energy used/sold from cogeneration	Facility purchasing or energy department records	MJ from cogeneration per ADMT	
ENV21	Energy Consumption	Intensity of energy used per unit production	Facility records	MJ consumed from all sources per air dried ton of production	
ENV22	Energy Consumption	Percent of energy use from renewable sources	Facility data calculated by EPA's regional e-grid.	Ratio of MJ from renewable sources to total MJ consumed	Including solar, wind, hydro, biomass and biofuels including black/red liquor. EPA's E-grid webpage - <a href="http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html">http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html</a>
<b>Environmental Management</b>					
ENV23	<i>Environmental Management</i>	Index of EMS levels	Facility environmental data	0, 1, or 2	0 for no EMS, 1 for EMS with no third party review, and 2 for EMS with third party review.
<b>Raw Materials</b>					
ENV24	<i>Raw Materials</i>	Percent of raw materials input from recycled and reused sources	Facility purchasing and fiber procurement records	Ratio of tons of raw material inputs from recycled and/or reused sources to tons of raw material inputs total	Including Reprocessed Fuel Oil (RFO), chips, fiber, broke, precipitated calcium carbonate (PCC), oil recycled/reused on site and other materials.

<b>Environmental Indicator Domain</b>					
<b>Identifier</b>	<b>Set</b>	<b>Parameter (Indicator)</b>	<b>Source of data</b>	<b>Units (annual)</b>	<b>Comments</b>
ENV25	<i>Raw Materials</i>	Percent raw fiber and biomass energy materials from FSC/SFI certified sources	Facility purchasing and fiber procurement records	Ratio of tons of raw fiber and biomass energy materials from FSC/ SFI certified sources to tons of raw fiber and biomass energy materials total	
ENV26	<i>Raw Materials</i>	Average percent of recycled fiber content in products	Facility purchasing and fiber procurement records	Weighted average of recycled content in products	Aggregation function of % in each product and product % of total product. Weighted averages are constructed by multiplying each product's share of total production (in metric tons) by its recycled content, then summing.
ENV27	<i>Raw materials</i>	Raw material intensity	Facility purchasing and environmental records	Tons of raw materials minus tons of raw materials that are recycled or reused input, per ADMT	Materials that are factored in must be consistent between years.
<b>Regulatory Compliance</b>					
ENV28	<i>Regulatory compliance</i>	Percent of monitoring period in compliance	Ecology docket system	Percent	There are times when Ecology issues a Notice of Violation (NOV) and it is found that no violation occurred. While these remain in the docket system, they will not be counted against compliance.
ENV29	<i>Regulatory compliance</i>	Percent below/above limits	Ecology and local air authority records	Percent of time below and above permit limits	

<b>Environmental Indicator Domain</b>					
<b>Identifier</b>	<b>Set</b>	<b>Parameter (Indicator)</b>	<b>Source of data</b>	<b>Units (annual)</b>	<b>Comments</b>
<b>Waste Disposal</b>					
ENV30	<i>Waste Disposal</i>	Percent waste recycled (on or off site) of total tons	Facility environmental records	Ratio of tons of waste recycled on or off site to total tons of waste generated	
ENV31	<i>Waste Disposal</i>	Percent landfilled to total tons	Facility environmental records	Ratio of tons of waste sent to landfill to total tons of waste generated	
ENV32	<i>Waste Disposal</i>	Percent composted of total tons	Facility environmental records	Ratio of tons of waste composted to total tons of waste generated	
ENV33	<i>Waste Disposal</i>	Percent reused (on or off site) of total tons	Facility environmental records	Ratio of tons of waste re-used on or off site to total tons of waste generated	
<b>Water Intensity</b>					
ENV34	<i>Water Intensity</i>	Net water consumption	Facility records	Cubic feet of water used from non-recycled sources, less total outflow.	
ENV35	<i>Water Intensity</i>	Raw water intake per unit production	Facility records	Cubic feet of raw water intake per ADMT	
<b>Water Quality</b>					

Environmental Indicator Domain					
Identifier	Set	Parameter (Indicator)	Source of data	Units (annual)	Comments
ENV36	<i>Water Quality</i>	Temperature difference between incoming and outgoing water	Facility environmental records		BTUs variance factored by volume per day measured at intake as reference point.
ENV37	<i>Water Quality</i>	Discharged Biological Oxygen Demand (BOD) as percent of permit limit	Ecology Water Quality Permit Life Cycle System (WPLCS)	Ratio of discharged annual BOD tons to permit limit BOD	Sampling and methods defined by facility NPDES permit
ENV38	<i>Water Quality</i>	Total Suspended Solids (TSS) discharged as percent of permit limit	Ecology WPLCS	Ratio of discharged annual TSS tons to permit limit TSS	Sampling and methods defined by facility NPDES permit
ENV39	<i>Water Quality</i>	Adsorbable Organic Halide (AOX) output	Ecology WPLCS	lbs/ADMT	Sampling and methods defined by facility NPDES permit
Biodiversity Conservation					
ENV40	<i>Biodiversity Conservation</i>	Percent of acres facility owned land protected as habitat.	Facility environmental records	Ratio of protected acres to total acres	Protected: any existing natural lands mills pledge to leave undeveloped or to restore.

<b>Economic Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units (annual)</b>	<b>Comments</b>
<b>Economic Impact</b>					
ECON1	<i>Economic Impact</i>	Regional economic impact - income	Output of adapted I/O model*	Direct, indirect and induced income, jobs, and tax revenue generated per air dried ton of production	Derived from facility accounting and purchasing records. Some of this data is proprietary. With the exception of GHP, Ecology will only see the final number that is put into the footprint tool.
ECON2	<i>Regional Economy</i>	Regional economic impact – tax revenue	Output of adapted I/O model*	Percent	Derived from facility accounting and purchasing records. Some of this data is proprietary. With the exception of GHP, Ecology will only see the final number that is put into the footprint tool.
ECON3	<i>Regional Economy</i>	Regional economic impact – jobs	Output of adapted I/O model*	Percent	Derived from facility accounting and purchasing records. Some of this data is proprietary. With the exception of GHP, Ecology will only see the final number that is put into the footprint tool.
ECON4	<i>Regional Economy</i>	Percent of revenue spent regionally	Output of I/O model*	Percent	Derived from facility accounting and purchasing records. Some of this data is proprietary. With the exception of GHP, Ecology will only see the final number that is put into the footprint tool.
ECON5	<i>Regional Economy</i>	Percent of purchases procured regionally	Output of I/O model*	Percent	Derived from facility accounting and purchasing records. Some of this data is proprietary. With the exception of GHP, Ecology will only see the final number that is put into the footprint tool.

<b>Economic Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units (annual)</b>	<b>Comments</b>
ECON6	<i>Economic Impact</i>	Net capital investment in facility	Facility records	Ratio	Ratio of capital investment (spread over years) to depreciation, replacement, and maintenance.
<b>Community Involvement</b>					
ECON7	<i>Community Involvement</i>	Total spending on habitat conservation/restoration	Facility environmental records	Dollars	Including restoration projects, habitat improvement on or off site.
ECON8	<i>Community Involvement</i>	Contributions to charities and non-profit organizations	Facility Human Resources Department (HR) records	Dollars	Including giving in mill community (blood drives, food/goods collection, armed services support, natural disaster support, Cancer Society walk, United Way, or any other charities, churches or non-profit organizations.
ECON9	<i>Community Involvement</i>	Contributions to local education	Facility HR records	Dollars	Including giving in mill community for internship programs, scholarships and grants; financial support of local schools.
ECON10	<i>Economic Development</i>	Recycled and/or Reused market creation	Facility sales and marketing records	Dollars	Total money spent on recycled and reused material inputs/outputs. Includes used equipment purchased. Market price estimates used where recycled and/or reused inputs not purchased.
<b>Employment Opportunities</b>					
ECON11	<i>Jobs</i>	Average compensation including benefits	Facility HR records	Dollars	
ECON12	<i>Jobs</i>	Percent of total jobs at family wage level	Facility HR records	Percent	
ECON13	<i>Jobs</i>	Percent of total jobs providing benefits	Facility HR records	Percent	
<b>Customer Satisfaction</b>					

<b>Economic Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units (annual)</b>	<b>Comments</b>
ECON14	<i>Customer Satisfaction</i>	Claims paid including returns	Facility quality services records	Ratio	Dollars per million dollars in sales. To be expressed per certain sales volume to normalize and account for year to year sales fluctuations.

\*I/O model categories: Crop Production; Animal Production; Forestry and Logging; Fishing, Hunting, and Trapping; Mining; Electric Utilities; Construction; Other Utilities; Gas Utilities; Food, Beverage and Tobacco Manufacturing; Textiles and Apparel Mills; Wood Product Manufacturing; Paper Manufacturing; Printing and Related Activities; Chemical Manufacturing; Nonmetallic Mineral Products Manufacturing; Petroleum and Coal Products Manufacturing; Fabricated Metals Manufacturing; Primary Metal Manufacturing; Machinery Manufacturing; Computer and Electronic Product Manufacturing; Aircraft and Parts Manufacturing; Electrical Equipment Manufacturing; Ship and Boat Building; Other Transportation Equipment Manufacturing; Furniture Product Manufacturing; Other Manufacturing; Wholesale; Retail; Air Transportation; Water Transportation; Support Activities for Storage, Transportation and Warehousing ; Other Transportation/Postal Offices; Truck Transportation; Software Publishers & Internet Service Providers; Telecommunications; Nursing and Residential Care Facilities, Social Assistance; Credit Intermediation and Related Activities; Other Finance and Insurance; Real Estate and Rental and Leasing; Legal /Accounting and Bookkeeping /Management Services; Architectural, Engineering, and Computing Services; Educational Services; Ambulatory Health Care Services; Hospitals; Other Information; Arts, Recreation, and Accommodation; Waste Management/Other, and Agriculture Services; Administrative/Employment Support Services; Food Services and Drinking Places

<b>Social Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units</b>	<b>Comments</b>
<b>Community Involvement</b>					
SOC1	<i>Community Involvement</i>	Volunteerism for location education	Facility HR records	Hours per employee	Number of personnel hours among workers contributing non-profit education, local schools, environmental education or other educational activities.

<b>Social Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units</b>	<b>Comments</b>
SOC2	<i>Community Involvement</i>	Volunteerism for community benefit	Facility HR records	Hours per employee	Number of personnel hours among workers contributing to any volunteerism or leadership positions in charity/civic/non-profit organization.
SOC3	<i>Community Involvement</i>	Number of social awards	Facility Environmental and HR records	Number	Awards received for social, ethical, and environmental performance.
<b>Environmental Nuisance</b>					
SOC4	<i>Environmental Nuisance</i>	Number of odor complaints	Facility logs kept; ISO 14001 records for those certified; Ecology provides data from Environmental Report Tracking System (ERTS)	Number	
SOC5	<i>Environmental Nuisance</i>	Intensity of operational traffic	Facility fiber purchasing, transportation records	Truck vehicle miles traveled per ADMT	Number of trips and distance.
<b>Health and Safety</b>					
SOC6	<i>Health and Safety</i>	OSHA Compliance	Facility records	Number	Confirmed compliance without any fines imposed for incidents.
SOC7	<i>Health and Safety</i>	Safety incidents, injuries, accidents	Facility records	Incidents per 100 employees	Number of accidents requiring medical attention or workers compensation. Also can be expressed as incidents per certain number of employee hours. Important to include contractors.

<b>Social Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units</b>	<b>Comments</b>
SOC8	<i>Health and Safety</i>	Wellness programs and benefits	Facility records	Dollars per employee	Total value of or investment in wellness programs and benefits.
SOC9	<i>Health and Safety</i>	Trained incident responders	Facility records	Number per 100 employees	Number of individuals trained in CPR/First Aid, emergency command/response or other incident response certification.
SOC10	<i>Health and Safety</i>	Emergency and safety planning	Facility records	Number	Emergency or safety response plans on file.
<b>Human Rights</b>					
SOC11	<i>Human Rights</i>	<b>Demographic diversity</b>	<b>Facility HR records</b>	Number of employees by census category.	Data to be collected for gender and ethnicity distribution of employees. Race and ethnicity data collection should include major U.S. Census categories (White, Black, Asian, American Indian/Native, Hispanic/Latino/Spanish, Other).
<b>Employee Relations</b>					
SOC12	<i>Employee Relations</i>	Benefits for Family Leave	Facility HR records	Number	
SOC13	<i>Employee Relations</i>	Workplace satisfaction	Facility HR records	Number	
SOC14	<i>Employee Relations</i>	Wage distribution gap	Facility HR records	Ratio of highest paid employee to lowest paid employee	
SOC15	<i>Employee Relations</i>	Labor Representation	Facility records	Percent	Including non-management employees covered by union or collective bargaining agreement

<b>Social Indicator Domain</b>					
<b>#</b>	<b>Set</b>	<b>Indicator</b>	<b>Data Collection Source</b>	<b>Units</b>	<b>Comments</b>
SOC16	<i>Employee Relations</i>	Workforce turnover rate	Facility HR records	Ratio of total number of employees resigning, fired, or laid off to average annual workforce	
SOC17	<i>Employee Relations</i>	Employee training	Facility HR records	Total training hours per employee	
SOC18	<i>Employee Relations</i>	Benefits beyond compliance	Facility HR records	Dollars per employee	
SOC19	<i>Employee Relations</i>	Labor relation incidents	Facility records	Incidents per 100 employees	Including grievances that go to mediation and arbitration

## Appendix C. AOP and NPDES Permit Requirements by Facility

### Boise, Inc.

#### Boise AOP requirements (footnote key at the end of the Boise AOP requirements)

##### A. No. 2 Recovery Furnace

	Parameter	Limit & Averaging Period (shall not exceed)	Monitoring & Reporting <sup>1</sup>	Applicable Requirement(s)
I.A.1. a	Particulate and HAP (metals)	0.044 gr/dscf at 8% O <sub>2</sub>	Sample at least annually consisting of three 1-hour test using EPA Method 5 or a test method approved in writing by Ecology. Report test results in the monthly report <sup>2</sup> . The permittee shall comply with Condition I.A.7 for minimum O&M requirements intended to indicate compliance with the particulate limit.	PSD-X-77-04 and 40 CFR60.862.(a)(1)(i) for PM limit.  40 CFR63.862(a)(1)(i) for PM surrogate HAP limit.  40 CFR 63.865(b)(1) for RM
I.A.1. b	Particulate	0.1 gr/dscf @ 8% O <sub>2</sub> avg over three 1-hour tests	EPA RM 5 is the reference test method	WAC 173-400-091(2)
I.A.2. a	Particulate	476 lbs/day, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Report test results in the monthly report. <sup>2</sup>	PSD-X-77-04 as consolidated in Order DE 96-AQI078
I.A.2. b	Particulate	75 tons per year, 12-month rolling annual average, calculated monthly.	12-month rolling annual average value is calculated using emissions data from previous stack tests using EPA Method 5. Report test results and calculated emissions in the monthly report.	Order No. DE 02AQ9IS-5019, WAC 173-400-091

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.A.2. c	PM <sub>10</sub>	63 tons per year, 12-month rolling annual average, calculated monthly.	12-month rolling annual average value is calculated using emissions data from previous stack tests using EPA Method 5. Report test results and calculated emissions in the monthly report.	Order No. DE 02AQ91S-5019, WAC 173-400-091
I.A.3. a	Opacity and NESHAPS	Average 35% for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the reference test method.  If the total number of contiguous periods of excess emissions in a quarter is less than 6% of the total number of operating hours (excluding periods of start-up, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. The permittee shall comply with Condition I.A.7 for opacity monitoring and reporting requirements.	40 CFR 60.282(a)(1)(ii) and WAC 173-405-040(6) for opacity standard 40 CFR 60.11(b) for RM. 40 CFR 60.284(a)(1) and 40 CFR 60.13(h) for CEM requirements. 40 CFR 60.284(e)(1)(ii) for excess emission allowance.
I.A.3. b	Opacity and NESHAPS	Opacity is greater than 35% for 6% or more of the operating time within any quarterly period.	Monitored with Continuous Monitoring System. Report excursions in the semi-annual report. <sup>11,12,13</sup>	40 CFR 63.864(c)(2)(i) for NESHAPS HAP definition of limit violation.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); 40 CFR 63.8(c)(4); and 40 CFR 60.13(e) for COMS data recovery.
I.A.4	SO <sub>2</sub>	500 ppm at 8% O <sub>2</sub> , hourly average.	Sample monthly consisting of three 1-hour test using EPA Method 6 or a test method approved in writing by Ecology. Report test results in the monthly report. <sup>2</sup>	WAC 173-405-040(11)(a)

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.A.5. a	SO <sub>2</sub>	5424 lbs/day, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Report excursions in the monthly report. <sup>2</sup>	PSD-X-77-04 as consolidated in Order DE 96-AQI078
I.A.5. b	SO <sub>2</sub>	585 tons per year, 12-month rolling annual average, calculated monthly.	12-month rolling annual average value is calculated using CEM concentration data and air flow data from stack test results. Report test results and calculated emissions in the monthly report. <sup>11,14</sup>	Order No. DE 02AQ91S-5019 based on WAC 173-400-091(2); WAC 173-401-615(1)(c); and WAC 173-400-105(5)(h); for CEMS data recovery.
I.A.6	TRS	5 ppmvd at 8% O <sub>2</sub> , 12-hour average.	Monitor continuously using EPA Method 16. Report excursions in the monthly report. If the total number of contiguous periods of excess emissions in a quarter is less than 1% of the total number of operating hours (excluding periods of start-up, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. <sup>11,13</sup>	40 CFR 60.283(a)(2) for limit. 40 CFR 60.284(e)(1)(i) for excursion allowance.  WAC 173-401-615(1); WAC 173-400-105(5)(h); and 40 CFR §60.13(e) for CEMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.A.7	Operation	Minimum operating condition.	Monitor opacity continuously using an approved COMS and is operated in conformance with 40 CFR Part 60 (July 1, 1992), App. B and App. F, Perf. Spec. 1. The permittee shall operate the continuous opacity monitor as a performance indicator to show continuous operation of the pollution control device. If opacity exceeds 20% for more than ten consecutive six minute blocks the permittee will initiate corrective action within 24 hours. Failure to initiate corrective action within 24 hours may be a violation of the underlying applicable requirement. Report corrective actions and performance indicator deviations in the monthly report. <sup>11,12</sup>	40 CFR 63.864 (c)(1);  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CEMS data recovery.
I.A.8	NESHAPS Startup, Shutdown, and Malfunction (SSM) Plan	NA	Refer to the generic NESHAPS SSM Plan components following the emission unit specific section of this permit.	40 CFR 63.6(e)(3) for SSM requirements.

**B. No. 3 Recovery Furnace**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.1. a	Particulate (PM/PM <sub>10</sub> )	0.027 gr/dscf at 8% O <sub>2</sub> , hourly average. 0.021 gr/dscf at 8% O <sub>2</sub> , rolling annual average. <sup>7</sup> 186 tpy rolling average	Sample monthly consisting of three 1-hour test using EPA Method 5 or a test method approved in writing by Ecology. <sup>3</sup> Report test results in the monthly report. <sup>2</sup> The Permittee shall comply with Condition I.B.4.a for minimum O&M requirements intended to indicate compliance with the particulate limits.	WAC 173-400-112 (Lowest Achievable Emission Rate — state nonattainment new source review) as implemented in Order DE 02-AQIS-3588 for PM limits.  40 CFR 63.865(b)(1) for test method application.
I.B.1. b	Particulate and HAP (PM as surrogate)	0.044 gr/dscf @ 8%.	EPA Method 5 or a test method approved in writing by Ecology.	40 CFR60.282(a)(1)(i) for PM limit. 40 CFR63.862(a)(1)(i) for HAP limit.
I.B.1. c	Particulate	0.10 gr/dscf @ 8% O <sub>2</sub> averaged over	EPA Method 5 or a test method approved in writing by Ecology.	WAC 173-405-040(1) for limit.
I.B.2. a	Opacity	35% for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the reference test method. The permittee shall comply with Condition I.B.4 for opacity and reporting requirements.	WAC 173-405-040(6)

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.2. b	Opacity/ Visible Emissions	When firing exclusively fuel oil, 20% opacity for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the primary reference test method. Boise shall install, calibrate, maintain, and operate a continuous monitoring system to monitor opacity from the No. 3 recovery furnace. Report exceedances to Administrator (Ecology) semiannually or more frequently as directed by Ecology. <sup>11,13</sup>	NSPS Subpart Db 40 CFR 60.43b(f) and Order DE 96-AQ-I078 for opacity limit. 40 CFR 60.46b(d)(7) for basis of compliance test method. 40 CFR 60.48b(a) for COMS requirement.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for COMS data recovery
I.B.2. c	Opacity/ Visible Emissions	35%, six-minute average	EPA Method 9 is the primary reference test method. Boise shall install, calibrate, maintain, and operate a continuous monitoring system to monitor opacity from the No. 3 Recovery Furnace. <sup>11,13</sup>	40 CFR 60.11(b) for RM. 40 CFR 60.13(h) for COM data management. 40 CFR 60.282(a)(1)(ii) for opacity limit. 40 CFR 60.284(a)(1) for COM.. 40 CFR 60.284(e)(1)(ii) for excursion allowance.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for COMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.2. d	Opacity/ Visible Emissions	Opacity is greater than 35% for 6% or more of the operating time within any quarterly period.	Monitored with Continuous Monitoring System. Report in excursions in the semi-annual report. <sup>11,13</sup>	40 CFR 63.864(c)(2)(i) for excursion allowance limitation.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); 40 CFR 63.8(c)(4); and 40 CFR §60.13(e) for COMS data recovery.
I.B.3	<b>Reserved</b>			
I.B.4. a	Operation	Minimum operating condition.	Monitor opacity continuously using an approved COMS and is operated in conformance with 40 CFR Part 60 (July 1, 1992), App. B and App. F, Perf. Spec. 1. The permittee shall operate the continuous opacity monitor as a performance indicator to show continuous operation of the pollution control device. If opacity exceeds 20% for more than six consecutive minutes in any 60-minute period, the permittee will initiate corrective action within 24 hours. Failure to initiate corrective action within 24 hours may be a violation of the underlying applicable requirement. Report corrective actions and performance indicator deviations in the monthly report. <sup>11,12</sup>	40 CFR 63.864 (c)(1)  WAC 173-401-15(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for COMS data recovery.
I.B.5	Annual Capacity Factor	10% annual fuel capacity factor, calendar year basis.	Annual average heat input from oil or natural gas fossil fuels shall not exceed 10% of the total heat input on an MMBTU basis. The unit is not subject to NSPS subpart Db if the annual capacity factor remains at or below 10%. Boise shall keep records of heat input calculations which demonstrate that the annual fuel capacity factor is below 10%.	NSPS Subpart Db 40 CFR 60.44b

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.6. a	SO <sub>2</sub>	1301 tpy, 12-month rolling annual average.	EPA Method 6 or 6C is the primary reference test method. Boise shall perform source tests monthly. Annual average value is calculated using actual emissions from the results of the most recent source tests. Boise shall report monthly all source test results and rolling 12-month mass emissions. <sup>2</sup> Source tests shall be conducted at a production rate which is at or above the average production rate in the previous month.	PSD-01-07 condition 1.1 as BACT avoidance limit for SO <sub>2</sub> .
I.B.6. b	SO <sub>2</sub>	500 ppmvd at 8% O <sub>2</sub> , hourly average.	EPA Method 6 or 6C is the primary reference test method. Boise shall sample monthly consisting of three 1-hour sample runs using Method 6, 6C, or a test method approved in advance in writing by Ecology. Report test results monthly. <sup>2</sup>	PSD-01-07 condition 1.2 and WAC 173-405-040(11)(a) for SO <sub>2</sub> limit.
I.B.7	NO <sub>x</sub>	112 ppmvd at 8% O <sub>2</sub> , daily average.  825 tpy	EPA Method 7, 7A, 7B, or 7E is the primary reference test method. Boise shall monitor continuously using an approved CEM that conforms to 40 CFR Part 60, Appendix B, Performance Specification 2. Report exceedances monthly. <sup>11,13,14</sup>	PSD-01-07 condition 1.3 BACT and PSD-95-04 through Order DE 96-AQI078 for concentration limit.  PSD-95-04 through Order DE 96-AQI078 for mass limit.  WAC 173-401-615(1)(c), WAC 173-400-105(5)(h) 40 and 40 CFR §60.13(e) for CEMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.8	CO	500 ppmvd at 8% O <sub>2</sub> , 24-hour average.  1355 tpy	EPA Method 10 is the primary reference test method. Boise shall monitor continuously using an approved CEM that conforms to 40 CFR Part 60, Appendix B, Performance Specification 4. Report exceedances monthly. <sup>11,13,14</sup>	PSD-01-07 condition 1.4 BACT Limit for concentration limit.  PSD-95-04 through Order DE 96-AQI078 for mass limit. WAC 173-401-615(1)(c) WAC 173-400-105(5)(h) 40 CFR §60.13(e) for CEMs data recovery.
I.B.9. a	TRS	5 ppmvd at 8% O <sub>2</sub> , 12-hour average.	EPA Method 16, 16A, or 16B is the primary reference test method. Boise shall monitor continuously using an approved CEM operated in conformance with 40 CFR Part 60, Appendix B, Performance Specification 5. Report monitoring results and exceedances quarterly to Ecology. If the total duration of all 12-hour averaging periods of excess emissions in a quarter is less than 1% of the total number of operating hours (excluding periods of start-up, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. <sup>11,13</sup>	PSD-01-07 condition 1.5, WAC 173-405-040(1)(c) as state-only, not federally enforceable and 40 CFR 60.283(a)(2) for limit. 40 CFR 60.284(a)(2) for CEM. 40 CFR 60.284(e)(1)(i) for excursion allowance.  WAC 173-401-615(1)(c) WAC 173-400-105(5)(h) 40 and 40 CFR §60.13(e) for CEMS data recovery.
I.B.9. b	TRS	27 tpy, annual average	Annual average value is calculated using an approved CEM and is operated in conformance with 40 CFR Pt 60 (July 1, 1992), App. B, Perf. Spec. 5. Annually report emissions. <sup>11,13,14</sup>	PSD-95-04 as consolidated in Order DE 96-AQI078.  WAC 173-401-615(1)(c) WAC 173-400-105(5)(h) 40 and 40 CFR §60.13(e) for CEMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.B.10	VOC	0.05 lb/MMBTU, hourly average. Source test during the last year of permit term.	Sample consists of one 1-hour test using EPA Method 25A or a test method approved in writing by Ecology once per permit term. The Permittee is required to conduct the test at full load. Report test results with the renewal permit application. The Permittee shall comply with Condition I.B.4.a for O&M requirements intended to indicate compliance with the VOC limit.	PSD-95-04 as consolidated in Order DE 96-AQI078.
I.B.11	VOC	179 tpy annual average.	Annual average value is calculated using actual emissions from previous stack test results. Report test results with the renewal permit application.	PSD-95-04 as consolidated in Order DE 96-AQI078.

