

POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

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2			
3	FRIENDS OF GRAYS HARBOR, GRAYS)	
4	HARBOR AUDUBON SOCIETY, NATURAL)	
5	RESOURCES DEFENSE COUNCIL, TWIN)	PCHB NO.
6	HARBORS WATERKEEPER, and WILD ORCA,)	
7)	
8	Appellants,)	
9)	NOTICE OF APPEAL
10	v.)	
11)	
12	OLYMPIC REGION CLEAN AIR AGENCY, THE)	
13	CITY OF HOQUIAM, and PACIFIC NORTHWEST)	
14	RENEWABLE ENERGY, LLC,)	
15)	
16	Respondents.)	
17)	

1. Identity of Appealing Parties and Representatives

The appealing parties are:

Friends of Grays Harbor
P.O. Box 1512
Westport, WA 98595-1512
(360) 648-2254
rd@fogh.org

Grays Harbor Audubon Society
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Montesano, WA 98563
(360) 495-3950
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Natural Resources Defense Council
111 Sutter St., 20th Floor
San Francisco, CA 94104
(512) 423-0620
rfrost@nrdc.org

Twin Harbors Waterkeeper
P.O. Box 201
Rochester, WA 98579
(206) 293-0574
suej@twinharborswaterkeeper.org

1 Wild Orca
2 470 Spring Street 201A
3 Postal Box 294
4 Friday Harbor, WA 98250
5 (360) 317-0111, ext. 100
6 giles@wildorca.org

7 The representatives of the appealing parties are:

8 Ashley Bennett
9 Kristen L. Boyles
10 Earthjustice
11 810 Third Avenue, Suite 610
12 Seattle, WA 98104
13 (206) 343-7340
14 abennett@earthjustice.org
15 kboyles@earthjustice.org

16 **2. Identification of Other Parties**

17 The respondents to this appeal are the Olympic Region Clean Air Agency and the City of
18 Hoquiam. The permittee is Pacific Northwest Renewable Energy, LLC.

19 **3. Decision Under Appeal**

20 This is an appeal of the Final Determination and Order of Approval for Notice of
21 Construction Application 23NOC1606, issued by the Olympic Region Clean Air Agency
22 (“ORCAA”) on May 14, 2024, permitting Pacific Northwest Renewable Energy (“PNWRE”) to
23 construct and operate an industrial-scale, export-focused wood pellet manufacturing facility
24 (“Industrial Fuel Pellet Project”) at 411 Moon Island Road in Hoquiam, Washington (“the
25 Permit”). A copy of the Permit is attached (Attachment 1). As required under WAC 371-08-
26 340(3), Appellants also attach a copy of the application, 23NOC1605, that PNWRE submitted to
ORCAA for approval (Attachment 2).

1 Appellants also challenge the Determination of Nonsignificance (“DNS”) for the Project
2 that the City of Hoquiam issued on July 25, 2023, and which ORCAA relied on to approve the
3 Permit. A copy of the DNS is attached (Attachment 3).

4 **4. Short and Plain Statement Showing Grounds for Appeal**

5 A. Violations by ORCAA

6 The Permit for PNWRE’s construction and operation of the Industrial Fuel Pellet Project
7 is unlawful because it does not meet the requirements and intent of the federal Clean Air Act and
8 its implementing regulations and Washington State clean air laws and regulations designed to
9 protect public health and the environment from adverse impacts caused by a polluting stationary
10 source.

11 First, the Permit is contrary to state and federal Clean Air Act requirements because it
12 relies on flawed calculations and data to determine the Industrial Fuel Pellet Project’s potential-
13 to-emit hazardous air pollutants (“HAPs”), volatile organic compounds (“VOCs”), nitrogen
14 oxides (“NOx”), greenhouse gas emissions, and dust (PM 2.5 and PM 10). The Permit did not
15 account for all the emissions stemming from the Project, such as those generated from outdoor
16 wood storage piles, wood pellet storage silos, round-trip trucking, and marine vessel loading and
17 hoteling. Consequently, the Project’s emissions are drastically underestimated.

18 Second, based in part on comments submitted on the draft and other evidence in the
19 record, the Permit is arbitrary, capricious, and not in accordance with law.

20 Third, ORCAA failed to provide proper public notice and comment on the Permit, given
21 its use of flawed calculations to estimate the Industrial Fuel Pellet Project’s potential-to-emit.
22 The agency also failed to provide the public with all the necessary supporting information that
23 ORCAA relied on in its review of PNWRE’s application and decision to approve it.

1 Fourth, ORCAA issued the Permit in violation of the State Environmental Policy Act
2 (“SEPA”), SEPA’s governing regulations, and SEPA’s implementing ordinances because the
3 agency relied on the City of Hoquiam’s DNS that erroneously concluded that the Project would
4 not have a significant adverse environmental impact. Issuance of the Permit to PNWRE will
5 have a variety of significant adverse environmental impacts, and ORCAA should not have issued
6 the Permit before the City of Hoquiam completed an environmental impact statement, or the
7 agency should have conducted its own environmental review, disclosing and evaluating all the
8 impacts of, alternatives to, and potential mitigation for the Project.

9 Fifth, ORCAA failed to consider and comply with applicable laws and regulations
10 relating to ocean management and ocean uses, including the requirements of RCW Chapter
11 43.143 and WAC 173-26-360.

12 B. Violations by City of Hoquiam

13 First, the City of Hoquiam violated SEPA, SEPA’s governing regulations, and SEPA’s
14 implementing ordinances by issuing a DNS without accounting for all the emissions caused by
15 the Project, which will have a significant and detrimental environmental impact. This includes
16 emissions of HAPs, VOCs, NOx, greenhouse gas emissions, and dust (PM 2.5 and PM 10).

17 Second, the City failed to disclose to the public all the information necessary to analyze
18 the Project’s impacts, including but not limited to use of certain equipment, expected sources and
19 types of wood, modeling, and full life-cycle analysis of greenhouse gas emissions caused by the
20 Project.

21 Third, the City failed to consider or comply with the requirements of RCW 43.143
22 applicable to ocean resources management.

1 **5. Statement of Facts and Preliminary Identification of Issues**

2 A. PNWRE’s Proposed Industrial Fuel Pellet Project

3 The Permit concerns PNWRE’s proposed construction and operation of an industrial-
4 scale, export-focused wood pellet manufacturing facility on an approximately 60-acre parcel of
5 land in Hoquiam, Washington. This facility would be among the first of its kind in the Pacific
6 Northwest. PNWRE’s proposed location for the Industrial Fuel Pellet Project is adjacent to Gray
7 Harbor National Refuge and near Hoquiam High School, Hoquiam Middle School, residential
8 areas, and local parks.

9 PNWRE designed the Proposed Industrial Fuel Pellet Project to produce, store, and
10 export up to 440,800 tons of dried wood pellets per year, operating seven days a week, 24 hours
11 a day—for at least a total of 8,000 hours per year. To process harvested wood into fuel pellets,
12 the facility will include the use of three truck tippers for delivery of harvested wood and hog
13 fuel, a chips cleaning line to remove impurities and sort chipped wood by size, two wet hammer
14 mills, one hog fuel furnace and dryer, four dry hammer mills, 12 pellet mills, five wood pellet
15 storage silos, and a covered conveyor system to deliver wood pellets to a ship loading facility.

16 Harmful air pollutants will be emitted throughout PNWRE’s fuel pellet production
17 process. Trucks will transport wood from unknown sources to the facility where it will be
18 chopped up into chips and blasted with heat from an industrial furnace in a large rotary drum
19 dryer to remove moisture. The furnace and drying processes release heavy amounts of NOx,
20 particulate matter (“PM”), carbon dioxide (“CO”), VOCs, and HAPs.¹ After the wood is dried, a
21 hammermill will crush the chips into finer pieces. The finer pieces will then be fed into the

22 _____
23 ¹ Environmental Integrity Project, *Dirty Deception: How the Wood Biomass Industry Skirts the*
24 *Clean Air Act* (April 26, 2018) at 5-7, [https://www.environmentalintegrity.org/wp-](https://www.environmentalintegrity.org/wp-content/uploads/2017/02/Biomass-Report.pdf)
[content/uploads/2017/02/Biomass-Report.pdf](https://www.environmentalintegrity.org/wp-content/uploads/2017/02/Biomass-Report.pdf).

1 pellet mill, where they will be extruded under high pressure and temperatures to soften the lignin
2 in the wood, which binds the material together to form the pellets. These milling and pelletizing
3 processes emit significant amounts of VOCs, HAPs, and PM.² Additionally, harmful air
4 pollutants will be released from stockpiling the unprocessed harvested wood outside and storing
5 the wood pellets in silos before shipping them out to countries in Asia.

6 B. The Flawed Review of PNWRE’s Proposed Industrial Fuel Pellet Project.

7 1. *Legal Background*

8 Under Washington State law and ORCAA’s regulations, a proponent of any new
9 stationary source of air pollution within ORCAA’s jurisdiction must submit a Notice of
10 Construction (“NOC”) application.³ ORCAA’s approval of a NOC application is generally
11 required to begin construction of a new source of air pollution.

12 To approve an NOC application, ORCAA must analyze air quality impacts from the
13 proposed project and ensure that it complies with all applicable federal Clean Air Act, state,
14 and ORCAA’s air quality requirements.⁴ These requirements include the obligation for a
15 new source to employ state best available control technology (“BACT”) for all air pollutants
16 not previously emitted.⁵ State-BACT also must be installed if a proposed new source emits
17 any toxic air pollutants.⁶ The State-BACT emission limitation and compliance requirements
18 mirror the Federal-BACT requirements for major sources.⁷

19 _____
20 ² *Id.*

21 ³ See Washington Administrative Code (“WAC”) 173-400-110 (1), (2); ORCAA Rule 6.1.

22 ⁴ ORCAA Rule 6.1.4.

23 ⁵ ORCAA Rule 6.1.4(a)(2).

24 ⁶ See WAC 173-460-060.

25 ⁷ WAC 173-400-700(a)(vi) adopts the federal definition of BACT by reference; *see also* WAC
26 173-400-030 (29).

1 ORCAA uses a source’s potential-to emit as a mechanism to determine applicable air
2 quality requirements and evaluate the potential impacts of the source’s emissions on ambient air
3 quality. Potential-to-emit refers to the maximum amount of pollutants that a source can emit
4 based on its physical design and operational limits.⁸ When a new source is projected to emit 10
5 tons per year of a single hazardous air pollutant or 25 tons per year of total hazardous air
6 pollutants, it is classified as a major source of hazardous air pollutants.⁹ Major sources of
7 hazardous air pollutants are subject to federal requirements to restrict emissions to levels
8 consistent with the lowest emitting (also called best-performing) plants.¹⁰ These air toxics
9 control standards are developed by EPA and are known as maximum achievable control
10 technology (“MACT”).¹¹ In instances where EPA has not established standards for a specific
11 source category, it is the permitting authority’s responsibility to conduct case-by-case MACT
12 analysis for the source.¹² The objective of the case-by-case analysis is to set emission limits that
13 “shall not be less stringent than the emission control which is achieved in practice by the best
14 controlled similar source.”¹³ This means that the minimum degree of control efficiency under
15 MACT requirements is determined by the best-controlled similar source’s real-world emission
16 control, also known as the MACT “floor.”¹⁴

19 ⁸ 40 C.F.R. § 52.21(b)(4).

20 ⁹ 42 U.S.C. § 7412(a)(1).

21 ¹⁰ *Id.* § 7412(d)(1)-(3).

22 ¹¹ *See Id.* § 7412(d)(1).

23 ¹² *See* 42 U.S.C. § 7412(g)(2); 40 C.F.R. § 63.42(c).

24 ¹³ 40 C.F.R. § 63.43(d)(1) (emphasis added).

25 ¹⁴ *Id.*

1 Under SEPA, ORCAA must consider the direct and indirect environmental impacts of its
2 decision.¹⁵ When ORCAA is not the lead agency required to do the SEPA review (as is the case
3 here), it still has a duty to initiate and complete its own supplemental environmental review of a
4 proposed new source if a DNS was issued and:

- 5 • there are substantial changes to a proposal so that the proposal is likely to have
6 significant adverse environmental impacts;
- 7 • there is significant new information on a proposal’s probable significant impacts;
8 or
- 9 • there was misrepresentation or lack of material disclosure.¹⁶

10 Finally, the Ocean Resources Management Act (“ORMA”) applies to “uses or activities
11 that require federal, state, or local government permits or other approvals and that will adversely
12 impact renewable resources, marine life, fishing, aquaculture, recreation, navigation, air or water
13 quality, or other existing ocean or coastal uses.”¹⁷

14 2. *The Permit fails to properly account for emissions from PNWRE’s fuel
15 pellet project.*

16 As required by state and federal law, as well as ORCAA’s regulations, PNWRE
17 submitted an application for a Notice of Construction to ORCAA on July 24, 2023, seeking
18 approval to build and operate the Industrial Fuel Pellet Project in Hoquiam, Washington, at the
19 Port of Grays Harbor. PNWRE submitted two addendums to its application (on August 11,
20 2023, and September 6, 2023) before ORCAA deemed it complete on September 11, 2023. The
21 company submitted another addendum on October 25, 2023.

22 ¹⁵ WAC 197-11-060(4)(a)-(d).

23 ¹⁶ WAC 197-11-340(3)(a).

24 ¹⁷ RCW 43.143.030(2); WAC 173-26-360.

1 In the application, PNWRE estimated that the facility would emit no more than 1.32 tons
2 of hazardous air pollutants per year. But data from stack tests and air permit applications for
3 similar-sized facilities and with comparable controls—including the only other pellet plant
4 proposed in Washington—show emissions of at least 40 tons of HAPs per year, which would
5 trigger the requirement to complete case-by-case MACT analysis. In other words, PNWRE’s
6 underestimated HAP emissions allowed the facility to circumvent the most stringent Clean Air
7 Act pre-construction permitting requirement that might apply to the facility. Further, the
8 underestimated emissions mean that the requisite Air Toxics Ambient Impact Review was
9 completely flawed because the modeling was based on incorrect emission rates.

10 In addition to HAPs, PNWRE projected its proposed Industrial Fuel Pellet Project would
11 emit 67 tons of VOCs per year and 230 tons of NOx per year. These estimations do not account
12 for all the Industrial Fuel Pellet Project’s emissions. For example, emissions from the wood that
13 would be stored outside and the five fuel pellet storage silos were not included in PNWRE’s
14 application. PNWRE also estimated that the proposed facility would emit 163,592 tons of CO₂e
15 annually. However, this estimate excludes greenhouse gas emissions from transportation
16 activities associated with the Industrial Fuel Pellet Project, such as trucking going into and out of
17 the proposed facility and marine vessels traveling to and from international destinations.

18 ORCAA relied on the flawed emissions data PNWRE provided in its NOC application to
19 confirm applicability of relevant air regulations, evaluate projected air impacts, and establish
20 emissions limits. When ORCAA released its Preliminary Determination to approve the
21 Industrial Fuel Pellet Project for public comment on December 8, 2023, it did so based on this
22 flawed emissions data. This public notice and comment period was therefore deficient because it
23 substantially misrepresented the facility’s true emissions.

1 ORCAA also failed to provide the public with all the supporting information it relied on
2 from PNWRE to make its Preliminary Determination, explaining that any supporting information
3 that was not posted on ORCAA's website was available upon filing a records request. This lack
4 of transparency in the process prevented the public from fully understanding the potential impact
5 of the Industrial Fuel Pellet Project and commenting on the Permit.

6 On May 14, 2024, ORCAA issued a Final Determination and Order to approve the
7 Industrial Fuel Pellet Project. Despite receiving several comments, including comments from
8 Appellants, with supporting evidence demonstrating that PNWRE's emissions data for which
9 ORCAA relied on was deeply flawed, ORCAA continued to rely on the flawed emissions data.
10 ORCAA's attempt to use post-construction/operation testing and monitoring to remedy any
11 issues related to excess emissions from the Industrial Fuel Pellet Plant is a wait-and-see approach
12 that directly contradicts the purpose of *pre-construction* permits, which is to protect public health
13 and the environment *before* a project is built.

14 ORCAA's issuance of the Final Determination and Order of Approval for PNWRE's
15 Industrial Fuel Pellet Project violates state, federal, and the agency's own regulations for several
16 reasons. First, ORCAA erred in relying on flawed emissions data to determine air quality
17 impacts, emissions limits, and compliance with applicable air quality requirements for the
18 Industrial Fuel Pellet Project. ORCAA also failed to evaluate all sources of Project emissions.
19 Second, ORCAA's reliance on flawed emissions data resulted in the agency's failure to properly
20 classify the Industrial Fuel Pellet Project as a major source of hazardous air pollutants and
21 complete the required MACT analysis. Third, ORCAA did not provide a rational basis and
22 explanation for its Final Determination and Order of Approval.

1 3. *The Permit relies on an invalid and flawed SEPA analysis.*

2 Prior to applying for a Notice of Construction from ORCAA, PNWRE submitted a SEPA
3 checklist for the Proposed Industrial Fuel Pellet Project to the City of Hoquiam for review on
4 June 19, 2023. The City of Hoquiam deemed the SEPA checklist complete on July 20, 2023.
5 Less than a week later, on July 24, 2024, the City of Hoquiam issued a DNS for the Project,
6 commencing a 14-day public comment period. The Department of Ecology (“Ecology”)
7 submitted comments to the City of Hoquiam raising concerns that the DNS failed to disclose the
8 full potential amounts and sources of CO₂ emissions. Upon information and belief, Ecology
9 submitted the sole comment letter on the DNS Determination.

10 The Department of Ecology warned that without this information stakeholders would be
11 unable to evaluate potential CO₂ impacts and determine the extent of the proposal’s contribution
12 to climate change. Consequently, Ecology recommended that the City of Hoquiam consider
13 more specific information on potential CO₂ emissions from the Project. But despite Ecology’s
14 concerns, the City of Hoquiam did not amend its determination. SEPA and SEPA regulations
15 mandate thorough consideration of both direct and indirect climate impacts.¹⁸

16 The City of Hoquiam’s review of PNWRE’s Proposed Industrial Fuel Pellet Project was
17 limited to the immediate environmental impacts of constructing and operating the facility and
18 contained major errors, including:

- 19 • an inaccurate assessment of air pollution emissions at the facility, including, but
20 not limited to, greenhouse gases, VOCs, and HAPs;
- 21 • failure to disclose material information about the Project, including, but not
22 limited to VOC and HAPs emissions, emissions from outdoor storage piles,

23 ¹⁸ See RCW 43.21C.030(f) (directing agencies to “recognize the world-wide and long-range
24 character of environmental problem); WAC 197-11-444 (listing “climate” among elements of the
environment that must be considered in SEPA review).

1 transportation and loading emissions, sources and types of wood, off-site
2 emissions, and

- 3 • failure to perform a life-cycle greenhouse gas analysis of the direct, indirect, and
4 cumulative greenhouse gas impacts of producing, transporting, and burning the
5 wood pellets.

6 The DNS does not properly assess emissions of HAPs and VOCs from the Project; and it
7 fails to account for all direct and indirect greenhouse gas emissions from PNWRE’s proposed
8 pellet facility as required by SEPA. Nor does the DNS mention or consider the requirements of
9 ORMA. ORCAA cannot rely on the DNS to fulfill its SEPA obligations.

10 4. *The DNS is invalid due to substantial changes to the Project, significant
11 new information, and lack of material disclosures.*

12 SEPA Regulations require the lead agency (here Hoquiam) to withdraw a DNS if:

13 “(i) There are *substantial changes* to a proposal so that the proposal is likely to have significant
14 adverse environmental impacts; (ii) There is *significant new information* indicating, or on, a
15 proposal’s probable significant adverse environmental impacts; (iii) The DNS was procured by
16 misrepresentation or *lack of material disclosure*.”¹⁹ The DNS itself is a six-page document that,
17 for most of the SEPA checklist areas, simply states that the environmental checklist description
18 of impact to each area “is adequate.” The DNS does not mention HAPs, VOCs, or greenhouse
19 gas emissions at all, the last an omission noted by Ecology. “While the checklist states that total
20 GHG emissions from the project would be insignificant and minor, neither it nor the DNS
21 disclose the potential amounts or sources of CO₂ emissions. Without some idea or substantive
22 discussion about the amounts or sources, evaluate potential CO₂ impacts and determine the
23 extent of the proposal’s contribution to climate change.” Ecology DNS Comment Ltr. (Aug. 9,
24 2023).

25 ¹⁹ WAC 197-11-340(3)(a) (emphasis added).

1 Nor does the DNS disclose substantial aspects of the Project, such as the source, type, or
2 amount of wood to be used, or the deposition of dust and fines on water and shorelands. SEPA
3 regulations also explicitly require the consideration of environmental impacts outside the
4 jurisdiction of the deciding agency.²⁰

5 The SEPA Checklist, the only document cited in the DNS, offers scant additional details.
6 PNWRE's SEPA Checklist did not quantify GHG emissions, instead concluding that "Total
7 GHG emissions from the Project would represent minor contributions to local, regional, and
8 global GHGs and would not be a significant source of emissions when compared to standard
9 benchmarks." SEPA Checklist at 7. Nor did PNWRE's SEPA Checklist account for the
10 greenhouse gas emissions associated with the entire life cycle of the fuel pellets, from logging to
11 burning. In fact, the SEPA Checklist averred that "[t]here are no known off-site emissions or
12 odors" that would affect the proposal, ignoring the truck transportation, marine shipping, and the
13 burning of wood pellets at their final destination. SEPA Checklist at 8.

14 On emissions of HAPs and VOCs, the SEPA Checklist explained only that the facility's
15 individual and total HAPs emissions were less than the major source threshold. The SEPA
16 checklist does not discuss VOCs at all, nor does it mention sources of wood, except to note that
17 the adjacent chip mill site is expected to be "one of the sources of raw material." SEPA
18 Checklist at 2.

19 **6. Interests of the Appellants**

20 Pollution from PNWRE's Industrial Fuel Pellet Project would significantly affect the
21 City of Hoquiam and broader communities in Washington State. Appellants Friends of Grays
22 Harbor, Grays Harbor Audubon Society, Natural Resource Defense Council, Twins Harbors

23
24 ²⁰ WAC 197-11-060(c).

1 Waterkeeper, and Wild Orca are all non-profit organizations that represent thousands of
2 members and supporters dedicated to protecting the environment, communities, and wildlife near
3 where PNWRE proposes to construct the Industrial Fuel Pellet Project.

4 Members and supporters of the Appellant groups work, live, and recreate near where the
5 Industrial Fuel Pellet Project would be located. Members have children who attend Hoquiam
6 High School and Hoquiam Middle School—schools just over a mile from where the proposed
7 Industrial Fuel Pellet Project would operate. They frequent Gary’s Grove-Old Cannery Park to
8 walk along the beach and take in the majestic ocean views. Members visit Grays Harbor
9 National Wildlife Refuge to see unique flora and fauna and one of the largest concentrations of
10 shorebirds on the West Coast. They enjoy catching glimpses of the critically endangered
11 Southern Resident killer whales that forage for Chinook salmon outside of Grays Harbor. There
12 are also members working, living, and recreating near where the Industrial Fuel Pellet Project
13 would be built who are particularly sensitive to air pollution due to age or chronic illnesses like
14 asthma.

15 ORCAA’s unlawful issuance of the Permit would subject Appellants to harmful air
16 pollution from PNWRE’s proposed construction and operation of the Industrial Fuel Pellet
17 Project. The proposed facility would emit a significant amount of hazardous air pollutants into
18 the air, including formaldehyde, acrolein, and methanol—substances known to pose significant
19 risks to human health, particularly for children, seniors, and people with chronic illnesses
20 including respiratory ailments such as chronic inflammatory lung disease or COPD. The
21 Industrial Fuel Pellet Project would also emit a substantial amount of criteria air pollutants,
22 which would put the health of Appellants members who live, work, and recreate in the area at
23
24

1 further risk, along with the wildlife Appellants are trying to protect and recover. Dust and fine
2 particulate matter from the Project will also cover sensitive shoreline areas.

3 Moreover, the emissions from the Industrial Fuel Pellet Plant would further exacerbate
4 existing environmental challenges. PNWRE’s proposed project would significantly increase
5 Washington State’s contribution to global greenhouse gas emissions and other pollutants. From
6 the logging of trees to the transportation of wood via trucks, the processing of wood into fuel
7 pellets, and the eventual shipping of the wood pellets to Asia for burning in power plants—each
8 step in the process would add to the environmental toll that Appellants would have to bear.
9 Increased logging rates in Washington’s forests would release stored carbon in the Olympic
10 Peninsula and in the Willapa Hills, further compounding the impacts of climate change.
11 Deforestation is the second leading cause of ocean acidification and warming, further harming
12 coastal stocks of salmon, which are already in serious decline.

13 **7. Relief Requested**

14 Appellants respectfully ask the Board to declare the Permit and the DNS unlawful and set
15 aside both, and prohibit ORCAA from reissuing the Permit until it corrects the emissions
16 calculations, properly analyzes the environmental impacts under SEPA, and complies with the
17 requirements of ORMA. Appellants also request that the Board declare the City of Hoquiam’s
18 DNS for the Project invalid and vacate it with instructions for the City of Hoquiam to fully
19 comply with SEPA and ORMA.

20 **8. Service**

21 Copies of this Notice were sent to the Olympic Region Clean Air Agency, City of
22 Hoquiam, and Pacific Northwest Renewable Energy, LLC by e-mail and Federal Express on
23 June 13, 2024.

1 Respectfully submitted this 13th day of June, 2024.

2
3 *s/Ashley Bennett*

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12 *Attorneys for Appellants*

1 CERTIFICATE OF SERVICE

2 I hereby certify that on this 13th day of June, 2024, the foregoing NOTICE OF APPEAL
3 was filed electronically through the CMS system and served on the following parties:

4 ***Via FedEx and Email***

5 Olympic Region Clean Air Agency
6 Jeff C. Johnston, ORCAA Executive Director
7 2940 Limited Lane
8 Olympia, WA 98502
9 Jeff.johnston@orca.org

10 City of Hoquiam
11 Brian Shay, City Administrator
12 609 Eighth St.
13 Hoquiam, WA 98550-351
14 bshay@cityofhoquiam.com

15 Pacific Northwest Renewable Energy
16 Marvin Boivin, CEO
17 P.O. Boc 391 South Egremont, MA 01258
18 mboivin@pnwrenewable.com

19 *s/Diana Brechtel*
20 Diana Brechtel, Litigation Paralegal

ATTACHMENT 1

ORDER OF APPROVAL
NOTICE OF CONSTRUCTION 23NOC1606
ISSUED to Pacific Northwest Renewable Energy, LLC on

MAY 14 2024

This Order of Approval ("Order") is issued in accordance with Olympic Region Clean Air Agency ("ORCAA") Rule 6.1 and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6.

Conditional approval to establish a wood pellet manufacturing facility located at 411 Moon Island Road, in Hoquiam ("Approved Location"), for operation solely as described in the associated Notice of Construction ("NOC") application 23NOC1606, is hereby GRANTED to Pacific Northwest Renewable Energy, LLC ("Applicant"), subject to the Conditions of Approval listed below.

This Order and the Conditions of Approval herein remain in effect for the life of the Approved Equipment as used at the Approved Location and shall be binding on Applicant, current owners and operators of the equipment, and Applicant's heirs, successors and assigns unless amended or superseded by a subsequent Order issued by ORCAA or unless the equipment is permanently shut down. The Applicant must notify any subsequent owner, operator, heirs, successor or assigns of this Order and the Conditions of Approval herein.

Conditions of Approval established in this Order shall be enforceable in addition to any applicable state, local and federal regulations, or standards in existence now or in the future. Compliance with the conditions of this Order do not relieve the Applicant or any owner or operator from compliance with ORCAA Regulations, chapter 70A.15 of the Revised Code of Washington, or any other emissions control requirements, nor from any penalties for failure to comply with the same. Applicant may appeal this Order to the Pollution Control Hearings Board ("PCHB") by filing a written appeal with the PCHB and serving a copy upon ORCAA within thirty (30) days of receipt of this Order.

This Order is GRANTED, subject to the following Conditions of Approval:

1. **Approved Equipment.** The new wood pellet manufacturing facility as described in Notice of Construction application No. 23NOC1606, application addendums, and the associated Final Determination is approved for construction and operation subject to conditions in this Order of Approval.
[Regulatory Basis: ORCAA Rule 6.1(a); ORCAA Rule 6.1.2(l); 40 CFR Part 52.2470(c), Table 6]
2. **Preapproval Required.** Prior approval by ORCAA may be required for the following as specified in ORCAA Rule 6.1:
 - a) Construction, installation, or establishment of any stationary source;

- b) Modification to any existing stationary source;
- c) Replacement or substantial alteration of emission control technology installed on an existing stationary source; or,
- d) Deviations from the approved plans, drawings, data, and specifications of the stationary sources listed in the following table:

Source ID	Approved Stationary Sources	Approved Control Technologies and Measures
TD-01	Truck Dumper – White Wood (75' Back-On Truck Dump Platform)	Dust control plan
TD-02	Truck Dumper – Chips (75' Back-On Truck Dump Platform)	Dust control plan
TD-03	Truck Dumper – Hog Fuel (75' Back-On Truck Dump Platform)	Dust control plan
SP-01	Storage Pile – White Wood	Dust control plan
SP-02	Storage Pile – Chips	Dust control plan
SP-03	Storage Pile – Hog Fuel	Dust control plan
VEH-01	Vehicle Traffic – Trucks	Dust control plan
VEH-02	Vehicle Traffic – Front End Loaders	Dust control plan
EP-01.1	Chip Cleaning Line	Cyclo-filter
EP-01.2	White Wood Disc Screening	None
EP-01.3	Hog Fuel Feed	None
EP-02	Drying Line Emissions Units (EU): EU 02.1 – Furnace: <ul style="list-style-type: none"> • Fuel – Biomass • Start-up Fuel – Biomass + Diesel • 4 reciprocating grate zones • Heat rate 165 MMBtu/hr total • Under-fire and overfire air + secondary combustion zone EU 02.2 – Drum dryer: <ul style="list-style-type: none"> • Ø 20' by 90' long • Feedstock input – 85.5 ton/h @ 45% mc • Operating temperature around 750°F • Operating airflow around 124,031 ACFM 	Cyclones (2 units in parallel) Wet Electrostatic Precipitator: <ul style="list-style-type: none"> • Output Rating: 70 kilovolt, 1500 milliamp. • Input: 105 KVA, 460 V / 3-phase / 60 Hz. • 3 Fields and 621 Ø10" tubes Regenerative Thermal Oxidizer: <ul style="list-style-type: none"> • 4 chambers • 20.2 MMBtu/hr gas consumption
EP-03	Dry Product Intermediate Storage Silo 1: <ul style="list-style-type: none"> • Volume (gross) 45,732 ft³ 	Silo vent filters
EP-04	Dry Product Intermediate Storage Silo 2: <ul style="list-style-type: none"> • Volume (gross) 45,732 ft³ 	Silo vent filters
EP-05	Wet Hammer Mill 1	Baghouses or Cyclo-filters (4 units, one for each DHM): <ul style="list-style-type: none"> • Each exhausting to RCO
EP-06	Wet Hammer Mill 2	
EP-07	Dry Hammer Mills (DHM, 4 units): <ul style="list-style-type: none"> • 15.5 ton/h design capacity each • 900 HP each 	Baghouses or Cyclo-filters (2 units, one per each pellet cooler): <ul style="list-style-type: none"> • Each exhausting to RCO
EP-08	Pellet Mill Emissions Units (EU) EU 08.1 – Pelletizers (12 units): <ul style="list-style-type: none"> • 500 HP each • 5.5 ton/h EU 08.2 – Pellet Coolers (2 units)	Baghouses or Cyclo-filters (2 units, one per each wet hammer mill): <ul style="list-style-type: none"> • Each exhausting to RCO Regenerative Catalytic Oxidizer (RCO): <ul style="list-style-type: none"> • Controls exhaust from DHMs, Pelletizers, Pellet Coolers, and wet hammer mills

Source ID	Approved Stationary Sources	Approved Control Technologies and Measures
		<ul style="list-style-type: none"> Design Airflow = 29,500 ACFM from DHM + 76,000 ACFM from pelleting line + 20,440 ACFM from wet hammer mills 5.8 MMBtu/hr design natural gas consumption
EP-09	Milled Dry Product Intermediate Storage Silo <ul style="list-style-type: none"> Volume (gross) 45,732 ft³ 	Silo vent filters
EP-10	Pellet Storage Silo #1	Silo vent filters
EP-11	Pellet Storage Silo #2	
EP-12	Pellet Storage Silo #3	
EP-13	Pellet Storage Silo #4	
EP-14	Pellet Storage Silo #5	
EP-15	Truck Loadout	Silo Filter and shrouded dump chute

[Regulatory Basis: ORCAA Rule 6.1(a); ORCAA Rule 6.1.2(l); WAC 173-400-110(2); WAC 173-400-111(10)]

3. **Cyclo-filters and Baghouses.** In addition to applicable general emissions limits and standards, the following limits and standards apply to all cyclo-filters and baghouses emitting directly to the ambient air:

- a) Cyclo-filters and baghouses must be operating whenever the pellet plant is operating.
- b) All cyclo-filters and baghouses must be equipped with a working manometer to read pressure drop across the filters.
- c) Visible emissions must not exceed 0% opacity as measured in accordance with EPA 40 CFR Part 60 Appendix A Method 9.
- d) Total filterable emissions must not exceed 0.004 grains per standard cubic feet, 1-hour average, measured in accordance with EPA Method 5 in Appendix A to 40 CFR Part 60, or an alternative method approved by ORCAA.
- e) Baghouses and Cyclo-filters must exhaust through a vertical stack that provides suitable conditions for stack testing per Method 5.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

4. **Silo Vents.** In addition to applicable general emissions limits and standards, the following limits and standards apply to all silo vents:

- a) Silo vents must be equipped with suitable filters capable of at least 98% filtration efficiency for the size range of particles emitted.
- b) Filter efficiency must be confirmed and documented by appropriate certification and/or guarantees provided by the filter manufacturer.
- c) Visible emissions from any silo vent must not exceed 0% opacity as measured in accordance with EPA 40 CFR Part 60 Appendix A Method 9.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

5. **Drying Line.** In addition to applicable general emissions limits and standards, the following limits and standards apply to emissions from the drying line (furnace and drum dryer):

- a) Emissions from the RTO stack must not exceed the following limits:

Pollutant	Limit	Reference Test Methods
PM ₁₀ (filterable + condensable)	12.7 lbs/hr, 1-hr ave	EPA Methods 1-4, 5, 201, or 201A, plus EPA Reference Method 202 from 40 CFR Part 60 Appendix A-1, or equivalent methods agreed to in advance by ORCAA. Use of EPA Reference Method 5 assumes all filterable particulate is PM ₁₀ .
NO _x	53 lbs/hr, 1-hr ave	EPA Methods 1-4, and 20 from 40 CFR Part 60 Appendix A, or an equivalent method agreed to in advance by ORCAA.
CO	42 lbs/hr, 1-hr ave	EPA Methods 1-4, and 10 from 40 CFR Part 60 Appendix, or an equivalent method agreed to in advance by ORCAA.
VOC (Per EPA's Wood Products Protocol 1)	8.92 lbs/hr, 1-hr ave	EPA Method 1-4, and 25A from 40 CFR Part 60 Appendix A, or equivalent method agreed to in advance by ORCAA. Concurrent testing for both methanol and formaldehyde. VOC must be determined using EPA Method OTM-26 (see condition 8). Formaldehyde and methanol testing methods (or equivalent methods agreed to in advance by ORCAA): <ul style="list-style-type: none"> • Methanol: EPA Method 308 or 320 from 40 CFR Part 63 Appendix A or NCASI method CI/WP-98.01 • Formaldehyde: EPA Method 316 or 320 from 40 CFR Part 63 Appendix A or NCASI Method CI/WP-98.01
HCl	0.028 lbs/hr, 1-hr ave	EPA Methods 1-4, and 26 or 26A (M26 or M26A) from 40 CFR part 60, appendix A-8.
Hg	0.0006 lbs/hr, 1-hr ave	EPA Methods 1-4, and 29, 30A, or 30B from 40 CFR Part 60, appendix A-8. For Method 29, collect a minimum of 4 dscm per run; for Method 30A or Method 30B, collect a minimum sample as specified in the method; for ASTM D6784 collect a minimum of 4 dscm.
Opacity	5%, 6-minute average	EPA Method 9 from 40 CFR Part 60 Appendix A.

- b) At all times, except during startup as allowed by condition 9, emissions from the furnace and dryer must exhaust through the air pollution control system consisting of the pair of cyclones, Wet Electrostatic Precipitator (WESP) and Regenerative Thermal Oxidizer (RTO).
- c) The WESP must be equipped with a means to continuously monitor and record VDC and mADC of each WESP field.
- d) The cake produced by the WESP decanter centrifuge must be properly disposed of and must not be recycled back into the furnace fuel feed system or in the pellet feedstock.
- e) All combustion chambers of the RTO must be equipped with thermocouples to continuously measure and record combustion chamber temperature.
- f) Except as provided by conditions 9 and 10, emissions exhausting through either the furnace or dryer bypass stacks are presumed to be in violation of the limits and standards of this condition.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

6. **Wet Hammer Mill and Pellet Mill.** In addition to applicable general emissions limits and standards, the following limits and standards apply to emissions from the wet hammer mills, dry hammer mills, pelletizers and pellet coolers:
 - a) At all times, exhaust from the wet and dry hammer mills must exhaust through their respective baghouses and the Regenerative Catalytic Oxidizer (RCO).
 - b) At all times, emissions from the pellet coolers must exhaust through their respective baghouses and the RCO.
 - c) All baghouses must be equipped with a working manometer to read pressure drop across the filters.