**C. Lime Kiln**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.1. a	HAP (PM as surrogate)	0.064 gr/dscf at 10% O <sub>2</sub> hourly average.	Sample at least once/permit cycle consisting of three – 1-hour test using EPA Method 5 or a test method approved in writing by Ecology. <sup>2</sup> Report test results in the monthly report. The permittee shall comply with Condition I.C.8 for O&M requirements intended to indicate compliance with the particulate limit.	40 CFR 63.862(a)(1)(i)(C) for HAP PM surrogate limit.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.1. b	Particulate	0.066 gr/dscf at 10% O <sub>2</sub> when firing natural gas,  0.13 gr/dscf when firing liquid fossil fuel.	EPA RM 5 or a test method approved in writing by Ecology.	40 CFR 60.282(a)(3) for PM limits.
I.C.1. c	Particulate	0.067 gr/dscf @ 10% O <sub>2</sub> when firing with natural gas, hourly average.  0.12 gr/dscf @ 10% O <sub>2</sub> when firing fuel oil.	Sample monthly consisting of one 1-hour test using EPA RM 5 or a test method approved in writing by Ecology <sup>2</sup> . Report test results in the monthly report. The Permittee shall comply with Condition I.C.8 for O&M requirements intended to indicate compliance with the particulate limit.	PSD-X-77-04 as consolidated in Order DE 96-AQI078 for basis of particulate limit when firing with fuel oil, 40 CFR 60.282(a)(3)(i) for basis of PM limit when firing with natural gas.
I.C.1. d	Particulate	0.13 gr/dscf @ 10% O <sub>2</sub>	EPA RM 5 is reference test method.	WAC 173-405-040(3)
I.C.1. e	Particulate	906 lbs/day when firing with fuel oil, 466 lbs/day when firing with natural gas, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Lime kiln particulate tests will be performed on the fuel being fired on the day of the scheduled test. Tests will not be scheduled for the purpose of testing the lime kiln while firing a particular fuel type. Report results in the monthly report.	PSD-X-77-04 as consolidated in Order DE 96-AQI078

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.2. a	Opacity	Average 35% for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the reference test method. The permittee shall comply with Condition I.C.8 for opacity monitoring and reporting requirements intended to indicate compliance with the opacity limit.	WAC 173-405-040(6)
I.C.3.	Reserved			
I.C.4	SO <sub>2</sub>	500 ppmvd at 10% O <sub>2</sub> , hourly average.	Sample consisting of three 1-hour tests per quarter using EPA Method 6 or a test method approved in writing by Ecology. <sup>2</sup> Report test results quarterly. The permittee shall comply with Condition I.C.8 for O&M requirements to indicate compliance with the SO <sub>2</sub> limit.	WAC 173-405-040(11)(a)
I.C.5	SO <sub>2</sub>	5 ppmvd at 10% O <sub>2</sub> , rolling annual average.	Sample consisting of three 1-hour test per quarter using EPA Method 6 or a test method approved in writing by Ecology. <sup>2</sup> Report test results quarterly. The permittee shall comply with Condition I.C.8 for O&M requirements intended to indicate compliance with the SO <sub>2</sub> limit.	Order DE 96-AQI078
I.C.6	SO <sub>2</sub>	19 lbs/day, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Report test results quarterly in the monthly report.	PSD-X-77-04 as consolidated in Order DE 96-AQI078

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.7. a	TRS	8 ppmvd at 10% O <sub>2</sub> , 12-hour average.	Sample continuously using EPA Method 16. Report only excursions in the monthly report. <sup>11,13</sup>	Order DE 96-AQ-I078 and 40 CFR 60.283(a)(5) for TRS limit. 40 CFR 60.284(a)(2) for CEM. 40 CFR 60.13(d)(1) for CEM calibration.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR §60.13(e) for CEMS data recovery.
I.C.7. b	TRS	20 ppmvd @ 10% O <sub>2</sub> on a daily avg.	EPA Method 16 is reference test method.	WAC 173-405-040(3) for limit.
I.C.8. a	Operation	Pressure drop across lime kiln scrubber and scrubber recirculation flow rate to lime kiln must meet the minimum level established during initial performance test-parameter established no later than Sept. 2004, three-hour block average.	Continuously monitor pressure drop and scrubber recirculation rate. Report excursions in monthly, quarterly and semi-annual reports. Pressure drop recorded at least once every 15 minutes at equally spaced intervals, or as an arithmetic or integrated three-hour block average. <sup>11,12,13</sup>  Note: Maintain 1-hour scrubber recirculation rate equal or greater than 1000 gpm until completion of initial performance test date.	40 CFR 63.864(a)(2) and 40 CFR 60.284(b)(2)(i) for pressure drop and monitoring accuracy.  40 CFR 63.864(c)(ii) for CA trigger. 40 CFR 64.3 for CAM applicability.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); 40 CFR 63.8(c)(4) for CMS data recovery

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.8. b	Scrubber Monitoring	Three-hour block average parameter value is outside the range established in IPT.	Implement corrective action as specified in the Start-up, Shutdown, and Malfunction Plan (SSMP) for any kraft recovery furnace, kraft smelt dissolving tank, kraft lime kiln, or sulfite combustion unit equipped with a wet scrubber when any 3-hour block average parameter value is outside the range of values established in the IPT.	40 CFR 63.864(c)(1)(ii) for CA requirement.
I.C.8. c	Scrubber Monitoring	Six or more monitoring parameter exceedances in a semiannual reporting period.	Sources equipped with a scrubber shall not have six or more monitoring parameter exceedances in a semiannual reporting period on each unit. A unit exceedance day is a 24-hour period in which one or more monitoring parameter exceedance(s) occur(s) on a specific emission unit.	40 CFR 63.864 (c)(2)(iii) for excursion allowance limitation.

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.C.9	TRS	80 ppmvd at 10% O <sub>2</sub> for two consecutive hours.	Sample continuously using EPA Method 16, or equivalent method. Report only excursions in the monthly report. <sup>11,14</sup>	WAC 173-405-040(3)(b) for limit.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and WAC 173-405-077 for CEMS data recovery.

**D. No. 2 Smelt Tank**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.D.1. a	PM and HAP (PM as surrogate HAP)	0.2 lbs/ton of black liquor solids (dry weight), hourly average.	Sample monthly consisting of three 1-hour test using EPA Method 5 or a test method approved in writing by Ecology. Report test results in the monthly report. <sup>2</sup>  The permittee shall comply with Condition I.D.5 for O&M requirements intended to indicate compliance with the particulate limit.	Order DE 96-AQ-I078 and 40 CFR 60.282(a)(2) for PM limit.  40 CFR 63.862(a)(1)(i)(B) for PM surrogate HAP limit
I.D.1. b	Particulate	0.30 lbs/ton BLS	EPA RM 5 is the reference test method.	WAC 173-405-040(2)
I.D.2	Particulate	71 lbs/day, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Report results in the monthly report. <sup>2</sup>	Order DE 96-AQI078
I.D.3	Opacity	Average 35% for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the reference test method. The permittee shall comply with Condition I.D.5 for opacity monitoring and reporting requirements intended to indicate compliance with the opacity limit.	WAC 173-405-040(6)
I.D.4.	TRS	0.033 lbs/ton of black liquor solids as H <sub>2</sub> S annual average.	Sampling consists of one test per year using EPA Method 16A/6C bag sample or equivalent method. Report test results annually.	40 CFR 60.283(a)(4) and Order DE 96AQI078 for limit.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.D.5.a	Scrubber Monitoring	Pressure drop across SDT scrubber and recirculation flow rate to SDT scrubber must meet the minimum level established during initial performance test parameter established no later than Sept. 2004, three-hour block average.	Continuously monitor pressure drop and recirculation flow. Report excursions in the monthly, quarterly and semi-annual reports. Pressure drop recorded at least once every 15 minutes at equally spaced intervals, or as an arithmetic or three-hour block average. <sup>11,12</sup>  Note: Maintain 1-hour scrubber recirculation rate equal or greater than 20 gpm until completion of initial performance test date.	40 CFR 63.864(a)(2) for pressure drop and flow rate monitoring 40 CFR 63.867(c) and 40 CFR 63.10(c) for reporting 40 CFR 63.8(c)(4)(ii) for recording frequency. 40 CFR 63.8(g)(2) for monitored data management requirements.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR §63.8(c)(4) for CMS data recovery.
I.D.5.b	Scrubber Monitoring	Three-hour block average parameter value is outside the range established in IPT.	Implement corrective action as specified in the Start-up, Shutdown, and Malfunction Plan (SSMP) for any kraft recovery furnace, kraft smelt dissolving tank, kraft lime kiln, or sulfite combustion unit equipped with a wet scrubber when any three-hour block average parameter value is outside the range of values established in the IPT.	40 CFR 63.864(c)(1)(ii) for CA requirement.
I.D.5.c	Scrubber Monitoring	Six or more monitoring parameter exceedances in a semiannual reporting period.	Sources equipped with a scrubber shall not have six or more monitoring parameter exceedances in a semiannual reporting period on each unit. A unit exceedance day is a 24-hour period in which one or more monitoring parameter exceedance(s) occur(s) on a specific emission unit.	40 CFR 63.864(c)(2)(iii) for excursion allowance limitation.

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.D.6	Damper position	None.	Record the damper position. Report only bypass periods.	Order DE 96-AQI078

**E. No. 3 Smelt Tank**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.E.1. a	HAP (PM as surrogate)	0.2 lbs/ton of black liquor solids, hourly average.	Sample annually consisting of three 1-hour test using EPA Method 5 or a test method approved in writing by Ecology. Report test results in the monthly report. The permittee shall comply with Condition I.E.3 for O&M requirements intended to indicate compliance with the particulate limit.	40 CFR 63.862(a)(1)(i)(B) for HAP limit
I.E.1. b	Particulate	0.3 lbs/ton of black liquor solids, hourly average.	Sampling consists of one 1-hour test per month using EPA Method 5 or a test method approved in writing by Ecology. Report test results in the monthly report. <sup>2</sup> The permittee shall comply with Condition I.E.3 for O&M requirements intended to indicate compliance with the particulate limit.	WAC 173-405-040(2) for PM limit.
I.E.2	Opacity	Average 35% for more than six consecutive minutes in any 60-minute period.	EPA Method 9 is the reference test method. The permittee shall comply with Condition I.E.3 for opacity monitoring and reporting requirements intended to indicate compliance with the opacity limit.	WAC 173-405-040(6)

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.E.3. a	Scrubber Monitoring	Pressure drop across SDT scrubber and recirculation flow rate to SDT scrubber must meet the minimum level established during initial performance test parameter established no later than Sept. 2004, three-hour block average.	Continuously monitor pressure drop and recirculation flow. Report excursions in the monthly, quarterly and semi-annual reports. Pressure drop recorded at least once every 15 minutes at equally spaced intervals, or as an arithmetic or three-hour block average. <sup>11,12</sup>  Note: Maintain 1-hour scrubber recirculation rate equal or greater than 20 gpm until completion of initial performance test date.	40 CFR 63.864(a)(2) for monitoring requirements  40 CFR 63.864(a)(2) for pressure drop and flow rate monitoring 40 CFR 63.867(c) and 40 CFR 63.10(c) for reporting 40 CFR 63.8(c)(4)(ii) and 40 CFR 63.8(g)(2) for data management requirements.  40 CFR 64.3 for CAM applicability  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR §63.8(c)(4) for CMS data recovery.
I.E.3. b	Scrubber Monitoring	Three-hour block average parameter value is outside the range established in IPT.	Implement corrective action as specified in the Start-up, Shutdown, and Malfunction Plan (SSMP) for any kraft recovery furnace, kraft smelt dissolving tank, kraft lime kiln, or sulfite combustion unit equipped with a wet scrubber when any three-hour block average parameter value is outside the range of values established in the IPT.	40 CFR 63.864(c)(1)(ii) for CA requirement.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.E.3. c	Scrubber Monitoring	Six or more monitoring parameter exceedances in a semiannual reporting period.	Sources equipped with a scrubber shall not have six or more monitoring parameter exceedances in a semiannual reporting period on each unit. A unit exceedance day is a 24-hour period in which one or more monitoring parameter exceedance(s) occur(s) on a specific emission unit.	40 CFR 63.864(c)(1)(iii) for excursion allowance limitation.

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.E.4	Damper position	None.	Record the damper position. Report only bypass periods.	Order DE 96-AQI078

**F. Hog Fuel Boiler**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.F.1	Particulate	0.04 gr/dscf at 12% CO <sub>2</sub> , average of three 1-hour tests.	Sample quarterly consisting of three 1-hour tests using EPA Method 5 or a test method approved in writing by Ecology. <sup>2</sup> Report test results quarterly. The permittee shall comply with Condition I.F.5 for O&M requirements intended to indicate compliance with the particulate limit.	PSD-X-77-04 as consolidated in Order DE 96-AQI078
I.F.2	Particulate	0.2 gr/dscf @7% O <sub>2</sub> .	EPA RM 5 is reference test method.	WAC 173-405-040(5)(a) for limit.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.F.3	Particulate	459 lbs/day, rolling annual average.	Daily average value is calculated using actual emissions from previous stack test results. Report results quarterly.	PSD-X-77-04 as consolidated in Order DE 96-AQI078
I.F.4	Opacity	Average 20% for more than three consecutive minutes in any 60-minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in eight consecutive hours.	EPA Method 9 is the reference test method. The permittee shall comply with Condition I.F.5 for opacity monitoring and reporting requirements intended to indicate compliance with the opacity limit.	WAC 173-400-070(2)(a) for basis of opacity limit
I.F.5	Operation	Minimum operating condition.	Monitor scrubber liquid flow continuously as a performance indicator. Record one-hour averages once every hour. Whenever hourly scrubber liquid flow falls below 800 gpm for greater than one hour, the permittee will, within 24 hours, initiate corrective action to bring the scrubber liquid flow to 800 gpm or greater. Failure to initiate corrective action within 24 hours is a violation of may be a violation of the underlying applicable requirement. Report one-hour average excursions and corrective action in the monthly report. <sup>11,14</sup>	Order DE 96-AQI078  Order 02AQIS-3588 condition 11 rescinds this condition if HF Boiler modifications are completed.  WAC 173-401-615(1)(c); and WAC 173-400-105(5)(h) for CMS data recovery.
I.F.6	SO <sub>2</sub>	1000 ppm one hour average @ 7% O <sub>2</sub> .	EPA RM 6 is the reference test method.	WAC 173-405-040(11)(d)

**F2 Alternate Operating Scenario:  
Emissions Limits and Related Monitoring and Reporting Requirements for Hog Fuel Boiler upon completion of Overfire Air (Not implemented as of 10/1/2004)**

Upon the completion of construction and start-up of the Hog Fuel Boiler with over-fire combustion air equipment and associated controls and equipment modifications, Boise shall comply with the emissions limitations, monitoring, and reporting requirements listed in the Table below for the Hog Fuel Boiler. A 180-day testing and break-in period is allowed, after startup, to make any changes or adjustments required to comply with applicable rules and regulations pertaining to air quality and conditions of operation imposed herein.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
2.F.1	Particulate (PM/PM <sub>10</sub> )	0.026 gr/dscf at 7% O <sub>2</sub> , average of three 1-hour tests.	Sample quarterly consisting of three 1-hour tests using EPA RM 5 or a test method approved in writing by Ecology. Report test results quarterly. <sup>2</sup>	Order DE 02AQIS-3588
2.F.2	Particulate (PM/PM <sub>10</sub> )	77 tons/year, 12-month rolling annual average.	EPA Method 5 is the reference test method. Annual average value is calculated using actual emissions from the most recent stack test results from Condition 2.1 above. Report test results monthly. <sup>2</sup>	Order DE 02AQIS-3588 limiting PM/PM <sub>10</sub> to past actual emissions
2.F.3	Opacity	20% for up to 15 consecutive minutes in any eight hours.	EPA Method 9 is the reference test method. Ongoing compliance assessed by visual emissions observations. If visible emissions are greater than 20%, Boise shall, within 24 hours, initiate corrective action to reduce visible emissions. Failure to initiate corrective action may be a violation of the underlying applicable requirement. Document and report any excursion and corrective actions monthly.	WAC 173-400-070(2)(a) for limit.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
2.F.4	SO <sub>2</sub>	102 tons/year, 12-month rolling annual average.	The permittee shall record time of combustion of low-volume, high-concentration (LVHC) noncondensable gas (NCG). The combustion shall not exceed 1,200 hours per year. Report the hours of combustion with semiannual MACT reporting requirements.	Order DE 02AQIS-3588.
2.F.6	NO <sub>x</sub>	0.254 lb/MMBtu 30-day rolling average.  0.30 lb/MMBtu	EPA Method 7, 7A, 7B, or 7E is the reference test method. Boise shall install, calibrate, maintain, and operate a continuous monitoring system to monitor NO <sub>x</sub> from the HFB. Monitor continuously using an approved CEM that conforms to 40 CFR Part 60, Appendix B, Performance Specification 2. CEM data shall be averaged over a rolling 30-day period. Report monitoring results and exceedances semiannually to the Administrator (Ecology) as required by 40 CFR 60.49b(w). <sup>11,13,14</sup>	PSD-01-07 condition 2.1 for 0.254 lb/MMBtu limit.  40 CFR 60.44b for 0.30 lb/MMBtu limit  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR §60.13(e) for CEMS data recovery.
2.F.7	CO	500 ppmvd at 7% O <sub>2</sub> , 12-month rolling annual average.	EPA Method 10/10B is the primary reference test method. Source test monthly consisting of three 1-hour sample runs using a modified Ecology Method 10/10B (Tedlar bag method). Annual average is calculated from monthly test results. <sup>2</sup> Report results monthly.	PSD-01-07 condition 2.2  WAC 173-401-615(1)(c) WAC 173-400-105(5)(h) 40 CFR §60.13(e) for CEM downtime

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
2.F.8.a	Operation	Minimum operating condition for CO process monitoring.	Maintain a continuous process combustion CO monitor at the boiler outlet and monitor in-process CO concentration as a performance indicator. Whenever CO concentration at the boiler outlet is in excess of 2,000 ppmvd (7% O <sub>2</sub> ) for more than 24 hours, Boise shall, within 24 hours, initiate corrective action to reduce in-process CO concentration. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Boise shall report 24-hour average in-process CO concentration in excess of 2,000 ppmvd (7% O <sub>2</sub> ) and corrective action on a monthly basis. <sup>11,14</sup>	PSD-01-07 condition 2.3  WAC 173-401-615(1)(c); and WAC 173-400-105(5)(h) for CMS data recovery.
2.F.8.b	Operation	Minimum operating condition for bypassing ESP when firing natural gas exclusively.	Maintain ESP bypass valves in closed position during wood waste firing. Monitor and record the positions of ESP bypass valves at all times. Boise shall report monthly all bypass periods and the type of fuel fired during bypass period.	PSD-01-07 condition 2.4
2.F.5	Operation	Minimum operating condition.	Maintain ESP bypass valves in closed position during wood waste firing. Monitor and record the positions of ESP bypass valves at all times. Report monthly all bypass periods and the type of fuel fired during bypass period.	Minimum operating condition for bypassing control device when firing natural gas exclusively.

**G. No. 1 Power Boiler**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.G.1	Particulate	0.1 gr/dscf at 7% O <sub>2</sub> , hourly average.	Based on calculations for maximum emissions, this boiler cannot exceed the grain loading limit when firing natural gas or fuel oil. Sulfur content limit of ≤ 2% for fuel oil is intended to indicate compliance with the particulate standard. Permittee shall keep records of receipts showing all oil fired is ≤ 2% sulfur.	WAC 173-405-040(5)(c)
I.G.2		229 lbs/day, annual average.	Based on calculations for maximum emissions, this boiler cannot exceed the mass loading limit when firing natural gas. When firing with fuel oil, pounds per day average value is calculated using emission factor from EPA's AP-42 (9/98) with fuel oil of ≤ 2% sulfur. Report emissions annually.	Order DE 96-AQI078
I.G.3	SO <sub>2</sub>	3025 lbs/day, annual average.	Based on calculations for maximum emissions, this boiler cannot exceed the SO <sub>2</sub> mass loading limit when firing natural gas. Fuel oil may be fired at any time in the No. 1 Power Boiler, subject to the stated mass loading limit. Boise shall report emissions annually. Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Maintain fuel receipts showing that all fuel oil fired is ≤ 2% sulfur.	Order DE 96-AQI078

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.G.4	SO <sub>2</sub>	1000 ppm one hour average @ 7% O <sub>2</sub> .	EPA RM 6 is reference test method.	WAC 173-405-040(11)(d)
I.G.5	SO <sub>2</sub>	8750 lbs/day from No. 1 and No. 2 power boilers combined, daily average.	Based on calculations for maximum emissions, the boilers cannot exceed the combined mass loading limit when exclusively firing natural gas. When firing with fuel oil, daily average value is calculated using emission factor from AP-42 (9/98) with fuel oil of ≤ 2% sulfur. Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Report emissions in the monthly report. Maintain fuel receipts showing that all fuel oil fired is ≤ 2% sulfur.	Order DE 96-AQI078
I.G.6	SO <sub>2</sub>	1104 tpy from No. 1 and No. 2 power boilers combined, annual average.	Based on calculations for maximum emissions, the boilers cannot exceed the combined mass loading limit when exclusively firing natural gas. When firing with fuel oil, annual average value is calculated using emission factor from AP-42 (9/98) with fuel oil of ≤ 2% sulfur. Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Report emissions in the monthly report. Maintain fuel receipts showing that all fuel oil fired is ≤ 2% sulfur.	Order DE 96-AQI078

**H. No. 2 Power Boiler**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.H.1	Particulate	0.1 gr/dscf at 7% O <sub>2</sub> , hourly average.	Based on calculations for maximum emissions, this boiler cannot exceed the grain loading limit when firing natural gas or fuel oil. Compliance is demonstrated through normal operation. Maintain records of type of fuel used.	WAC 173-405-040(5)(c)
I.H.2	SO <sub>2</sub>	1000 ppm one hour average @ 7% O <sub>2</sub> .	EPA RM 6. Compliance indicated by use of < 2% S in fuel oil fired.	WAC 173-405-040(11)(d)

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.H.3	SO <sub>2</sub>	≤ 2% sulfur in fuel oil fired.	Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Maintain fuel receipts showing that all oil fired is ≤ 2% sulfur.	Order DE 96-AQI078
I.H.4	SO <sub>2</sub>	8750 lbs/day from No. 1 and No. 2 power boilers combined, daily average.	Based on calculations for maximum emissions, the boiler cannot exceed the limit when firing exclusively natural gas. When firing with fuel oil, daily average value is calculated using emission factor from AP-42 (9/98) with fuel oil of ≤ 2% sulfur. Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Report emissions in the monthly report. Maintain fuel receipts showing that all fuel oil fired is ≤ 2% sulfur.	Order DE 96-AQI078

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.H.5	SO <sub>2</sub>	1104 tpy from No. 1 and No. 2 power boilers combined, annual average.	Based on calculations for maximum emissions, the boiler cannot exceed the limit when firing exclusively natural gas.  When firing with fuel oil, annual average value is calculated using emission factor from AP-42 (9/98) with fuel oil of ≤ 2% sulfur. Fuel oil fired cannot exceed ≤ 2% sulfur content by weight. Report emissions in the monthly report. Maintain fuel receipts showing that all fuel oil fired is ≤ 2% sulfur.	Order DE 96-AQ1078

**I. No. 1 and No. 2 M&D Digesters; No. 1 and No. 2 Evaporator Sets; and Concentrators**

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.I.1	TRS	Treat all collectible noncondensable gas (NCG) to reduce TRS emissions equal to reduction achieved by thermal oxidation in a lime kiln.	Record the number of hours that NCGs generated were not combusted each month. Report periods of such noncombustion monthly. Periods of noncombustion arising from the need to prevent loss of life or limb are not subject to this requirement and need not be considered in determining total monthly periods of noncombustion. Continuously monitor pressure differentials throughout collection system. <sup>11,14</sup>	WAC 173-405-040(4)  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery.

**J. KAMYR Digester and No. 3 Evaporator Set**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.J.1	TRS	Combust collectible noncondensable gas (NCG) at a minimum temperature of 1,200°F for at least 0.5 seconds.	Record all periods during which NCGs generated were not combusted. Report periods of such noncombustion monthly. By intrinsic design, the NCG incineration units (Hog Fuel Boiler and Lime Kiln) meet the temperature and residence time requirements. <sup>11,14</sup>	40 CFR 60.283(a)(1)(iii)  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery.

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.J.2	TRS	Treat all collectible noncondensable gas (NCG) to reduce TRS emissions equal to reduction achieved by thermal oxidation in a lime kiln.	Record the number of hours that NCGs generated were not combusted each month. Report periods of such noncombustion monthly. Continuously monitor pressure differentials throughout collection system. <sup>11,14</sup>	WAC 173-405-040(4)  40 CFR 64.3 for CAM applicability.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery.

**K. Chlorine Dioxide Generation Unit**

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.K.1	Chlorine and chlorine dioxide from R8 Vent Gas Scrubber	Maximum chilled water temperature of 50°F, hourly average.	Monitor new No. 3 (York) Chiller chilled water temperature continuously as a performance indicator. If chilled water temperature exceeds 50°F based on an hourly average, permittee will take corrective action within 72 hours. Report only excursions in the monthly report. <sup>11,14</sup>	Order DE 96-AQI078  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery.
I.K.2	Chlorine and chlorine dioxide from R8 Tail Gas Scrubber	Scrubbing liquid pH at minimum of 10.0, hourly average.	Monitor scrubber pH continuously as a performance indicator. If scrubbing liquid pH falls below 10.0 based on an hourly average, permittee will take corrective action within 72 hours. Report only excursions in the monthly report. <sup>11,14</sup>	Order DE 96-AQI078  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery
I.K.3		Scrubbing liquid volumetric flow rate, hourly average.	Maintain the recirculation scrubbing liquid flow at the minimum at 50 gallons per minute as a performance indicator. If scrubbing liquid flow rate falls below 50 gallons per minute based on an hourly average, permittee will take corrective action within 72 hours. Report only excursions in the monthly report. <sup>11,14</sup>	Order DE 96-AQI078  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h) for CMS data recovery

**L. Cyclone Box Clipping Collection System**

	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.L.1	0.17 tpy, annual average.	The permittee shall provide quarterly inspection of the cyclone when the unit is in operation. Inspection log shall be maintained and made available for inspection by Ecology. When the cyclone malfunctions, the permittee will initiate corrective action within 24 hours. Failure to initiate corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report excursions and corrective action in the monthly report.	Order DE 96-AQI078 for particulate 40 CFR 64.3 for CAM applicability.

**M. Bleach Plant**

	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.M.1. a	No visible defects in enclosure openings and closed vent system components.	<p>Perform monthly visual inspection of each enclosure opening and closed-vent system component as specified in 40 CFR 63.453(k). If an inspection identifies visible defects or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken. Make a first effort to repair or correct the closed vent system as soon as practicable, but no later than five calendar days after the problem has been identified.</p> <p>Complete the repair or corrective action no later than 15 days after the problem is identified. Delay of repair or corrective action is allowed if the repair or corrective action is technically infeasible without a process unit shutdown or if it is determined that the emissions resulting from the immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process shutdown.</p>	<p>40 CFR 63.453(k)(1) and (2) for monthly visual inspection.</p> <p>40 CFR 63.453(k)(6) for CA.</p> <p>40 CFR 63.453(b)(ii) for repair requirements.</p>

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.M.1. b	Total chlorinated HAP (not including chloroform)	Enclose, collect, and treat all gases vented from each bleaching stage where chlorinated compounds are introduced (D <sub>0</sub> , D-1, and D-2 stage equipment).	Record all periods during which bleach plant vent gases were not collected and treated each month. Report periods of such nontreatment monthly. <sup>11,12</sup>	WAC 173-400-075(5) incorporates MACT by reference. 40 CFR 63.445(b) for chlorinated HAP management requirements.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); 40 CFR 63.8(c)(4) for CMS data recovery
I.M.1. c	Total chlorinated HAP (not including chloroform)	Treat bleach plant vent gases to achieve a scrubber outlet concentration of 10 parts per million or less by volume as measured as Chlorine.	Operation of the scrubber outside the range established for operating parameter values shall constitute a violation of the applicable emission standard and shall be reported as excess emissions in the monthly report,	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.445(c) for HAP limit.
I.M.2. a	Operation	Minimum operating condition.	Monitor scrubber fan motor function continuously as a performance indicator. If fan motor ceases operation as indicated by motor function based on a three-hour block average, permittee will initiate corrective action within 24 hours. Report only excursions in the monthly report. <sup>11,12</sup>	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.453(m) for alternate operating parameter.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.M.2. b	Operation	Minimum operating condition.	Monitor scrubber medium ORP continuously as a performance indicator. If scrubbing medium ORP minimum operating parameter is not maintained, based on a three-hour block average, permittee will initiate corrective action within 24 hours. Report only deviations and corrective actions in the monthly report. <sup>11,12</sup>	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.453(m) for alternate operating parameter.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CMS data recovery.
I.M.2. c	Total chlorinated HAP (as chlorine)	Minimum operating condition.	Maintain the recirculation scrubbing liquid flow above the established minimum operating parameter value as a performance indicator. If scrubbing liquid flow rate falls below the established minimum flow rate based on a three-hour block average, permittee will initiate corrective action within 24 hours. Report only deviations and corrective actions in the monthly report. <sup>11,12</sup>	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.453(m) for alternate operating parameter.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); 40 CFR 63.8(c)(4) for CMS data recovery.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.M.3	Total chlorinated HAP (as chlorine)	Collect all gases vented from each bleaching stage where chlorinated compounds are introduced (D <sub>0</sub> , D-1, and D-2 stage equipment).	Conduct annual performance test on negative pressure closed-vent system using procedures specified in 40 CFR 63.457(e). Report test results within 60 days of conducting test.  Perform monthly visual inspection of closed-vent system components as specified in 40 CFR 63.453(k).	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.445(b) for chlorinated HAP management requirement.  40 CFR 63.453(k) for monthly visual inspection.
I.M.4	Chloroform	The permittee shall use no hypochlorite or chlorine for bleaching in the bleaching systems or line.	Report only deviations and corrective actions in the monthly report.	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.445(d) for effluent limitation.

**N. LVHC Collection and Incineration System (includes KAMYR Digester, NSSC Digester, and No. 1 and No. 2 M&D Digesters; No. 1, No. 2, and No. 3 Evaporator Sets and Concentrators; and Foul Condensate Collection Tank)**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.N.1	Total HAP emissions	Enclose, collect, and treat all vent gases from LVHC equipment systems.	Record all periods during which LVHC gases were not collected and treated each month. Report periods of such nontreatment monthly.	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.443(c) for HAP management requirement.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.N.2	Total HAP emissions	Collect LVHC gases in closed-vent system.	Conduct annual performance tests on closed-vent systems using the referenced procedures annually. Report test results within 60 days of conducting performance test. Perform monthly visual inspection of closed-vent system components as specified in 40 CFR 63.453(k)	WAC 173-400-075(5) incorporates MACT by reference.  40 CFR 63.443(c) for HAP management requirement.  40 CFR 63.453(k) for monthly visual inspection.
I.N.3	Total HAP emissions	Treat LVHC vent gases to reduce total HAP emissions using hog fuel boiler, lime kiln, by introducing the HAP emission stream with the primary fuel or into the flame zone.	Record all periods during which LVHC gases are combusted in each control device. Report periods during which LVHC gases are vented to the atmosphere before control in the monthly report. Venting of LVHC gases from main bypass vent valves for periods in excess of 1% of total operating time (excluding periods of start-up, shutdown, or malfunction) shall constitute a violation of the applicable emission standard. <sup>11,12</sup>	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.443(d)(4) for HAP management options and specifications.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CMS data recovery.

**O. Pulping Condensate Collection and Treatment System (includes KAMYR Digester; No. 1 and No. 2 M&D Digesters; No. 1, No. 2, and No. 3 Evaporator Sets; and LVHC and Foul Condensate Collection Tanks)**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.O.1	Total HAP emissions	Enclose, collect, and convey pulping condensates from the identified equipment systems to the wastewater treatment plant.	Manage, inspect, maintain records and conduct repairs as necessary. Record all periods during which identified condensate streams were not collected or treated each month, and conduct monthly closed-collection system inspections.	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.960-966 for hard piping management requirements.  40 CFR 63.446(b) for tie in to 40 CFR 63.960-962

I.O.2

<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
Total HAPs collected	Collect condensates from the applicable equipment systems named such that the total collected HAP mass contains 11.1 pounds or more per ton of oven-dry pulp (for mills that perform bleaching).	<p>Record kraft pulp production (in oven-dry tons of unscreened brownstock) and volumetric flow rates for each condensate stream collected on a daily basis.</p> <p>On a daily basis, calculate the following:</p> <ul style="list-style-type: none"> <li>(a) Total HAP collected using the HAP emission factors from the initial condensate characterization study and the daily volumetric flows of collected condensate streams.</li> <li>(b) Total HAP collected during the previous 15-day period.</li> <li>(c) Total kraft pulp production during the previous 15-day period.</li> <li>(d) Total HAP per ODTP by dividing total HAP collected during -day period by the total kraft pulp production during the 15-day period.</li> </ul> <p>Composite samples shall be analyzed for total HAP using EPA Method 305, NCASI DI/MeOH 94.02, or an alternative method approved by EPA.</p>	<p>WAC 173-400-075(5) incorporates MACT by reference</p> <p>40 CFR 63.446(b) specifies equipment systems for collection requirement.,(c)(3) specifies HAP collection requirement,(e)(2) for CCA.</p>

I.O.3

<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
Total HAPs collected	Collect at least 11.1 lbs of HAP per oven-dry ton of unscreened kraft brownstock, 15-day rolling average.	Maintain the collected HAP mass above the minimum 11.1 lbs/ODTP as a performance indicator. If collected HAP mass falls below 11.1 lbs/ODTP based on a 15-day rolling average, permittee will initiate corrective action within 24 hours. Report only deviations and corrective actions in the monthly report	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.446(c) for HAP collection number.  40 CFR 63.453 (m) and (n) for CCA surrogate performance indicator requirements.

I.O.4

Parameter	Limit & Averaging Period (shall not exceed)	Monitoring & Reporting <sup>1</sup>	Applicable Requirement(s)
Total HAPs treated	<p>Treat collected pulping condensates to achieve the following:</p> <p>At mills that perform bleaching, treat the pulping process condensates to remove 10.2 or more pounds of HAP per ton of oven-dry pulp.</p>	<p>Obtain daily inlet and outlet liquid grab samples from the effluent lagoon. Record inlet liquid flow and nominal applied aerator horsepower and blower horsepower. Perform the percent reduction test procedure specified in 40 CFR 63.457(l) on a quarterly basis thereafter within 45 days after the beginning of each quarter. Report test results within 60 days of conducting percent reduction test.</p> <p>The permittee shall comply with conditions I.O.5 and I.O.6 for minimum O&amp;M requirements intended to indicate compliance with the limit for treating HAP in the pulping condensates. Operation below minimum operating parameter values shall require the permittee to perform the percent reduction test procedure specified in 40 CFR 63.457(l). Report only excursions determined from the percent reduction test procedure in the monthly report.</p> <p>To establish or re-establish the value for each operating parameter required to be monitored by I.O.5 and I.O.6, the permittee shall use the procedures described in 40 CFR 63.453(n).<sup>9</sup></p>	<p>WAC 173-400-075(5) incorporates MACT by reference</p> <p>40 CFR 63.446(e) for treatment options.</p> <p>40 CFR 63.453(j) for monitoring and performance testing, (n) for operating parameter requirements, (p) for operating parameter excursion specifications.</p>

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.O.5	Total HAPs treated	Minimum operating condition.	If the 15-day rolling average condensate treatment falls below 10.2 lbs per ton kraft pulp, permittee will perform the percent reduction test procedure specified in 40 CFR 63.457(l) as soon as practical. <sup>9</sup>	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.453(j) for performance parameter requirements and (p) for performance parameter excursion specification.
I.O.6	Performance parameter	Minimum operating condition.	Maintain the total aerator horsepower days above the established minimum aerator horsepower days as a performance indicator. If total aerator horsepower days fall below the established minimum parameter value based on a 15-day rolling average, permittee will perform the percent reduction test procedure specified in 40 CFR 63.457(l) as soon as practical. <sup>9</sup>	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.453(j) for performance parameter requirements and (p) for performance parameter excursion specification.

**P. Clean Condensate Alternative (CCA)**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.P.1	Total HAP emissions	Reduce HAP emissions (as methanol) at the levels established in the CCA.	Report periods of condensate non-collection for the CCA for periods in excess of 4% of total operating time (excluding periods of start-up, shutdown, or malfunction) shall constitute a violation of the applicable emission standard.	40 CFR 63.443(e)(2) for excess emission allowance.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.P.2. a	Total HAP emissions	Perform IPT	Permittee will perform an IPT which will establish both HAPs' collection and destruction parameters. <sup>10</sup>	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.443(c) for HAP control requirement and 40 CFR 63.447 for CCA alternative.
I.P.2. b	Total HAP emissions	The Wallula CCA requires the mill to enclose, collect, and convey pulping condensates from the identified equipment systems to the wastewater treatment system as an approved alternative to HVLC controls. Discharge the pulping process condensate below the liquid surface of a biological treatment system that reduces or destroys total HAPs.	Permittee will establish levels of collection and biodegradation of HAPs (as methanol) in the wastewater treatment plant during the CCA initial performance test. Report test results within 60 days of conducting a performance test.	WAC 173-400-075(5) incorporates MACT by reference 40 CFR 63.443(c) for HAP control requirement.  40 CFR 63.453(k) for enclosure and closed vent system management requirements.  40 CFR 63.447 for CCA alternative.
I.P.3	HAP CCA Operational Parameter	Establish the level of over-collection required to meet the CCA requirements of 40 CFR 63.447 proposed in the Wallula CCA plan.	Maintain the collected HAP mass above the minimum as outlined in the CCA as a performance indicator. If collected HAP mass falls below the established minimum, based on a 15-day average, permittee will initiate corrective action within 24 hours. Report only deviations and corrective actions in the monthly report. <sup>10</sup>	40 CFR 63.447 for CCA alternative

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.P.4	HAP CCA Operational Parameter	Confirm operational parameter	Obtain daily inlet and outlet liquid composite BOD <sub>5</sub> and COD samples from the effluent lagoon. Record inlet liquid flow and nominal applied aerator horsepower and blower horsepower. <sup>10</sup>	40 CFR 63.447 for CCA alternative.  40 CFR 63.453(j) for sampling.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CMS data recovery.
I.P.5	HAP CCA Operational Parameter	Permittee shall not use segregated condensate on brownstock washers or deckers.	Permittee shall continuously monitor segregated condensate collection status to demonstrate that condensates are not used in brownstock washers or deckers and certify once per year that segregated condensate will not be used in brownstock washers or deckers. <sup>10,11,12</sup>	40 CFR 63.447(b)-(h) for CCA alternative requirements.  WAC 173-401-615(1)(c); WAC 173-400-105(5)(h); and 40 CFR 63.8(c)(4) for CMS data recovery.
I.P.6	Reserved			
I.P.7 a.	HAP CCA Operational Parameter	Recordkeeping	Permittee shall maintain all CCA compliance demonstration records, testing, and reporting for a period not less than five years.	40 CFR 63.10 (b) for record review.
I.P.7 b	HAP CCA Operational Parameter	IPT Plan submittal date	Permittee will submit an IPT plan for approval by Ecology at least 60 days prior to execution. <sup>10</sup>	40 CFR 63.9(e) for approval review.
I.P.7 c	HAP CCA Operational Parameter	IPT implementation date	Permittee will execute IPT plan and submit results to Ecology within 60 days of the completion of the IPT. Permittee will execute IPT no later than April 17, 2006. <sup>10</sup>	40 CFR 63.7(g) for reporting deadline

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.P.7 d	HAP CCA Operational Parameter	Confirm over collection	Permittee shall perform the IPT to confirm that collected and treated condensate methanol levels are not less than 35% below initial levels proposed in the CCA emissions study and contained in the mill's CCA final proposal. <sup>10</sup>	40 CFR 63.447 for CCA
I.P.7 e	HAP CCA Operational Parameter	Conditional compliance demonstration	If the IPT results were more than 35% below initial levels proposed in the CCA emissions study and contained in the mill's CCA final proposal, the mill shall again conduct testing of HVLC vent emission points and complete and submit a CCA methanol emissions study to demonstrate compliance with the CCA regulation. This study shall serve as the mill's demonstration of compliance.	40 CFR 63.447 for CCA
I.P.7 f	HAP CCA Operational Parameter	Condensate over-collection.	The permittee shall investigate, take corrective action, and retest if the 15-day rolling average of condensate collection (lbs methanol per ton of kraft pulp) falls below the threshold established in the IPT.	40 CFR 63.447 for CCA

**Q. Landfill/Compost Operation**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirement(s)</b>
I.Q.1	Particulate-fugitive dust	Minimum Operating condition	The permittee shall comply with Landfill/Compost Dust control plan after the implementation date specified in the order establishing the dust control plan. This order is part of the SIP maintenance plan for the local air shed.	Order No. 1614-AQ04

**Footnote key for Boise AOP requirements:**

- <sup>1</sup> Monitoring is required only when emission unit is operating.
- <sup>2</sup> If monitored emissions are equal to or less than 75% of the emission limitation for any six consecutive months, emissions will be monitored by three 1-hour test per quarter and reported quarterly.
- <sup>3</sup> Boise shall record levels of precipitator voltage and current during particulate compliance source testing for informational purposes only. [Order DE 02AQIS-3588]
- <sup>4</sup> If the total number of contiguous periods of excess emissions in a quarter is less than 6% of the total number of operating hours (excluding periods of start-up, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement. [40 CFR 63.864(c)(2)(i)]
- <sup>5</sup> A “unit exceedance day” is any 24-hour period during which one or more non-opacity monitoring exceedance(s) occur(s) at a specific affected unit. [40 CFR 63.864(c)(2)(iii)]
- <sup>6</sup> NCASI Technical Bulletin 604 fig 41 (a)
- <sup>7</sup> The PM10 emission limits satisfy the NSPS requirement of 0.044 grains per dry standard cubic feet in 40 CFR 52.21(j).
- <sup>8</sup> Further combustion of CO is expected to take place between the boiler outlet and the stack. The process combustion CO monitor is an internal process monitor and does not indicate direct emissions to the atmosphere.
- <sup>9</sup> The monitoring and reporting provisions contained within I.O.4, I.O.5, and I.O.6 shall be reopened and amended upon promulgation of changes to 40 CFR 63.453 by EPA.
- <sup>10</sup> Compliance with the provisions contained in section I.P. will be achieved no later than April 17, 2006, as provided by 40 CFR 63.440(d)(1).
- <sup>11</sup> CMS Data Recovery. State and federal regulations recognize that monitoring data may be lost for legitimate reasons. The permittee may be exempted from monitoring and reporting requirements during periods of monitoring system malfunctions, provided that the permittee shows that the malfunction was unavoidable and is being repaired as expeditiously as practicable. [40 CFR §60.13(e); 40 CFR 63.8(c)(4); WAC 173-400-105(5)(h); WAC 173-405-077]  
The permittee shall make every effort to acquire, maintain, and recover valid monitoring data. CMS downtime and resulting monitoring data loss due to malfunctions shall be less

than 10% of the monthly unit operating time. An acceptable explanation for the loss of monitoring data must be provided in the monthly report. Periods when CMS data is not recovered due to daily calibration, zero and span checks are not considered nor reported as CMS downtime in the monthly report. Records of daily calibration, zero and span checks shall be kept for a period of five years and made available upon request to Ecology. [WAC 173-401-615(1)(c); WAC 173-401-630(1)]

- 12 MACT CMS Performance Reports. The permittee shall record and report CMS downtime in the semi-annual MACT report. [40 CFR 63.10(e)]
- 13 NSPS CMS Performance Reports. The permittee shall record and report CMS downtime in the semi-annual report. [40 CFR §60.7(c) and (d) (2/12/99)]
- 14 WA PSD/NSR/SIP CMS Performance Reports. The permittee shall record and report CMS downtime, other than calibration, zero and span checks, in the monthly report. In the case of monitor downtime due to system malfunctions, the report will address whether the malfunction was unavoidable, and repaired as expeditiously as practicable. [WAC 173-400-105(5)(h); WAC 173-405-077; WAC 173-401-615(1)(c); WAC 173-401-630(1)]

### Boise's NPDES requirements

Category	Parameter	Units	Sample Point (Point of Compliance)	Minimum Sampling Frequency	Sample Type
Wastewater Effluent	Flow	MGD	Final Effluent <sup>(c)</sup>	Daily	Continuous Recording <sup>(f)</sup>
	BOD <sub>5</sub> <sup>(d)</sup>	mg/l	Secondary Effluent <sup>(c)(d)</sup>	At least 3/week	24-hour Composite
	TSS <sup>(d)</sup>	mg/l	Secondary Effluent <sup>(c)(d)</sup>	At least 3/week	24-hour Composite
	pH	Standard Units	Final Effluent <sup>(c)</sup>	Daily	Continuous Recording <sup>(f)</sup>
	Temperature	°F	Final Effluent <sup>(c)</sup>	Daily	Continuous Recording <sup>(f)</sup>
	Kraft Pulp Production	ADT/Day	To the Bleach Plant	Daily	
	Paper Production	MDT/Day <sup>(b)</sup>	At the Reel <sup>(b)</sup>	Daily	
	AOX	mg/l	Secondary Effluent <sup>(c)</sup>	Monthly <sup>(a)</sup>	24-hour Composite
	2,3,7,8-TCDD	pg/l	Bleach Plant Effluent	Quarterly	24-hour Composite
	2,3,7,8-TCDD	pg/l	Secondary Effluent <sup>(c)</sup>	Annually	24-hour composite

Category	Parameter	Units	Sample Point (Point of Compliance)	Minimum Sampling Frequency	Sample Type
	2,3,7,8-TCDF	pg/ℓ	Secondary Effluent <sup>(c)</sup>	Annually	24-hour composite
	2,3,7,8-TCDF	pg/ℓ	Bleach Plant Effluent	Quarterly	24-hour Composite
	Chloroform	□g/ℓ	Bleach Plant Effluent	Once per permit cycle <sup>(e)</sup>	24-hour Composite
	Trichlorosyringol 3,4,5-trichlorolcatechol 3,4,6-trichlorolcatechol 3,4,5-trichlorolguaiacol 3,4,6-trichlorolguaiacol 4,5,6-trichlorolguaiacol 2,4,5-trichlorolphenol 3,4,6-trichlorolphenol Tetrachlorocatechol Tetrachloroguaiacol 2,3,4,6-tetrachlorophenol Pentachlorophenol	□g/ℓ	Bleach Plant Effluent	Once per permit cycle <sup>(e)</sup>	24-hour Composite

<sup>(a)</sup> AOX monitoring frequency may be adjusted by Ecology five years from the effective date of the previous permit term (July 1, 2001) as allowed in 63 FR 18572, April 15, 1998.

<sup>(b)</sup> As described in 40 CFR Part 430, machine dry tons are based on normal moisture content at the reel for each paper machine which is: No. 1 (10%), No. 2 (10%), and No. 3 (4-6%). Machine tons are on the basis of gross production at the reel.

<sup>(c)</sup> Effluent sampling points shall be defined as follows: 1. Final effluent is that effluent stream after the treated effluent from the wastewater treatment system and non-contact cooling water are combined; and, 2. Secondary effluent shall be treated effluent from the wastewater treatment system prior to the combination with any other streams.

<sup>(d)</sup> Mass discharge calculations for BOD and TSS are done on the basis of secondary treatment flow times secondary treatment effluent concentrations.

<sup>(e)</sup> Upon satisfactory demonstration of compliance with the chloroform standard, or upon monthly certification of 100% ClO<sub>2</sub> substitution for Cl<sub>2</sub> in the bleaching process. The monthly certification may be addressed in the monthly DMR submittal.

<sup>(f)</sup> Continuous means uninterrupted except for brief periods of time for calibration, power failure, or for unanticipated equipment repairs or maintenance.

<sup>(g)</sup> 2,3,7,8-TCDD is 2,3,7,8-tetrachlorodibenzo-p-dioxin and 2,3,7,8-TCDF is 2,3,7,8-tetrachlorodibenzofuran. Analysis including sample containers and QA/QC shall be conducted in accordance with Method 1613: Tetra- through Octa- chlorinated Dioxin and Furans by Isotopic Dilution HRGC/HRMS, USEPA Office of Water, Engineering and Analysis Division, Revision A or an approved equivalent method.

## Grays Harbor Paper

### GHP AOP requirements

#### **Monitoring Air Impacts Which are Detrimental or a Nuisance to Persons or Property.**

The permittee shall monitor all air quality related complaints directed to the facility as follows:

- a) The permittee shall provide an automatic phone recording system or an onsite contact person available to the general public for filing a complaint whenever the facility is operating.
- b) The phone number for the facility available to the general public shall be a directory listed phone number.
- c) The permittee shall maintain a record of air quality related complaints which shall include, if available or provided, the following information:
  - i) Description of the complaint.
  - ii) Date and time the alleged impact was first noticed.
  - iii) Date and time the alleged impact was last noticed.
  - iv) Location where the alleged impact was experienced.
  - v) Name and phone number of caller.
  - vi) The permittee's assessment of the validity of the complaint.
  - vii) Description of any corrective action taken.

[WAC 173-401-615(1)(b)]

**Fugitive Emissions and Dust Control Monitoring.** The permittee shall monitor equipment and operations to assure reasonable and appropriate precautions are taken for preventing fugitive emissions and dust. Reasonable and appropriate precautions adopted by the permittee for preventing fugitive emissions and fugitive dust shall be described in a written list that shall be made available for inspection by ORCAA upon request. [WAC 173-401-615(1)(b)]

**Sulfur Dioxide Emissions Monitoring.** The permittee shall determine the sulfur content of fuels used, as received, using ASTM D4294-98, or EPA Method 6010, except that no determination is needed for diesel fuel containing less than 2% sulfur by weight, propane, natural gas, or wood derived fuel. The permittee may rely upon information from fuel suppliers as to sulfur content, and upon general published information regarding sulfur content of solid fuels or test results. For liquid fuels combusted by emission units at the facility, the permittee shall confirm prior to purchase that the sulfur content of the liquid fuel used is less than 2%. The use of any fuel with a

sulfur content of greater than 2% requires a reference method source test during the use of that fuel. [WAC 173-401-615(1)(b)]

**Compliance Assurance Monitoring.** The permittee shall implement a Compliance Assurance Monitoring Plan for Boiler #8 (EU1) and Boiler #6 (EU2) consistent with 40 CFR Part 64, Compliance Assurance Monitoring, as follows:

**a) Monitoring Indicators.** The permittee shall monitor operating indicators as specified in Table [C-3] below whenever subject emissions units are operating [§64.7(a)].