- d) All combustion chambers of the RCO must be equipped with thermocouples to continuously measure and record combustion chamber temperature directly after the catalyst bed.
- e) Emissions from the RCO stack must not exceed the following limits:

Pollutant	Limit	Reference Test Methods
PM ₁₀ (filterable + condensable)	3.0 lbs/hr, 1-hr ave	EPA Methods 1-4, 5, 201, or 201A, plus EPA Reference Method 202 from 40 CFR Part 60 Appendix A-1, or equivalent methods agreed to in advance by ORCAA. Use of EPA Reference Method 5 assumes all filterable particulate is PM ₁₀ .
VOC (Per EPA's Wood Products Protocol 1)	9.0 lbs/hr, 1-hr ave	EPA Method 1-4, and 25A from 40 CFR Part 60 Appendix A, or equivalent method agreed to in advance by ORCAA. Concurrent testing for both methanol and formaldehyde, VOC must be determined using EPA Method OTM-26 (see condition 8). Formaldehyde and methanol testing methods (or equivalent methods agreed to in advance by ORCAA): <ul style="list-style-type: none"> • Methanol: EPA Method 308 or 320 from 40 CFR Part 63 Appendix A or NCASI method CI/WP-98.01 • Formaldehyde: EPA Method 316 or 320 from 40 CFR Part 63 Appendix A or NCASI Method CI/WP-98.01
Opacity	5%, 6-minute average	EPA Method 9 from 40 CFR Part 60 Appendix A.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

- 7. **Facility-wide Annual Emissions Limits.** Facility-wide annual emissions must not exceed the following limits in terms of tons per consecutive 12-month period:

Pollutant	Facility-Wide Limit	Compliance Determination Methods
PM ₁₀ (filterable + condensable)	98 tons/12-month period	Compliance determined by calculating tons of each pollutant based on ORCAA-approved emissions factors and the actual fuels combusted, tons of pellets produced, and operating schedule over the previous 12-month period according to condition 8.
NO _x	230 tons/12-month period	
CO	186 tons/12-month period	
VOC (Per EPA's Wood Products Protocol 1)	68 tons/12-month period	

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

- 8. **Monitoring Facility-Wide Emissions.** Compliance with facility-wide annual emissions must be determined monthly by calculating facility-wide total tons of each pollutant for the previous 12-consecutive month period as follows:

- a) For the drying line (furnace and dryer):
 - i) PM₁₀ and VOC emissions must be calculated based on emission factors in terms of pounds per oven dried ton of pellets (lb/ODT) determined through source testing, times the actual tons of pellets produced, or an alternative method of calculation approved by ORCAA. Emissions factors must be updated with each required source test.
 - ii) VOC emissions must be determined using EPA's Interim VOC Measurement Protocol for the Wood Products Industry – July 2007 (otherwise known as Other Test Method 26 or

- OTM-26) and must include quantification of the individual contributions of methanol and formaldehyde based on the most recent source test results. VOC emissions calculated using this method are referred to as "WPP1 VOC".
- iii) NO_x and CO emissions must be determined using data from the NO_x and CO continuous emission rate monitoring systems (CERMS) required by condition 11.
 - iv) Emissions from the dryer line during any period when pellets are not produced such as, but not limited to, startup, shutdown, and idle mode, must be included in the facility-wide total emissions.
- b) For the RCO exhaust (pellet mill and wet hammer mills):
 - i) Emissions of NO_x, CO, PM₁₀, and VOC must be calculated based on emission factors in terms of pounds per oven dried ton of pellets produced (lb/ODT) determined through source testing, times the actual tons of pellets produced, or an alternative method of calculation approved by ORCAA. Emissions factors must be updated with each required source test.
 - ii) VOC emissions must be determined using EPA's Interim VOC Measurement Protocol for the Wood Products Industry – July 2007 (otherwise known as Other Test Method 26 or OTM-26) and must include quantification of the individual contributions of methanol and formaldehyde based on the most recent source test results. VOC emissions calculated using this method are referred to as "WPP1 VOC".
 - iii) Emissions from the dryer line and pellet mill during any periods when pellets are not produced such as, but not limited to, startup, shutdown, and idle mode, must be included in the facility-wide total emissions.
 - c) PM₁₀ emissions from process units (baghouses, cyclo-filters, silo vents) must be calculated based on 0.004 grains per standard cubic feet, and each unit's exhaust rate and the hours they operated, or an alternative method of calculation approved by ORCAA.
 - d) PM₁₀ emissions from road dust created by traffic (front end loaders and trucks) must be calculated based on equations from AP-42 Section 13.2.2 and vehicle miles traveled at the facility by front end loaders and haul truck, or an alternative method of calculation approved by ORCAA.
 - e) PM₁₀ emissions from process fugitive sources (truck dumpers, storage piles, chip screening) must be calculated based on equations from Particulate Matter Potential to Emit Emissions Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country (EPA Region 10, May 8, 2014) and actual production over the 12-month period, or an alternative method of calculation approved by ORCAA.
- [Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

9. **Furnace/Dryer Startups.** In addition to applicable general emissions limits and standards, the following requirements apply to operation of the furnace and drum dryer during startups:
- a) Cold startup must be initiated using clean, dry fuels including dry wood and ultra-low sulfur diesel.
 - b) Furnace exhaust during a startup may bypass the drying line air pollution control system through the furnace bypass stack provided:
 - i) Bypass of the air pollution control system (cyclones, WESP, RTO) does not exceed 30 minutes during any single startup;

- ii) The number of startups that bypass the air pollution control systems and exhaust through the furnace bypass stack does not exceed 10 startups per each 12-month period;
 - iii) Operation of the air pollution control system including the WESP and RTO are initiated so that these units are fully functional and ready to accept emissions from the furnace and dryer as soon as possible after a startup is initiated;
 - iv) Exhausting through the air pollution control system is initiated as soon as possible after a startup is initiated.
- c) A sufficient amount of clean dry fuel must be maintained at all times to minimize emissions during startups.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-400-081; WAC 173-460-040(3)]

10. Furnace/Dryer Planned Shutdowns. In addition to applicable general emissions limits and standards, the following requirements apply to operation of the furnace and drum dryer during planned shutdowns:

- a) The air pollution control system must be fully functioning during a planned shutdown;
- b) Exhaust of hot gases through the furnace bypass stack during a planned shutdown may commence once there is no combustion occurring on the furnace grates;
- c) Exhaust of hot gases through the dryer bypass stack during a planned shutdown may commence once there is no combustion on the furnace grates and no material remaining in the drum dryer.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

11. Dryer Line Emissions Monitoring. Ongoing compliance with the drying line NO_x and CO limits in condition 5a must be continuously monitored using continuous emission rate monitoring systems (CERMS) for measuring NO_x and CO pollutant mass rates in lb/hr.

- a) The NO_x and CO CERMS must meet applicable requirements from 40 CFR Part 60, Appendix B.
- b) The NO_x and CO CERMS must meet applicable procedures and requirements from 40 CFR Part 60, Appendix F, including requirements and schedules for Relative Accuracy Test Audits (RATA).

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2)]

12. Performance Testing. The following requirements apply to all performance testing. For purposes of this condition, performance testing includes the RATA of the NO_x and CO CERMS.

a) **Performance Testing Schedule.**

- i) The following performance tests must be completed within 180-days of commencing operation of the facility to demonstrate compliance with emissions limits and determine emissions factors:
 - (1) Emissions from the RTO stack must be tested for each pollutant in Condition 5a.
 - (2) Emissions from the RCO stack must be tested for each pollutant in Condition 6e.

- (3) Acetaldehyde, acrolein, propionaldehyde and phenol emissions from the RTO stack and the RCO stack must be tested according to EPA Method 320 from 40 CFR Part 63 Appendix A, or an alternative method approved by ORCAA.
- ii) Following the initial performance tests required in (i), the following performance tests must be completed every five years or whenever required by ORCAA:
 - (1) Emissions from the RTO stack must be tested for each pollutant in Condition 5a.
 - (2) Emissions from the RCO stack must be tested for each pollutant in Condition 6e.
- b) **Performance Testing Requirements.**
 - i) Performance testing must be conducted during operating conditions with highest emissions unless otherwise approved by ORCAA.
 - ii) Compliance with each emissions limit must be determined from the average of three separate 1-hour test runs unless otherwise approved by ORCAA.
 - iii) RATA of the NO_x and CO CERMS must be conducted:
 - (1) According to the requirements from 40 CFR Part 60, Appendix F; and
 - (2) Concurrently with RTO performance testing.
 - iv) Testing for formaldehyde and methanol must be conducted concurrently with VOC testing.
 - v) Testing for NO_x and CO must be conducted concurrently.
- c) **Notifications, Plans, and Reports.**
 - i) Performance testing must be conducted consistent with an ORCAA approved test plan.
 - ii) A test plan must be submitted to ORCAA for approval at least 45 days prior to conducting a required performance test.
 - iii) The test plan must describe:
 - (1) Air emissions test methods;
 - (2) Target operating conditions for testing;
 - (3) Performance indicators that will be monitored during the testing; and,
 - (4) Methods for calculating emissions factors.
 - iv) A test report must be submitted to ORCAA within 45 days of conducting any performance test.
 - v) The test report must include for each test run:
 - (1) The concentrations and pollutant mass rates in pounds per hour for each pollutant measured;
 - (2) Emissions factors in terms of pounds of pollutant per oven dry ton of pellets produced;
 - (3) The rate of pellet production;
 - (4) Key operating indicators of the source and pollution control technology.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-40-113(2); WAC 173-460-040(3)(a); ORCAA Rule 6.1.2(l); WAC 173-400-111(10)]

13. Operation and Maintenance Plan. The owner or operator must devise and implement an operation and maintenance plan (O&M Plan) to minimize emissions from all sources and modes of operation at the facility. The O&M Plan must be submitted to ORCAA for approval within the first six months from commencement of operation of the facility. The O&M Plan must include, but is not limited to, the following elements:

- a) Dust prevention plan describing company policies to prevent fugitive dust emissions including, at a minimum, vehicle speed limits, application of dust suppressants to haul roads, minimizing material drop heights, surveying the facility for fugitive dust; procedures for minimizing for fugitives during truck loading; and minimizing visible dust during feedstock and fuel dumps;
- b) Cyclo-filter maintenance plan that describes how acceptable operating pressure drop ranges will be determined and applied, how and when cyclo-filters will be inspected, and how filters will be maintained;
- c) WESP maintenance plan that describes how acceptable performance indicators will be determined, how quality of flush water will be maintained, how centrifuge cake will be disposed of, and detailed startup and shutdown procedures;
- d) RTO maintenance plan that describes how RTO performance will be monitored, when thermocouples will be changed out, and detailed startup and shutdown procedures;
- e) RCO maintenance plan that describes how RCO performance will be monitored, how performance of the catalyst will be monitored and maintained, and detailed startup and shutdown procedures;
- f) Detailed startup and shutdown procedures for the furnace and dryer;
- g) How proper combustion in the furnace will be monitored and maintained;
- h) Plan describing the means and methods for monitoring time emissions bypass air pollution control systems for both the dryer line and pellet mill.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2)]

14. **Emissions Inventory.** On an annual basis, the owner or operator must complete and submit to ORCAA an annual emissions inventory (inventory) of all regulated pollutants from all emissions units. Actual emissions must be based on actual operating data and ORCAA approved emission factors. The inventory must be accompanied by all associated calculations and data and must be certified by a Responsible Official as defined under WAC 173-401-200(27) as being true and accurate.

[Regulatory Basis: ORCAA Rule 8.11]

15. **Required Records.** The following records must be kept and made available when requested:

- a) The O&M plan required by condition 13;
- b) Manufacturer specifications for all cyclo-filters and baghouses as built identifying design air flow rates, pressure drops, and filtering efficiencies;
- c) Manufacturer specified or certified filtering efficiency for all silo vent filters;
- d) The number of truck dumps per day;
- e) Tons of pellets produced per day;
- f) Combustion chamber temperatures of the RTO and RCO;
- g) WESP KVA and MA of each of the three WESP fields;
- h) Number of occurrences, duration for each occurrence, and reason for emitting through either the furnace or drum dryer bypass stacks;
- i) The amount of diesel and clean, dry wood used during each cold startup;
- j) Daily record of the operating pressure drop across each baghouse and cyclo-filter;

- k) Monthly record of emissions calculations to demonstrate compliance with the emissions limits in condition 7; and,
- l) NO_x and CO CERMS certification and quality assurance records.
[Regulatory Basis: ORCAA Rule 8.11]

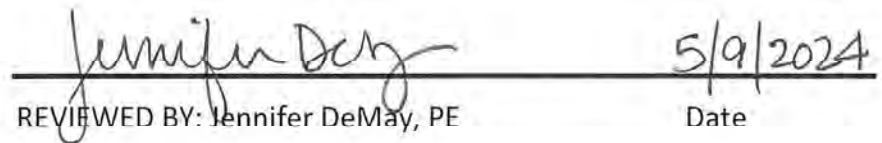
16. Required Notifications, Reports and Applications. The following notifications, reports, and applications must be submitted to ORCAA by the deadline specified:

- a) Any updates or revisions to the O&M plan required by condition 13 must be submitted to ORCAA for approval prior to implementing them;
- b) Notification by phone or email message of any complaint as soon as possible but in no case later than 24 hours of receiving the complaint;
- c) Title V Air Operating Permit (AOP) application within 12 months from commencing operation of the facility;
- d) Notification by phone or email of any emissions through the furnace or drum dryer bypass stacks as soon as possible but in no case later than 24 hours from initiation of the event;
- e) Notification of any excess emissions determined through the NO_x or CO CERMS as soon as possible but in no case later than 24 hours from the beginning of each event; and,
- f) Notification of any exceedances with respect to all facility-wide emission limits as soon as possible, but no later than 30 days after the end of the month during which the exceedance was discovered.

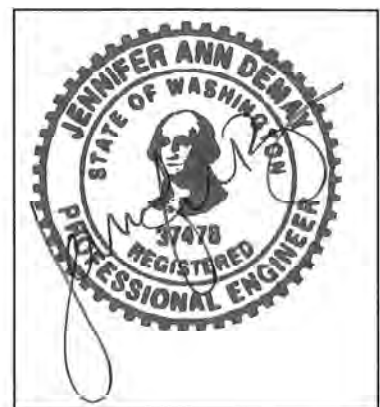
[Regulatory Basis: WAC 173-401-500; ORCAA Rule 8.11; ORCAA Rule 8.7; ORCAA Rule 5.1]

 5/7/2024

PREPARED BY: Lauren Whybrew, Engineer II Date

 5/9/2024

REVIEWED BY: Jennifer DeMay, PE Date



OLYMPIA REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org).
3. Duty to Correction Application: An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name: Pacific Northwest Renewable Energy	For ORCAA use only File No: <u>432</u> County No: <u>27</u> Source No: <u>924</u> Application No: <u>23 NOC 1606</u> Date Received: <div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Received JUL 20 2023 ORCAA </div>
Mailing Address: P.O. Box 391, Sth Egrement, MA 01258	
Physical Address of Project or New Source: 411 Moon Island Road, Hoquiam, WA 98550	
Billing Address: P.O. Box 391, Sth Egrement, MA 01258	
Project or Equipment to be installed/established: Wood pellet manufacturing facility	
Anticipated startup date: <u>02</u> / <u>01</u> / <u>2025</u> Is facility currently registered with ORCAA? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option: <input type="checkbox"/> SEPA was satisfied by _____ (government agency) on ___/___/___ (date) - Include a copy of the SEPA determination <input checked="" type="checkbox"/> SEPA threshold determination by <u>City of Hoquiam</u> (government agency) is pending - Include a copy of the environmental checklist <input type="checkbox"/> ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist <input type="checkbox"/> This project is exempt from SEPA per _____ (WAC citation).	
Name of Owner of Business: Farnese Partners, LTD Title: <u>Owner</u> Email: <u>pheasman@pnwrenewable.com</u> Phone: _____	Agency Use Only <div style="text-align: center;"> CONDITIONALLY APPROVED FOR CONSTRUCTION ONLY IN ACCORDANCE WITH RCW 70A.15, WAC 173-400 ORCAA REGULATIONS (SEE ATTACHED ADDENDUM FOR CONDITIONS OF APPROVAL) <u>5-14-2024</u> DATE <i>Mike Schultz for</i> ORCAA <i>Jeff Johnston</i> </div>
Authorized Representative for Application (if different than owner): Mark Boivin Title: <u>CEO</u> Email: <u>mboivin@pnwrenewable.com</u> Phone: <u>(413) 244-7360</u>	
I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.	
Signature of Owner or Authorized Representative: (sign in Blue Ink) <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border-bottom: 1px solid black; width: 60%; text-align: center;"> </div> <div style="border-bottom: 1px solid black; width: 30%; text-align: center;"> Date: <u>7/20/23</u> </div> </div>	
IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.	



**Olympic Region
Clean Air Agency**
2940 Limited Lane NW
Olympia, WA 98502

(360) 539-7610
Or 1-800-422-5623
Fax: (360) 491-6308

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Executive Director
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NEW SOURCE

FINAL DETERMINATION

to APPROVE:

**Wood Pellet Manufacturing
Facility**

**Pacific Northwest Renewable Energy,
LLC**

23NOC1606

May 7, 2024

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NOTICE OF CONSTRUCTION FINAL DETERMINATION TO APPROVE

Olympic Region Clean Air Agency

Issued to:	Pacific Northwest Renewable Energy, LLC	County:	Grays Harbor
Location:	411 Moon Island Road Hoquiam	Source:	926
Application #:	23NOC1606	RC:	OP1
Prepared on:	May 7, 2024	File:	432

1. Summary

Pacific Northwest Renewable Energy (PNWRE) seeks approval from Olympic Region Clean Air Agency (ORCAA) to construct a new wood pellet manufacturing facility at 411 Moon Island Road in Hoquiam, Washington. The proposed facility would emit air pollution from combustion of woody biomass and wood processing activities and, therefore, triggers approval by ORCAA through an air permit application prior to commencement of construction. PNWRE submitted an air permit application to ORCAA, which was determined complete on September 11, 2023. ORCAA staff reviewed PNWRE's application and concluded that the proposed facility meets criteria for approval in Washington and, therefore, may be conditionally approved. Recommended conditions of approval are detailed in Section 17 of this [Final Determination](#).

2. Regulatory Background

Pursuant to the Washington Clean Air Act under chapter 70A.15 of the Revised Code of Washington, ORCAA's Rule 6.1 and the Washington State Implementation Plan under 40 CFR part 52.2470(c)¹ require New Source Review (NSR) for new stationary sources of air pollution (referred to as new sources) in ORCAA's jurisdiction. NSR is also required prior to installing, replacing, or substantially altering any air pollution control technology. NSR generally refers to the process of evaluating air quality impacts and the likelihood of compliance with applicable air regulations and standards. NSR and approval of an air permit by ORCAA is required prior to commencing construction or modification of any new source or prior to installing, replacing, or substantially altering air pollution control technology. The goal of NSR is to assure compliance

¹ A State Implementation Plan (SIP) is a collection of regulations and documents used by a state, territory, or local air district to implement, maintain, and enforce the National Ambient Air Quality Standards, or NAAQS, and to fulfill other requirements of the federal Clean Air Act. The Clean Air Act requires the EPA to review and approve all SIPs. ORCAA's SIP was last approved by EPA in 1995.

with applicable air regulations and standards, including equipment performance standards and ambient air quality standards.

NSR is initiated by a project proponent submitting an air permit application referred to as a Notice of Construction (NOC) application², which provides ORCAA information on the proposed project of sufficient detail to characterize air impacts. NOC applications are posted on ORCAA's website and may undergo a public notice and comment period if requested by the public or if emissions increases trigger an automatic public notice. Approval of a NOC in an attainment or unclassifiable area³ is contingent on verifying a proposed project meets the following criteria from ORCAA's Rule 6.1 and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6:

1. **Performance Standards** – The new stationary source will likely comply with applicable air-performance standards such as federal new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAPs), or any performance standards adopted under chapter 70A.15 RCW;
2. **BACT** – The new stationary source will employ “Best Available Control Technology” (BACT) to control all air pollutants emitted;
3. **RACT** – Replaced or substantially altered air pollution control technology meets the standard of “Reasonably Available Control Technology” (RACT) as defined in ORCAA Rule 1.4;
4. **Ambient Air Quality** – Emissions from the new stationary source will not cause or contribute to a violation of any ambient air quality standard;
5. **Federal Air Permitting Requirements** – The new stationary source secures all applicable federal air permits that may apply; and,
6. **Air Toxics** – If there are increases in toxic air pollutant (TAP) emissions, the requirements of Washington's Controls for New Sources of Toxic Air Pollutants under Chapter 173-460 WAC are met.