**b) Exemptions.** The permittee is temporarily exempted from a monitoring requirement of this condition when the associated monitoring system is inoperable either due to an unavoidable breakdown or malfunction, or due to a routine scheduled repair or calibration check as specified in Table 6.1. In determining whether a monitoring system malfunction or breakdown was unavoidable, the following criteria shall be considered:

**i)** Whether the malfunction was caused by poor or inadequate operation, maintenance, or any other reasonably preventable condition;

**ii)** Whether the malfunction was of a recurring pattern indicative of inadequate operation or maintenance; and

**iii)** Whether the permittee took appropriate action as expeditiously as practicable to correct the malfunction.

[§64.7(c)]

**c) Minimum Data Recovery.** For any indicator requiring hourly or more frequent monitoring under this condition, the permittee shall recover valid monitoring data in accordance with the averaging periods specified in Table 6.1 for at least 90% of the time the subject emission unit is required to be monitored. Data recorded during monitoring system malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of assessing the operation of the control device being monitored [§64.6(c)(4);§64.7(c)].

**d) Definition of Excursion.** Except during startup or shutdown of the subject emission unit, any occurrence when operation of the emission unit fails to meet any of the target operating ranges specified in Table 6.1 below will constitute an excursion if the out-of-range indicator can not be brought back into conformance with its target operating range or within 24-hours from the time the out-of-range operation was first noted or recorded [§64.6(c)(2)].

**e) Quality Improvement Plan (QIP) Required.** Based on results of a notification by the permittee of the need for improved monitoring of Boiler #8 (EU2), as required under condition 8.7, the permitting authority or the Administrator may require the permittee to develop and implement a Quality Improvement Plan (QIP) in accordance with §64.8 of 40 CFR Part 64 [40 CFR Part 64, §64.8].

**GHP Prescribed operating ranges for pollution control equipment**

Emission Unit Indicator [§64.3(a); §64.6(c)(1)(i)]	Target Operating Ranges and Conditions [§64.3(a); §64.6(c)(1)(i)]	Monitoring Means [§64.3(a); §64.6(c)(1)(ii)]	Monitoring Frequency [§64.3(a); §64.6(c)(1)(i)]	Performance Requirements [§64.3(b); §64.6(c)(1)(iii)]
EU1 Scrubber	Pressure Drop Pressure drop range of 3 to 11 inches of water column	Differential pressure in the wet scrubber is monitored by a differential pressure transmitter and a local gauge display.	Hourly	Annual calibration of transmitter pressure to U-tube manometer reading to within $\pm 0.5$ inches of water in accordance with manufacturer recommendations.
EU1 Multiclone Pressure Drop	Pressure drop range of 2 to 6 inches of water column	Differential pressure in the multiclone is monitored by a differential pressure transmitter and a local gauge display.	Hourly	Annual calibration of transmitter pressure to U-tube manometer reading to within $\pm 0.5$ inches of water in accordance with manufacturer recommendations.
EU2 Multiclone Pressure Drop	Pressure drop range of 2.5 to 8 inches of water column	Differential pressure in the multiclone is monitored by a differential pressure transmitter and a local gauge display.	Hourly	Annual calibration of transmitter pressure to U-tube manometer reading to within $\pm 0.5$ inches of water in accordance with manufacturer recommendations.
EU2 Secondary Scrubber with wet venturi and mist eliminator	The following target operating ranges apply to this system:  Cyclone separator pressure drop is 2 to 3 inches of water column	Differential pressure in the multiclone is monitored by a differential pressure transmitter and a local gauge display.	Annual calibration of transmitter pressure to U-tube manometer reading to within $\pm 0.5$ inches of water in accordance with manufacturer recommendations.	Hourly

Emission Unit Indicator [§64.3(a); §64.6(c)(1)(i)]	Target Operating Ranges and Conditions [§64.3(a); §64.6(c)(1)(i)]	Monitoring Means [§64.3(a); §64.6(c)(1)(ii)]	Monitoring Frequency [§64.3(a); §64.6(c)(1)(i)]	Performance Requirements [§64.3(b); §64.6(c)(1)(iii)]
	Venturi scrubber pressure drop is 4.5 to 10 inches of water column  Mist separator pressure drop is 3 to 4.5 inches of water column			

[WAC 173-401-615(1)(b); 40 CFR Part 64]

**PM10 Emission Limit Monitoring.** The permittee shall monitor daily PM10 emissions from production data such as boiler steam production, fuel consumed, and emission factors. [WAC 173-401-615(1)(a); PSD-06-01 Condition 6]

**Particulate Testing Required.** The permittee shall monitor particulate grain loading of EU1 and EU2 by performing Ecology Method 5 testing in accordance with condition 6.10 [in the permit] at least once during the permit term but no later than 48 months after permit issuance, and whenever required by ORCAA. Particulate grain loading shall be determined in terms of grains per dry standard cubic foot at standard conditions and 7% oxygen. [WAC 173-401-615(1)(b)]

**Performance Testing.** To demonstrate compliance, ORCAA may conduct or require that a test be conducted of the source in accordance with the following conditions:

- a) General Test Methods. Use approved EPA methods from 40 CFR parts 51, 60, 61 and 63 (in effect on May 10, 2004), or approved procedures contained in “*Source Test Manual –Procedures for Compliance Testing*,” state of Washington, Department of Ecology, as of July 12, 1990. The operator of the source shall be required to provide the necessary platform and sampling ports for ORCAA personnel or others to perform a test of an emissions unit. ORCAA shall be allowed to obtain a sample from any emissions unit. The operator of the source shall be given an opportunity to observe the sampling and to obtain a sample at the same time. [WAC 173-400-105(4); 03NOC309 Condition 4, PSD-06-01 Condition 10]
- b) Appropriate Testing Facilities. When requested by ORCAA, the permittee is required to provide an appropriate source testing platform and sampling ports. **[Local Only:** ORCAA 1.5(j)]

**PM10 Emission Limit Monitoring.** The permittee shall monitor compliance with the PM10 emission limit within every 36-month period starting when the 7.5 MW turbine is placed into

commercial operation. Testing shall alternate between summer and winter seasonal conditions. The following testing condition shall be satisfied:

- a) Testing shall be done using 40 CFR Part 60 Appendix A Method 5 or 40 CFR 51 Appendix M Method 201 or 201A for the front half, and 40 CFR 51 Appendix M Method 202 for the back half.
- b) Testing shall be done at a boiler operating rate at least equal to or greater than 90% of the highest daily operating rate within the previous 36 months.
- c) Equivalent test methods may be used if approved in advance by Ecology and ORCAA. [WAC 173-401-615(1)(a); PSD-06-01 Condition 7]

**Monitoring Fuel Oil Consumption in EU1 and EU2.** The permittee shall monitor the monthly usage of Number 6 fuel oil consumed in EU1 and EU2. [WAC 173-401-615(1)(b); PSD-06-01 Condition 4]

**Monitoring Steam Production in EU1 and EU2.** The permittee shall monitor the daily average steam production from EU1 and EU2. [WAC 173-401-615(1)(a); PSD-06-01 Condition 5]

**Fuel Monitoring.** The permittee shall monitor the facility-wide total daily consumption of fuels meeting the definition of solid waste found in WAC 173-434-030(3). [WAC 173-401-615(1)(a); 06MOD522 Condition 4]

**Fuel Quality Monitoring.** The permittee shall monitor the quality of wood waste and biofuels brought to the facility to be used as boiler fuel. The criteria for accepting or rejecting wood waste and biofuels shall be clearly described in the Wood Waste and Approved Biofuels Quality Assurance Plan. [WAC 173-401-615(1)(a); 06MOD522 Condition 2]

## GHP’s NPDES requirements

### 1. Outfall # 001

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Effluent	Flow	MGD	Effluent	Daily	Continuous
“	BOD <sub>5</sub>	mg/l	Effluent	Daily	24 hr. Composite
“	TSS	mg/l	Effluent	Daily	24 hr. Composite
“	pH	Standard Units	Effluent	Daily	Continuous
“	Fecal Coliform	#/100 mL	Effluent	Monthly	Grab
“	NH <sub>3</sub>	mg/l	Effluent	Daily	24 hr. Composite
OP Effluent	Flow	MGD	Effluent	Daily	Continuous
“	BOD <sub>5</sub>	mg/l	Effluent	Daily	24 hr. Composite

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
“	TSS	mg/l	Effluent	Daily	24 hr. Composite
“	pH	Standard Units	Effluent	Daily	Continuous
“	NH <sub>3</sub>	mg/l	Effluent	Daily	24 hr. Composite
“	TKN	mg/l	Effluent	Monthly	24 hr. Composite
“	Oil & Grease	mg/l	Effluent	Weekly for one month and monthly thereafter	Grab
Acute Toxicity Testing	S10		Effluent	Summer/Winter	Grab
Chronic Toxicity Testing	S11		Effluent	Summer/Winter	Grab

2. Outfall # 002

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Effluent	Flow	MGD	Effluent	Daily	Calculated
“	TSS	mg/l	Effluent	Daily	Grab
“	pH	Standard Units	Effluent	Daily	Grab

## Nippon Paper Industries USA

### Nippon’s AOP requirements

In accordance with WAC 173-401-615(1) and (2) the following monitoring conditions do not apply to IEU’s unless the condition specifically states otherwise.

**Complaint Monitoring.** The permittee shall monitor all air quality related complaints directed to the facility as follows:

a) The permittee shall provide an automatic phone recording system or an onsite contact person available to the general public for filing a complaint whenever the facility is operating.

b) The phone number for the facility available to the general public shall be a directory listed phone number.

[WAC 173-401-615(1)(b)]

**Fugitive Emissions and Dust Control Monitoring.** The permittee shall monitor equipment and operations to assure reasonable and appropriate precautions are taken for preventing fugitive emissions and dust. Reasonable and appropriate precautions adopted by Nippon for preventing fugitive emissions and fugitive dust shall be described in a written list that shall be made available for inspection by ORCAA upon request. [WAC 173-401-615(1)(b)]

**Sulfur Dioxide Emissions Monitoring.** For fuels used in Boiler #8 (EU2), Boiler #10 (EU3) or Boiler #9 (EU4), the permittee shall determine the sulfur content of fuels as received using ASTM D4294-98, or EPA Method 6010, except that no determination is needed for propane, natural gas or wood-derived fuels. The permittee may rely upon information from fuel suppliers as to sulfur content, and upon general published information regarding sulfur content of solid fuels or test results. For purposes of monitoring compliance the permittee will confirm on a monthly basis that the sulfur content in liquid fuels used is less than 2%. The use of any fuel with a sulfur content of greater than 2% requires a reference method source test during the use of that fuel. [WAC 173-401-615(1)(b)]

**Pollution Control Equipment Monitoring.** The permittee shall monitor implementation of the O&M plans for boilers #9 and #10. [WAC 173-401-615(1)(b)]

**Boiler #8 Compliance Assurance Monitoring.** The permittee shall implement a Compliance Assurance Monitoring Plan for Boiler #8 (EU1) consistent with 40 CFR Part 64, Compliance Assurance Monitoring, as follows:

a) **Monitoring Indicators.** The permittee shall monitor operating indicators as specified in Table [C-5] below whenever subject emissions units are operating [§64.7(a)].

b) **Exemptions.** The permittee is temporarily exempted from a monitoring requirement of this condition when the associated monitoring system is inoperable either due to an unavoidable breakdown or malfunction, or due to a routine scheduled repair or calibration check as specified in Table [C-5]. In determining whether a monitoring system malfunction or breakdown was unavoidable, the following criteria shall be considered:

i) Whether the malfunction was caused by poor or inadequate operation, maintenance, or any other reasonably preventable condition;

ii) Whether the malfunction was of a recurring pattern indicative of inadequate operation or maintenance; and

iii) Whether the permittee took appropriate action as expeditiously as practicable to correct the malfunction.

[§64.7(c)]

c) **Minimum Data Recovery.** For any indicator requiring hourly or more frequent monitoring under this condition, the permittee shall recover valid monitoring data in accordance with the averaging periods specified in Table [C-5] for at least 90% of the

time the subject emission unit is required to be monitored. Data recorded during monitoring system malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of assessing the operation of the control device being monitored [§64.6(c)(4); §64.7(c)].

**d) Definition of Excursion.** Except during startup or shutdown of the subject emission unit, any occurrence when operation of the emission unit fails to meet any of the target operating ranges specified in Table [C-5] below will constitute an excursion if the out-of-range indicator can not be brought back into conformance with its target operating range or condition within 24-hours from the time the out-of-range operation was first noted or recorded [§64.6(c)(2)].

**e) Quality Improvement Plan (QIP) Required.** Based on results of a notification by the permittee of the need for improved monitoring of Boiler #8 (EU2), as required under condition 8.7 [in the permit], the permitting authority or the Administrator may require the permittee to develop and implement a Quality Improvement Plan (QIP) in accordance with §64.8 of 40 CFR Part 64 [40 CFR Part 64, §64.8].

**Nippon CAM indicators**

Emission Unit Indicator [§64.3(a);§64.6(c)(1)(i)]	Target Operating Ranges and Conditions [§64.3(a); §64.6(c)(1)(i)]	Monitoring Means [§64.3(a); §64.6(c)(1)(ii)]	Monitoring Frequency [§64.3(a); §64.6(c)(1)(i)]	Performance Requirements [§64.3(b); §64.6(c)(1)(iii)]
EU2 Scrubber minimum water flow	175 gallons per minute of water (1-hour average) or greater.	Differential pressure flow meter monitors water flow directly to the scrubber.	Scrubber water flow will be measured continuously. Continuous measurements will be averaged over block, one-hour periods. Block, one-hour averages are nonoverlapping, sequential one-hour periods that are computed and recorded electronically.	Annual calibration of transmitter pressure to U-tube manometer reading to within ±0.5 inches of water in accordance with manufacturer recommendations
EU2 Scrubber minimum differential pressure	8.0 inches of water (1-hour average) or	Differential pressure transducer	Differential pressure is monitored	Annual calibration of transmitter

Emission Unit Indicator [§64.3(a);§64.6(c)(1)(i)]	Target Operating Ranges and Conditions [§64.3(a); §64.6(c)(1)(i)]	Monitoring Means [§64.3(a); §64.6(c)(1)(ii)]	Monitoring Frequency [§64.3(a); §64.6(c)(1)(i)]	Performance Requirements [§64.3(b); §64.6(c)(1)(iii)]
	greater.	monitors static pressure upstream and downstream of the scrubber's venturi throat.	continuously, but averaged over block one-hour periods. Block one-hour averages are non-overlapping, sequential one-hour periods that are computed and recorded electronically.	pressure to U-tube manometer reading to within ±0.5 inches of water in accordance with manufacturer recommendations

[WAC 173-401-615(1)(b); 40 CFR Part 64]

**Particulate Testing Required.** The permittee shall monitor particulate grain loading of Boiler #8, Boiler #10 and Boiler #9 by performing Ecology Method 5 testing in accordance with condition 6.13 [in the permit] at least once during the permit term but no later than 48 months after permit issuance, and whenever required by ORCAA. Particulate grain loading shall be determined in terms of grains per dry standard cubic foot at standard conditions and 7% oxygen. [WAC 173-401-615(1)(b)]

**NOx Testing Required.** The permittee shall verify the NOx emission factor for Boiler #10 and Boiler #9 by source testing in accordance with condition 6.13 at least once during the permit term but no later than 48 months after permit issuance, and whenever required by ORCAA. The NOx emission factor shall be in terms of pounds of NOx per thousand gallons of fuel burned. [WAC 173-401-615(1)(b)]

**Boiler #8 SO2 Emission Rate Monitoring.** The average rate of sulfur dioxide (SO2) emissions from Boiler #8 in terms of pounds per million Btu (lbs/MMBtu) over the previous 12-consecutive month period shall be determined on a monthly basis in accordance with condition 6.12 [in the permit]. [WAC 173-401-615(1)(b), 03NOC325 condition 1]

**Boiler #8 Emissions Monitoring.** On a monthly basis Nippon shall determine the total amounts of PM10, CO and SO2 emissions from Boiler #8 in terms of tons over the previous month and 12 consecutive month periods as follows:

- a) SO2 emissions shall be determined by sulfur mass balance calculation methods using the actual amounts and sulfur contents of the fuels combusted in Boiler #8 during each period.

- b) PM10 and CO emissions shall be determined by calculations using ORCAA-approved emission factors and the actual amounts of fuels combusted in Boiler #8 during each period.
- c) PM10 and CO emission factors used to monitor compliance shall be approved by ORCAA and shall be based on measured emissions from ORCAA-approved stack testing results.
- d) Fuel oil usage shall be monitored using a flow meter and cumulative fuel usage shall be recorded weekly.
- e) Sulfur content of the fuel oil used in Boiler #8 shall be determined weekly in accordance with condition 6.6 [in the permit].
- f) Hog fuel and sludge usage shall be monitored directly by continuously measurement of the mass rate of these fuels, or may be monitored indirectly using methods and conversions approved by ORCAA.
- g) Heat and sulfur content of hog fuel and sludge shall be determined through testing using standard methods.
- h) All calculation methods, test methods, test frequencies, and assumptions shall be approved by ORCAA.

[WAC 173-401-615(1)(a), 03NOC325, condition 3]

**General Source Testing Procedures and Methods.** To demonstrate compliance, Ecology or the authority may conduct or require that a test be conducted of the source in accordance with the following conditions:

- a) **General Test Methods.** Use approved EPA methods from 40 CFR parts 51, 60, 61 and 63 (in effect on May 10, 2004), or approved procedures contained in “*Source Test Manual –Procedures for Compliance Testing,*” state of Washington, Department of Ecology, as of July 12, 1990, on file at Ecology. The operator of the source shall be required to provide the necessary platform and sampling ports for Ecology personnel or others to perform a test of an emissions unit. Ecology shall be allowed to obtain a sample from any emissions unit. The operator of the source shall be given an opportunity to observe the sampling and to obtain a sample at the same time. [WAC 173-400-105(4)]
- b) **Appropriate Testing Facilities.** When requested by ORCAA, the permittee is required to provide an appropriate source testing platform and sampling ports. [**Local Only:** ORCAA 1.3.01(j)] [Specific to each subpart: a) WAC 173-400-105(4); b) ORCAA 1.3.01(j)]

**ORCAA Approved Emission Factors:** Emission factors used to determine annual emissions from Boiler #8 for purposes of compliance verification and Nippon’s annual emissions inventory shall be approved by ORCAA and shall meet the following requirements:

- a) Emission factors for NOx, CO and PM10 shall be based on emission concentrations measured during an ORCAA-approved stack test.
  - b) Stack testing methods shall be approved by ORCAA prior to conducting any test; and,
  - c) SO2 emission factors shall be based on the actual amounts and sulfur contents of the fuels combusted in Boiler #8 as specified in condition 6.11 [in the permit].
- [WAC 173-401-615(1)(a), 03NOC325, condition 4]

**SO2 Emissions Monitoring for Boilers #9 and #10.** On a monthly basis the permittee shall determine the total combined amount of SO2 emission from Boilers #9 and #10 over the previous month and 12 consecutive month periods. SO2 emissions shall be calculated by the material balance equation in the permit.

Fuel usage shall be monitored using a flow meter and cumulative fuel usage shall be recorded on a monthly basis. Fuel sulfur content shall be determined weekly in accordance with condition 6.6 [in the permit]. [WAC 173-401-615(1)(b)]

**NOx Emissions Monitoring for Boilers #9 and #10.** On a monthly basis the permittee shall determine the total combined amount of NOX emissions from boilers # 9 and #10 over the previous month and 12 consecutive month periods. NOX emissions shall be calculated using the equation in the permit.  
[WAC 173-401-615(1)(b)]

**Fuel Monitoring Plan.** Nippon shall develop and implement a Fuel Monitoring Plan to assure Post-Consumer Wood Waste (PC) fuel meets the criteria in condition 4.15 [in the permit]. Nippon shall submit a current Monitoring Plan to ORCAA for their review and update the plan annually. The Monitoring Plan shall include the following:

- a) Criteria for screening, rejecting and approving PC fuel deliveries on the basis of the criteria in condition 4.15 [of the permit];
  - b) Criteria for screening, rejecting and approving PC fuel deliveries consistent with the Industrial Boiler MACT rules; and,
  - c) Procedures and schedule for periodic auditing of PC fuel suppliers with respect to conforming to their Supplier’s QA Plan.
- [Not Federally Enforceable-Local Only: 06NOI475]

**Nippon’s NPDES requirements**

1. Outfall 001

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Wastewater Effluent	Flow	MGD	Effluent	Daily	Continuous*
Wastewater Effluent	BOD <sub>5</sub>	mg/l	Effluent	At least 3/week	24-hr composite
Wastewater Effluent	TSS	mg/l	Effluent	At least 3/week	24-hr composite
Wastewater Effluent	Temperature	Degree	Effluent	Daily	Continuous*
Wastewater	pH	SU	Effluent	Daily	Continuous*

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Effluent					
Wastewater Effluent	O & G	mg/L	Effluent	Yearly	Grab
Acute Toxicity Testing	See S9	See S9	Effluent	See S9	See S9
Chronic Toxicity Testing	See S10	See S10	Effluent	See S10	See S10
Production	Off-the-machine	Tons/day	Paper machine	Daily	Continuous*

\* Continuous means uninterrupted - except for brief lengths of time for calibration, power failure, or for unanticipated equipment repair or maintenance. Sampling shall be taken every four hours when continuous monitoring is not possible except for temperature.

## 2. Outfall 002

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Filter backwash	Flow	MGD	Effluent	Daily	Calculated**

\*\* Calculation is based on filter plant backwash frequency and tank capacities. The permittee shall report the above monitored parameters in accordance with the reporting requirements defined in Special Condition S3.

## Simpson Tacoma Kraft

### Simpson's AOP requirements

#### A. RECOVERY FURNACE # 4

Simpson shall comply with the applicable requirements of 40 CFR 60 Subparts A and BB for Recovery Furnace No. 4, which include the following general requirements:

- 40 CFR 60.7(b) & (f) concerning record keeping,
- 40 CFR 60.7(c), (d), & (e) concerning reporting,
- 40 CFR 60.11(d) concerning operation and maintenance,
- 40 CFR 60.12 concerning concealment,
- 40 CFR 60.13 concerning monitoring, and
- 40 CFR 60.19 concerning notification and reporting.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
A.1	Particulate	0.044 gr/dscf @ 8% O <sub>2</sub> , one hour average.	EPA Method 5 is the reference test method. The permittee shall source test quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Sampling shall follow EPA Method 5 except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests. Report test results monthly. (See Condition A.9 for surrogate monitoring necessary to satisfy CAM requirements.)	40 CFR 60.282(a)(1)(i) and Order No. 99AQIS-94.
		0.10 gr/dscf @ 8% O <sub>2</sub> , one hour average.	Same as for previous limit.	WAC 173-405-040(1)(a).
A.2	SO <sub>2</sub>	150 ppm @ 8% O <sub>2</sub> , 30-day rolling average.	EPA Method 6 is the reference test method. Monitor continuously using an approved CEM that conforms to 40 CFR Part 60 (July 1, 1992), App. F and App. B, Perf. Spec. 2. See 1&4 in appendix B for data recovery requirements. Report 30-day averages and excess emissions monthly.	Order No. 01AQIS-3114 (BACT limit).
		500 ppm @ 8% O <sub>2</sub> , hourly average.	Same monitoring as for previous limit. Report hour maximum in the monthly report.	WAC 173-405-040(11)(a).
		669 tons/year as 12-month rolling total.	Report 12-month rolling total monthly.	Order No. DE 01AQIS-3114 (limit makes potential to emit assumptions enforceable).

A.3

<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
Opacity	Average 35% for more than 6 consecutive minutes in any 60 minute period.	DOE Test Method 9B is the reference test method. Monitor continuously using COM that conforms to 40 CFR Part 60, App B, Perf. Spec. 1. See 1&4 in appendix B for data recovery requirements. Report periods of excess emissions monthly.	WAC 173-405-040(6) for limit. Order No. DE 97AQ-I004 for limit and monitoring.
	(when firing only black liquor) Average 35% for more than 6 consecutive minutes in any 60 minute period.	Same as for previous limit. See 1&3 in appendix B for data recovery requirements. If the total number of contiguous periods of excess emissions in a quarter is less than six percent of the total number of operating hours (excluding startup, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement.	40CFR 60.282(a)(1)(ii) for the opacity limit. 40 CFR 60.284(a)(1) for COM operational parameters. 40 CFR 60.284(d), (e) for reporting requirements and excess emission allowance.
	(when firing or co-firing oil) Average 20% for more than 6 consecutive minutes in any 60 minute period except for one 6-minute period per hour of not more than 27 % and except during SSM periods.	Same as for first opacity limit. See 1&3 in appendix B for data recovery requirements. Maintain records of when oil is fired or co-fired. Report periods of excess emissions monthly.	40 CFR 60.43b(f)&(g) for the opacity limit. 40 CFR 60.48b(a) for COM requirement. 40 CFR 60.49b(h)(i) for reporting. 40 CFR 60.13 for COM operational requirements.

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
A.4 NOx	85 ppm @ 8 % O <sub>2</sub> , 30-day rolling avg.	EPA Methods 7, 7A, 7B, or 7E are the reference test methods. Monitor ongoing compliance continuously using a CEM conforming to 40 CFR 60, App. F and App. B, Perf. Spec. 2. See 1&4 in appendix B for data recovery requirements. Report daily averages for the month and excess emissions monthly.	Order No. 99AQIS-94 (BACT limit).
	515 tons/year as 12-month rolling total	Calculate NOx mass emissions using the algorithm in condition A.5. Report 12-month rolling total monthly.	Order No. DE 01AQIS-3114 (limit makes potential to emit assumptions enforceable) and Order No. 1916-AQ05.
	Maintain annual oil capacity factor <10% so that 40 CFR 60.44b NOx limit not applicable.	Maintain records of black liquor and oil firing rate. Assume heat inputs of: 6000 Btu/lb BLS (H <sub>BLS</sub> ), and 18,000 Btu/lb of residual fuel oil (H <sub>O</sub> ). Cap Factor(%) = (lb oil fired/year)(H <sub>O</sub> )(100) / [1.1(142,080 lb BLS/hr)(H <sub>BLS</sub> )(8760 hr/year)]. Report 12-month rolling average oil capacity factor monthly.	Order No. 99AQIS-94, Order No. 1916-AQ05, and 40 CFR60.44b(c) for capacity factor limit. 40 CFR 60.49b(d) for reporting requirements.

A.5

NOx mass emissions algorithm:

NOx (ton) =

$$\frac{3.41 \times 10^6 \text{ lb BLS}}{\text{day}} \times \text{days of operation} \times \frac{87.5 \text{ DSCF @ } 8\% \text{ O}_2^*}{\text{lb BLS}} \times \text{ave NOx (ppm @ } 8\% \text{ O}_2) \times \frac{46 \text{ lb NOx}}{385 \text{ dscf NOx}} \times \frac{\text{ton NOx}}{2000 \text{ lb NOx}}$$

$$* \frac{87.5 \text{ DSCF @ } 8\% \text{ O}_2}{\text{lb BLS}} = \text{F factor} \times \text{HHV} \times \text{O}_2 \text{ correction}$$

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**F factor = 9000 DSCF/million Btu @0% O<sub>2</sub>**

**HHV = 6000 Btu/lb BLS**

O<sub>2</sub> correction factor = (20.9)/(20.9-8)

Reference: NCASI Technical Bulletin No. 646, pg. 16. [Order #1916-AQ05].

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
A.6	CO	400 ppm @ 8% O <sub>2</sub> , 30-day rolling average.	EPA Methods 10, 10A, or 10B are the reference test methods. Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60 (July 1, 1992), App. F and App. B, Perf. Spec. 4. See 1&4 in appendix B for data recovery requirements. Report 30-day averages and excess emissions monthly.	Order No. 01AQIS-3114 (BACT limit).
		1672 tons/year as 12-month rolling total.	Report 12-month rolling total monthly.	Order No. 01AQIS-3114 (limit makes potential to emit assumptions enforceable).
A.7	VOC	0.50 lb/ton BLS.	Sample twice per year using EPA Method 25A or equivalent. Use the average of 3 one-hour runs. Report results with next monthly report.	Order No. 01AQIS-3114 (BACT limit).
A.8	TRS	5 ppm by volume on a dry basis, corrected to 8 % O <sub>2</sub> , 12 hr average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. See 1&3 in appendix B for data recovery requirements. Record 12-hour average concentration for two consecutive 12-hour periods each day. If the total number of contiguous periods of excess emissions in a quarter is less than one percent of the total number of operating hours (excluding periods of startup, shutdown, or malfunction) during the quarter, the excess emissions do not constitute a violation of this requirement (40 CFR 60.11(d)).	40 CFR 60.283(a)(2) for basis of limit. 40 CFR 60.284(a)(2) and 40 CFR 60.284(e)(1)(i) for basis of monitoring. 40 CFR 60.284(c)(1) for reporting.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
A.9	HAPs	Particulate surrogate: 0.044 gr/dscf @ 8% O <sub>2</sub> (see condition A.9a)	Monitor opacity with a continuous opacity monitor meeting the requirements of 40 CFR 63.6(h) and 63.8. See 1&2 in appendix B for data recovery requirements. Begin corrective action, as specified in the SSM plan (see condition A.10), when an exceedence occurs (the average of any 10 consecutive 6-minute averages exceed 20%). A violation occurs when opacity exceeds 35% for ≥ 6% of the operating time during a quarter, not including applicable periods of startup, shutdown, or malfunction. Report time, date, average opacity, and corrective action for exceedences monthly; and report violations quarterly.	40 CFR 63.862(a)(i) for limit; 40 CFR 63.864(d) for monitoring; 40 CFR 63.864 (k)(1) for corrective action; 40 CFR 63.864 (k)(2) for violation definition; 40 CFR 63.864 (k)(3) for number of exceedences per period. 40 CFR 63.6(h) for SSM exclusion.

A.9a If a source test exceeds the particulate surrogate concentration listed in condition A.9, Simpson may use the PM overall compliance method described in 40 CFR 63.862(a)(ii) and 66 FR 3180 (January 12, 2001 or most recent version) to demonstrate compliance with the HAPS standard. The calculation must be made with the source test data from LK #1, RF #4, and smelt tank #s 4E & 4W for the same month, if available, or most recent source test data, if data from the same month is not available.

A.10 SSM Plan [40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)]  
Simpson shall comply with the SSM plan requirements identified in section J of this AOP.

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
A.11	TRS	5 ppm @ 8% O <sub>2</sub> , daily average.	Monitor same as A.8, except report daily average of test results monthly.	WAC 173-405-040(1)(c).

A.12 The permittee may not fire Recovery Furnace No. 4 with Kraft mill black liquor when both sides of the recovery furnace precipitator are out of service at the same time. The permittee shall monitor and record the time and duration when both sides of the precipitator are out of service at the same time, and maintain facility operation records showing that the firing limitation was followed. All violations will be reported in the most immediate monthly report. [Order DE 97AQ-I004]

**B. LIME KILN #s 1 & 2**

<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
B.1 Particulate	0.13 gr/dscf @ 10% O <sub>2</sub> , one hour average.	EPA Method 5 or DOE Method 8 is the reference test method. The permittee shall perform source testing quarterly if 6 consecutive monthly source tests results are all below 75% of the emissions limitation. If any single test result exceeds 75% of the limitation, source testing shall revert to a monthly frequency until 6 consecutive monthly source test results are all below 75% of the limitation. Sampling shall follow the method except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests. Report test results monthly. (See Condition B.4 for surrogate monitoring necessary to satisfy CAM requirements.)	Order No.97AQ-I004 and Order No. 1916-AQ05 WAC 173-405-040(3)(a) for particulate limit. WAC 173-405-040(10) for O&M requirements.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
B.2	SO <sub>2</sub>	500ppm @ 10% O <sub>2</sub> , hourly average.	EPA method 6c is the reference test method. The permittee shall perform a one-hour source test monthly and report test results monthly. In lieu of a source test, the highest hourly average for the month from a properly calibrated CEMS may be reported. For LK #2: Simpson may use the method "#2 Lime Kiln Continuous SO <sub>2</sub> Source Test Method" included in appendix D of this AOP, provided that #2 Lime Kiln processes lime mud ≤20% of the time on a calendar year basis. While this test method is in use, annual #2 Lime Kiln percent use shall be calculated and submitted with the monthly air report for December. If annual use is >20%, EPA Method 6c shall be used for all subsequent tests.	WAC 173-405-040(11)(a) and Order No. 1916-AQ05.
B.3	Opacity	Average 35% for more than 6 consecutive minutes in any 60 minute period.	DOE Test Method 9B is the reference test method. See Condition B.4 for opacity monitoring and reporting requirements.	Order No.97AQ-I004 and WAC 173-405-040(6).

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
B.4	HAPs	Particulate surrogate: 0.15 g/dscm (0.064 gr/dscf) @ 10% O <sub>2</sub> (see condition B.4a)	For LK #1: Maintain pressure drop ≥19 inches of water column and scrubber flow ≥273 gpm. For LK #2: Maintain pressure drop ≥29 inches of water column and scrubber flow ≥252 gpm. For LK #s 1&2: Continuously monitor pressure drop and scrubber flow. Begin corrective action, as specified in the SSM plan (see condition B.5), when an exceedence occurs (any 3-hr average out of compliance with pressure drop or scrubber flow requirements). A violation occurs when 6 or more 3-hr averages are out of compliance with pressure drop or scrubber flow requirements during a 6 month reporting period (not including applicable periods of startup, shutdown, or malfunction). For the purpose of determining the number of nonopacity exceedences, no more than one exceedence can occur per 24 hour period. Report exceedences monthly, and violations every 6 months.	40 CFR 63.862(a)(i) for limit; 40 CFR 63.864(e) for monitoring; 40 CFR 63.864 (k)(1) for corrective action; 40 CFR 63.864 (k)(2) for violation definition; 40 CFR 63.864 (k)(3) for number of exceedences per period. 40 CFR 63.6(f) for SSM exclusion.

B.4a For LK #1 only: If a source test exceeds the particulate surrogate concentration listed in condition B.4, Simpson may use the PM overall compliance method described in 40 CFR 63.862(a)(ii) and 66 FR 3180 (January 12, 2001 or most recent version) to demonstrate compliance with the HAPS standard. The calculation must be made with the source test data from LK #1, RF #4, and smelt tank #s 4E & 4W for the same month, if available, or most recent source test data, if data from the same month is not available.

B.5 SSM Plan [40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)]  
Simpson shall comply with the SSM plan requirements identified in section J of this AOP.

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>	
B.6	TRS	20 ppm @ 10% O <sub>2</sub> , daily average.	<p>Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 5. See 1&amp;4 in appendix B for data recovery requirements. Report daily averages and excursions monthly.</p> <p>For LK #2: Simpson may use the method "#2 Lime Kiln Continuous TRS Emissions Monitoring System" included in appendix D of this AOP, provided that #2 Lime Kiln processes lime mud ≤20% of the time on a calendar year basis. While this test method is in use, annual #2 Lime Kiln percent use shall be calculated and submitted with the monthly air report for December. If annual use is &gt;20%, 40 CFR 60, App. B, Perf. Spec. 5 shall be used for all subsequent monitoring.</p>	Order No.97AQ-I004, Order No. 1916-AQ05, and WAC 173-405-040(3)(b).
		80 ppm @ 10% O <sub>2</sub> , 2 hr average.	<p>Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. B, Perf. Spec. 5. See 1&amp;4 in appendix B for data recovery requirements. Report excursions monthly.</p> <p>For LK #2: Simpson may use the method "#2 Lime Kiln Continuous TRS Emissions Monitoring System" included in appendix D of this AOP, provided that #2 Lime Kiln processes lime mud ≤20% of the time on a calendar year basis. While this test method is in use, annual #2 Lime Kiln percent use shall be calculated and submitted with the monthly air report for December. If annual use is &gt;20%, 40 CFR 60, App. B, Perf. Spec. 5 shall be used for all subsequent monitoring.</p>	Order No.97AQ-I004, Order No. 1916-AQ05, and WAC 173-405-040(3)(c).

**C. SMELT TANK #s 4E & 4W**

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
C.1	Particulate	1.5 lbs/10,000 lbs BLS (0.3 lb/ton).	EPA Method 5 or DOE Method 8 is the reference test method. The permittee shall source test quarterly, using the method except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests. Report quarterly. (See Condition C.3 for surrogate monitoring necessary to satisfy CAM requirements.)	Order No. 97AQ-I004 and Order No. 1916-AQ05 for limit and monitoring; WAC 173-405-040(2) for limit.
C.2	Opacity	Average 35% for more than 6 consecutive minutes in any 60 minute period.	DOE Test Method 9B is the reference test method. See Condition C.3 for monitoring and reporting requirements.	Order No. 97AQ-I004 for limit and monitoring; WAC 173-405-040(6) for limit..
C.3	HAPs	Particulate surrogate: 0.10 kg/Mg (0.20 lb/ton) of black liquor solids fired (see condition C.3a)	Maintain fan amps $\geq 62$ and scrubber flow $\geq 35$ gpm. Continuously monitor fan amps and scrubber flow. Begin corrective action, as specified in the SSM plan (see condition C.4), when an exceedence occurs (any 3-hr average out of compliance with fan amps or scrubber flow requirements). A violation occurs when 6 or more 3-hr averages are out of compliance with fan amps or scrubber flow requirements during a 6 month reporting period (not including applicable periods of startup, shutdown, or malfunction). For the purpose of determining the number of nonopacity exceedences, no more than one exceedence can occur per 24 hour period. Report exceedences monthly, and violations every 6 months.	40 CFR 63.862(a)(i) for limit; 40 CFR 63.864(e) for monitoring; 40 CFR 63.864(k)(1) for corrective action; 40 CFR 63.864(k)(2) for violation definition; 40 CFR 63.864(k)(3) for number of exceedences per period. 40 CFR 63.6(f) for SSM exclusion.

C.3a If a source test exceeds the particulate surrogate concentration listed in condition C.3, Simpson may use the PM overall compliance method described in 40 CFR 63.862(a)(ii) and 66 FR 3180 (January 12, 2001 or most recent version) to demonstrate compliance

with the HAPS standard. The calculation must be made with the source test data from LK #1, RF #4, and smelt tank #s 4E & 4W for the same month, if available, or most recent source test data, if data from the same month is not available.

- C.4 SSM Plan [40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)]  
Simpson shall comply with the SSM plan requirements identified in section J of this AOP.

**D. POWER BOILER # 6**

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
D.1	Particulate	0.10 gr/dscf @ 7% O <sub>2</sub> .	EPA Method 5 or DOE Method 8 is the reference test method. The permittee shall sample using the reference method except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests as follows: one test per three years while firing natural gas; once every 90 days on oil if oil is fired for > 4 successive days. Report test results monthly if testing requirement was triggered. Maintain records of daily fuel usage.	Order No. 97AQ-I004 and WAC 173-405-040(5)(c) for limit; Order No. 97AQ-I004 and Order No. 1916-AQ05 for monitoring.
D.2	Opacity	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	When fuel oil is combusted the permittee will perform visual opacity assessments within 24 hours of boiler startup and weekly thereafter. If the observer decides that there may be excess opacity the facility will take steps to identify and correct the causes of the opacity and within 24 hours conduct a visual assessment to confirm compliance. When burning natural gas the visual assessment is waived. Results of all tests and any corrective actions taken will be reported in the monthly report immediately following when they were obtained. Maintain records of daily fuel usage.	Order No. 97AQ-I004 and WAC 173-405-040(6) for limit.
D.3	SO <sub>2</sub>	1000 ppm @ 7% O <sub>2</sub> hourly average.	Maintain fuel receipts showing that all oil fired was ≤2% sulfur. Maintain records of daily fuel usage.	WAC 173-405-040(11)(b) for limit.

**E. POWER BOILER # 7**

Simpson shall comply with the applicable requirements of 40 CFR 60 Subparts A and Db for Power Boiler No. 7, which include the following general requirements:

- 40 CFR 60.7(b) & (f) concerning record keeping,
- 40 CFR 60.7(c), (d), & (e) concerning reporting,
- 40 CFR 60.11(d) concerning operation and maintenance,
- 40 CFR 60.12 concerning concealment,
- 40 CFR 60.13 concerning monitoring, and
- 40 CFR 60.19 concerning notification and reporting.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
E.1	Particulate	0.01 gr/dscf @ 7% O <sub>2</sub> .	EPA Method 5 is the reference test method. The permittee shall source test quarterly using EPA Method 5 except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests Report test results quarterly. See Condition E.1a for minimum O&M requirements intended to indicate compliance with the particulate limit	Order No. 97AQ-I004.
		0.05 gr/dscf @ 7% O <sub>2</sub> .	Same as for previous limit.	WAC 173-405-040(5)(a).
		0.10 lb/mmBtu, except during SSM periods.	Same as for previous limit.	40 CFR 60.43b(c)(1) and 40 CFR 60.43b(g).
E.1a	Monitor opacity continuously and maintain an opacity alarm. Take corrective action immediately whenever alarm indicates 6 minute opacity average greater than 10% or a one hour opacity average of >6%. Failure to take corrective action is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report corrective action and opacity excursions monthly.			
E.2	Opacity	10% average for more than 6 consecutive minutes in any 60 minute period.	DOE Test Method 9B is the reference test method. Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60, App. B, Perf. Spec. 1. See 1&4 in appendix B for data recovery requirements. Report daily maximum 6-minute opacity averages and exceedences monthly.	Order No. 97AQ-I004.

<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for one six minute period of not more than 27% opacity and except during periods of SSM.	Same as for previous limit except see 1&3 in appendix B for data recovery requirements.	40 CFR 60.43b(f) for basis of limit. 40 CFR 60.48b(a) for basis of monitoring.
	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Same as for previous limit except see 1&4 in appendix B for data recovery requirements.	WAC 173-405-040(6).
E.3	NOx	0.30 lbs/MMBTU, 30 day rolling average.	Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60, App. F and App. B, Perf. Spec. 2. See 1&3 in appendix B for data recovery requirements. Report test results and rolling average emissions monthly.
		363 tpy annual rolling total calculated monthly.	Order No. 97AQ-I004 and 40 CFR 60.44b(d) for limit. 40 CFR 60.48b(b) and 40 CFR 60.49b(i) for CEM requirements.
		Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60, App. F and App. B, Perf. Spec. 2. Report annual rolling mass emissions monthly.	Order No. 97AQ-I004.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
E.4	SO <sub>2</sub> from oil	75,000 lbs steam/ hour when using ≤2% sulfur fuel oil.	Sample fuel oil for sulfur content when tank is filled using ASTM Method D129-64, D1552-83, D4057-81, or equivalent. Monitor the oil firing rate continuously, log hourly oil firing rate.	Order No. 97AQ-I004.
		175,000 lbs steam/hour when using ≤ 1% sulfur fuel oil.	Sample fuel oil for sulfur content when tank is filled using ASTM Method D129-64, D1552-83, D4057-81, or equivalent. Monitor the oil firing rate continuously, log hourly oil firing rate.	Order No. 97AQ-I004.
		10% annual capacity factor from oil.	Fuel mass balance. Maintain records of fuel usage. Calculate and report annual oil capacity factor monthly	Order No. 97AQ-I004.
		111 tpy	Calculate from fuel oil sulfur content and usage. Report running total in monthly report unless all oil fired was ≤0.5% sulfur. In that case, the only requirement is to certify that only very low sulfur oil was used.	Order No. 97AQ-I004.
		0.5 lb/MMBTU, 30 day rolling average	Calculate rolling average daily by methods in 40 CFR 60.47b(b). Report calculation results monthly.	40 CFR 60.42b(d)(1) 40 CFR 60.42b(e) 40 CFR 60.47b(a) 40 CFR 60.49b(j) 40 CFR 60.47b(b).
E.4b	SO <sub>2</sub>	1000 ppm @ 7% O <sub>2</sub> , hourly average.	Sample fuel oil for sulfur content when tank is filled using ASTM Method D129-64, D1552-83, D4057-81, or equivalent. Maintain records showing that all oil fired was ≤2% sulfur.	WAC 173-405-040(11)(b).
E.5	CO	600 ppm @ 7% O <sub>2</sub> , 30 day rolling average.	Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60 App. F and App. B, Perf. Spec. 4. See 1&4 in appendix B for data recovery requirements. Report excursions monthly.	Order No. 97AQ-I004.

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
	450 tpy	Monitor continuously using an approved CEM that conforms to 40 CFR Pt. 60 App. F and App. B, Perf. Spec. 4. Report year to date total monthly.	Order No. 97AQ-I004.
E.6 VOC	0.15 lbs/MMBTU	Source test twice per year using EPA Method 25A or equivalent. Use the average of 3 one-hour runs. Report results on most immediate monthly report.	Order No. 97AQ-I004.

- E.7 Operate a continuous emission monitor for O<sub>2</sub> that conforms to 40 CFR Pt. 60 Appendix F and Appendix B, Performance Specification 3. [Order No. 97AQ-I004]
- E.8 Monthly monitoring reports must include any occurrence of excess emissions recorded on a CEM for Power Boiler #7, including the time, magnitude, duration, cause, and any corrective action. [Order No. 97AQ-I004; 40 CFR 60.49b(h); 40 CFR 60.7(c)]
- E.9 The permittee may not fire Power Boiler #7 with hogged fuel while both sides of the precipitator are out of service; however, it may fire oil or natural gas subject to all applicable air emission limits. The permittee shall monitor and record the time and duration when both sides of the precipitator are out of service at the same time, and maintain facility operation records showing that the firing limitation was followed. All violations will be reported in the most immediate monthly report. [Order No. 97AQ-I004]
- E.10 The permittee shall maintain the records specified in 40 CFR 60.7(b), (c), (d) and (f) pertaining to the operation of Power Boiler #7, its associated air pollution control equipment, and its continuous monitoring system (CMS). CMS data, including measurement results, performance evaluations, calibration checks, adjustments and maintenance performed, and operating records are to be recorded in a form suitable for inspection. Submit monthly a summary report of excess emissions and submit quarterly monitoring system performance report. [40 CFR 60.7(b), (c), (d) and (f)]
- E.11 The permittee shall maintain records of the amount of fuel combusted each day in Power Boiler #7 and, at the end of each month, calculate annual capacity factors for each fuel on a 12-month rolling average basis. [40 CFR 60.49b(d)]
- E.12 The permittee shall maintain records and report information concerning NO<sub>x</sub> emissions, NO<sub>x</sub> continuous emission monitoring system, and SO<sub>2</sub> emissions data for #7 Power Boiler as described in 40 CFR 60.49b(g), (i), (j), & (k). Report excess emissions monthly. All other required reporting to be done at least quarterly. If all oil fired was ≤0.5% sulfur, the only requirement for SO<sub>2</sub> emissions reporting is to certify that only low sulfur fuel oil was combusted in the facility during the reporting period [40 CFR 60.49(r)].

**F. CAUSTICIZER SLAKER VENT**

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
F.1	Particulate	≤0.10 gr/dscf @ standard conditions	Monitor at the request of Ecology.	WAC 173-400-060.

**G. DIGESTER, MULTIPLE-EFFECTS EVAPORATORS, & CONDENSATE STRIPPER SYSTEM**

The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
G.1	TRS	Treat noncondensable gas (NCG) to reduce TRS emission equal to reduction achieved by thermal oxidation in a lime kiln; install a backup treatment system	Maintain records of continuous treatment as demonstrated by vent valve position, monthly NCG system inspections, and number of hours system vents each month. Report periods of untreated venting.	WAC 173-405-040(4)

**H. INDUSTRIAL STACK SOURCES**

Air emissions from the following units, which comprise the "industrial stack sources" at the facility as listed in the "SIP for Particulate Matter the Tacoma Tideflats," shall not exceed 1671 kg/day of PM-10, as measured using the procedures in Appendix C: Recovery Furnace No. 3; Recovery Furnace No. 4; Lime Kiln No. 1; Lime Kiln No. 2; Smelt Tank No. 3; Smelt Tank No. 4E; Smelt Tank No. 4W; #6 Power Boiler; and Power Boiler No. 7. Industrial stack sources do not include existing fugitive, area, and insignificant point source emissions. This limit may be modified through new source review or a SIP revision. Monitoring, reporting and recordkeeping requirements are described in Appendix C. [Order No. 95AQ-I006]

Note: the SIP includes the emissions from Recovery Furnace No. 3 and Smelt Vent No. 3. Simpson is prohibited from operating Recovery Furnace No. 3 and Smelt Vent No. 3. [Order No. 99AQIS-94, Condition 3]

## **I. COMPLIANCE ASSURANCE MONITORING (CAM)**

Under 40 CFR Part 64 Simpson is required to submit a CAM Plan. CAM monitoring requirements are applicable for particulates at RF No. 4, Smelt Tank Vents 4E and 4W, Lime Kilns 1&2, and Power Boiler No.7.

MACT 2 monitoring requirements [40 CFR Part 63.864] for RF No. 4, Smelt Tank Vents 4E and 4W, and Lime Kilns 1&2 satisfy the requirements for CAM. PB 7 monitoring to provide CAM is met with by the requirements of condition E.1a.

**J. NESHAP SSM Plan, Recordkeeping, and reporting**

The Simpson mill contains affected sources subject to the NESHAP for the Pulp and Paper Industry (Subpart S) and the NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semicheical Pulp Mills (Subpart MM). The SSM Plan, recordkeeping and reporting requirements in J.1 through J.10 apply to the affected sources listed in sections A, B, C, K, L, M and N of this permit. The requirements in J.11 apply to the affected sources listed in sections K, L, M and N. The requirements in J.12 apply to the affected sources listed in sections A, B and C. (Note: Only 40 CFR Part 63 requirements are cited in this permit as the applicable requirements. WAC 173-400-075(6) incorporates MACT by reference.)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
J.1	Operation and Maintenance/SSM Plan	Develop and implement a written startup, shutdown, and malfunction (SSM) plan for operating and maintaining affected sources subject to NESHAP Subparts S & MM during SSM periods, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with 40 CFR 63 Subparts S & MM standards. The SSM plan shall include the elements set forth in 40 CFR 63.6(e)(3).	40 CFR 63.6(e)(3)(i)
J.2		During SSM periods, operate and maintain regulated mill systems (including associated air pollution control equipment) in accordance with the SSM plan. Malfunctions shall be corrected as soon as possible after their occurrence in accordance with the SSM plan	40 CFR 63.6(e)(3)(i)
J.3		Change the SSM plan, if required by Ecology, if it is determined to be unacceptable under 40 CFR 63.6(e)(2).	40 CFR 63.6(e)(3)(i)
J.4		Update the SSM plan within 45 days of an SSM event that the plan failed to address or inadequately addressed.	40 CFR 63.6(e)(3)(i)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
J.5	Recordkeeping (General Requirements)	NESHAP Subparts S & MM Record Retention - maintain files of all information (including all reports and notifications) required by 40 CFR Part 63, Subparts S & MM in a form suitable and readily available for inspection for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report or record. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks or on microfiche.	40 CFR 63.10(b)(1) and 40 CFR 63.6(e)(3)(v)
J.6		Keep the SSM Plan on record to be made available for inspection, upon request, by the Ecology or EPA, for the life of mill, or until the mill is no longer subject to the provisions of 40 CFR Part 63. If the SSM Plan is revised, keep previous (i.e. superseded) versions of the Plan on record, to be made available for inspection, upon request, by the Ecology or EPA, for five years following each revision of the Plan.	40 CFR 63.10(b)(1) and 40 CFR 63.6(e)(3)(v)
J.7	Reporting (General Requirements)	Immediate SSM Plan Deviation Report. Any time an action taken during a SSM event (including actions taken to correct a malfunction) is not consistent with the procedures in the permittee's 40 CFR 63 Subparts S & MM SSM Plan, make an immediate report of the actions taken for that event to Ecology within 2 working days, by telephone or facsimile transmission. The immediate report shall be followed by a letter explaining the circumstances of the event, the reasons for not following the plan, and whether any 40 CFR 63 Subpart S or MM excess emissions and/or parameter monitoring exceedences are believed to have occurred. For purposes of this report, a "malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner (failures caused in part by poor maintenance or careless operation are not malfunctions).	40 CFR 63.10(d)(5)(ii) and WAC 173-401-615(3)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
J.8		Semi-annual NESHAP Subparts S & MM Summary Report. The monthly CEM reports filed (by July 30 <sup>th</sup> and January 30 <sup>th</sup> ) for the months of June and December shall include a semi-annual NESHAP Subparts S & MM excess emissions and continuous monitoring system performance report and/or summary report for the six month reporting periods ending June 30 and December 31.	40 CFR 63.10(e)(3) and WAC 173-401-615(3)
J.9		Semi-annual SSM Report. If actions taken during SSM events were consistent with the procedures in the permittee's SSM plan the semi-annual report required under section J of this AOP shall include a statement to that effect.	40 CFR 63.10(d)(5)(i) and WAC 173-401-615(3)
J.10		Comply with NESHAP General Reporting.	40 CFR 63.10(b) and (c)
J.11	Additional Reporting Requirements for Subpart S Affected Sources	Every two years beginning April 15, 1999, submit a non-binding control strategy report in accordance with applicable requirements.	40 CFR Part 63 §63.455(a); 40 CFR Part 63 §63.455(b)(1) through (b)(3); and 40 CFR Part 63 Subpart A, Section §63.9(b)(2)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
J.12	Additional SSM Plan Requirements for Subpart MM Affected Sources	In addition to the requirements specified in §63.6(e)(3), the SSM plan for Subpart MM sources must include: procedures to determine and record the cause of an operating parameter exceedance and the time the exceedance began and ended; corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions taken to correct the exceedance; a maintenance schedule for each control technique and recommendations for routine and long-term maintenance; and an inspection schedule for each continuous monitoring system required under §63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.	40 CFR 63.866(a)

**K. Low Volume High Concentration (LVHC) SYSTEM**  
(NESHAP Subpart S)

Applies to offgases from:

- Nos. 1 and 2 Kamyr steaming vessel,
- Nos. 1 and 2 Kamyr flash tank/blow tank,
- Kamyr flash evaporator,
- No. 1 & 2 evaporator hotwell,
- No. 4 evaporator hotwell,
- Turpentine system, and
- Pulping condensate collection tank.