In this case, PNWRE is proposing to construct a new “greenfield” wood pellet manufacturing facility in Hoquiam, Washington. The proposed facility would rely on combustion of woody biomass as the primary source of heat, which results in air pollutant emissions. It would also include wood processing activities that generate dust. At the production rates proposed by PNWRE, air emission rates from both activities are significant and trigger the requirement to secure ORCAA's approval through a NOC application prior to commencement of construction.

² There are two categories of NOC applications: Notice of Construction (NOC) and Notice of Construction Revision (NOR). NOCs are required for new or modified sources, new control technology, replacing an existing stationary source or control technology, and substantially altering control technology. NORs are required when an owner or operator requests a revision to an existing air permit issued by ORCAA.

³ Unclassified area or “attainment area” means an area that has not otherwise been designated by EPA as nonattainment with ambient air quality standards for a particular regulated pollutant. Attainment area means any geographic area in which levels of a given criteria air pollutant (e.g., ozone, carbon monoxide, PM₁₀, PM_{2.5}, and nitrogen dioxide) meet the health-based National Ambient Air Quality Standards (NAAQS) for that pollutant. An area may be an attainment area for one pollutant and a nonattainment area for others.

3. Application Processing

- Application received: July 20, 2023
- SEPA lead agency: City of Hoquiam
- SEPA determination: Determination of Non-Significance, #SEPA 2023-02, July 24th, 2023
- 1st Application addendum received: 8/11/2023 (requested 8/4/2023)
- 2nd Application addendum received: 9/6/2023 (requested 8/25/2023)
- Application declared complete: 9/11/2023
- Notification that natural gas will not be used as startup fuel: 9/27/2023
- 3rd Application addendum received: 10/25/2023 (requested 10/3/2023)
- ORCAA Preliminary Determination issued and posted to website: 12/8/2023
- Public Hearing at Hoquiam City Hall: 6:30 p.m. on 1/16/2024
- End of 30-day Public Comment Period: 4:30 p.m. on 1/18/2024

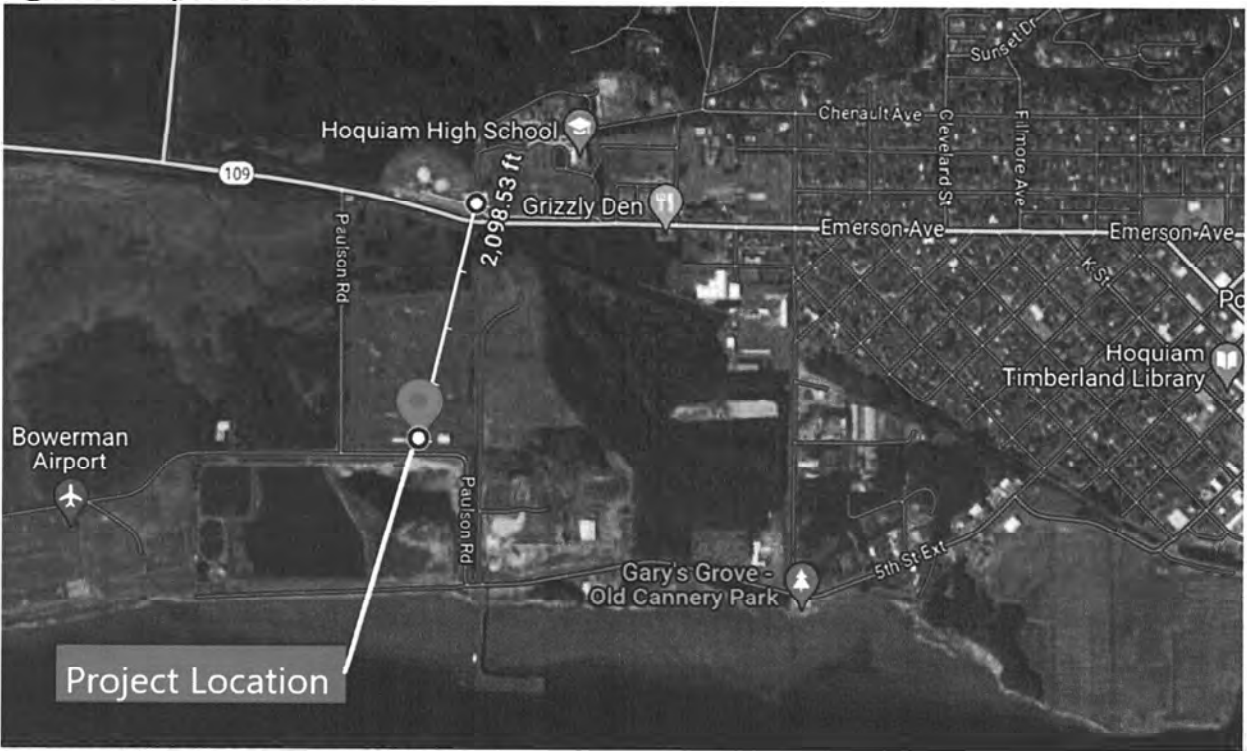
4. Description of Proposed Facility

PNWRE's NOC application thoroughly describes the proposed wood pellet manufacturing facility including equipment, operations, emissions units and air impacts. The following is a brief description of the facility and is intended as an overview.

4.1 Proposed Location

The proposed wood pellet manufacturing facility will be located on an approximately 60-acre parcel in the city of Hoquiam, Washington. The facility is designed to produce, store, and export up to 440,800 short tons per year (TPY) of wood pellets and is intended to operate at least 8,000 hours per year. The proposed location is adjacent to the Willis Enterprises Moon Island Chip Mill (Willis Enterprises) and near Terminal 3 at the Port of Grays Harbor.

Figure 1: Proposed Location



* Imagery ©2018 Google, Maps data ©2018 Google

** Annotated by ORCAA

4.2 Ambient Air Quality

ORCAA works cooperatively with the Washington State Department of Ecology (Ecology) and the regional United States Environmental Protection Agency (EPA) to measure criteria ambient air pollutants, meteorological parameters, and other air-related data. ORCAA is also a member of the Washington Air Monitoring Work Group, which makes recommendations to Washington Air Quality Managers Group regarding air monitoring programs, including ambient air monitoring site locations. ORCAA currently operates and maintains air monitoring equipment for measurement of three of the six criteria pollutants in various locations in its jurisdiction: particulate matter (PM_{2.5}), ozone (O₃), and carbon monoxide (CO).

ORCAA does not maintain any permanent monitors in Hoquiam but does operate a PM_{2.5} monitor in nearby Aberdeen, WA. A temporary federal reference method (FRM) PM_{2.5} monitor was installed at Harbor High School in Aberdeen between August 18, 2002, and December 29, 2003. No violations of the daily or annual PM_{2.5} NAAQS were recorded during this time. As a permanent FRM was not installed in Aberdeen, the region is officially considered “unclassified” with regards to PM_{2.5} attainment status. A nephelometer has been used to monitor PM_{2.5} at Harbor High School in Aberdeen for the past 20 years. Nephelometer based PM_{2.5} was verified by the previously mentioned FRM data during the period when both monitors were collocated in Aberdeen.

Because of the absence of FRM monitoring, Grays Harbor County is officially considered “unclassified” with respect to the National Ambient Air Quality Standards (NAAQS). However,

based on the number and size of air pollution sources and other monitoring data, ambient air quality in Hoquiam and Aberdeen is assumed to be generally good. Areas that are unclassified with respect to the NAAQS are regulated the same way as areas officially classified as "attainment."

4.3 Facility Overview

The facility is designed with three truck tippers; a chips cleaning line; two wet hammer mills; one hog fuel furnace and dryer; four dry hammer mills; 12 pellet mills; five wood pellet storage silos; and a covered conveyor system to deliver wood pellets to the existing Willis Enterprises conveyance system and ship loadout facility. Air pollution control systems are proposed for all point sources of air emissions. Descriptions of stationary sources of air emissions and air pollution controls proposed are summarized in the following table. The proposed emergency generator, Source ID GEN-01, will be less than 500 horsepower and therefore is categorically exempt from New Source Review per ORCAA Rule 6.1(c)(28)(ii). It is included in the table below for informational purposes only.

Table 1: Emissions Sources

Emission Source ID ^c	Emission Source	Exhaust Rate (cfm)	Fugitive or Point? ^{a,b}	Air Pollution Controls
TD-01	Truck Dumper – White Wood	N/A	Fugitive	Dust Control Plan: <ul style="list-style-type: none"> • 10 miles per hour (mph) speed limit for all mobile vehicles • Applying water where needed via water truck or other means • Using a vacuum truck as needed
TD-02	Truck Dumper – Chips			
TD-03	Truck Dumper – Hog Fuel			
SP-01	Storage Pile – White Wood			
SP-02	Storage Pile – Chips			
SP-03	Storage Pile – Hog Fuel			
VEH-01	Vehicle Traffic – Trucks			
VEH-02	Vehicle Traffic – Front End Loaders			
EP-01.1	Chip Cleaning Line	36,334	Point & Fugitive	Cyclo-filter capable of 10 mg/Nm ³ (.0044 gr/scf)
EP-01.2	White Wood Disc Screening	N/A	Fugitive	None
EP-01.3	Hog Fuel Feed	N/A	Fugitive	None
EP-02	Drying Line (furnace, drum dryer)	103,229	Point	Cyclones (2 units in parallel) WESP ^c RTO ^c
EP-03	Dry Product Intermediate Storage 1	852	Point	Passive Filters
EP-04	Dry Product Intermediate Storage 2	852	Point	Passive Filters
EP-05	Wet Hammer Mill 1	99,795	Point	Cyclo-filters (4 units serving DHM) Cyclo-Filters (2 units, one serving each pellet cooler) Cyclo-filter capable of 10 mg/Nm ³ (.0044 gr/scf) (Serving each wet hammer mill) RCO ^c (Serving exhaust from all)
EP-06	Wet Hammer Mill 2		Point	
EP-07	Dry Hammer Mills (DHM, 4 units)		Point	
EP-08	Pelletizers (12 units) Pellet Coolers (2 units)		Point	
EP-09	Milled Dry Product Intermediate Storage	852	Point	Silo vent filters
EP-10	Pellet Storage Silo #1	15,635	Point	Storage silo venting to maintain low pellet temperatures – equipped with silo vent filters
EP-11	Pellet Storage Silo #2	15,635	Point	
EP-12	Pellet Storage Silo #3	15,635	Point	
EP-13	Pellet Storage Silo #4	15,635	Point	
EP-14	Pellet Storage Silo #5	15,635	Point	
EP-15	Truck Loadout	N/A	Fugitive	Silo Filter and shrouded dump chute
GEN-01	Emergency Generator (<500 HP) ^d	N/A	Point	Tier 4

Table Notes:

^a Fugitive, refers to fugitive sources of emissions and means air pollution emitted to that is not captured and is not emitted through a stack or vent. Examples of fugitive emissions include, but are not limited to, road dust from vehicle traffic, wind-blown dust from piles of materials, and volatiles that escape capture or containment systems like emission from leaks.

^b Point, refers to point sources of emissions and means air pollution that is captured and emitted to the ambient air through a stack or vent.

^c Table acronyms: TD = Truck Dumpers; SP = Storage Piles; VEH = Vehicle Traffic; EP = Emission Point; LO = Load Out; RTO = Regenerative Thermal Oxidizer; RCO =Regenerative Catalytic Oxidizer, WESP = Wet Electrostatic Precipitator

^d Categorically exempt from New Source Review per ORCAA Rule 6.1(c)(28)(ii)

4.4 Raw Materials Processing

Raw materials for pellet production and fuel for the furnace will be delivered to the facility via truck and include:

- Forest Residuals consisting of chipped woody biomass from logging operations (referred to as “ground chips”).
- Mill residuals consisting of sawdust and shavings (referred to as “white wood”).
- Biomass fuel (“referred to as hog fuel”), which is an unrefined mix of coarse chips of bark and wood fiber used for fuel.

Trucks delivering raw materials will be emptied via gravity in dedicated truck tipplers. The proposed facility includes 3 truck tipplers. The biomass will empty into the yard where front-end loaders will move the material to outdoor storage piles. Approximately 1.7 acres will be dedicated to outdoor storage of fuel and raw material for wood pellet manufacturing. Front-end loaders will transfer raw materials and biomass fuel to dedicated walking-floor bins. A radial stacker/reclaimer system may be installed, which would eliminate fugitive dust and mobile source emissions from front-end loaders.

To minimize dust emissions from vehicle traffic in the yard, PNWRE proposes to implement a dust control plan. The plan will include a 10 miles per hour (mph) posted speed limit for all vehicles and heavy equipment, regularly applying water on road surfaces via water trucks or other means, and using a vacuum truck as needed. The walking floor bins are designed to move the materials to the next phase in their processing. The facility is designed with 3 walking floor bins, each dedicated to a specific raw material stream. From this point onward, all raw material handling processes are fully enclosed.

The walking floor bin for ground chips empties to the chip cleaning line. The chip cleaning line uses a series of scalper rolls to remove dirt, sand and other impurities from the ground chips. The chip cleaning line will also classify the chips by size. The smallest sizes, or fines, will be routed to the dryer feeding system, while the intermediate fraction will be sent to the wet hammer mills for size reduction. Overs are reclaimed and recycled. The chip cleaning line will be enclosed and equipped with a dust capture system that will exhaust through a cyclo-filter dust control unit. Cyclo-filter units are essentially cyclone separator units equipped with an integral fabric filter baghouse to remove particulate from the exhaust. PNWRE’s application states that the cyclo-filters proposed for the facility will be capable of controlling particulate emissions down to 0.0044 grains per standard cubic foot of air (gr/scf).

The white wood walking floor bin will discharge to a disc screen that separates larger pieces for further sizing in the wet hammer mills. PNWRE expects the white wood material stream to be relatively free of dust and contaminants. No dust control system is proposed for the disc screen. The screened white wood will be sent to the dryer via conveyor while overs will be sent to wet hammer mills for further size reduction. The white wood disc screening unit is considered a point source of fugitive particulate emissions.

Hog fuel will be off-loaded in its own dedicated truck tipper and then transported via front end loader to a hog fuel pile, which will be uncovered and in the open. Front end loaders will also be used to move the hog fuel from the pile onto the hog fuel walking floor bin. Traffic-generated dust from front end loaders was accounted for in the review of air quality impacts. The hog fuel walking floor will transport hog fuel to the furnace fuel feed conveyor that empties to the furnace fuel metering bin.

4.5 Wet Hammer Mills

The proposed facility includes two wet hammer mills operating in parallel. They are referred to as “wet hammer mills” because they process materials upstream of the dryer. The purpose of the wet hammer mills is to reduce the size of the chips so the material can be more easily dried and milled into pellets. The wet hammer mills will be enclosed and airborne dust emissions will be captured by a pneumatic system and routed to dedicated cyclo-filters for particulate emissions control. The cyclo-filters serving the wet hammer mills will be capable of controlling particulate emissions down to 0.0044 grains per standard cubic foot of air (gr/scf). On March 12, 2024, PNWRE submitted additional information proposing to route the exhaust to the regenerative catalytic oxidizer (RCO). Changes compared to the Preliminary Determination are summarized in Section 16.

4.6 Drying Line

The drying line includes the biomass furnace, drum dryer, and emissions control system. The furnace will combust hog fuel to provide heat for the dryer and will have a maximum heat input capacity of 164.81 million British thermal units per hour (MMBtu/hr), which is roughly 25.57 short tons per hour of hog fuel as received. Hog fuel will consist of ground forest slash from logging and forest management operations and hog fuel from local mill operations.

Wet raw materials will be staged in a metering bin before being fed to the drum dryer inlet. Hot flue gas from the furnace will be routed through the drum dryer to dry, by direct contact, the raw material from approximately 45 percent moisture to a target 10 percent final moisture. Dried material will then be conveyed pneumatically from the drum dryer discharge through a pair of high-efficiency cyclones operating in parallel that will separate the dried wood material from the moisture-rich exhaust gas stream. The dried material will then be conveyed pneumatically to a dry-product intermediate-storage silo.

The emissions control system for the drying line will consist of dual cyclones followed by a Wet Electrostatic Precipitator (WESP), and finally a Regenerative Thermal Oxidizer (RTO). The purpose of the dual cyclones is simply to separate the dried material stream from the wet exhaust. The WESP is a high efficiency particulate removal device and expected to remove upwards of 98% of the particulate matter (PM) from the exhaust gas stream. The RTO is a secondary combustion unit used to destroy organic gases through oxidation.

4.7 Furnace

The proposed biomass furnace is designed with four primary combustion zones to enable combustion of high moisture content fuel. Zone 1 is designed to dry out the fuel, with combustion occurring in the following zones. PNWRE claims this design accommodates the moisture in the biomass fuel, making a fuel pile cover unnecessary. The combustion chamber will have four zones of overlapping, moving grates. The primary combustion air enters the fuel bed from the under-fire air zone through slots between the grate bars. The combustion chamber is refractory lined. The chamber is designed with the top as a secondary combustion chamber. The furnace will also have a second, secondary combustion chamber to enable final combustion of remaining combustible gases from the furnace.

The furnace will exhaust to the drum dryer and is designed to provide process heat at 752° F. After passing through the drum dryer, exhaust gases will pass through the pollution control system consisting of dual cyclones, a wet Electrostatic Precipitator (ESP), and finally, a Regenerative Thermal Oxidizer (RTO). Therefore, during normal operations, emissions from the furnace will ultimately exhaust through the RTO stack.

Ash will drop through the grates to four separate ash hoppers in the primary combustion chamber and a single ash hopper in the secondary combustion chamber. Ash hoppers will drop to a “submerged” ash conveyor that provides an air lock from the furnace. The ash conveyor drag chain will move ash to an enclosed ash storage bin.

4.8 Dryer Line Operating Scenarios

4.8.1 Normal, Steady-State Operation

During normal steady-state operation at design capacity of the facility, the drying line will exhaust through the WESP and RTO, and the pellet lines will exhaust through baghouses or cyclo-filters and the Regenerative Catalytic Oxidizer (RCO). Operating the drying line at design capacity (164.81 MMBtu/hr) will require roughly 23.2 metric tons per hour (mt/h) of hog fuel as received and produce dried material for roughly 51.1 mt/hr of pellet product.

The dryer system will have two emergency bypass stacks: One for the furnace and a separate stack for the dryer. When used, exhaust and emissions from these stacks bypass the air pollution control system (WESP + RTO) and are emitted directly to the atmosphere at approximately 50 feet above grade. The purpose of the bypass stacks is to provide for safe operation and temperature control during start-ups, shutdowns and unplanned malfunction and emergency events. Temperature control enables more gradual heating and cooling of the furnace refractory during these events, which is essential for assuring the integrity and long life of the refractory as well as other furnace and dryer components. Also, ability to control temperature provides a means to maintain refractory heat during minor malfunction events, thereby avoiding the need for a cold start.