[40 CFR Part 63, §63.443(a)(1)(i) & 40 CFR Part 63, §63.440(d)] (Note: Only 40 CFR Part 63 requirements are cited in this permit as the applicable requirements. WAC 173-400-075(6) incorporates MACT by reference.)

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
K.1	HAPs	Collection and Treatment	LVHC non-condensable gas source group emissions shall be enclosed and vented into a closed-vent system and routed to the Lime Kilns.	40 CFR Part 63, §63.443(c)
K.2			Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures in 40 CFR Part 63, §63.457(e). Each enclosure or hood opening closed during the initial performance test shall be maintained in the closed position at all times except when necessary to open for sampling, inspection, maintenance, or repairs.	40 CFR Part 63, §63.450(a)&(b)
K.3			Each component of the closed-vent system used to control LVHC non-condensable gas source group emissions that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 ppmv above background, as measured by 40 CFR 60, Appendix A, Method 21.	40 CFR Part 63, §63.450(c) and 40 CFR Part 63, §63.457(d)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
K.4		<p>Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the limitations in 40 CFR Part 63, §63.443 shall comply with the following:</p> <p>On each bypass line; install, calibrate, maintain, and operate according to manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line (note: monitoring bypass valve position is a satisfactory flow indicator).</p> <p>For bypass line valves that are not computer controlled, maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.</p>	40 CFR Part 63, §63.450(d)
K.5		Introduce LVHC gases with the primary fuel or into flame zone of the Lime Kilns.	40 CFR Part 63, §63.443(d)(4)
K.6	Inspection and Monitoring	Install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system as specified in 40 CFR 63.453 (b) through (m) except as allowed in 40 CFR 63.453(m). The CMS shall include a continuous recorder.	40 CFR Part 63, §63.453(b) through (m)
K.7		For each enclosure opening, a visual inspection of the closure mechanism shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.	40 CFR Part 63, §63.453(k)(1)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
K.8		Each closed vent system (reasonably accessible ductwork, piping, enclosures, and connections to covers in the collection system for the LVHC non-condensable gas source group) shall be visually inspected for visible evidence of defects every 30 days or as requested by the Department.	40 CFR Part 63, §63.453(k)(2)
K.9		Measure initially and annually components of closed-vent systems under positive pressure for detectable leaks as specified in 40 CFR Part 63, §63.457(d).	40 CFR Part 63, §63.453(k)(3)
K.10		Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in 40 CFR Part 63, §63.457(e).	40 CFR Part 63, §63.453(k)(4)
K.11		<p>If an inspection of the LVHC non-condensable gas collection system identifies visible defects, or if an instrument reading of 500 ppmv or greater above background is measured by 40 CFR 60, Appendix A, Method 21 in accordance with the procedures in 40 CFR Part 63, §63.457(d), or if enclosure openings are not maintained at negative pressure, take the following corrective action as soon as practicable.</p> <p>Make a first effort to repair or correct the closed-vent system as soon as practicable but no later than 5 calendar days after the problem is identified.</p> <p>Complete the repair or corrective action no later than 15 days after the problem is identified. Delay of repair or corrective action is allowed if the repair or corrective action is technically infeasible without a process unit shutdown or if the permittee determines that the emissions resulting from immediate repair would be greater than the emission likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process shutdown.</p>	40 CFR Part 63, §63.453(k)(6) and 40 CFR Part 63, §63.457(d)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
K.12	Recordkeeping (specific to LVHC)	<p>For each applicable enclosure opening, closed vent system, and closed collection system, prepare and maintain a site-specific inspection plan, including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:</p> <ul style="list-style-type: none"> <li>date of inspection,</li> <li>equipment type and identification,</li> <li>results of negative pressure tests for enclosures, and</li> <li>results of leak detection tests.</li> </ul> <p>In addition, if any defects or leaks are detected record:</p> <ul style="list-style-type: none"> <li>nature of the defect or leak and the method of detection,</li> <li>date the defect or leak was detected and the date of each attempt to repair the defect or leak,</li> <li>repair methods applied in each attempt to repair the defect or leak,</li> <li>reason for the delay if the defect or leak is not repaired within 15 days,</li> <li>expected date of successful repair of the defect or leak if the repair is not completed within 15 days,</li> <li>date of successful repair of the defect or leak,</li> <li>position and duration of opening of bypass line valves and the condition of any valve seals, and</li> <li>duration of the use of manual or computer-controlled bypass valves.</li> </ul>	40 CFR Part 63, §63.454(b)
K.13		<p>Records shall be maintained for all periods of excess emissions. Periods of excess emissions from the LVHC non-condensable gas source group are not violations of 63.443(c) and (d) provided that the time of excess emissions, not including periods of startup, shutdown, and malfunction, divided by the total process operating time in a semiannual reporting period does not exceed one (1) percent from the computer-controlled bypass valves in the LVHC system.</p>	40 CFR Part 63, §63.443(e)(1)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
K.14	SSM Plan	Simpson shall comply with the SSM plan requirements identified in section J of this AOP.	40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)

**L. Pulping Process Condensates**  
(NESHAP Subpart S)

Applies to:

Nos. 1 and 2 Kamyr digesters, flash condenser and turpentine recovery condensate streams routed to the Kamyr evaporator hotwell and the associated condensate transfer tank.

Black liquor evaporator condensates from feed stages, surface condensers, and vacuum system of the No. 1 and No. 2 evaporators routed to the No. 1, 2 evaporator hotwell: and, black liquor evaporator condensates from feed stages, surface condenser, and vacuum system of the No. 4 evaporator system, routed to the No. 4 evaporator hotwell.

HVLC collection system condensates; and

LVHC collection system condensates.

[40 CFR Part 63, §63.440(d) and 40 CFR Part 63, §63.6(i)] (Note: Only 40 CFR Part 63 requirements are cited in this permit as the applicable requirements. WAC 173-400-075(6) incorporates MACT by reference.)

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
L.1	HAPs	Collection and Treatment	<p>Collect kraft pulping condensate streams such that one of the following collection requirements is satisfied:</p> <p>Kraft pulping condensate is collected from all named condensate streams;</p> <p>Kraft pulping condensate is collected from each HVLC collection system, from each LVHC collection system, and from other named condensate streams that in total contain at least 65 percent of the total HAP mass from the kraft pulping condensate from each digester system, each turpentine recovery system, vapors from the weak black liquor feed stages of each evaporator system, and the evaporator vacuum system for each weak black liquor feed stage; or</p> <p>Kraft pulping condensate collected from named condensate streams contains at least 11.1 pounds of total HAP per oven-dry ton of unscreened brownstock. kraft pulping condensate collected from named condensate streams contains at least 11.1 pounds of total HAP per oven-dry ton of unscreened brownstock feeding the bleach plant and 7.2 pounds of total HAP per oven-dry ton of unscreened brownstock not intended for bleaching.</p>	40 CFR Part 63, §63.446(c)
L.2			Transfer collected kraft pulping condensate through a closed collection system. The closed collection system shall meet the requirements in 40 CFR Part 63, Subpart RR, Sections §63.960, §63.961, and §63.962, except for the closed vent systems and control devices shall be designed and operated in accordance with 40 CFR Part 63, §63.443(d) and 63.450.	40 CFR Part 63, §63.446(d)(1)

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
L.3		<p>The permittee is permitted to install and operate condensate collection tanks (CCT) to collect kraft pulping condensate.</p> <p>The CCT shall be equipped so that the fixed roof and all openings are operated with no detectable leaks, as indicated by an instrument reading of less than 500 ppmv above background as measured by 40 CFR 60, Appendix A, Method 21 in accordance with the procedures in 40 CFR Part 63, §63.457(d). Each opening will be maintained in a closed, sealed position at all times that the tank contains condensate, except when necessary to use the openings for sampling, removal, or for equipment inspection, maintenance, or repair.</p> <p>The CCT shall be equipped with a water seal device on the overflow line.</p> <p>The CCT shall be vented to a closed vent system meeting the requirements in 40 CFR Part 63, §63.450. CCT vent gases shall be incinerated in Lime Kiln and/or Hog Fuel Boiler.</p> <p>The CCT shall be inspected for detectable leaks initially and annually using the procedures in 40 CFR Part 63, §63.457(d).</p> <p>Kraft pulping condensate collected in the CCT shall be transferred in a closed collection system to the UNOX Reactor.</p>	<p>40 CFR Part 63, §63.446(d)(2) and 40 CFR Part 63, §63.457(d)</p> <p>40 CFR Part 63, §63.962(b)(2)(i)(A)</p> <p>40 CFR Part 63, §63.446(d)(2)(i)</p> <p>40 CFR Part 63, §63.453(1)(2)</p> <p>40 CFR Part 63, §63.446(e)(2)</p>
L.4		<p>Kraft pulping condensate shall be treated to demonstrate 92% destruction of total HAPs (with methanol as a surrogate) calculated as per 40 CFR 63.457(1)(1).</p>	<p>40 CFR Part 63, §63.446(e)(3), (4), (5)</p>

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
L.5	Inspection and Monitoring	<p>The condensate collection system shall be visually inspected every 30 days. Follow the inspection requirements found in 40 CFR Part 63, §63.964(a)(1)(i)(A), §63.964(a)(1)(v), and §63.964(b)(1) and (2) including:</p> <p>The unburied portion of the collection system piping shall be visually inspected to verify that there are no defects.</p> <p>The inspection shall include verification that appropriate liquid levels in the water seals in the CCT are being maintained and identify any other defects that could reduce water seal control effectiveness.</p>	<p>40 CFR Part 63, §63.453(l)</p> <p>40 CFR Part 63, §63.964(a)(1)(iii)</p> <p>40 CFR Part 63, §63.964(a)(1)(i)(A)</p>
L.6		<p>Follow the repair requirements found in 40 CFR Part 63, §63.964(a)(1)(i)(A), §63.964(a)(1)(v), and §63.964(b)(1) and (2) including:</p> <p>The first effort to repair a defect shall be no later than 5 calendar days after detection,</p> <p>Repair shall be completed as soon as practicable but no later than 15 calendar days after detection unless the repair of the defect requires emptying or temporary removal from service of the collection system.</p> <p>If repair of the defect requires emptying or temporary removal of the condensate collection system from service, the defect will be repaired the next time the process equipment generating the condensate stops operation. The repair of the defect will be completed before the process resumes operation.</p>	<p>40 CFR Part 63, §63.964(b)(1) and (2)</p>

Parameter	Limit (shall not exceed)	Monitoring & Reporting	Applicable Requirements
L.7		<p>The control device shall be operated in a manner consistent with the procedures/values established under this 40 CFR 63 Subpart S except as provided in 40 CFR 63.453 (p), 40 CFR 63.443(e), or 40 CFR 63.446(g). Daily monitoring requirements to comply with shall include:</p> <p>Monitoring of the site-specific parameters - calculate a 15 day rolling average of aerator amperage. Aerator amperage shall be measured at least once every 15 minutes. Compliance shall be demonstrated by:</p> <p>15 day rolling aerator amperage average &gt;87 amps per cell when operating two cells in parallel, or</p> <p>15 day rolling aerator amperage average &gt;253 amps when operating one cell.</p> <p>To change the average amperage values the procedures in 40 CFR 63.453(n) must be followed.</p>	<p>40 CFR 63.446(e)(2) &amp; 40 CFR 63.453(n)</p>
L.8		<p>Conduct a performance test within 45 days after the beginning of each quarter and meet the applicable emission limit in 40 CFR 63.446(e)(2).</p> <p>The performance test conducted in the first quarter (annually) shall be performed for total HAP as specified in 40 CFR 63.457(g) and meet the percent reduction or mass removal emission limit specified in 40 CFR 63.446(e)(2).</p> <p>The remaining quarterly performance tests shall be performed as specified in paragraph (j)(3)(i) of this section except Simpson may use the applicable methanol procedure in 40 CFR 63.457(l)(1) or (2) and the value of r determined during the first quarter test instead of measuring the additional HAP to determine a new value of r.</p>	<p>40 CFR 63.457(l)</p>

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
L.9		SSM Plan	Simpson shall comply with the SSM plan requirements identified in section J of this AOP.	40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)

**M. Bleaching System**  
(NESHAP Subpart S)

Applies to:

- First chlorine dioxide tower vent,
- First chlorine dioxide stage washer vent,
- First chlorine dioxide stage filtrate tank vent,
- Extraction stage washer vent,
- Extraction stage filtrate tank vent,
- Second chlorine dioxide tower vent,
- Second chlorine dioxide stage washer vent, and
- Second chlorine dioxide stage filtrate tank vent.

(Note: Only 40 CFR Part 63 requirements are cited in this permit as the applicable requirements. WAC 173-400-075(6) incorporates MACT by reference.)

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
M.1	HAPs	Collection and Treatment	Vent gases from bleaching system stages where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to the Bleach Plant Scrubber.	40 CFR Part 63, §63.445(b)

M.2	Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures in 40 CFR Part 63, §63.457(e). Each enclosure or hood opening closed during the initial performance test shall be maintained in the closed position at all times except when necessary to open for sampling, inspection, maintenance, or repairs.	40 CFR Part 63, §63.450(b)
M.3	Each component of the closed-vent system used to control bleaching system source group emissions that is operated at positive pressure and located prior to the scrubber shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 ppmv above background, as measured by 40 CFR 60, Appendix A, Method 21.	40 CFR Part 63, §63.450(c) and 40 CFR Part 63, §63.457(d)
M.4	The Bleach Plant Scrubber shall reduce the total chlorinated HAP mass in the vent stream entering the scrubber by 99 percent or more by weight; achieve a scrubber outlet concentration of 10 parts per million or less by volume of total chlorinated HAP; or achieve a scrubber outlet mass emission rate of 0.002 pounds of total chlorinated HAP mass per ton of ODP.	40 CFR Part 63, §63.445(c)
M.5	The permittee shall either: comply with the chloroform limitations under 40 CFR 430.24(a)(1) and (e), or use no hypochlorite or chlorine for bleaching in the bleaching system.	40 CFR Part 63, §63.445(d)

M.6	Inspection and Monitoring	<p>Monitor scrubber liquid inlet flow rate to the active section of the scrubber and scrubber effluent pH or oxidation/reduction potential (ORP) with continuous monitoring systems (CMS). Fan operation shall also be measured and recorded as an indicator of gas scrubber vent gas inlet flow rate. The CMS shall be operated and maintained according to the manufacturer's specifications and shall include a continuous recorder.</p> <p>Compliance shall be demonstrated by:</p> <p>Fan operation: on</p> <p>Liquid inlet flow to the active section of the scrubber:</p> <p>Weak wash <math>\geq 42</math> gpm – 3-hour average, or</p> <p>White liquor <math>\geq 77</math> gpm – 3-hour average.</p> <p>ORP:</p> <p>Weak wash <math>\leq (-668 \text{ mv})</math> – 3-hour average, or</p> <p>White liquor <math>\leq (-361 \text{ mv})</math> – 3-hour average.</p> <p>To change the operational values the procedures in 40 CFR 63.453(n) must be followed.</p>	40 CFR Part 63, §63.453(a) and (c)
M.7		If alternative monitoring is desired, the permittee shall petition the Department and USEPA to use alternate parameters to monitor the bleach plant scrubber.	40 CFR Part 63, §63.453(m)
M.8	SSM Plan	Simpson shall comply with the SSM plan requirements identified in section J of this AOP.	40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)

**N. High Volume Low Concentration (HVLC) SYSTEM**

(NESHAP Subpart S)

Comply with the requirement of 40 CFR 443(a)(1)(ii) through (a)(1)(v) as expeditiously as practicable, but not later than April 17, 2006. [40 CFR 63.440(d)(1)].

Applies to the following systems:

- Pulp washing,
- Knotter system,

Screen system.

(Note: Only 40 CFR Part 63 requirements are cited in this permit as the applicable requirements. WAC 173-400-075(6) incorporates MACT by reference.)

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Requirement</b>	<b>Applicable Requirements</b>
N.1	HAPs	Collection and Treatment	The HVLC system shall be enclosed and vented to No. 4 Recovery Furnaces except for each knotter system that does not exceed 0.1 pounds of HAPs per ODP ton, and each screen system that does not exceed 0.2 pounds HAPs per ODP ton.	40 CFR Part 63, §63.443(a)(1)(ii)(A) §63.443(a)(1)(ii)(B) §63.443(c) §63.443(d)(4)
N.2			The HVLC system shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified in §63.457(e). Each enclosure or hood opening closed during the initial performance test specified in §63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.	40 CFR Part 63, §63.450(a)&(b)

Parameter	Limit (shall not exceed)	Requirement	Applicable Requirements
N.3		<p>Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in §§63.443 shall comply with either of the following requirements:</p> <p>(1) On each bypass line, Simpson shall install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that is capable of taking periodic readings as frequently as specified in §63.454(e). The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line (note: monitoring bypass valve position is a satisfactory flow indicator); or</p> <p>(2) For bypass line valves that are not computer controlled, Simpson shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.</p>	40 CFR Part 63, §63.450(d)
N.4	Monitoring & Reporting	For each enclosure opening, a visual inspection of the closure mechanism shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.	40 CFR Part 63, §63.453(k)(1)
N.5		Each closed vent system (reasonably accessible ductwork, piping, enclosures, and connections to covers in the collection system for the HVLC system) shall be visually inspected for visible evidence of defects every 30 days or as requested by the Department.	40 CFR Part 63, §63.453(k)(2)
N.6		Measure initially and annually components of closed-vent systems under positive pressure for detectable leaks as specified in 40 CFR Part 63, §63.457(d).	40 CFR Part 63, §63.453(k)(3)
N.7		Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in 40 CFR Part 63, §63.457(e).	40 CFR Part 63, §63.453(k)(4)

N.8

Parameter	Limit (shall not exceed)	Requirement	Applicable Requirements
		<p>If an inspection of the HVLC system identifies visible defects, or if an instrument reading of 500 ppmv or greater above background is measured by 40 CFR 60, Appendix A, Method 21 in accordance with the procedures in 40 CFR Part 63, §63.457(d), or if enclosure openings are not maintained at negative pressure, take the following corrective action as soon as practicable.</p> <p>Make a first effort to repair or correct the closed-vent system as soon as practicable but no later than 5 calendar days after the problem is identified.</p> <p>Complete the repair or corrective action no later than 15 days after the problem is identified. Delay of repair or corrective action is allowed if the repair or corrective action is technically infeasible without a process unit shutdown or if the permittee determines that the emissions resulting from immediate repair would be greater than the emission likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process shutdown.</p>	<p>40 CFR Part 63, §63.453(k)(6) §63.457(d)</p>

Parameter	Limit (shall not exceed)	Requirement	Applicable Requirements
N.9	Recordkeeping (specific to HVLC)	<p>For each applicable enclosure opening, closed vent system, and closed collection system, prepare and maintain a site-specific inspection plan, including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:</p> <ul style="list-style-type: none"> <li>date of inspection,</li> <li>equipment type and identification,</li> <li>results of negative pressure tests for enclosures, and</li> <li>results of leak detection tests.</li> </ul> <p>In addition, if any defects or leaks are detected record:</p> <ul style="list-style-type: none"> <li>nature of the defect or leak and the method of detection,</li> <li>date the defect or leak was detected and the date of each attempt to repair the defect or leak,</li> <li>repair methods applied in each attempt to repair the defect or leak,</li> <li>reason for the delay if the defect or leak is not repaired within 15 days,</li> <li>expected date of successful repair of the defect or leak if the repair is not completed within 15 days,</li> <li>date of successful repair of the defect or leak,</li> <li>position and duration of opening of bypass line valves and the condition of any valve seals, and</li> <li>duration of the use of manual or computer-controlled bypass valves.</li> </ul>	40 CFR Part 63, §63.454(a)&(b)
N.10		Records shall be maintained for all periods of excess emissions. Periods of excess emissions from the HVLC system are not violations of 63.443(c) and (d) provided that the time of excess emissions, not including periods of startup, shutdown, and malfunction, divided by the total process operating time in a semiannual reporting period does not exceed four (4) percent.	40 CFR Part 63, §63.443(e)(2)

<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Requirement</b>	<b>Applicable Requirements</b>
N.11	SSM Plan	Simpson shall comply with the SSM plan requirements identified in section J of this AOP.	40 CFR 63.6(e)(3)(i) & 40 CFR 63.866(a)

**O. POWER BOILER MACT**  
(NESHAP Subpart DDDDD)

Comply with the requirements this subpart (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters), including:

1. Submit initial notification no later than March 14, 2005. [40 CFR 63.7545(b)]
2. Comply with Subpart DDDDD no later than September 13, 2007. [40 CFR 63.7495]
3. Conduct a Performance Test to demonstrate compliance no later than March 11, 2008. [40 CFR 63.7510(d)]
4. Submit a Notification of Compliance Status, including Performance Test results, no later than May 11, 2008. [40 CFR 63.7545(e)]

**Simpson NPDES requirements**

Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type <sup>1</sup>
BOD <sub>5</sub>	mg/l	2° Clarifier Effluent	4×/wk <sup>2</sup>	24 hour composite
TSS	mg/l	2° Clarifier Effluent	4×/wk <sup>2</sup>	24 hour composite
AOX <sup>3</sup>	mg/l	2° Clarifier Effluent	4×/wk <sup>2</sup>	24 hour composite
pH <sup>4</sup>	SU	2° Clarifier Effluent	Continuous <sup>5</sup>	Recording
COD	mg/l	2° Clarifier Effluent	1×/wk	24 hour composite
Temperature	Degrees	2° Clarifier Effluent	Continuous <sup>5</sup>	Recording
Flow	MGD	2° Clarifier Effluent	Continuous <sup>5</sup>	Recording
2,3,7,8-TCDD <sup>6</sup>	pg/L	2° Clarifier Effluent	1×/qtr	24 hour composite
2,3,7,8-TCDF <sup>6</sup>	pg/L	2° Clarifier Effluent	1×/qtr	24 hour composite
Pollutant Scan	--	2° Clarifier Effluent	1×/yr	(see S?)
Chloroform <sup>7</sup>	ug/L	Bleach Plant Effluent	1×/mth <sup>8</sup>	24 hour composite <sup>9</sup>
Tetrachlorocatechol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
Tetrachloroguaiacol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite

Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type <sup>1</sup>
Trichlorosyringol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
4,5,6-trichloroguaiacol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
3,4,6-trichlorocatechol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
3,4,5-trichlorocatechol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
3,4,5-trichloroguaiacol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
2,3,4,6-tetrachlorophenol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
3,4,6-trichloroguaiacol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
Pentachlorophenol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
2,4,6-trichlorophenol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
2,4,5-trichlorophenol	ug/L	Bleach Plant Effluent	1×/qtr <sup>10</sup>	24 hour composite
2,3,7,8-TCDD <sup>4</sup>	pg/L	Bleach Plant Effluent	1×/mth	24 hour composite
2,3,7,8-TCDF <sup>4</sup>	pg/L	Bleach Plant Effluent	1×/mth	24 hour composite
BOD5	mg/l	Primary Clarifier Effluent <sup>11</sup>	Weekly	24 hour composite
TSS	mg/l	Primary Clarifier Effluent <sup>11</sup>	Weekly	24 hour composite
Flow	MGD	Non-contact Cooling Water Effluent	Continuous <sup>5</sup>	Recording
Temperature	Degrees	Non-contact Cooling Water Effluent	Continuous <sup>5</sup>	Recording
2,3,7,8-TCDD	pg/L	Sludge <sup>12</sup>	2×/yr <sup>13</sup>	grab
2,3,7,8-TCDF	pg/L	Sludge <sup>12</sup>	2×/yr <sup>13</sup>	grab

Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type <sup>1</sup>
Production B1 (Subpart B - bleached market pulp)	ADT/D	Mill	Daily	24 hour
Production B2 (Subpart B - bleached kraft paperboard, coarse paper, & tissue paper)	ADT/D	Mill	Daily	24 hour
Production C (Subpart C - unbleached kraft)	ADT/D	Mill	Daily	24 hour
Production J (Subpart J - paperboard from wastepaper, corrugating medium furnish)	ADT/D	Mill	Daily	24 hour
Acute Toxicity Testing		Final Effluent <sup>14</sup>	2×/5 yr	Composite (see S12)
Chronic Toxicity Testing		Final Effluent <sup>14</sup>	2×/5 yr	Composite (see S13)

- <sup>1</sup> All samples must be maintained at proper temperature during collection for composite samples. All samples must be stored at proper temperature until analyzed.
- <sup>2</sup> This represents a reduced sampling frequency. Sampling must be done so no more than two consecutive days occur between samples when sampling on 4×/wk frequency. When any two limit violations [Can we make this 2 separate events so it is not triggered by 2 or more days stemming from a single upset? We'd only apply it to BOD and TSS.] for a parameter occur in a 12 consecutive month period, monitoring frequency for that parameter reverts to daily. Any changes in sampling frequency must be noted in the monthly report for the month in which the changes occur.
- <sup>3</sup> Analysis must be conducted in accordance with Method 1650: Adsorbable Organic Halides by Adsorption and Coulometric Titration, Revision B, October, 1993. The Permittee must report date sampled, AOX concentration (ppm), effluent flow (MGD), AOX lb/D, and pulp fed daily to the bleach plant (ADT).
- <sup>4</sup> For facilities which continuously monitor and record pH values, the number of minutes the pH value was below or above the permitted range must be recorded for each day and the total minutes for the month reported, the durations when values were above and below the permitted range must be reported separately. The instantaneous maximum and minimum pH must be reported monthly.
- <sup>5</sup> Continuous means uninterrupted - except for brief lengths of time for calibration, power failure, or for unanticipated equipment repair or maintenance. Sampling must be done four times per day when continuous monitoring is not possible.
- <sup>6</sup> Analysis including sample containers and QA/QC must be conducted in accordance with Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotopic Dilution HRGC/HRMS, USEPA Office of Water, Engineering and Analysis Division, Revision A. The Permittee must achieve a minimum level of detection less than or equal to 10 pg/L.

- 7 Analysis for chloroform must be conducted in accordance with EPA Method 624 or equivalent. The Permittee must report date sampled, chloroform concentration (ppm), bleach plant effluent flow (MGD), chloroform lb/D, and pulp fed daily to the bleach plant (ADT).
- 8 This represents a reduced sampling frequency. When a limit violation occurs the monitoring frequency reverts to 1×/wk. Any changes in sampling frequency must be noted in the monthly report for the month in which the changes occur.
- 9 The twenty-four hour composite sampling for chloroform must consist of a minimum of four (4) individual samples collected during a twenty-four hour period and quantitatively composited in the laboratory. The Permittee must include a detailed description of the method used to composite the samples with the first report, and with subsequent reports where there is a modification of the compositing method. If an automated continuous or grab compositing device is used, the report must include a description of the system and the name of the manufacturer.
- 10 This represents a reduced sampling frequency. When a limit violation occurs for any chlorinated phenolic compound (Tetrachlorocatechol, Tetrachloroguaiacol, Trichlorosyringol, 4,5,6-trichloroguaiacol, 3,4,6-trichlorocatechol, 3,4,5-trichlorocatechol, 3,4,5-trichloroguaiacol, 2,3,4,6-tetrachlorophenol, 3,4,6-trichloroguaiacol, Pentachlorophenol, 2,4,6-trichlorophenol, and 2,4,5-trichlorophenol) the monitoring frequency for all chlorinated phenolic compounds reverts to 1×/mth. Any changes in sampling frequency must be noted in the monthly report for the month in which the changes occur.
- 11 Monitor primary clarifier effluent instead of UNOX influent to acknowledge condensate BOD and TSS loading not included in Condition F6. Sample may be time or flow weighted.
- 12 Sludge is defined as combined primary and secondary treatment and OCC sludge leaving the de-watering presses. Analysis of sludge samples and QA/QC, must be conducted in accordance with, Method 8290, Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), SW-846, Test Methods for Evaluating Solid Waste, USEPA, Office of Solid Waste, September, 1994.
- 13 Effluent samples must be taken for TCDD and TCDF at the same time as the sludge samples. Sampling for TCDD and TCDF must also coincide with that for AOX.
- 14 Final effluent sample must be collected at a point after the 2° Clarifier Effluent and the Non-contact Cooling Water Effluent are combined.

## Port Townsend Paper Corporation

### PTPC's AOP requirements (footnote key at the end of PTPC AOP requirements)

#### A. Recovery Furnace

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
A.1	Particulate and HAP (metals)	0.044 gr/dscf at 8% O <sub>2</sub> except during periods of Startup, Shutdown and Malfunction	EPA Method 5 is the reference test method. Monitor opacity per A.7 as surrogate <sup>11</sup> .	40 CFR 63.862(a)(1)(i)(A) for PM surrogate HAP limit.  40 CFR 63.865(b)(1) for test method.  40 CFR 63.6(f) for SSM allowance.
A.2a	Particulate	0.08 gr/dscf @ 8% O <sub>2</sub> , one hour average.	Sample monthly <sup>2</sup> using EPA Method 5 except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly. Refer to A.2c for reporting requirements.  Refer to Condition A.7 for minimum O&M requirements intended to indicate compliance with the particular limit.	Order DE 05AQIS-2892 for limit and monitoring (Table 1, A.1a)
A.2b		0.10 gr/dscf @ 8% O <sub>2</sub> , one hour average.	Same as for previous limit.	WAC 173-405-040 (1)(a) for limit

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
A.2c	Source Test Reporting	No limit – report defined source test parameters for A.2a.	Report the following parameters in the monthly air report: Average opacity during each source test run. Sufficient data to allow verification of source test results. Air flow split between ESP chambers. Average black liquor flow rate, density, and % solids during source test. As alternative to #4, PTPC can estimate the total solids fired during the source test run. Log, every hour during the source test, primary and secondary voltage and current, and spark rate (if available) for each TRC unit.	Order DE 05AQIS-2892 for operating parameter recording and reporting requirements.
A.3	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	Monitor continuously using an approved COM that conforms to 40 CFR 60, App. B, Perf. Spec. 1. Report excursions monthly <sup>11</sup> .	WAC 173-405-040(6) for opacity limit. for continuous monitoring requirement.
A.4	Opacity	20% for average of 10 consecutive 6-minute averages except during periods of SSM.	Implement corrective action per the SSM Plan when monitoring exceedence occurs. Monitor continuously using an approved COM that conforms to 40 CFR 63.864(d)(1)-(4) and 63.6(h) and 63.8 <sup>11</sup> . Compliance may also be determined using EPA Method 9. Report excess emissions quarterly per 40 CFR 63.867(c).	40 CFR 63.864(k)(1)(i) for 20% limit.  40 CFR 63.864(d)(1)-(4) and 63.6(h) and 63.8. for COM requirement  40 CFR 63.867(c) for quarterly excess emissions reporting.

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
A.5	Opacity	35% for 6% or more of the operating time within any quarterly period except during periods of SSM.	Same as for previous limit.	40 CFR 63.864(k)(2)(i) for 35% limit.
A.6a	SO <sub>2</sub>	200 ppm @ 8% O <sub>2</sub> , one hour average.	Sample monthly using EPA modified RM 6 except that the permittee may conduct one 1-hour test in lieu of three 1-hour tests. Report test results in following monthly report <sup>2</sup> .	PSD-I (Condition 2) (for limit only)  WAC 173-401-615 for test method and reporting.
A.6b		500 ppm @ 8% O <sub>2</sub> , one hour average.	Same as for previous limit.	WAC 173-405-040(11)(a) for limit.
A.7	Monitor opacity with a COM as a compliance indicator as described in conditions A.3 <sup>11</sup> . Failure to take corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report corrective action and opacity excursions monthly. (WAC 173-401-615)			
A.8	Reserved			
A.9	NESHAPS SSM	See Condition I for generic NESHAPS SSM Requirements.		

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
A.13	Particulate	0.05 gr/dscf @ 8% O <sub>2</sub> , one hour average.	Sample monthly <sup>2</sup> using EPA Method 5 except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly.	Order DE 05AQIS-2892 (Table 1, A.1b)

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
A.14	TRS	5.0 ppm @ 8% O <sub>2</sub> , 24 hour average except during periods of Startup, Shutdown and Malfunction	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and to App. B, Perf. Spec. 5. Report excursions monthly <sup>11</sup> .	WAC 173-405-040 (1)(c) for limit and Order DE 05AQIS-2892 for monitoring and reporting (Table 1, A.4)
A.15	O <sub>2</sub>	No limit - required to correct TRS data except during periods of SSM.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and to App. B, Perf. Spec. 3 <sup>11</sup> .	Order DE 05AQIS-2892 (Table 1, A.5)

#### B. Smelt Dissolver Tank

	<b>Parameter</b>	<b>Limit (shall not exceed)</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
B.1	HAP (PM as surrogate)	Shall not exceed 0.20 lb/ton BLS as hourly avg except during periods of SSM.	EPA Method 5 is reference method. Monitor scrubber flow as surrogate <sup>11</sup> . Refer to B.4 for scrubber flow surrogate monitoring requirements.	40 CFR 63.862 (a)(1)(i)(B) for PM surrogate HAP limit.  40 CFR 63.865(b)(1) for test method.
B.2	Particulate	0.3 lbs/ton BLS, one hour average.	Sample monthly <sup>2</sup> using EPA Method 5 or Ecology Method 8 except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly.	WAC 173-405-040(2) for limit.  WAC 173-401-615(b) for monitoring.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
B.3	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	EPA Method 9 is the reference test method. Maintain scrubber shower flow $\geq 50$ gpm. An excursion is defined as any hour in which scrubber flow is $< 50$ gpm for more than six consecutive minutes. Monitor scrubber flow rate continuously <sup>11</sup> ; record continuously; report excursions monthly. See Condition B.6 for excursion allowance.	WAC 173-405-040(6) for limit.  WAC 173-401-615(b) for monitoring.
B.4	Scrubber Monitoring	3-hour average scrubbing liquid flow rate must be equal to or greater than 80 gpm, as established in IPT dated 9/10/04. <sup>15</sup>	Continuously monitor scrubbing liquid flow rate. Report excursions in the monthly, quarterly and semi-annual reports. Record scrubbing liquid flow rate at least once every 15 minutes at equally spaced intervals, or as an arithmetic or three-hour block average. <sup>11,12</sup>  Scrubber pressure drop does not need to be monitored per Ecology letter dated 3/3/2004.	40 CFR 63.864(e)(10) for scrubbing liquid flow rate monitoring. 40 CFR 63.867(c) and 40 CFR 63.10(c) for reporting. 40 CFR 63.8(c)(4)(ii) for recording frequency. 40 CFR 63.8(g)(2) for monitored data management requirements.  WAC 173-401-615(1)(c); and 40 CFR §63.8(c)(4) for CMS data recovery.
B.5	Scrubber Monitoring	CA when 3-hour average scrubbing liquid flow rate is less than 80 gpm.	Implement corrective action as specified in the Start-up, Shutdown, and Malfunction Plan (SSMP) for kraft smelt dissolving tank equipped with a wet scrubber when any three-hour block average parameter value is outside the range of values established in the IPT.	40 CFR 63.864(k)(1)(ii) for CA requirement.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
B.6	Scrubber Monitoring	Five 3-hour average monitoring parameter exceedances in a semiannual reporting period.	Sources equipped with a scrubber shall not have six or more 3-hour average monitoring parameter exceedances in a semiannual reporting period. A unit exceedance day is a 24-hour period in which one or more monitoring parameter exceedance(s) occur(s) on a specific emission unit.	40 CFR 63.864 (k)(2)(iii) for excursion allowance limitation.
B.7	Reserved			
B.8	NESHAPS SSM		See Condition I for generic NESHAPS SSM Requirements.	

### C. Lime Kiln

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
C.1	HAP (PM as surrogate)	Shall not exceed 0.064 gr/dscf@10 % O <sub>2</sub> except during periods of Startup, SSM.	EPA Method 5 is the reference method. Monitor scrubber flow and pressure differential as surrogate parameters <sup>11</sup> . Refer to C.10 for scrubber flow and scrubber pressure drop surrogate monitoring requirements. Take CA as required per C.11 when scrubber parameters fall outside of range established in IPT.	40 CFR 63.862(a)(1) (i)(C) for PM surrogate HAP limit.  40 CFR 63.865(b)(1) for test method.
C.2	Particulate	0.13 gr/dscf @ 10% O <sub>2</sub> , one hour average.	Sample monthly <sup>2</sup> using EPA Method 5 or Ecology Method 8 except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly.	WAC 173-405-040 (3)(a) for limit.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
C.3	Opacity	35% average for more than 6 consecutive minutes in any 60 minute period.	EPA Method 9 is the reference test method. Ongoing compliance indicated by maintaining venturi pressure drop $\geq 8$ inches of H <sub>2</sub> O (gauge). An excursion is defined as any hour in which the pressure drop is $< 8$ inches of H <sub>2</sub> O (gauge) for more than six consecutive minutes. Monitor scrubber pressure drop continuously; record continuously <sup>11</sup> ; report excursions monthly.	WAC 173-405-040(6) for limit.
C.4	SO <sub>2</sub>	500 ppm @ 10% O <sub>2</sub> , hourly avg.	EPA Method 6 is the reference method except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly if testing occurs.	WAC 173-405-040 (11)(a) for limit.
C.5a	TRS	8 ppm by volume on a dry basis @ 10% O <sub>2</sub> , 12 hour average.	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5. Report excursions <sup>11,13</sup> monthly.	40 CFR 60.283 (a)(5) and Order DE 05AQIS-2892 (Table 1, C.4) for limit. 40 CFR 60.284 (a)(2) for CEM monitoring. 40 CFR 60.284 (c)(1) for 12 hr avg.
C.5b	O <sub>2</sub>	No limit - required to correct TRS data	Monitor continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3 <sup>11</sup> .	Order DE 05AQIS-2892 (Table 1, C.5). 40CFR 60.284©(2) for 12 hr avg.
C.6	Reserved.			
C.7	Stack Height shall be $\geq 31$ meters before production exceeds 650 tons/D unbleached pulp. PTPC has certified stack height is $\geq 31$ meters. Report if stack is shortened. (PSD I)			
C.8	Reserved			
C.9	Reserved			

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
C.10	Operation	3-hour scrubbing liquid average flow rate must be equal to or greater than 90 gpm and the scrubber pressure drop must be equal or greater than 8" H2O per 2003-2004 IPT.	Continuously monitor pressure drop and scrubbing liquid flow rate. Report excursions in monthly, quarterly and semi-annual reports. Pressure drop and scrubbing liquid flow rate recorded at least once every 15 minutes at equally spaced intervals, or as an arithmetic or integrated three-hour block average. <sup>11,12,13</sup>	40 CFR 63.864(e)(10) for pressure drop and scrubbing liquid flow rate monitoring. 40 CFR 63.864(e)(10)(i) and 40 CFR 60.284(b)(2)(i) for pressure drop monitoring accuracy.  40 CFR 63.864(e)(10)(ii) and 40 CFR 60.284(b)(2)(ii) for scrubbing liquid flow rate monitoring accuracy.  40 CFR 64.3 for CAM applicability.  WAC 173-401-615 (1)(c); 40 CFR 63.8(c)(4) for CMS data recovery
C.11	Scrubber Monitoring	CA Threshold: 3-hour scrubbing liquid average flow rate < 90 gpm or pressure drop < 8" H2O, three-hour block average <sup>15</sup> .	Implement corrective action as specified in the Start-up, Shutdown, and Malfunction Plan (SSMP) for kraft lime kiln equipped with a wet scrubber when any 3-hour block average parameter value is outside the range of values established in the IPT.	40 CFR 63.864(k)(1)(ii) for CA requirement.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
C.12	Scrubber Monitoring	Five 3-hour average monitoring parameter exceedances in a semiannual reporting period.	Sources equipped with a scrubber shall not have six or more 3-hour average monitoring parameter exceedances in a semiannual reporting period on each unit. A unit exceedance day is a 24-hour period in which one or more monitoring parameter exceedance(s) occur(s) on a specific emission unit.	40 CFR 63.864 (k)(2) (iii) for excursion allowance limitation.
C.13	NESHAPS SSM		See Condition I for generic NESHAPS SSM Requirements.	

The following **state-only** requirements are not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
C.14 a	TRS	20 ppm @ 10% O <sub>2</sub> , 24 hour average.	Limit met by meeting Condition C.5a.	WAC 173-405-040(3)(c) for limit.
C.14 b		80 ppm H <sub>2</sub> S @ 10% O <sub>2</sub> for more than 2 consecutive hours	Monitor TRS continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 5 <sup>11</sup> . Report excursions monthly (if the upper range of the monitor is less than 80 ppm, all off scale measurements shall be considered >80 ppm). All TRS monitored is considered H <sub>2</sub> S for this limit.	WAC 173-405-040(3)(b) for basis of limit Order DE 05AQIS-2892 (Table 1, C.4) for basis of monitoring

**D. Power Boiler #10**

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
D.1	Particulate	0.10 lb/mmBtu, one hour average	Sample monthly <sup>2</sup> using EPA Method 5 except that the permittee may conduct one test of at least one hour in lieu of three 1-hour tests. Report test results monthly. See Condition D.6 for minimum O&M requirements intended to indicate compliance with the particulate limit.	40 CFR 60.42(a)(1) for limit.  40 CFR 60.46(b)(2) for test method.
D.2a	Opacity	Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing or grate cleaning for up to 15 minutes in 8 consecutive hours.	Reference method is EPA RM 9. Ongoing compliance indicated by maintaining scrubber quench H <sub>2</sub> O flow ≥100 gpm, scrubber H <sub>2</sub> O flow ≥100 gpm, and scrubber air flow ≥1300 cfm. An excursion is defined as any hour in which quench H <sub>2</sub> O flow is <100 gpm, scrubber H <sub>2</sub> O flow is <100 gpm, and/or scrubber air flow is <1300 cfm for more than six consecutive minutes. Monitor quench H <sub>2</sub> O flow, scrubber H <sub>2</sub> O flow, and scrubber air flow continuously <sup>11</sup> ; record continuously; report excursions monthly. Visually inspect baffle each scheduled maintenance down. Record results; report deficiencies and repairs made.	WAC 173-405-040(6) for basis of limit. WAC 173-400-105(5) (a)(i) for continuous monitoring requirement. EPA approval letter dated March 2000 for basis of alternative opacity monitoring.
D.2b		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for one six minute average per hour period of not more than 27% opacity.	Same as for previous limit.	40 CFR 60.42(a)(2) and 40CFR 60.45(g) (1) for limit. 40 CFR 60.45(a) for monitoring.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
D.2c		Salty hog fuel shall not be burned.	Monitor hog fuel shipments. Report any salty hog fuel burned on monthly report.	WAC 173-401-615.
D.3a	SO <sub>2</sub>	0.8 lb/mmBtu, 3 hour average	Maintain fuel receipts showing all oil fired was ≤0.76% sulfur. Report all occasions when fuel with S content >0.76% burned.	40 CFR 60.43(a)(1) for limit. 40 CFR 60.45(g)(2) for averaging period. 40 CFR 60.45(b)(2) and Order DE 05AQIS-2892 for fuel sampling.
D.3b		1000 ppm @ 7% O <sub>2</sub> , hourly average.	Maintain fuel receipts showing all oil fired was ≤2% sulfur. Report all occasions when fuel with S content >2% burned.	WAC 173-405-040 (11)(b) for basis of limit.
D.4	NO <sub>x</sub>	0.30 lb/mmBtu, over any 3-hour period as average of three contiguous one-hour periods.	Monitor continuously using an approved CEM <sup>11,14</sup> that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2. Report excursions monthly.	40 CFR 60.44 for limit. 40 CFR 60.45(g)(3) for averaging interval. 40 CFR 60.45(a) and 40 CFR 60.13(d) for monitoring.
D.5	O <sub>2</sub>	No limit - required to correct NO <sub>x</sub> data except during periods of Startup, Shutdown and Malfunction	Monitor continuously using an approved CEM <sup>11,14</sup> that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3.	40 CFR 60.45(a) for oxygen monitoring.

D.6 Monitor opacity with scrubber quench H<sub>2</sub>O flow, scrubber H<sub>2</sub>O flow, and scrubber air flow as a compliance indicator. Take corrective action immediately whenever scrubber quench H<sub>2</sub>O flow is <100 gpm and/or scrubber H<sub>2</sub>O flow is <100 gpm and/or scrubber air flow is <1300 cfm for 60 consecutive minutes. Failure to take corrective action within 24 hours is a violation of WAC 173-405-040(10) and may be a violation of the underlying applicable requirement. Report corrective action and opacity excursions monthly. (WAC 173-401-615 )

D.7 Stack Height shall be  $\geq 53$  meters before production exceeds 650 tons/D unbleached pulp. PTPC has certified stack height is  $\geq 53$  meters. Report if stack is shortened. (PSD I Condition 3)

D.8 Power Boiler #10 shall comply with all the applicable requirements of the new source performance standards for fossil-fuel-fired-steam generators in 40 CFR Part 60 Subpart D. (Order DE 05AQIS-2892)

Compliance with 40 CFR Subpart D SO<sub>2</sub> emission limits shall be met using fuels receipts until such time as:

- a. 40 cfr 60.45 describing a fuel monitoring program is completed, or
- b. PTPC receives EPA approval of an alternative monitoring method. Before using this option, PTPC shall submit a copy of the EPA approval letter with the approved alternative monitoring program and reporting requirements to the Department.

Should a or b occur, the permit will be opened and the condition will be revised to reflect the EPA requirements.

D.9 Power Boiler #10 shall comply with the applicable requirements of the National Emissions Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters (40 CFR 63,Subpart DDDDD) by the compliance date which is September 13, 2007.

#### E. Package Boiler

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.1a	Particulate matter (PM)	0.10 lb/mmBtu, 30 day rolling average, (see footnote 2e.c), excluding start-up (See footnote 5e)	Sample monthly using EPA Method 5. Report monthly.	PSD 96-01A conditions 3, 7, and 13.  PSD 96-01A condition 12(c)(1).
E.1b		56.3 tons/yr	Calculate using the average of Method 5 test results collected during the year and using the calculation found in Appendix B. Report annually.	PSD 96-01A condition 3.
E.1c		0.2 gr/dscf @ 7% O <sub>2</sub> , one hour average.	Same as for 0.10 lb/mmBtu limit in condition E.1a.	WAC 173-405-040 (5)(a) for limit.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.2a	Particulate matter <10 microns (PM10)	0.086 lb/mmBtu, 30 day rolling average(see footnote 2e.c), excluding start-up (See footnote 5e)	Calculate by multiplying PM result by 0.86. Report monthly.	PSD 96-01A conditions 4, 7, 12(c)(2), and 13.
E.2b		48.4 tons/yr	Calculate using the average of monthly results calculated during the year and using the calculation found in Appendix B. Report annually.	PSD 96-01A condition 4.
E.3a	Opacity	Average 15% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing for up to 15 minutes in 8 consecutive hours or except during startup.(See footnote 5e)	Monitor continuously using an approved CEM <sup>11</sup> that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 1. Compliance may also be determined using EPA Method 9. Report excursions monthly.  Report monthly the daily maximum opacity.	PSD 96-01A conditions 5, 8, and 13.  PSD 96-01A condition12(c)(3).
E.3b		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for emissions due to soot blowing for up to 15 minutes in 8 consecutive hours or except during startup. See footnote 5e.	Same as for previous limit.	WAC 173-405-040(6) for limit.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.3c		Average 20% for more than 6 consecutive minutes in any 60 minute period, except for one six minute period of not more than 27% opacity except during SSM.	Same as for previous limit.	40 CFR 60.43b(f) for limit.  40CFR 60.43b(g) for startup, shutdown, malfunction.  40 CFR 60.48b(a) for monitoring.
E.4a	SO <sub>2</sub>	0.80 lb/mmBtu, 30 day rolling average	see footnote 2e	First Revision-DE 97AQ-I030 condition 4; and 40 CFR 60.42b(a) basis for limit 40 CFR 60.47b(b)(1), (3), & (4) basis for monitoring
E.4b		1000 ppm @ 7% O <sub>2</sub> , hourly average.	Maintain fuel receipts showing all oil fired was ≤0.50% sulfur.	WAC 173-405-040(11)(b)for limit.
E.5a	NO <sub>x</sub>	0.24 lb/mmBtu, 30 day rolling average (see footnote 2e.c).	Monitor continuously using an approved NO <sub>x</sub> CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 2. Monitor O <sub>2</sub> continuously using an approved CEM that conforms to 40 CFR 60, App. F and App. B, Perf. Spec. 3. Calculate lb/mmBtu using formula found in 40 CFR Part 60, Appendix A, Method 19, section 2.1. See footnote 5e and requirement E.11 for reporting requirements.	PSD 96-01A conditions 2, 6, and 11.  Order No. DE 01AQIS-2056
		217 tons/yr		

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.5b		0.38 lb/mmBty, and 0.40 lb/mmBtu, 30 day rolling average(see footnote 2e.c).	Same as for previous limit.	PSD 01A Condition 2 for 0.38 lb/mmBtu limit.  40 CFR 60.44b(a)(2)(ii)for 0.40 lb/mmBtu limit.
E.6	Fuel Consumption	28,995 tons/yr and 301,128 lbs/D. 7,836,000 gal/yr and 40,693 gal/D	Monitor in lbs/hr and gals/hr using meter with accuracy of +/- 0.5%. Calibrate meter according to manufacturer's recommendations. Include items in footnote 1e in monthly report.	First Revision-Order DE 97AQ-I030 condition 1 and PSD-96-01A condition 1.
E.7a	Fuel supply	Primary fuel shall be a reprocessed fuel oil. Number 2 fuel oil (0.05% sulfur) may be used as a backup fuel.	Report fuel type used on monthly report.	PSD 96-01A condition 1 and condition 12(b)(8).
E.7b		Sulfur ≤0.50% by weight	Analyze all fuel shipments for sulfur using EPA or ASTM approved test methods. Monthly submit a table summarizing the sulfur concentration for all shipments of fuel received to be burned in the boiler.	First Revision-Order DE 97AQ-I030 condition 3 and PSD-96-01A condition 1 and condition 12(e)(3).
E.7c		Nitrogen ≤0.138% by weight Ash ≤0.54% by weight	Analyze all fuel shipments for nitrogen and ash using EPA or ASTM approved test methods. Monthly submit a table summarizing concentrations of the listed parameters for all shipments of fuel received to be burned in the boiler.	PSD 96-01A condition 1 and condition 12(e)(3).