4.8.2 Planned Startups

Planned startups are referred to as “cold startups” because they are initiated when the dryer system (furnace + drum dryer) has been shut down and has cooled to a temperature that requires gradual heating to safely bring the system up to operating temperatures. This is necessary to avoid thermally shocking and damaging the dryer system. The furnace bypass stack is open when combustion in the furnace is initiated, thereby bypassing both the drum dryer and the air pollution control system. PNWRE stated in an email correspondence to ORCAA that exhaust bypassing the air pollution control system during a cold startup will last only approximately 30 minutes during a normal cold startup, and that they anticipate no more than ten cold startups per year. Based on these constraints, and a reduced initial heat rate to the furnace of approximately 15% of the maximum furnace heat input rate (~25 MMBtu/hr), emissions rates were determined by PNWRE to be less than those during normal, steady state operations. ORCAA staff evaluated PNWRE’s emissions calculations and concurs with this assessment. However, to assure startup emissions do not exceed these bounds in the future,

ORCAA imposed startup constraints consistent with the cold startup descriptions provided by PNWRE.

ORCAA's understanding is that cold startup of the furnace will be initiated using approximately 25 pounds of dry wood, which will be augmented with approximately 15 gallons of diesel. The diesel is used as an accelerant. The clean/dry wood is placed on a bed of dry wood chips on the furnace grate, and is ignited using the diesel to help accelerate the combustion. The fire is manually ignited and allowed to burn while exhausting from the emergency bypass stack. During this time, the flue gas connection to the dryer is closed and the dryer ID fan runs at minimum speed with the drum turning and empty without material. After approximately 30 minutes, normal biomass fuel input to the furnace is initiated, the emergency stack of the furnace is closed, and the flue gas connection to the dryer is opened. By this time, the dryer system's air pollution controls (WESP and RTO) will be fully operational. Therefore, uncontrolled emissions through the bypass stack are only expected to last for 30 minutes during a normal cold startup. However, optimal combustion of the fuel is not achieved until the primary and secondary air in the furnace are fully functioning. Once a temperature of approximately 300° C (570° F) is reached, primary and secondary combustion air fans start operation at a low rate and then are gradually increased. From this point in the cold startup sequence, temperatures within the combustion chamber are increased in steps of approximately 120° F per hour until the normal fuel input rate is reached. The air ratio between primary and secondary combustion air are then adjusted until the working/operating temperature is achieved. PNWRE expects approximately 14 hours from cold start-up to achieving normal operating temperatures. However, bypass of the air pollution control system is only expected to last 30 minutes during the entire 14-hour cold startup period.

PNWRE does not expect the total duration of cold startup bypass (exhaust bypassing the air pollution control systems during cold startups) to exceed 5 hours per year (10 startups @ 30 minutes per). Use of diesel during startups is expected to be less than 15 gallons per startup, and no more than 150 gallons per year. A propane torch may also be used to ignite the biomass during startups. Air emissions rates from combustion of wood and diesel during startups were quantified by PNWRE's environmental consultant and found to be less than emissions rates during normal, steady state operations. Emissions from the bypass stack during a cold startup are likely to exhibit opacity and, therefore, BACT opacity limits imposed on the dryer system exempt emissions from the bypass stacks during cold startups. However, ORCAA's general opacity standard of 20% (ORCAA Rule 8.2) applies at all times including startup and shutdown as does the State's general opacity standard of 20% (WAC 173-400-040).

4.8.3 Planned Shutdowns

Planned shutdown from full production mode to a cold system takes about 14 hours. PNWRE stated in an email correspondence that air pollution control systems will be fully operational during a planned shutdown. Shutdowns are initiated by stopping fuel flow to the furnace fuel hopper. Actual fuel feed to the furnace stops after fuel hopper is emptied. Simultaneously with stopping fuel feed to the furnace, material input to the dryer system is ramped down until material infeed is completely stopped. It takes less than 30 minutes to empty the entire drum of material. The dryer system temperature will be controlled by a substitute cooling load (water injection into the drum). Until the fuel on the furnace grate is completely combusted, the

furnace and dryer will exhaust through the air pollution control system consisting of the WESP and RTO. Only after fuel is completely combusted on the grate, primary and secondary combustion fans will be stopped and the flue gas connection to the dryer closed. As the combustion chamber cools down, hot gases will be exhausted through the emergency bypass stack of the furnace.

Cool down of the furnace is conducted at a rate of approx. 120° F per hour. Simultaneously, the dryer system ID fan will continue to run until the dryer system is cooled down. At this stage of the shutdown sequence, because neither fuel is being combusted nor material is being dried, hot gases from both the furnace and dryer will be emitted through the emergency bypass stacks for these units until they are sufficiently cooled. Therefore, during a planned shut-down, air pollution control systems for the drying system will be fully operational for the duration of time air pollution is being generated. Likewise, the RCO will be fully operational while air emissions are being generated by the hammer mills and pellet coolers during a planned shutdown. ORCAA's understanding is that PNWRE anticipates only two shutdowns of the furnace each year but assumed 10 for the air impacts analysis.

4.8.4 Malfunctions and Emergencies

The furnace automatically aborts to the furnace bypass stack in the event of a malfunction or emergency situation like loss of power or failure of a critical piece of equipment. Likewise, the dryer system automatically aborts to the dryer bypass stack due to similar events. Aborts and exhausting through either or both of the bypass stacks may be triggered by failsafe interlocks associated with the furnace, dryer, emissions control systems, or utility supply systems. Typically interlocks divert flue gas to both bypass stacks in the event of loss of utilities (electricity, water, compressed air or fuel), when monitoring conditions exceed safe operating ranges (temperature, pressure, flowrate) or in the event of a spark detection within the wood drying system and flue gas treatment areas. Whenever there is an abort, the furnace automatically switches to idle mode and emissions are exhausted through the bypass stack. Simultaneously, fuel feed to the furnace is reduced to the idle mode heat rate. During malfunctions and emergencies, air emissions from the drying system may emit uncontrolled through the bypass stacks. However, other than during planned startups and shutdowns of the drying system, exhaust through either of the bypass stacks is presumed to be in excess of the pollutant mass rate limits established in the air permit.

4.8.5 Feedstock Interruptions

Idle-mode may also be triggered by a reduction or interruption of feedstock material to the dryer. During these occurrences, idle-mode is triggered as a means to reduce the heat rate to the dryer in order to avoid excessive dryer temperatures and damage to the drying system. Also, in addition to preventing damage to the drying system, idle-mode avoids completely shutting down the furnace when feedstock input to the dryer is interrupted. Idle mode is initiated by reducing or stopping fuel feed into the furnace. The dryer system temperatures are reduced by substitute load (assumed water injection). Until feedstock input is resumed, the system continues to operate at a reduced heat rate. PNWRE stated in a communication with ORCAA that the furnace, dryer, dry hammer mills and pellet coolers will all be exhausted through their respective air pollution control systems when there are feedstock interruptions.

4.9 Pellet Mill

Dried material is then transferred by conveyor to into a dry-product intermediate-storage silo. The purpose of the intermediate-storage silo is to allow the dried material moisture content to homogenize; This helps provide a consistent raw material moisture content for the pelletizing process. The residency time of the dried materials in the intermediate-storage silo is approximately 2 hours and 50 minutes. The intermediate storage silo is passively vented through fabric filters.

A chain conveyor will be used to transfer dried material from the bottom of the intermediate-storage silo to four dry hammer mills operating in parallel. The dry hammer mills then mill the dried material into the desired size and consistency for pelletizing. Each dry hammer mill will exhaust through a cyclo-filter for recovering product and controlling particulate emissions. Exhaust streams from each dry hammer mill cyclo-filter will then be combined with exhaust streams from the pelletizing line and passed through a RCO for destruction of Volatile Organic Compounds (VOC) before emitting to the atmosphere. The RCO functions like an RTO to destroy VOC; however, the RCO uses a catalyst material rather than a ceramic material to achieve oxidation, and therefore can achieve efficient VOC destruction at lower temperatures.

Dried, milled material from the dry hammer mills and associated cyclo-filters will empty onto a chain conveyor which then conveys the milled product to a dry product intermediate-storage silo. The purpose of the dry intermediate-storage silo is to provide additional retention time for achieving homogenous moisture content, which is a key factor for achieving the desired quality in the final product. The intermediate-storage silo will be passively vented through a particulate filter.

A chain conveyor will then transport the dried, milled material from the outlet of the intermediate-storage silo to the pellet mill hoppers, which independently feed the pellet mills. PNWRE proposes two pellet lines consisting of six pellet mills each, for a total of 12 pellet mills. In each pellet mill, rollers push the material through the holes of a die plate. Knives on the exterior of the die plate cut the wood pellets from the plate once the pellets achieve the required length. The temperature of a freshly produced pellet is around 200 degrees Fahrenheit (°F). Therefore, the two pellet lines will discharge into pellet coolers where the material will flow countercurrent to a stream of ambient air. The airflow reduces the temperature of the wood pellets at the point of pellet discharge. Each pellet cooler will be equipped with either a baghouse or cyclo-filter to remove dust from the exhaust stream before it goes to the RCO. The exhaust streams from the two pellet cooler baghouses will then be combined with the exhaust streams from the dry hammer mills and passed through the RCO for control of VOC before being emitted to the atmosphere.

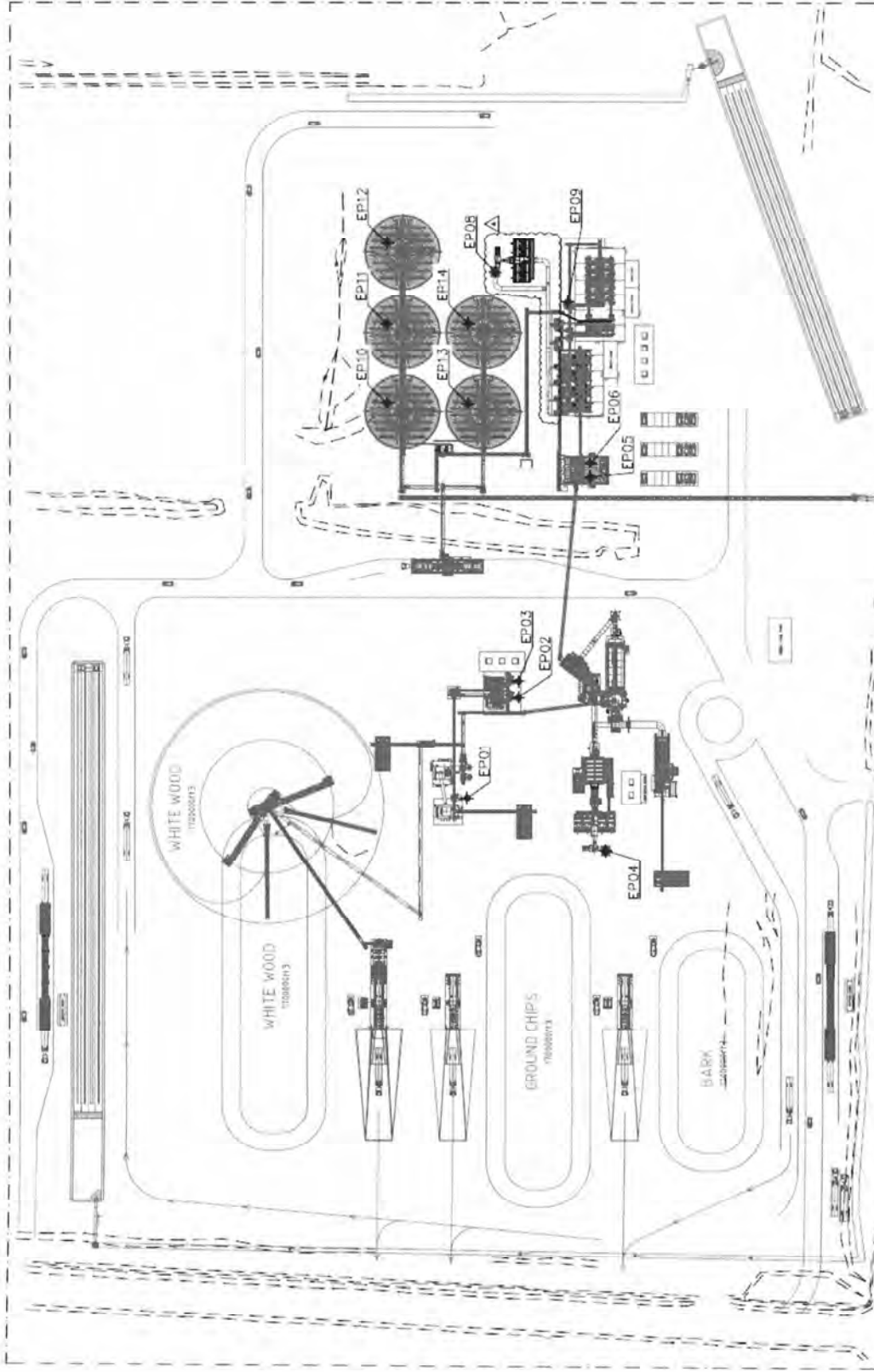
4.10 Pellet Silos and Loadout

Cooled pellets will be conveyed from the pellet coolers to one of five pellet silos. The total combined capacity of the pellet silos is approximately 60,000 short tons. The silos will utilize aeration fans and venting to maintain low pellet temperature for final shipment. An automated enclosed conveyor will draw pellets from the silos evenly according to loading schedules and transport them via enclosed conveyor to the neighboring Willis Enterprises' existing conveyors and marine vessel loadout facilities. Willis Enterprises operates under an RC2-class ORCAA

registration (source number 2112, file number 647). The existing conveyors and vessel loadout facilities owned by Willis Enterprises are under a separate air permit and already registered with ORCAA.

PNWRE will also have the ability to deliver pellets via a truck unloading system; however, this system would be used only in special circumstances. PNWRE proposes no more than 10 loaded trucks per day and 32,000 tons per year of truck loadout utilization.

Figure 2: General Facility Layout



* Figure from page 3 of PNWRE NOC application

5. Air Pollutant Emissions

Air pollutant emissions evaluated through this permitting action included Criteria Air Pollutants, Hazardous Air Pollutants (HAP), Toxic Air Pollutants (TAP) and Greenhouse Gases (GHG). Criteria Air Pollutants are air pollutants that have established National Ambient Air Quality Standards (NAAQS). EPA established and periodically reevaluates and updates NAAQS for six of the most common air pollutants— carbon monoxide, lead, ground-level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide— these are known as “criteria” air pollutants (or simply “criteria pollutants”). Based on ambient monitoring throughout the nation, areas are ranked in terms of whether or not the NAAQS are maintained. It is important to note that ground-level ozone is not an air pollutant directly emitted, but is created via photo-chemical reactions in the atmosphere involving volatile organic compounds (VOCs) and nitrogen oxides (NO_x). Therefore, ozone is not included in any of the tables below because it is not directly emitted. However, ground-level ozone precursors (NO_x and VOC) are quantified and included in the tables below.

HAP are those pollutants that are known or suspected by the EPA to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. There are 188 air pollutants that are regulated as HAP under the Clean Air Act. Facilities that have the potential to emit 10 tons or more per year of any single HAP or 25 tons per year or more of any combination of HAPs are regulated as “Major Sources” of HAP and subject to the Title V Air Operating Permit program. It is important to note that HAPs emitted as solids are a subset of and reflected in the PM, PM₁₀ and PM_{2.5} emissions rates shown in the tables below. Likewise, HAP emitted as volatile gases are reflected in the in the VOC emissions rates shown below.

TAP, also known “air toxics,” are specific air pollutants regulated by Washington because they are known or suspected by the Department of Ecology to cause cancer or other serious health effects. Washington State regulates TAP through a State-wide regulation titled CONTROLS FOR NEW SOURCES OF TOXIC AIR POLLUTANTS, which is under Chapter 173-460 of the Washington Administrative Code (Washington Air Toxics Regulation). It is important to note that the list of TAP regulated by Washington contains more than 350 chemical compounds and substances. Most but not all of the federally listed HAPs are also listed and regulated as TAPs in Washington. However, there are 40 HAPs that are not listed as TAP. Emissions of individual TAPs were provided in PNWRE’s application. Section 12 addresses compliance with the Washington Air Toxics Regulation.

A comprehensive Potential to Emit analysis for the proposed facility was provided in PNWRE’s NOC application. The emissions inventory accounts for both point sources of emissions (stacks and equipment) and area sources of emissions (material piles, material handling, haul roads). All foreseeable operating scenarios were accounted for such as startup, shutdown, and “idle mode,” as well as normal, steady-state operation. Emissions estimates for normal operations were calculated based on fuel and production rates at maximum capacity for each operating scenario and assuming no down time.

5.1 Emissions During Normal Operations

ORCAA staff reviewed PNWRE's emissions calculations including verifying emissions factors, conversions, assumptions and equations used to calculate emissions from individual point and area sources. ORCAA staff concluded that PNWRE's emission estimates reflect maximum potential to emit of the facility and are appropriate for making regulatory determinations and estimating ambient air quality impacts. Therefore, the emissions rates and facility-wide emissions provided in PNWRE's NOC application were used in confirming applicability of relevant air regulations, evaluating projected air impacts, and establishing emissions limits. Revisions or additions to emissions estimates in response to comments made during the public comment period are incorporated into this Final Determination as necessary, and summarized in Section 16.

Table 2 provides a Potential to Emit (PTE) summary for the proposed facility in terms of tons of pollutants emitted annually. PTE represents the highest amount an air pollutant could be emitted at the maximum design rates of each emissions source and assuming continuous operation. PTE estimates were used in determining applicability of relevant performance standards and air regulatory programs such as the Title V Air Operating Permits (Title V) and Prevention of Significant Determination (PSD) permitting programs. To ensure long term protection of air quality, PTE estimates were converted to annual emissions limits and included in the proposed conditions of approval detailed in section 17.

Table 3 provides a summary of emissions rates for criteria pollutant emissions and Greenhouse Gases (GHG) in terms of pounds per hour for each source. It is important to note that Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) emissions rates are shown for normal, steady-state operations, and for potential alternative operating scenarios. Emission rates for normal, steady-state operations reflect the maximum hourly PTE with air emissions control systems fully functioning. To ensure that the performance of air pollution control systems do not degrade over time, emission rates for normal operations were converted to commensurate emission limits as appropriate, and included in the recommended conditions of approval detailed in section 17.

5.2 Startup Emissions Rates

Startup of the drying system will require exhausting emissions uncontrolled from the furnace bypass stack. PNWRE stated in their application that two cold start-ups are anticipated per year. However, the air quality analysis provided in the application conservatively assumes 10, 30-minute startups per year. The objective for startups is to gradually bring the furnace up to normal operating temperatures using clean startup fuels.

PNWRE stated in their application that startup of the furnace will be initiated using approximately 25 pounds of dry wood, which will be augmented with approximately 15 gallons of diesel and ignited using propane torches. The diesel is used as an accelerant. The clean/dry wood is placed on a bed of dry wood chips on the furnace grate, soaked with diesel and ignited using propane to help accelerate the combustion. The fire is manually ignited using propane torches and allowed to burn while exhausting from the emergency bypass stack. During this time, the flue gas connection to the dryer is closed and the dryer ID fan runs at minimum rpm with the drum turning and empty without material.

Table 2. Facility-Wide Potential Annual Emissions (tons per year (tpy))

Pollutant	Class	Point-Sources (tpy)	Area-Sources (tpy)	Facility-Wide Total (tpy)	Title V Major?	PSD Major?
PM	Criteria ^a	108	32	140	N/A	No
PM ₁₀	Criteria ^a	88	10	98	No	No
PM _{2.5}	Criteria ^a	71	1	72	No	No
NO _x	Criteria ^a	230	Not emitted	230	Yes	No
CO	Criteria ^a	186	Not emitted	186	Yes	No
VOC ^d	Criteria ^a	68	Not emitted	68	No	No
SO ₂	Criteria ^a	18	Not emitted	18	No	No
Lead	Criteria ^a	< 0.1 lbs/yr	Not emitted	< 0.1 lbs/yr	No	No
CO _{2e}	GHG ^e	163,592	Not emitted	163,592	N/A	No
Total HAP	Total HAP ^b	1.60	Not emitted	1.60	No	N/A
Formaldehyde (Highest individual HAP/TAP)	HAP ^b TAP ^c	0.34	Not emitted	0.34	No	N/A

Table Notes:

^a EPA has established national ambient air quality standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground-level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as “criteria” air pollutants (or simply “criteria pollutants”).

^b HAP means Hazardous Air Pollutant. Hazardous Air Pollutants are those known to cause cancer and other serious health impacts and are regulated under the federal Clean Air Act. HAPs that are solids when emitted are reflected in the PM, PM₁₀ and PM_{2.5} annual emissions. HAP emitted as volatile organic compounds are reflected in the in the VOC annual emissions.

^c TAP means any toxic air pollutant regulated in Washington and listed in WAC 173-460-150.

^d VOC is regulated as a Criteria Air Pollutant because it is a precursor to Ground Level Ozone (O₃)

^e GHG means Green House Gas. GHG are shown in terms of Carbon Dioxide Equivalents.

^f Table acronyms: CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; HAP = hazardous air pollutant; N/A = not applicable; NO_x = nitrogen oxides; PM = particulate matter; PM_{2.5} = particulate matter 2.5 microns or less in diameter; PM₁₀ = particulate matter 10 microns or less in diameter; PSD = Prevention of Significant Deterioration; PTE = potential to emit; SO₂ = sulfur dioxide; TPY = tons per year; VOC = volatile organic compound

Table 3. PTE Hourly Emissions Rates, Normal Operation (pounds per hour (lb/hr))

Sources	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂	CO _{2e}
Truck Dumpers (fugitive ^a): TD-01 (White Wood) TD-02 (Chips) TD-03 (Bark)	0.26	0.12	0.02					
Storage Piles (fugitive ^a): SP-01 (White Wood) SP-02 (Chips) SP-03 (Bark)	0.44	0.22	0.11					
Vehicle Dust (fugitive ^a): VEH-01 (Truck Traffic) VEH-02 (Loaders)	9.24	2.75	0.28					
Chip Cleaning Line: EP-01.1 (Cyclo-filter: point ^b) EP-01.2 (White Wood Disc Screening: fugitive ^a) EP-01.3 (Hog Fuel Feed: fugitive ^a)	6.81	1.70	0.29					
Drying Line (RTO ^c exhaust - point ^b) EP-02	7.73	7.73	7.73	52.00	42.00	6.58	4.12	36,729
Dry Product Intermediate Storage (point ^b): EP-03 (Silo 1 Vent) EP-04 (Silo 2 Vent)	0.03	0.03	0.03					
Wet Hammer Mills and Pellet Mill (RCO ^c exhaust - point ^b): EP-05 (Wet Hammer Mill 1) EP-06 (Wet Hammer Mill 2) EP-07 (Dry Hammer Mills; 4 units) EP-08 (Pelletizers; 12 units. Pellet Coolers; 2 units)	5.95	2.86	2.06	0.41	0.18	8.98	0.00	529
Milled, Dry Product Intermediate Storage (point ^b): EP-09 (Silo Vent)	0.02	0.02	0.02					
Pellet Storage Silos (point ^b): EP-10 (Silo 1 Vent) EP-11 (Silo 2 Vent) EP-12 (Silo 3 Vent) EP-13 (Silo 4 Vent) EP-14 (Silo 5 Vent)	4.39	2.68	1.01		0.18	0.06		
Truck Loadout (fugitive ^a) EP-15 (Truck Loading)	0.01	0.00	0.00					
Emergency Generator (point ^b): GEN-01 (Generator Stack)	0.17	0.17	0.17	2.05	2.87	1.26	1.03	575

Table Notes:

^a Fugitive, refers to fugitive sources of emissions and means air pollution emitted to that is not captured and is not emitted through a stack or vent. Examples of fugitive emissions include, but are not limited to, road dust from vehicle traffic, wind-blown dust from piles of materials, and volatiles that escape capture or containment systems like emission from leaks.

^b Point, refers to point sources of emissions and means air pollution that is captured and emitted to the ambient air through a stack or vent.

^c Table acronyms: TD = Truck Dumpers; SP = Storage Piles; VEH = Vehicle Traffic; EP = Emission Point; LO = Load Out; RTO = Regenerative Thermal Oxidizer; RCO =Regenerative Catalytic Oxidizer

^d Pollutant acronyms: CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM = particulate matter; PM_{2.5} = particulate matter 2.5 microns or less in diameter; PM₁₀ = particulate matter 10 microns or less in diameter; VOC = volatile organic compound;

After approximately 30 minutes, normal biomass fuel input to the furnace is initiated, the emergency stack of the furnace is closed, and the flue gas connection to the dryer is opened. By this time, the dryer system air pollution controls (WESP and RTO) will be fully operational. Therefore, uncontrolled emissions through the bypass stack are only expected to last for 30 minutes during a normal cold startup. Startup continues from this point forward in the startup sequence with air pollution controls functional. However, optimal combustion of the fuel is not achieved until the primary and secondary air are fully functioning.

Once a temperature of approx. 300° C (570° F) is reached, primary and secondary combustion air fans start operation at a low rate and then are gradually increased. From this point in the cold startup sequence, temperatures within the combustion chamber are increased in steps of approximately 120° F per hour until the normal fuel input rate is reached. The air ratio between primary and secondary combustion air are then adjusted until the working/operating temperature is achieved. From cold start-up to operating temperature, PNWRE expects a cold startup to take about 14 hours.

Startup emission rate estimates are shown in Table 4 and were based on emissions factors from EPA's latest edition of Compilation of Air Pollutant Emissions Factors (AP-42). Startup emission rates from wood combustion were based on EPA AP-42 Chapter 1.10 Residential Wood Stoves utilizing emission factors for conventional stoves. Conventional stoves are enclosed wood-burning heaters that operate without catalytic combustors and have no emission reduction technology or design features. This scenario is similar to the piles of burning wood pieces within the enclosed furnace. Startup emission rates from diesel fuel used as an accelerant were based on EPA AP-42 Chapter 1.3 using emission factors for distillate oil-fired boilers and assuming ultra-low sulfur diesel.

Table 4. Uncontrolled Startup Emissions Rates (pounds per hour (lb/hr))

Sources	PM	PM ₁₀	PM _{2.5}	NO _x	CO	VOC	SO ₂	CO _{2e}
Drying Line (Furnace & Dryer) ^a EP-02	0.84	0.84	0.84	0.67	5.92	1.34	0.03	784

Table Notes:

^a Includes uncontrolled emissions from combustion of dry wood and diesel for the initial 30-minutes during a cold startup. EP = Emission Point.

^b PM = particulate matter; PM_{2.5} = particulate matter 2.5 microns or less in diameter; PM₁₀ = particulate matter 10 microns or less in diameter; NO_x = Nitrogen Oxides; CO = Carbon Monoxide; VOC = Volatile Organic Compounds; SO₂ = Sulfur Dioxide; CO_{2e} = Carbon dioxide equivalent

5.3 Shutdown Emission Rates

Shut down from full production mode to a cold system takes about 14 hours. PNWRE stated in their application that air pollution control systems will be fully operational during a planned shutdown while fuel is still being combusted on the furnace grates. Shutdowns are initiated by stopping fuel flow to the furnace fuel hopper. Actual fuel feed to the furnace stops after fuel hopper is emptied. Simultaneously with stopping fuel feed to the furnace, material input to the

dryer system is ramped down until material infeed is completely stopped. It takes less than 30 minutes to empty the entire drum of material. The dryer system temperature will be controlled by a substitute cooling load (water injection into the drum). Until the fuel on the furnace grate is completely combusted, the furnace and dryer will exhaust through the air pollution control system consisting of the cyclones, WESP and RTO. Only after fuel is completely combusted on the grate, primary and secondary combustion fans will be stopped and the flue gas connection to the dryer closed. As the combustion chamber cools down, hot gases will be exhausted through the emergency bypass stack of the furnace.

Cool down of the furnace is conducted at a rate of approx. 120° F per hour. Simultaneously, the dryer system ID fan will continue to run until the dryer system is cooled down. At this stage of the shutdown sequence, because neither fuel is being combusted nor material is being dried, hot gases from both the furnace and dryer will be emitted through the emergency bypass stacks for these units until they are sufficiently cooled. Therefore, during a planned shut-down, air pollution control systems will be fully operational for the duration of time air pollution is being generated. Likewise, the RCO will be fully operational while air emissions are being generated by the hammer mills and pellet coolers during a planned shutdown.

6. Administrative Requirements for NOC Applications

NOC applications are subject to filing fees according to ORCAA Rule 3.3(b) and may incur additional NOC processing fees at an hourly rate according to ORCAA Rule 3.3(c). Applicable NOC filing fees for PNWRE's NOC application were paid prior to ORCAA commencing processing of the application. Additional NOC processing fees may apply and will be determined and assessed prior to issuing a Final Determination and the Approval Order (a.k.a.: Air Permit).

NOC applications are subject to a 15-day public notice and an opportunity to request a 30-day public comment period. Public notice of PNWRE's NOC application was posted on ORCAA's website on July 25, 2023. The time period for filing comments on the application and requests for a public comment period expired on August 9, 2023.

There were no requests for a public comment hearing during the application noticing period. However, the NOC application is subject to a mandatory public comment period per ORCAA Rule 6.1.3(b) as the proposed facility would cause a significant net increase in emissions of several air contaminants. Per ORCAA regulations, a public hearing may be scheduled if requested during the public comment period. However, anticipating a high level of public interest on the case, PNWRE proactively requested ORCAA to schedule a Public Hearing. On December 8, 2023, ORCAA opened the 30-day public comment period and notice of public hearing. The information was posted to ORCAA's website on December 8, 2023 and notice was given in The Daily World (local newspaper in Aberdeen) on December 9, 2023. Additionally, copies of ORCAA's Preliminary Determination and the NOC application were made available to view at the Hoquiam Timberland Library. The notice included the time, date, and location of the public hearing. A copy of the notice is retained on file.

On January 16, 2024, ORCAA conducted a public hearing at the Hoquiam City Hall to collect testimony from the public. The public comment period closed at 4:30 p.m. on January 18, 2024. In addition to the comments received during the public hearing, ORCAA accepted emailed

comments that were sent to Lauren Whybrew, ORCAA Engineer II, during the public comment period. All comments received responses and are retained on file. ORCAA's response to comments has been distributed to all members of the public who submitted an emailed comment, attended the public hearing, or provided written or oral testimony at the public hearing in Hoquiam.

7. SEPA Review

The State Environmental Policy Act (SEPA) under Chapter 197-11 WAC is intended to provide information to agencies, applicants, and the public to encourage the development of environmentally sound proposals. The goal of SEPA is to assure that significant impacts are mitigated.

The City of Hoquiam served as the Lead Agency for this project and issued a Determination of Non-Significance (DNS) on July 25, 2023. The DNS lists an Air Permit issued by ORCAA as one of the permits required. Other permits listed in the DNS include:

- Department of Ecology – National Pollutant Discharge Elimination System Construction Stormwater Permit and Industrial Stormwater Permit
- FAA – Clearance Letter
- City of Hoquiam Building Permit
- City of Hoquiam Critical Areas Review
- Port of Grays Harbor – Approval of Operation Agreement and Lease Agreement

8. Criteria for Approval

ORCAA's Rule 6.1 and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6, establish the following general criteria for approving new stationary sources and modifications to existing stationary sources of air pollution in ORCAA's region:

1. **Performance Standards** - Any new stationary source or modification will likely comply with applicable air-performance standards such as the federal new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAPs), and any performance standards adopted under chapter 70A.15 RCW;
2. **BACT** - The new or modified stationary source is controlled to a level that meets the standard of "Best Available Control Technology" (BACT);
3. **Ambient Air Quality** – Any increase in air emissions will not cause or contribute to violation of any ambient air quality standard;
4. **Federal Air Permitting Requirements** – All applicable federal air permits, if required, are secured;
5. **Washington Air Toxics Regulations** - If there are increases in toxic air pollutant (TAP) emissions, the requirements of Washington's Controls for New Sources of Toxic Air Pollutants under Chapter 173-460 WAC are met; and,
6. **Public Outreach** – Public notice and comment requirements in ORCAA's regulations and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6 are met.

The following sections provide more detail on each criterion.

9. Applicable Performance Standards (Summary)

ORCAA's Rule 6.1.4(a)(1) and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6, require a finding that any new or modified stationary source will likely comply with applicable state, federal and local performance standards for air emissions including emission standards adopted under chapter 70A.15 RCW, emissions standard of ORCAA, and federal emission standards including New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT standards). The performance standards in Table 5 were determined applicable to the new wood pellet manufacturing facility. The performance standards in Table 6 were determined relevant to the proposed wood pellet manufacturing facility, but inapplicable. A comprehensive list of applicable performance standards that apply to all stationary sources of air pollution to be located at the facility, as well as general air regulations and standards that apply, are included in the Appendix.

Table 5: General Requirements, Prohibitions, and Performance Standards

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
Air Operating Permit Program Chapter 173-401 WAC; ORCAA Rule 5.1	All sources subject to this regulation must have a permit to operate that assures compliance by the source with all applicable requirements. While chapter 173-401 WAC does not impose substantive new requirements, it does require that fees be imposed on sources and that certain procedural measures be adopted especially with respect to compliance.	The facility is projected to emit greater than 100 tons per year of NO _x and CO, which makes the facility a "major source" and subject to the Title V Air Operating Permit program.
Operating Permit Fees ORCAA Rule 3.2	Requires all facilities subject to the Air Operating Program to pay an annual fee to cover ORCAA's costs of administering the program.	The facility is projected to emit greater than 100 tons per year of NO _x and CO, which makes the facility a "major source" and subject to the Title V Air Operating Permit program.
Interference or Obstruction ORCAA Rule 7.1	Prohibits willfully interfering with or obstructing the Executive Director or any Agency employee in performing any lawful duty.	Applies generally to all air pollution sources
False or Misleading Statements ORCAA Rule 7.2	Prohibits any person from willfully making a false or misleading statement to the Board or its representative as to any matter within the jurisdiction of the Board.	Applies generally to all air pollution sources
Unlawful Reproduction or Alteration of Documents ORCAA Rule 7.3	Prohibits reproducing or altering, or causing to be reproduced or altered, any order, registration certificate or other paper issued by the Agency if the purpose of such reproduction or alteration is to evade or violate any provision of these Regulations or any other law.	Applies generally to all air pollution sources
Display of Orders and Certificates ORCAA Rule 7.4	Any order or registration certificate required to be obtained by these Regulations shall be available on the premises designated on the order or certificate. In the event that the Agency requires order or registration certificate to be displayed, it shall be posted. No person shall mutilate, obstruct, or remove any order or registration certificate unless authorized to do so by the Board or the Executive Director.	Applies generally to all air pollution sources
RACT Requirement WAC 173-400-040(1)(c) ORCAA Rule 8.3	All emissions units are required to use reasonably available control technology (RACT).	Applies generally to all air pollution sources
Visible Emissions WAC 173-400-040(2) ORCAA Rule 8.2(a)	Prohibits emissions with opacity of greater than 20% for more than three (3) minutes in any one hour.	Applies generally to all air pollution sources
Sulfur Dioxide WAC 173-400-040(7)	No person shall cause or allow the emission from any emissions unit in excess of one thousand ppm of sulfur dioxide on a dry basis, corrected to seven percent oxygen for combustion sources, and based	Applies generally to all air pollution sources

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
	on the average of any period of sixty consecutive minutes.	
Control Equipment Maintenance and Repair ORCAA Rule 8.8	ORCAA Rule 8.8 requires that all air contaminant sources keep any process and/or air pollution control equipment in good operating condition and repair.	Applies generally to all air pollution sources
Fallout WAC 173-400-040(3) ORCAA Rule 8.3(e)	Prohibits particulate emissions from any source to be deposited, beyond the property under direct control of the owner or operator of the source, in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material was deposited.	Applies generally to all air pollution sources
Fugitive Emissions WAC 173-400-040(4)(a) ORCAA Rule 8.3(c)	The owner or operator of any emissions unit engaging in materials handling, construction, demolition, or other operation which is a source of fugitive emission shall take reasonable precautions to prevent the release of air contaminants from the operation.	Applies generally to all air pollution sources
Odor WAC 173-400-040(5) ORCAA Rule 8.5	ORCAA Rule 8.5 contains general requirements for controlling odors and a general prohibition of odors that unreasonably interfere with the use or enjoyment of a person's property.	Applies generally to all air pollution sources
Emissions Detrimental to Persons or Property WAC 173-400-040(6) ORCAA Rule 7.6	Prohibits causing or allowing the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.	Applies generally to all air pollution sources
Concealment and Masking WAC 173-400-040(8) ORCAA Rule 7.5	Prohibits installation or use of any device or means to conceal or mask emissions of an air contaminant, which causes detriment to health, safety, or welfare of any person, or causes damage to property or business.	Applies generally to all air pollution sources
Fugitive Dust WAC 173-400-040(9)	The owner or operator of a source or activity that generates fugitive dust must take reasonable precautions to prevent that fugitive dust from becoming airborne and must maintain and operate the source to minimize emissions.	Applies generally to all air pollution sources
Excess Emissions Provisions WAC 173-400-107; WAC 173-400-108 ORCAA 8.7	Requires excess emissions be reported to the Agency as soon as possible and within 24 hours and establishes criteria qualifying excess emissions as unavoidable.	Applies generally to all air pollution sources
Record Keeping and Reporting. ORCAA Rule 8.11	Requires the following: 1. Maintenance of records on the nature and amounts of emissions and other related information as deemed necessary by ORCAA; 2. Reporting of emissions to ORCAA upon request.	Applies generally to all air pollution sources
Emission Standards for Combustion and Incineration units	Prohibits emissions from any combustion unit in excess of 0.1 grain/dscf. EPA test methods from 40 CFR Part 60 Appendix A shall be used should demonstration of compliance be required.	The furnace, RTO and RCO are combustion units and subject to the limit of these rules.

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	discussion/determination
WAC 173-400-050(1) ORCAA Rule 8.3(a)	Measured concentrations for combustion and incineration units shall be adjusted for volumes corrected to seven percent oxygen, except when the permitting authority determines that an alternate oxygen correction factor is more representative of normal operations.	
Emission standards for general process units. WAC 173-400-060 ORCAA Rule 8.3(a)	Prohibits emissions from any process unit in excess of 0.1 grain/dscf. EPA test methods from 40 CFR Appendix A shall be used should demonstration of compliance be required.	The performance standards of these rules apply to all baghouses, cyclo-filters and other general process units proposed for the facility.
Washington State Reporting of Emissions of Greenhouse Gases Chapter 173-441 WAC	This rule establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain suppliers and electric power entities. For suppliers, the GHGs reported are the quantity that would be emitted from the complete combustion or oxidation of the products supplied.	Based on PNWRE's GHG potential to emit estimates and a strong likelihood that the facility will operate continuously, actual emissions will likely exceed the 10,000 metric tons CO ₂ e or more per calendar year threshold. Therefore, reporting GHG per Chapter 173-441 WAC will likely be required.
Standards of Performance for Stationary Compression Ignition Internal Combustion Engines 40 CFR 60 Subpart IIII	This New Source Performance Standard (NSPS) applies to manufacturers, owners, and operations of certain stationary compression-ignition (CI) internal combustion engines (ICEs).	PNWRE is proposing to operate a CI ICE emergency generator. Therefore, NSPS IIII is applicable to the CI ICE at the facility. PNWRE proposes to operate the CI ICE as an emergency engine as defined in this regulation and comply with the applicable performance standards.
National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart ZZZZ	Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions.	The proposed facility will include one diesel-fired emergency generator that meets the applicability criteria of this regulation.

Table 6: Inapplicable Requirements, Prohibitions, and Performance Standards

Regulation Title Citation	Applicability Criteria	Basis
Registration ORCAA Regulation 4	Requires facilities that are minor sources of emissions to register annually with ORCAA and pay annual registration fees.	PNWRE will be a major source of air pollution and subject to the Title V Air Operating Permit (AOP) program
Annual Registration Fees ORCAA Rule 3.1	Requires payment of annual registration fees to ORCAA based in part on air pollutants emitted during the previous year.	PNWRE will be a major source of air pollution and subject to the Title V Air Operating Permit (AOP) program
Initial Notification ORCAA Rule 4.3(a)&(b); 4.3(f)	Requires facilities subject to registration to register by submitting an initial notification with the information in ORCAA Rule 4.3(b) within 30 days from: 1) Commencement of operation of any new or recommissioned stationary source; 2) Change in ownership of existing registered stationary source. The notification must be signed by the owner or operator or by the agent appointed by the owner.	PNWRE will be a major source of air pollution and subject to the Title V Air Operating Permit (AOP) program
Administrative Change Notification ORCAA Rule 4.3(e); 4.3(f)	Requires facilities to notify ORCAA of any changes to administrative information within 30 days from the change taking place including, but not limited to, contact names, address, phone numbers, and permanent shut down or decommissioning of a stationary source. The notification must be signed by the owner or operator or by the agent appointed by the owner.	PNWRE will be a major source of air pollution and subject to the Title V Air Operating Permit (AOP) program
Annual and/or Periodic Reports ORCAA Rule 4.3(c)&(d); 4.3(f)	Requires stationary sources to submit reports with information directly related to the registration program when requested by the Agency within 30 days of receipt of the request. The submittal must be signed by the owner or operator or by the agent appointed by the owner.	PNWRE will be a major source of air pollution and subject to the Title V Air Operating Permit (AOP) program
Emission Standards for Combustion and Incineration units – Incinerators WAC 173-400-050(2)	For any incinerator, no person shall cause or allow emissions in excess of one hundred ppm of total carbonyls as measured by Source Test Method 14 procedures in Source Test Manual - Procedures for Compliance Testing, state of Washington, department of ecology, as of September 20, 2004, on file at ecology. "Incinerator" means a furnace used primarily for the thermal destruction of waste.	The biomass combusted in the furnace is a fuel and not regulated as a waste. Therefore, this rule does not apply.
Commercial and industrial solid waste incineration units WAC 173-400-050(4)	This rule applies to commercial and industrial solid waste incineration units constructed on or before November 30, 1999. A commercial and industrial solid waste incineration unit that commenced construction on or before November 30, 1999, that meets the applicability requirements in 40 C.F.R. 62.14510, must comply with the requirements in 40 C.F.R. Part 62, Subpart GGG (in effect on the date in WAC 173-400-025).	PNWRE's biomass furnace is not regulated as an incinerator because the biomass fuel is not classified as a solid waste. Therefore, this rule does not apply.

<p>Other waste wood burners WAC 173-400-070(5)</p>	<p>This rule applies to waste wood burners and incorporates by reference federal standards for Commercial and Industrial Solid Waste Incineration units (CISWI) under 40 CFR Part 60 Subpart CCCC and 40 CFR Part 62 Subpart III. For purposes of this rule, "Waste wood" means, "... wood pieces or particles generated as a by-product or waste from the manufacturing of wood products..."</p>	<p>This rule does not apply because the biomass combusted in the proposed furnace does is not "waste wood," but will be purchased and combusted as a fuel to produce heat for a manufacturing process.</p>
<p>Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units 40 CFR 60 Subpart Db</p>	<p>The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr).</p>	<p>Although the heat rate of the furnace exceeds 100 MMBtu/hr, by definition, the furnace is not a steam generating unit. Therefore, the performance standards under this subpart do not apply.</p>
<p>Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units 40 CFR Part 60 Subpart Dc</p>	<p>The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).</p>	<p>The heat rate of the furnace exceeds 100 MMBtu/hr and is, therefore, outside the applicability slot of this performance standard. Also, by definition, the furnace is not a steam generating unit. Therefore, the performance standards under this subpart do not apply.</p>
<p>Standards of Performance for Commercial and Industrial Solid Waste Incineration Units 40 CFR Part 60 Subpart CCCC</p>	<p>This subpart establishes new source performance standards for commercial and industrial solid waste incineration units (CISWIs) and air curtain incinerators (ACIs). Commercial and industrial solid waste incineration unit (CISWI) means any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241.</p>	<p>Per §241.2, traditional fuels that have not been discarded are not solid wastes, including cellulosic biomass (virgin wood). The traditional fuels definition further states that clean cellulosic biomass, defined in §241.2 to include forest-derived biomass such as bark and hogged fuel, is a fuel product. Therefore, the proposed fuel for the furnace is not solid waste and the furnace is not a CISWI.</p>
<p>National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products 40 CFR Part 63 Subpart DDDD</p>	<p>This subpart establishes national compliance options, operating requirements, and work practice requirements for hazardous air pollutants (HAP) emitted from plywood and composite wood products (PCWP) manufacturing facilities. Plywood and composite wood products (PCWP) manufacturing facility means a facility that manufactures plywood and/or composite wood products by bonding wood material (fibers, particles, strands, veneers, etc.) or agricultural fiber, generally with resin under heat and pressure, to form a panel, engineered wood product, or other product defined in § 63.2292.</p>	<p>The PNWRE facility will be an area source of HAP emissions. Therefore, 40 CFR Part 63 Subpart DDDD does not apply.</p>

<p>National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters</p> <p>40 CFR Part 63 Subpart DDDDD</p>	<p>This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP.</p>	<p>The PNWRE facility will be an area source of HAP emissions. Therefore, the proposed facility is not subject to 40 CFR Part 63 Subpart DDDDD.</p>
<p>National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources</p> <p>40 CFR Part 63, Subpart JJJJJ</p>	<p>This subpart applies to industrial, commercial, or institutional boilers that are located at, or part of, an area source of hazardous air pollutants (HAP). A “boiler” is defined as an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water.</p>	<p>The PNWRE facility will be an “Area Source” of HAP emissions. However, the facility does not include any boilers. Therefore, the performance standards under 40 CFR Part 63 Subpart JJJJJ do not apply.</p>
<p>National Emission Standards for Hazardous Air Pollutants for Wood Preserving Area Sources</p> <p>40 CFR Part 63 Subpart QQQQQ</p>	<p>This subpart applies to wood preserving operations that are Area Sources of HAP emissions. Wood preserving is defined as means the pressure or thermal impregnation of chemicals into wood to provide effective long-term resistance to attack by fungi, bacteria, insects, and marine borers.</p>	<p>The PNWRE facility will not use any wood preservatives in the production of wood pellets. Therefore, the standards in Subpart QQQQQ do not apply.</p>
<p>Federal- MANDATORY GREENHOUSE GAS REPORTING</p> <p>40 CFR Part 98</p>	<p>This part establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain suppliers.</p>	<p>PNWRE will not emit GHG above the threshold requiring federal reporting. This determination relies on “netting out” biogenic CO_{2e} emissions from combustion of biomass.</p>

10. Best Available Control Technology (BACT)

ORCAA Rule 6.1.4(a)(2) and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6, require the finding that a new source or modification to an existing source of air pollution in an attainment or unclassifiable area will employ best available control technology for all pollutants (BACT) not previously emitted or whose emissions would increase as a result of the new source or modification.

New sources of air pollution and modifications to existing sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, *“an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under chapter 70A.15 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant.”*

PNWRE’s original NOC application and subsequent application addendums describe air pollution control technology proposed for all point, area, and fugitive sources of air emissions, and the expected level of control. The emissions levels and control efficiencies proposed meet ORCAA’s presumed BACT control levels. These BACT levels may be assured through commensurate emissions limits established in the air permit issued by ORCAA, which is staff’s recommendation. Air pollution control technologies and measures proposed and corresponding controlled emissions levels are described in the following table.

Table 7: BACT Summary

Emission Source ID ^a	Emission Source	Air Pollution Control Technology & Methods	BACT Emissions Level ^b
TD-01	Truck Dumper – White Wood	Dust Control Plan: <ul style="list-style-type: none"> • 10 miles per hour (mph) speed limit for all mobile vehicles • Applying water where needed • Using a vacuum truck as needed 	General Opacity Standards
TD-02	Truck Dumper – Chips		
TD-03	Truck Dumper – Hog Fuel		
SP-01	Storage Pile – White Wood		
SP-02	Storage Pile – Chips		
SP-03	Storage Pile – Hog Fuel		
VEH-01	Vehicle Traffic – Trucks		
VEH-02	Vehicle Traffic – Front End Loaders		
EP-01.1	Chip Cleaning Line	Cyclo-filter	0.0044 gr/scf 0% opacity
EP-01.2	White Wood Disc Screening	Clean/wet feedstock	General Opacity Standards
EP-01.3	Hog Fuel Feed	Clean/wet feedstock	General Opacity Standards
EP-02	Drying Line (furnace, drum dryer)	Cyclones (2 units in parallel) WESP ^a RTO ^a Low-NOx burners (furnace)	PM ₁₀ : 8.0 lbs/hr (filterable + condensable) NOx: 53 lbs/hr CO: 42 lbs/hr VOC: 7 lbs/hr HCl: 0.028 lbs/hr Hg: 0.0006 lbs/hr 5% opacity
EP-03	Dry Product Intermediate Storage 1	Silo Filters	0% opacity 98+ % filter efficiency
EP-04	Dry Product Intermediate Storage 2		
EP-05	Wet Hammer Mill 1	Baghouse or Cyclo-filter (for each DHM) Baghouse or Cyclo-filter (per each pellet cooler) Cyclo-filter (for each wet hammer mill) RCO ^a (serving exhaust from all)	PM ₁₀ : 3.0 lbs/hr (filterable + condensable) VOC: 9.0 lbs/hr 5% opacity
EP-06	Wet Hammer Mill 2		
EP-07	Dry Hammer Mills (DHM, 4 units)		
EP-08	Pelletizers (12 units) Pellet Coolers (2 units)		
EP-09	Milled Dry Product Intermediate Storage	Silo Filter	0% opacity 98+ % filter efficiency
EP-10	Pellet Storage Silo #1	Silo Filters	0% opacity 98+ % filter efficiency
EP-11	Pellet Storage Silo #2		
EP-12	Pellet Storage Silo #3		
EP-13	Pellet Storage Silo #4		
EP-14	Pellet Storage Silo #5		
EP-15	Truck Loadout	Silo Filter and shrouded dump	5% opacity 98+ % filter efficiency

Table Notes:

^a Table acronyms: TD = Truck Dumpers; SP = Storage Piles; VEH = Vehicle Traffic; EP = Emission Point; LO = Load Out; RTO = Regenerative Thermal Oxidizer; RCO =Regenerative Catalytic Oxidizer, WESP = Wet Electrostatic Precipitator

^b Pollutant acronyms: CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ = particulate matter 10 microns or less in diameter; VOC = volatile organic compound; HCl = Hydrogen Chloride; Hg = Mercury

11. Ambient Impact Analysis (Criteria Pollutants)

ORCAA’s Rule 6.1.4(a)(3) and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6, require emissions from any new stationary source or modification not delay the attainment date of an area not in attainment, nor cause or contribute to a violation of any National Ambient Air Quality Standard (NAAQS).

PNWRE provided an Ambient Air Quality Analysis (AAQA) in their NOC application, which compares estimated maximum ground-level concentrations of regulated pollutants to the NAAQS for each regulated pollutant. PNWRE’s NOC application includes a comprehensive description of the air dispersion modeling analysis performed. PNWRE relied on the AERMOD air dispersion model (Version 22112) to estimate ground-level concentrations. Ambient impacts were estimated based continuous operation and maximum Potential to Emit (PTE) for all pollutants evaluated. ORCAA staff reviewed PNWRE’s AAQA, the emissions and other model input parameters, modeling methods, meteorological data, and background ambient air quality data used. Staff concluded that PNWRE’s AAQA conservatively estimates ground-level impacts, and that results from the analysis are appropriate for comparing with the NAAQS. Results from PNWRE’s analysis shown in the table below sufficiently demonstrates that emissions from the new facility will not cause or contribute to a violation of any National Ambient Air Quality Standard (NAAQS), which meets this approval criteria.

Table 8: Impacts Compared to NAAQS

Pollutant	Averaging Period	Modeled	Background	Total Impact	NAAQS	Exceeds NAAQS? (Yes/No)
PM ₁₀ (µg/m ³)	24-hour	79.8	42.1	122	150	No
PM _{2.5} (µg/m ³)	24-hour	11.6	12.5	24.1	35	No
	Annual	3.86	5.1	8.96	9	No
NO ₂ (ppb)	1-hour	68.6	15.1	83.7	100	No
	Annual	0.818	2.6	3.42	53	No
CO (ppm)	1-hour	0.381	1.04	1.42	35	No
	8-hour	0.0809	0.69	0.771	9	No
SO ₂	Not modeled – Emissions less than significant emissions rates					
Lead	Not modeled – Emissions less than significant emissions rates					

Table Notes:

^a Pollutant acronyms: PM₁₀ = particulate matter 10 microns or less in diameter; PM_{2.5} = particulate matter 2.5 microns or less in diameter; NO₂ = nitrogen dioxide; CO = carbon monoxide; SO₂ = sulfur dioxide

12. Ambient Impact Analysis (Toxic Air Pollutants)

Washington’s regulation titled Controls for New Sources of Toxic Air Pollutants (Air Toxics Rule) under Chapter 173-460 of the Washington Administrative Code applies to new stationary sources of Toxic Air Pollutants (TAP), including modifications to existing emissions units that increase TAP. The purpose of the Air Toxics Rule is to, “... maintain such levels of air quality as

will protect human health and safety.” The TAPs covered under the Air Toxics Rule include carcinogens and non-carcinogens

The Air Toxics Rule has two independent requirements for new sources and modifications that increase TAP emissions above de-minimis levels:

- 1) **tBACT:** The new or modified emission units must use Best Available Control Technology to control TAP emissions (WAC 173-460-040(3)(a)).
- 2) **Ambient Impact:** The NOC application must demonstrate that any increase in TAP from the new or modified emission units are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects (WAC 173-460-070).

12.1 tBACT

The tBACT requirement applies to any new or modified emission units that triggers the Air Toxics Rule (results in a TAP increase above de-minimis levels), regardless of facility-wide or “net” TAP emissions. The term tBACT means Best Available Control Technology, as that term is defined in WAC 173-400-030, but applied to control of TAP (see BACT definition in Section 10).

Staff’s conclusion is that the BACT emissions levels described above for particulate and VOC emissions meets the tBACT requirement for TAP emitted as particulate and TAP emitted as VOC, respectively. These tBACT levels may be assured through the VOC and PM₁₀ emissions limits established in the air permit issued by ORCAA, which is staff’s recommendation.

12.2 Ambient Impact Review

The Air Toxics Rule provides a multi-tiered, screening approach under WAC 173-460-080 to assess health impacts and demonstrate compliance with the ambient impact requirement under WAC 173-460-070, which is that TAP increases must be sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects.

The “First Tier Review” (Tier 1 Review) is a two-step process. First, the emissions increase of each TAP is compared to its unique Small Quantity Emission Rate (SQER). SQERs are listed for each TAP under WAC 173-460-150. An SQER is the level of emissions of a TAP below which dispersion modeling is not required to demonstrate compliance with the ambient impact requirement. TAP emissions increases used in this first step must be based on the maximum potential to emit considering control or reduction in emissions achievable using the air pollution control technology or methods proposed to meet the tBACT requirement. Any TAP with an increase below its SQER can be presumed to be in compliance with the ambient impact requirement. If this is the outcome, further analysis is not required for that TAP. However, TAPs with emissions increases above their SQER must undergo the second step of the Tier 1 Review.

The second step of the Tier 1 Review requires evaluating TAP impacts against Acceptable Source Impact Levels (ASIL) and is referred to as an ASIL Analysis. An ASIL is the adopted health-based concentration for a TAP below which can be presumed as meeting the ambient impact requirement of WAC 173-460-070. ASILs are provided for each TAP under WAC 173-460-150. An ASIL analysis typically involves using an ambient air dispersion model to estimate ambient concentrations resulting from TAP emissions increases and considering air dispersion and local meteorological characteristics of the source. If the modeled impact of the increase in emissions

of a TAP does not exceed its corresponding ASIL, the ambient impact requirement of WAC 173-460-070 may be considered met and the First Tier Review is completed for that TAP.

Emissions rates used to support an ASIL Analysis must be based on the maximum potential to emit considering control or reduction in emissions achievable using the air pollution control technology or methods proposed to meet the tBACT requirement. In addition, the Air Toxics Rule allows TAP reductions from existing emission units not subject to review to be subtracted or “netted out” from TAP increases, provided the reductions are included in the approval order as enforceable voluntary emission limits and meet all the requirements of WAC 173-460-071. These requirements include:

- (1) The voluntary emissions reductions must be enforceable through a regulatory order issued by the air permitting agency.
- (2) The approval order enforcing the voluntary emissions reductions must include monitoring, recordkeeping, and reporting requirements sufficient to ensure the reductions are maintained.
- (3) The agency’s preliminary determination to approve the voluntary emissions reductions are subject to a 30-day public notice and comment period and opportunity for a public hearing.

For pollutants with ambient concentrations found to be greater than their ASIL, a “Second Tier Review” (Tier 2 Review) by the Washington Department of Ecology (Ecology) is required. An application for a Tier 2 Review by Ecology is referred to a Tier 2 petition. Tier 2 petitions must include a Health Impacts Assessment (HRA) and estimated ambient TAP impacts based on refined air dispersion modeling. Ecology will not act on a Tier 2 petition unless a written preliminary determination on the NOC application for the new or modified TAP source and a draft approval order have been completed by the local agency with jurisdiction. Ecology’s review and approval of a Tier 2 petition is contingent on a finding that TAP impacts meet the ambient impact requirement of WAC 173-460-070 that increases in TAP emissions are sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects. If Ecology recommends denial of a Tier 2 petition, the permitting authority may not approve the project. The applicant then has the option of submitting a petition for a “Third Tier Review” (Tier 3 Review) by Ecology and a request for a risk management decision.

PNWRE conducted a Tier 1 Review of TAP according to the methods prescribed in Washington’s Air Toxics Rule. The Tier 1 review was based continuous operation and maximum PTE for all TAP emitted. On March 12, 2024, PNWRE provided additional information regarding VOC emission rates from the wet (green) hammer mills and proposed to route the wet hammer mills’ exhaust to the RCO. ORCAA staff used source test data from a wet hammer mill (Enviva Wiggins, Oct. 2013) to estimate the TAP emissions rates from the wet hammer mills, based on the VOC emission rate provided by PNWRE. TAP emissions from the wet hammer mills included methanol, acetaldehyde, acrolein, formaldehyde, and propionaldehyde emissions. PTE for most of the TAP expected to be emitted are below their respective SQER level and, therefore, do not require modeling for demonstrating compliance with the ambient impact requirement. This still held true after incorporating the estimated TAP emission rates from the wet hammer mills. Several TAP were found to be emitted above their respective SQER level. For these TAP, PNWRE applied the same modeling methodology as described above to estimate ground level impacts. Staff reviewed this analysis including PTE emission rate estimates, model input parameters,

modeling methods, and meteorological data. Three TAPs emitted from the wet hammer mills required modeling, so ORCAA staff added the maximum impact for these TAPs to the previously modeled impact. This was accomplished by scaling the PTE for each of these TAPs emitted by the 1 g/s modeled result from the RCO and adding it to the modeled impact originally provided by PNWRE for all other emission points. This approach is overly conservative as it does not spatially and temporally resolve where and when the maximum impact occurs. Attachment 4 includes information supporting the TAP PTE from the wet hammer mills. Staff concluded that PNWRE’s ASIL analysis, with the amendment from ORCAA staff to account for TAPs from the wet hammer mills, conservatively estimates ground-level TAP impacts and that results from the analysis are appropriate for comparing with ASILs for each TAP evaluated. Results demonstrate that TAP emissions from the new facility will be sufficiently low to protect human health and safety from potential carcinogenic and/or other toxic effects, which meets this approval criteria.

Table 9: ASIL Analysis

TAP Name	Averaging Period	ASIL (µg/m³)	Projected Impact (µg/m³)	Pass Tier 1 (Yes/No)
12-Dimethylbenz(a)anthracene	year	8.50E-06	1.42E-08	Yes
Acetaldehyde	year	3.70E-01	1.07E-02	Yes
Acrolein	24-hr	3.50E-01	7.73E-02	Yes
Benzene	year	1.30E-01	1.03E-02	Yes
Formaldehyde	year	1.70E-01	1.46E-02	Yes
Arsenic	year	3.00E-04	6.21E-06	Yes
Beryllium	year	4.20E-04	3.12E-07	Yes
Cadmium	year	2.40E-04	1.89E-06	Yes
Chromium hexavalent	year	4.00E-06	9.68E-07	Yes
Manganese	24-hr	3.00E-01	1.14E-02	Yes
Mercury	24-hr	3.00E-02	5.03E-04	Yes
Nickel	year	3.80E-03	1.05E-05	Yes

13. Requirements for Major Stationary Sources and Major Modifications to Major Stationary Sources

Projects that are major stationary sources and major modifications to major stationary sources as defined in 40 CFR 52.21(b) may be subject to permitting requirements under WAC 173-400-700 through 173-400-860.

Based on the facility’s PTE, the pellet manufacturing facility proposed by PNWRE is not a “Major Stationary Source” as defined in 40 CFR 52.21(b) and not subject to the permitting program required by WAC 173-400-700 through WAC 173-400-860. Therefore, these permitting requirements do not apply. This conclusion will be assured through annual limits.

During the 30-day public comment period, ORCAA received several comments asserting that PNWRE must be classified as a “fuel conversion plant” for PSD applicability purposes. The Washington Department of Ecology (Ecology) is the delegated PSD authority in the state of Washington. ORCAA sought Ecology’s opinion on whether the pellet manufacturing facility proposed in Hoquiam should be considered a “fuel conversion plant” for PSD applicability

purposes. Ecology responded with a letter dated February 21, 2024 clarifying the key characteristics of a “fuel conversion plant” based on a review of EPA memos. Based on this letter, ORCAA reaffirms that PNWRE should not be classified as a Fuel Conversion Plant under PSD regulations as the proposed plant will not have any of the key characteristics identified in Ecology’s letter (e.g., conversion is irreversible, change in the state of a fuel, involves a fossil fuel).

14. Title V Air Operating Permit (AOP) Implications

The State of Washington program pursuant to Title V of the federal Clean Air Act is governed under Chapter 173-401 WAC, the Washington Air Operating Permit Program. Chapter 173-401 WAC requires existing major stationary sources to operate in compliance with an approved Air Operating Permit (AOP). Major stationary sources are those stationary sources with a potential to emit which is greater than 100 tons per year of any criteria pollutant, greater than 10 tons per year of any hazardous air pollutants (HAP), or greater than 25 tons per year of any combination of HAP.

Based on the facility’s PTE, the pellet manufacturing facility proposed by PNWRE is a “Major Stationary Source” as defined in Chapter 173-401 WAC. Specifically, the facility will be a major source of both NO_x and CO. Therefore, the facility will be subject to Title V of the federal Clean Air Act and will be required to submit a Title V Air Operating Permit (AOP) application within twelve months after commencing operation.

15. Environmental Justice Considerations

EPA defines Environmental Justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The purpose of an EJ review in conjunction with an air permitting action is to ensure no group of people bear a disproportionate share of the negative environmental consequences as the result of the permitting action. Further, ORCAA strives to engage the affected community effectively and meaningfully regarding the permitting action, and to ensure compliance with obligations pursuant to Title VI of the Civil Rights Act.

With respect to factoring EJ into air permitting decisions, EPA Region 10 expects air agencies to:

- Identify overburdened communities;
- Engage with communities;
- Evaluate cumulative impacts; and,
- Use available authority to minimize emissions.

However, EPA Region 10 does not expect air agencies to use the Clean Air Act’s authorities to address existing disproportional impacts to communities when implementing New Source Review in areas that are “attainment/unclassifiable” with respect to meeting the NAAQS.

The following subsections describe how these expectations from EPA Region 10 were met.

15.1 Identify Overburdened Communities

The initial step in an EJ review is to identify any affected populations or communities of concern and to identify whether they are disproportionately impacted.

ORCAA used EPA's environmental justice screening and mapping tool, EJScreen, to answer this first part of this question. An EJScreen Community Report was generated for Grays Harbor County. The Community Report estimates a minority population of 31%, with approximately 8% of the total population speaking Spanish and 1% speaking another non-English language at home. All demographic indicators were below the 80th percentile for the nation. Likewise, the Community Report indicates that Grays Harbor County is below the 80th percentile for all environmental indicators. Environmental indicators above the 80th percentile is an indication that a community is already disproportionately impacted. Therefore, ORCAA staff's conclusion is that the project impact area does not include any preexisting, overburdened communities. A copy of the Community Report with more detailed information will be filed as part of the supporting documentation for the project.

Pre-existing air quality impacts were evaluated based on ambient air quality monitoring data and designation of the area with respect to maintaining compliance with the NAAQS. If air quality in a geographic area meets or is cleaner than a national standard based on ambient air monitoring data, it is called an attainment area and designated "attainment/unclassifiable." Areas may also be presumed "attainment/unclassifiable" based on population density and air pollutant emissions being below certain thresholds. For this case, the project impact area and Grays Harbor County as a whole is designated "attainment/unclassifiable." Therefore, there are no preexisting nonattainment issues identified within the County. Furthermore, the ambient air quality analysis provided in PNWRE's application demonstrates that air emissions will not cause or contribute to any exceedance of a NAAQS. Therefore, ORCAA staff's conclusion is that there are no indications of any existing disproportional impacts to communities of concern within the project impact area.

15.2 Engage with Communities

A public hearing was conducted on ORCAA's Preliminary Determination to approve PNWRE's application to construct the new pellet mill. ORCAA's current public noticing and outreach policies and procedures were sufficient to effectively provide notice for the public hearing and meaningfully engage with the community surrounding the proposed project site and included:

- Issuing a press release of the Public Notice.
- Posting the Public Notice, application, and ORCAA's Preliminary Determination on ORCAA's website.
- Posting Hard Copies –Hard copies of the Public Notice and ORCAA's Preliminary Determination were posted at the nearest library, Hoquiam Timberland Library located at 420, 7th St. in Hoquiam.
- Publishing the Public Notice in The Daily World (local newspaper) on December 9, 2023.
- Emailing the Public Notice to environmental agencies, local tribal nations, organizations and advocacy groups, and persons and entities who have expressed interest in the project.

After the public hearing and considering all comments submitted on the case, ORCAA prepared a written responsiveness summary (response to comments). The responsiveness summary

includes a description of ORCAA's Final Determination as well as responses to questions and comments received during the comment period and public hearing. ORCAA's responsiveness summary will be posted on ORCAA's website and forwarded to all persons and entities who submitted comments during the comment period and public hearing.

15.3 Evaluate Cumulative Impacts

The air permitting action for this case did not trigger a cumulative impacts analysis under either the Clean Air Act or the Washington Clean Air Act. However, with respect to air impacts alone, results from the Ambient Air Quality Analysis included in PNWRE's application do reflect background ambient concentrations for each criteria air pollutant evaluated. Also, the modeling protocol specified that air emissions from existing and planned facilities within the project impact area should be included in the analysis. However, because of the proposed location of new pellet mill, it was determined by PNWRE's environmental consultant that impacts of emissions from existing sources of air pollution are already reflected in the background concentrations used. Therefore, emissions from nearby sources of air pollution were not explicitly modeled. PNWRE's environmental consultant also determined that planned sources in the Grays Harbor area are not likely to cause significant impacts within the project impact area. Therefore, the air analysis can be considered a cumulative analysis with respect to the NAAQS.

15.4 Use Available Authority to Minimize Emissions

As described elsewhere in this report, ORCAA applied existing New Source Review authorities provided under the Clean Air Act and the Washington Clean Air Act to minimize emissions from the proposed new pellet mill. Principally among these authorities is the requirement to use BACT for controlling emissions. The BACT requirement was applied and corresponding BACT emissions limits are included in the air permit.

16. Differences Between Preliminary and Final Determination

In addition to minor formatting changes and corrections of typographical errors, the following changes were made between the Preliminary Determination dated November 30, 2023 and the Final Determination:

- Sections 3, 5.1, 6, and 15.2 were updated to include information regarding the public comment period and public hearing.
- Table 1, Table 7, and section 4.5 was updated to include PNWRE's proposal to route the wet (green) hammer mills to the RCO to control VOCs and HAPs. These units were previously proposed to be uncontrolled for these pollutants. The wet hammer mills were redesignated from EP-02 and EP-03 to EP-05 and EP-06 in Table 1 and Table 7. As a result, the drying line was redesignated from EP-04 to EP-02, and the dry product intermediate storage silos were redesignated from EP-05 and EP-06 to EP-03 and EP-04.
- Table 2 and Table 3 was updated to include VOC and HAP emissions from the wet hammer mills, and VOC and CO emission from the five wood pellet storage silos. Section 12.2 and Table 9 were updated to include the TAP emissions from the wet hammer mills.
- Added footnotes to Table 1, Table 4, Table 7 and Table 8 for clarity.
- Edited ID #s in Table 3 and Table 4 to clarify and better align with the nomenclature used throughout the other tables in the Final Determination.

- Table 7: Added low-NOx burners to the BACT Summary for EP-02 (drying line) for clarity.
- Table 8: Revised the PM_{2.5} annual NAAQS to reflect the most current standard.
- Section 13 includes additional clarification regarding PNWRE's classification of "Fuel Conversion Plant" under PSD regulations.
- Table in Condition #2 was updated to change the wet hammer mills from EP-02 and EP-03 to EP-05 and EP-06, and require the wet (green) hammer mills to be routed to the RCO. Drying line was redesignated from EP-04 to EP-02 and dry product intermediate storage silos were redesignated from EP-05 and EP-06 to EP-03 and EP-04 as a result.
- Condition #6 was updated to include PNWRE's proposal to route the wet (green) hammer mills to the RCO to control VOC and HAP. These units were previously proposed to be uncontrolled for these pollutants.
- Condition #7 was updated: The VOC limit was changed from "VOC as propane" to VOC per EPA's Wood Products Protocol 1 (WPP1), and emission limits were revised to account for the VOC emissions from the wet (green) hammer mills.
- Condition #8 was updated to support the initial testing requirements for HAP added to Condition #12.
- Condition #12 was updated and reorganized; added initial testing requirements for acetaldehyde, acrolein, propionaldehyde and phenol for the RTO and RCO exhaust. Additionally, the deadline to submit performance test results was changed from 60 days to 45 days to resolve a discrepancy with Condition #16.
- Condition #13(a) added "to prevent fugitive dust emissions" for clarity.
- Condition #16 includes reporting requirement for any exceedances of facility-wide emission limits. The requirement to submit test results was removed from Condition #16, as it is redundant and already established in Condition #12.
- Attachment 2 was added that includes a list of abbreviations, acronyms, and units of measurement commonly used in NOC permits.
- Attachment 3 was added to support the CO and VOC silo emissions from the five pellet storage silos. Attachment 4 was added to support the TAP PTE for the wet hammer mills and the changes made to section 12.2.

17. Recommended Conditions of Approval

The following conditions of approval were determined necessary for assuring compliance with applicable air regulations and standards and protecting air quality. Recommended conditions of approval will become effective once the Approval Order is issued:

1. **Approved Equipment.** The new wood pellet manufacturing facility as described in Notice of Construction application No. 23NOC1606, application addendums, and the associated Final Determination is approved for construction and operation subject to conditions in this Order of Approval.
[Regulatory Basis: ORCAA Rule 6.1(a); ORCAA Rule 6.1.2(l); 40 CFR Part 52.2470(c), Table 6]
2. **Preapproval Required.** Prior approval by ORCAA may be required for the following as specified in ORCAA Rule 6.1:
 - a) Construction, installation, or establishment of any stationary source;
 - b) Modification to any existing stationary source;

- c) Replacement or substantial alteration of emission control technology installed on an existing stationary source; or,
- d) Deviations from the approved plans, drawings, data, and specifications of the stationary sources listed in the following table:

Source ID	Approved Stationary Sources	Approved Control Technologies and Measures
TD-01	Truck Dumper – White Wood (75' Back-On Truck Dump Platform)	Dust control plan
TD-02	Truck Dumper – Chips (75' Back-On Truck Dump Platform)	Dust control plan
TD-03	Truck Dumper – Hog Fuel (75' Back-On Truck Dump Platform)	Dust control plan
SP-01	Storage Pile – White Wood	Dust control plan
SP-02	Storage Pile – Chips	Dust control plan
SP-03	Storage Pile – Hog Fuel	Dust control plan
VEH-01	Vehicle Traffic – Trucks	Dust control plan
VEH-02	Vehicle Traffic – Front End Loaders	Dust control plan
EP-01.1	Chip Cleaning Line	Cyclo-filter
EP-01.2	White Wood Disc Screening	None
EP-01.3	Hog Fuel Feed	None
EP-02	Drying Line Emissions Units (EU): EU 02.1 – Furnace: <ul style="list-style-type: none"> Fuel – Biomass Start-up Fuel – Biomass + Diesel 4 reciprocating grate zones Heat rate 165 MMBtu/hr total Under-fire and overfire air + secondary combustion zone EU 02.2 – Drum dryer: <ul style="list-style-type: none"> Ø 20' by 90' long Feedstock input – 85.5 ton/h @ 45% mc Operating temperature around 750°F Operating airflow around 124,031 ACFM 	Cyclones (2 units in parallel) Wet Electrostatic Precipitator: <ul style="list-style-type: none"> Output Rating: 70 kilovolt, 1500 milliamp. Input: 105 KVA, 460 V / 3-phase / 60 Hz. 3 Fields and 621 Ø10" tubes Regenerative Thermal Oxidizer: <ul style="list-style-type: none"> 4 chambers 20.2 MMBtu/hr gas consumption
EP-03	Dry Product Intermediate Storage Silo 1: <ul style="list-style-type: none"> Volume (gross) 45,732 ft³ 	Silo vent filters
EP-04	Dry Product Intermediate Storage Silo 2: <ul style="list-style-type: none"> Volume (gross) 45,732 ft³ 	Silo vent filters
EP-05	Wet Hammer Mill 1	Baghouses or Cyclo-filters (4 units, one for each DHM): <ul style="list-style-type: none"> Each exhausting to RCO
EP-06	Wet Hammer Mill 2	
EP-07	Dry Hammer Mills (DHM, 4 units): <ul style="list-style-type: none"> 15.5 ton/h design capacity each 900 HP each 	Baghouses or Cyclo-filters (2 units, one per each pellet cooler): <ul style="list-style-type: none"> Each exhausting to RCO
EP-08	Pellet Mill Emissions Units (EU) EU 08.1 – Pelletizers (12 units): <ul style="list-style-type: none"> 500 HP each 5.5 ton/h EU 08.2 – Pellet Coolers (2 units)	Baghouses or Cyclo-filters (2 units, one per each wet hammer mill): <ul style="list-style-type: none"> Each exhausting to RCO Regenerative Catalytic Oxidizer (RCO): <ul style="list-style-type: none"> Controls exhaust from DHMs, Pelletizers, Pellet Coolers, and wet hammer mills Design Airflow = 29,500 ACFM from DHM + 76,000 ACFM from pelleting line + 20,440 ACFM from wet hammer mills 5.8 MMBtu/hr design natural gas consumption

Source ID	Approved Stationary Sources	Approved Control Technologies and Measures
EP-09	Milled Dry Product Intermediate Storage Silo • Volume (gross) 45,732 ft ³	Silo vent filters
EP-10	Pellet Storage Silo #1	Silo vent filters
EP-11	Pellet Storage Silo #2	
EP-12	Pellet Storage Silo #3	
EP-13	Pellet Storage Silo #4	
EP-14	Pellet Storage Silo #5	
EP-15	Truck Loadout	Silo Filter and shrouded dump chute

[Regulatory Basis: ORCAA Rule 6.1(a); ORCAA Rule 6.1.2(l); WAC 173-400-110(2); WAC 173-400-111(10)]

3. **Cyclo-filters and Baghouses.** In addition to applicable general emissions limits and standards, the following limits and standards apply to all cyclo-filters and baghouses emitting directly to the ambient air:
 - a) Cyclo-filters and baghouses must be operating whenever the pellet plant is operating.
 - b) All cyclo-filters and baghouses must be equipped with a working manometer to read pressure drop across the filters.
 - c) Visible emissions must not exceed 0% opacity as measured in accordance with EPA 40 CFR Part 60 Appendix A Method 9.
 - d) Total filterable emissions must not exceed 0.004 grains per standard cubic feet, 1-hour average, measured in accordance with EPA Method 5 in Appendix A to 40 CFR Part 60, or an alternative method approved by ORCAA.
 - e) Baghouses and Cyclo-filters must exhaust through a vertical stack that provides suitable conditions for stack testing per Method 5.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

4. **Silo Vents.** In addition to applicable general emissions limits and standards, the following limits and standards apply to all silo vents:
 - a) Silo vents must be equipped with suitable filters capable of at least 98% filtration efficiency for the size range of particles emitted.
 - b) Filter efficiency must be confirmed and documented by appropriate certification and/or guarantees provided by the filter manufacturer.
 - c) Visible emissions from any silo vent must not exceed 0% opacity as measured in accordance with EPA 40 CFR Part 60 Appendix A Method 9.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

5. **Drying Line.** In addition to applicable general emissions limits and standards, the following limits and standards apply to emissions from the drying line (furnace and drum dryer):
 - a) Emissions from the RTO stack must not exceed the following limits:

Pollutant	Limit	Reference Test Methods
PM ₁₀ (filterable + condensable)	12.7 lbs/hr, 1-hr average	EPA Methods 1-4, 5, 201, or 201A, plus EPA Reference Method 202 from 40 CFR Part 60 Appendix A-1, or equivalent methods agreed to in advance by ORCAA. Use of EPA Reference Method 5 assumes all filterable particulate is PM ₁₀ .
NO _x	53 lbs/hr, 1-hr average	EPA Methods 1-4, and 