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.8	CO	116 ppmv @ 7% O <sub>2</sub> , 24 hour average	Operate boiler within operating conditions specified in PTPC documents TS#4 and SOP#29 (see appendix D). Report excursions in monthly report. Excursions are noted in footnote 3e.	First Revision-DE 97AQ-I030 condition 6(a)and (c).
E.9	VOC	8 ppm @ 7% O <sub>2</sub> , 24 hour average	Operate boiler within operating conditions specified in PTPC documents TS#4 and SOP#29 (see appendix D). Report excursions in monthly report. Excursions are noted in footnote 3e.	First Revision-DE 97AQ-I030 condition 6(b) and (c).

E.10 Port Townsend Paper Corporation has identified in an operation and maintenance (O&M) manual for the boiler, operational parameters and practices that have been described as “good combustion practice.” The O&M manual includes a description of records that will be maintained to insure the continuous application of “good combustion practice.” The pertinent parts of the O&M manual include SOP #29, TS #2, TS #3, TS #4, and a sample package boiler daily records sheet. The O&M manual shall be maintained by Port Townsend Paper Corporation and be available for review by state, federal, and local agencies. (PSD 96-01A condition 9).

E.11 Special reporting requirements (PSD 96-01A conditions 12(d) and 12(e)):  
Report monthly the following CEM test data (40 C.F.R 60.49b):

- 1) Days for which data was not collected,
- 2) Reasons for which data was not collected,
- 3) Identification of times when the pollutant concentration exceeds span of the CEM,
- 4) Description of any modifications to the CEM system that could affect the ability of the system to comply with performance specifications 2 or 3, and
- 5) Results of any CEM drift tests.

In addition, Port Townsend Paper Corporation shall maintain monitoring records on site for at least two years, and shall submit:

- 1) Excess emission reports, as appropriate and
- 2) Results of any source tests.
- 3) Records of the nitrogen content, sulfur content, ash content, and heating value (Btu/lb.) of the oil on a per calendar quarter basis.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
E.12	Fuel supply	Arsenic ≤0.4 ppm by weight Cadmium ≤0.97 ppm by weight Chlorine ≤650 ppm by weight Chromium ≤10 ppm by weight Lead ≤20 ppm by weight PCBs ≤2 ppm by weight	Analyze all fuel shipments for listed parameters using EPA or ASTM approved test methods. Submit results of analysis in subsequent monthly report. The Department may reduce monitoring frequency.	First Revision, Order DE 97AQ-I030 condition 3 and WAC 173-460-150/160.

Footnotes:

- 1e. Fuel consumption items to report (First Revision-Order 97AQ-I030 condition 1):
  - the amount of fuel burned daily in pounds and gallons,
  - the total amount of fuel burned during the month in pounds and gallons and
  - the cumulative total of fuel burned during the calendar year in pounds and gallons.
  
- 2e. Compliance with 40 CFR Subpart Db SO<sub>2</sub> emission limits shall be met by complying with option “a” or “b” listed below. (40 cfr 60.47b(b) and First Revision-Order 97AQ-I030 condition 4).
  - 1) a. The 30-day rolling average of SO<sub>2</sub> emissions from the package boiler shall not exceed 0.80 lb/mmBtu. Compliance shall be determined by burning fuel that does not exceed 0.50% sulfur by weight. The SO<sub>2</sub> emission rate shall be calculated based on fuel sample analysis in accordance with requirement E.6 of this permit and 40 CFR 60.47b(b)(1), (3), and (4). The following information shall be included in the monthly air report.
    - 2) calendar date.
    - 3) daily value and 30 day rolling average for fuel % sulfur.
    - 4) daily value and 30 day rolling average for SO<sub>2</sub> emission rate in lb/mmBtu.
    - 5) identification of each day the 30 day rolling average exceeds the SO<sub>2</sub> emission limit and each day the fuel sulfur concentration exceeds the fuel sulfur specification, including reasons for the excess and a description of any corrective action taken.
    - 6) identification of operating days when fuel sulfur data were not obtained, including justification and any corrective action taken.
    - 7) identification of any operating day data that were excluded from calculations, including justification and any corrective action taken.
    - 8) identification of “F” factor used for calculations, method of determining the factor, and type of fuel combusted.

- b. Comply with an alternative monitoring method approved by the Environmental Protection Agency (EPA). Before using this option, PTPC shall submit a copy of the EPA approval letter with the approved alternative monitoring program and reporting requirements to the Department. (First Revision-Order 97AQ-1030 condition 4(b).
  - c. For purposes of this condition, a 30-day rolling average consists of 30 consecutive operating days. An operating day means a 24-hour period based on the mill day (between 0600 AM and 0600 AM the following day) during which period any fuel is combusted at any time in the steam generating unit. It is not necessary for the fuel to be combusted continuously for the entire 24-hour period. If no fuel is burned during a 24-hour period that day is not an operating day for the purposes of the 30-day rolling average. (PSD 96-01A condition 18 and First Revision-Order 97AQ-1030 condition 4c).
- 3e. Operation of the package boiler outside of the approved operating conditions either: (i) continuously for more than one hour, or (ii) for a total of more than four hours on any one day, will constitute an exceedence of the CO and VOC emission limits. All exceedences shall be reported in the monthly air report. (First Revision-Order 97AQ-I030 condition 6(c)).
- 4e. Report monthly the following for each steam generating day (PSD 96-01A condition 12(b)):
- 1) Calendar date,
  - 2) Average hourly NO<sub>x</sub> emission rate in lb./mmBtu,
  - 3) Daily and accumulated mass per calendar year of NO<sub>x</sub>,
  - 4) The 30-day rolling average NO<sub>x</sub> emission rate in lb./mmBtu,
  - 5) Identification of each day the 30-day rolling average is in excess of the NO<sub>x</sub> standard, including reasons for the excess and description of the corrective action taken,
  - 6) Identification of any steam generating days for which NO<sub>x</sub> data were not obtained, including reasons for not obtaining sufficient data and description of corrective actions taken,
  - 7) Identification of times emission data are excluded from the calculated average emission rate and the reasons for excluding the data, and
  - 8) Identification of the “F” factor used for calculations, the method of determining the factor, and the type of fuel combusted.
- 5e. The particulate matter emission standards and opacity limits shall apply at all times except during startup. Two startup conditions are covered by this condition. Cold startup (from cold to operating condition) is typically expected to occur only a few times a year. Such cold startup scenarios shall be limited to 5 hours. Warm startup (from warm standby condition to operating condition) is expected to occur on a more regular basis. Such warm startup scenarios shall be limited to one hour. This provision does not preclude Port Townsend Paper Corporation from demonstrating that other scenarios are excused from enforcement actions as allowed pursuant to WAC 173-400-107. (PSD 96-01A condition 13).

**F. Digester, Multiple-Effects Evaporators**

F.1 The following requirement applies to MEE E-set, C-washer, and Digesters #10, 11, & 12 only:

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
F.1a	TRS	5 ppmv @ 10% O <sub>2</sub> , unless combusted in a lime kiln or equivalent	Monitoring required by Condition C.5a shall be used to demonstrate compliance with this requirement.	40 CFR 60.283(a)(1)(i) for limit.

F.2 The following **state-only** requirement is not federally enforceable under the federal Clean Air Act:

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
F.2a	TRS	Treat non-condensable gasses to reduce TRS emission equal to reduction achieved by thermal oxidation in a lime kiln; install a backup treatment system	Monitoring required by Condition F.2b shall be used to demonstrate compliance with this requirement.  Report venting duration and cause in the monthly air report.	WAC 173-405-040(4) for treatment requirement.  WAC 173-401-615(3) for reporting requirement.

The following requirements are federally enforceable under the federal Clean Air Act:

F.3 40 CFR 63 Subpart S (MACT I): LVHC Non-condensable Gas Source Group: Applies to M&D and Batch digester systems, “D” and “E” Multiple effect evaporator systems, Batch digester blow tank, Foul condensate collection tank, Blow heat condenser system, and Turpentine collection system including the Turpentine after condenser.

	<b>Parameter</b>	<b>Limit</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
F.3a	Total HAP emissions	Enclose, collect, and treat all LVHC vent gases. Route to Lime Kiln and/or to #10 Power Boiler for destruction	Perform monthly visual inspection of closed-vent system components as specified in 40 CFR 63.453(k)(1) and (2).	40 CFR 63.443(c) and (d)(4) for HAP management requirement. 40 CFR 63.453(k)(6) for CA. 40 CFR 63.457(d) for leak detection procedure.
F.3b	Total HAP emissions	Maintain negative pressure at each enclosure or hood opening. If closed during initial performance test then maintain in the closed position except when sampling, inspection, maintenance, or repairs.	Demonstrate annually that each enclosure opening is maintained at negative pressure as specified in 40 CFR 63.457(e).  Take CA as necessary per 40 CFR 63.453.	40 CFR 63.450(b) for enclosures and closed-vent system standards. 40 CFR 63.453(k)(4) for annual negative pressure check. 40 CFR 63.453(k)(6) for CA.
F.3c	Total HAP emissions	Operate components operated at positive pressure and located prior to a control device < 500 ppmv above background.	Measure annually for detectable leaks as specified in 40 CFR 63.457(d). Conduct annual assessment by 40 CFR 60, Appendix A, Method 21.	40 CFR 63.450(c) for enclosures and closed-vent system standards. 40 CFR 63.453(k)(3) for annual positive pressure check. 40 CFR 63.453(k)(6) for CA.

	<b>Parameter</b>	<b>Limit</b>	<b>Monitoring &amp; Reporting<sup>1</sup></b>	<b>Applicable Requirements</b>
F.3d	Total HAP emissions	For non-computer controlled bypass line valves, maintain valve in closed position with seal.	Perform monthly visual inspection of enclosure openings as specified in 40 CFR 63.453(k)(1)&(5).	40 CFR 63.450(d) for enclosures and closed-vent system standards. 40 CFR 63.453(k)(6) for CA.
F.3e	Recordkeeping	Comply with 40 CFR 63.10 and 63.454(b)	Prepare and maintain a site-specific inspection plan per 40 CFR 63.454(b).  Maintain records for the inspection plan as required. Record periods when LVHC not collected and treated.	40 CFR 63.10 (b)(1) and (b)(2) and 40 CFR 63.454 for recordkeeping and reporting requirements.
F.3f	Excess Emissions Allowance	Time of excess emissions divided by total process operating time in a semi-annual reporting period shall not exceed 1% (Excludes periods of startup, shutdown, or malfunction).	If > 1% of the total operating time in a semi-annual period, excluding periods of startup, shutdown and malfunction, then violation of 40 CFR 63.443(c) and (d).	40 CFR 63.443 (e)(1) for excess emission allowance.

F.4 40 CFR 63 Subpart S (MACT I) and 40 CFR 63 Subpart A the latter based on 40 CFR 63.440(g) and 40 CFR 63.455: Kraft Pulping Condensate Source Group: Applies to M&D and Batch digester condensate, Digester condensate tank, “D” and “E” evaporator foul condensate off primary feed effects, Turpentine collection system, Concentrator condensate, LVHC NCG condensates, and Foul condensate collection tank.

	Parameter	Limit	Monitoring & Reporting	Applicable Requirements
F.4a	Total HAP emissions	Enclose, collect, and convey pulping condensates to condensate collection tanks (CCT) and then to the aerated stabilization basin.	The closed collection system must meet 40 CFR Part 63, Subpart RR, Sections 63.960, 63.961, and 63.962(a)(1),(2), and (b); except for the closed vent systems and control equipment (Lime Kiln and #10 Power Boiler) must be operated per 40 CFR 63.443(d)(4) and 63.450.  Perform visual inspection every 30 days per 40 CFR 63.453(l)(1).	40 CFR 63.446 (a),(b),(d)(1),(e)(2), and (e)(4) for selected condensate treatment standards.  40 CFR 63.453 (l)(1) for 30-day visual inspection.
F.4b	Total HAP emissions	Operate fixed roof and openings of CCT less than 500 ppmv above background.	Perform visual inspection of enclosure opening and closed-vent system at least every 30 days.  Annually inspect for detectable leaks using procedures in 40 CFR 63.457(d). (Measure for leaks by 40 CFR 60, Appendix A, Method 21)  Report excess emissions according to 40 CFR 63.10(e)(v).	40 CFR 63.446(d)(2)(i) for 500 ppm limit. 40 CFR 63.453 (k)(1) and (2) for 30-day visual inspection check.  40 CFR 63.453(k)(3) for annual positive pressure check.
F.4c	Total HAP emissions	Maintain each opening of a CCT in a closed, sealed position at all times except when sampling, removal, or for equipment inspection, maintenance, or repair.	Perform visual inspection every 30 days per 40 CFR 63.453(l)(1).	40 CFR 63.446(d)(2)(ii) for CCT management requirements.  40 CFR 63.453(l)(1) for 30-day visual inspection schedule.

	Parameter	Limit	Monitoring & Reporting	Applicable Requirements
F.4d	Total HAP emissions	Equip CCT with a water seal device on the overflow line.	Perform visual inspection every 30 days per 40 CFR 63.453(l)(1).	40 CFR 63.962(b)(2)(I)(A) per 40CFR 63.446(d)(1) for collection system requirements.  40 CFR 63.453(l)(1) for 30-day visual inspection schedule.
F.4e	Total HAP emissions	Vent the CCT to a closed vent and incinerate the vent gases in Lime Kiln and/or #10 Power Boiler.	The closed vent system must meet the requirements of 40 CFR 63.450.  Annually inspect for detectable leaks using procedures in 40 CFR 63.457(d). (Measure for leaks by 40 CFR 60, Appendix A, Method 21)	40 CFR 63.443(d)(4) for incineration of vented CCT gases.  40 CFR 63.446(d)(2)(i) for vent gas management requirements.  40 CFR 63.450 for closed vent system management requirements.  40 CFR 63.453(k)(3) for annual positive pressure check.
F.4f	HAP Collection	Collect at least 7.2 lb HAP/ODTP (oven-dry ton of unscreened brownstock) from condensate.	Perform quarterly monitoring per 40 CFR 63.453(j)(3) and 40 CFR 63.457(l).  When monitoring is out of range then follow requirements and maintain records per 40 CFR 63.453(p).  Report excess emissions according to 40 CFR 63.455.	40 CFR 63.446(c)(3) for collection requirement.

	Parameter	Limit	Monitoring & Reporting	Applicable Requirements
F.4g	HAP removal	Biologically treat condensate in aerated stabilization basin and remove at least 6.6 lb/ ODTP.	Monitor surrogate parameters after initial CCA compliance testing. EPA extension granted on surrogate parameters in letter dated 9/10/04.  Perform quarterly monitoring per 40 CFR 63.453(j)(3) and 40 CFR 63.457(l).  When monitoring is out of range then follow requirements and maintain records per 40 CFR 63.453(p).  Report excess emissions according to 40 CFR 63.455.	40 CFR 63.446(e)(2) and (4) for condensate treatment standard.  40 CFR 63.453(m) for surrogate parameters.
F.4h	Record-keeping	Prepare and maintain a site-specific inspection plan	Maintain inspection records as required.	40 CFR 63.10(b)(1) and (2) for general recordkeeping and 40 CFR 63.454(a) and (b) for inspection plan.
F.5	Record-keeping	Scope of recordkeeping and duration of records retention	Records must contain at a minimum information described in 40 CFR 63.10(b)(2) and be kept for a minimum of 5 years.	40 CFR 63.10(b)(1) for recordkeeping requirement.

F.6 PTPC shall comply with applicable requirements prescribed in 40 CFR Part 63, Subpart A, Sections 63.6, 63.7, 63.8, 63.9, 63.10 and Table 1 to Subpart S of Part 63. (40 CFR 63.440(g)).

F.7 40 CFR 63 Subpart S MACT Reporting Requirements: Applies to the equipment listed above in F.3 for LVHC Non-condensable Gas Source Group and F.4 for Kraft Pulping Condensate Source Group.

PTPC shall comply with the reporting requirements in 40 CFR Part 63, Subpart A, and all the requirements in 40 CFR 63.455.

**G. Clean Condensate Alternative (CCA)**

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirement(s)</b>
G.1	Total HAP emissions	Reduce HAP emissions (as methanol) at the levels established in the CCA.	Report periods of condensate non-collection for the CCA for periods in excess of 4% of total operating time (excluding periods of start-up, shutdown, or malfunction) shall constitute a violation of the applicable emission standard.	40 CFR 63.443(e)(2) for excess emission allowance.
G.2	Total HAP emissions	Perform IPT	Permittee will perform an initial performance test (IPT) that will establish HAPs collection and destruction parameters.	WAC 173-400-075(5) incorporates MACT by reference 40 CFR 63.443(c) for HAP control requirement and 40 CFR 63.447 for CCA alternative. 40 CFR 63.457(a) for IPT requirement.

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirement(s)</b>
G.3	Total HAP emissions	Enclose, collect, and convey pulping condensates from equipment systems identified in the CCA proposal to the waste water treatment system as an approved alternative to HVLC controls. The pulping process condensate will be discharged below the liquid surface of a biological treatment system that reduces or destroys total HAPs (as methanol).	Permittee will establish levels of collection and biodegradation of HAPs (as methanol) in the wastewater treatment plant during the IPT. Report test results within 60 days of conducting a performance test.	WAC 173-400-075(5) incorporates MACT by reference  40 CFR 63.443(c) for HAP control requirement.  40 CFR 63.453(k) for enclosure and closed vent system management requirements.  40 CFR 63.447 for CCA alternative.
G.4	HAP CCA Operational Parameter	Establish the level of over-collection required to meet the CCA requirements of 40 CFR 63.447	Operational parameter used to confirm HAP collection to be determined during IPT.	40 CFR 63.447 for CCA alternative  40 CFR 63.453(j)(2) for alternate operational parameter  Ecology letter dated May 2, 2003 granting extension for alternate operational parameter until completion of CCA

	<b>Parameter</b>	<b>Limit &amp; Averaging Period</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirement(s)</b>
G.5	HAP CCA Operational Parameter	Confirm operational parameter	Monitor HAP operational parameter established during IPT	40 CFR 63.447 for CCA alternative. 40 CFR 63.453(j)(2) for alternate operational parameter WAC 173-401-615 (1)(c), WAC 173-400-105 (5)(h), and 40 CFR 63.8(c)(4) for CMS data recovery
G.6	HAP CCA Operational Parameter	Recordkeeping	Permittee shall maintain all CCA compliance demonstration records, testing, and reporting for a period not less than five years.	40 CFR 63.10 (b)(1) for record retention.
G.7	HAP CCA Operational Parameter	IPT Plan submittal date	Permittee will submit an IPT plan for approval by Ecology at least 60 days prior to execution.	40 CFR 63.9(e) for notification and performance test requirement.
G.8	HAP CCA Operational Parameter	IPT implementation date	Permittee will execute IPT plan and submit results to Ecology within 60 days of the completion of the IPT.	40 CFR 63.7(g) for reporting deadline
G.9	HAP CCA Operational Parameter	Confirm over collection	Permittee shall perform quarterly testing to confirm collection and destruction of HAPs as determined in the IPT.	40 CFR 63.447 for the CCA 40 CFR 63.543(j)(3) for quarterly testing requirements

## H. Millwide Limits

Millwide limits, except for the TRS limit, apply to aggregate emissions from the recovery furnace, smelt dissolver tank, lime kiln, and power boiler #10. Millwide TRS emission limits apply to the aggregate emissions from the recovery furnace, smelt dissolver tank, lime kiln, power boiler #10, evaporators, and washers.

	<b>Parameter</b>	<b>Limit</b> (shall not exceed)	<b>Monitoring &amp; Reporting</b>	<b>Applicable Requirements</b>
H.1	Particulate	729 tons/yr	Monitoring and reporting method 1.	Order DE 05AQIS-2892
		1007 tons/yr	Monitoring and reporting method 1.	PSD-I
		5590 lbs/D	Monitoring and reporting method 3.	PSD-I
H.2	NO <sub>x</sub>	645 tons/yr	Monitoring and reporting method 1.	PSD-I
		3580 lbs/D	Monitoring and reporting method 2.	PSD-I
H.3	CO	6204 tons/yr	Monitoring and reporting method 1.	PSD-I
		34500 lbs/D	Monitoring and reporting method 3.	PSD-I
H.4	VOC	182 tons/yr	Monitoring and reporting method 1.	PSD-I
		1010 lbs/D	Monitoring and reporting method 3.	PSD-I
H.5	TRS	31.7 tons/yr	Monitoring and reporting method 1.	PSD-I
		176 lbs/D	Monitoring and reporting method 2.	PSD-I
H.6	SO <sub>2</sub>	1300 tons/yr	Monitoring and reporting method 1.	Order DE 05AQIS-2892

Monitoring and reporting methods:

1. Compliance determined by adding calendar year emissions from all applicable units. Emissions from a unit for which the pollutant is measured shall be calculated using the average of test results collected during the year. Emissions from a unit for which the pollutant is not measured shall be calculated using emission factors and production data or fuel consumption. Report annually within 30 days of the end of the calendar year.
2. Compliance determined by adding daily emissions from all applicable units. Emissions from a unit for which the pollutant is measured through source testing or continuous emission monitoring shall be calculated using the most recent test results adjusted for production/hours of operation. Emissions from a unit for which the parameter is not directly measured shall be calculated using emission factors and daily production or fuel consumption data. Report monthly.

- 3 Compliance determined by complying with the annual limit. If annual emissions are greater than 60% of the annual limit, during the following year, compliance shall be demonstrated by monitoring and reporting according to monitoring and reporting method 2.

**I. NESHAPS Startup, Shutdown, and Malfunction (SSM) requirements. See the emission unit specific section of the permit for emission unit applicability. [40 CFR 63.6(e)(3)]**

1. The Permittee shall develop and implement a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining Subpart S and MM applicable units during SSM periods, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with 40 CFR 63 Subparts S & MM standards. The SSM plan shall include the elements set forth in 40 CFR 63.6(e)(3)(i).
2. Reserved.
3. The Permittee shall change the SSM plan if required by Ecology if it is determined to be unacceptable under 40 CFR 63.6(e)(2). [40 CFR 63.6(e)(3)(vii),4/5/02]
4. The Permittee shall update the SSM plan within 45 days of an SSM event that the plan failed to address or inadequately addressed. [40 CFR 63.6(e)(3)(viii), 4/5/02]

Footnote key for PTPC AOP requirements

- <sup>1</sup> Monitoring is required only when emission unit is operating.
- <sup>2</sup> If monitored emissions are equal to or less than 75% of the emission limitation for any six consecutive months, emissions will be monitored by three 1-hour test per quarter and reported quarterly. If monitored emissions are less than or equal to 65% of the emission limitation for any four consecutive quarters, emissions will be monitored by three 1-hour tests per year and reported annually. If monitored emissions are less than or equal to 50% of the emission limitation for any four consecutive quarters, emissions may be monitored by one 1-hour test per year and reported annually.  
3 through 10 Reserved.
- <sup>11</sup> CMS Data Recovery. State and federal regulations recognize that monitoring data may be lost for legitimate reasons. The permittee may be exempted from monitoring and reporting requirements during periods of monitoring system malfunctions, provided that the permittee shows that the malfunction was unavoidable and is being repaired as expeditiously as practicable. [40 CFR §60.13(e); 40 CFR 63.8(c)(4); WAC 173-400-105(5)(h); WAC 173-405-077]  
The permittee shall make every effort to acquire, maintain, and recover valid monitoring data. CMS downtime and resulting monitoring data loss due to malfunctions shall be less than 10% of the monthly unit operating time. An acceptable explanation for the loss of monitoring data must be provided in the monthly report. Periods when CMS data is not recovered due to daily calibration, zero and span checks are not considered nor reported as CMS downtime in the monthly report. Records of daily calibration, zero and span checks shall be kept for a period of five years and made available upon request to Ecology. [WAC

173-401-615(1)(c); WAC 173-401-630(1)]

<sup>12</sup> MACT CMS Performance Reports. The permittee shall record and report CMS downtime in the semi-annual MACT report. [40 CFR 63.10(e)]

<sup>13</sup> NSPS CMS Performance Reports. The permittee shall record and report CMS downtime in the semi-annual report. [40 CFR §60.7(c) and (d) (2/12/99)]

<sup>14</sup> WA PSD/NSR/SIP CMS Performance Reports. The permittee shall record and report CMS downtime, other than calibration, zero and span checks, in the monthly report. In the case of monitor downtime due to system malfunctions, the report will address whether the malfunction was unavoidable, and repaired as expeditiously as practicable. [WAC 173-400-105(5)(h); WAC 173-405-077; WAC 173-401-615(1)(c); WAC 173-401-630(1)]

### PTPC NPDES requirements

Category	Parameter	Units	Sample Point	Minimum Sampling Frequency	Sample Type
Outfall 001	Flow	MGD	Influent	Continuous*	Recording
“	BOD <sub>5</sub>	mg/l	Effluent	2 days per week	24 hour composite*
“	TSS	mg/l	Effluent	3 days per week	24 hour composite*
“	pH	Standard Units	Effluent	Continuous*	Recording
"	Temperature	°F	Effluent	Continuous*	Recording
Outfall 002	Temperature	°F	Effluent	Continuous*	Recording

WET Testing					
Outfall 001	Characterization Study	Acute Toxicity	Effluent	Twice/permit term as described in Special Condition S9.	24 hour composite
Outfall 001	Characterization Study	Chronic Toxicity	Effluent	Twice/permit term as described in Special Condition S10.	24 hour composite

Outfall 005	Flow	KGD	Effluent <sup>a</sup>	Continuous*	Recording
"	BOD <sub>5</sub>	mg/l	Effluent <sup>a</sup>	Weekly	Grab
"	BOD <sub>5</sub>	mg/l	Influent <sup>a</sup>	Weekly	Grab
"	TSS	mg/l	Effluent <sup>a</sup>	Weekly	Grab
"	TSS	mg/l	Influent <sup>a</sup>	Weekly	Grab
"	pH	Standard unit	Effluent <sup>a</sup>	Daily	Grab
"	Fecal Coliform	Counts/100 mL	Effluent <sup>a</sup>	Monthly	Grab
"	Total chlorine residual	mg/l	Effluent <sup>a</sup>	Daily	Grab

<sup>a</sup> The influent shall be taken from the line before the sanitary wastewater treatment system. The effluent shall be taken from the discharge of the sanitary wastewater treatment system before mixing with any of the process wastewater.

\*Continuous or 24 hour composite means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance.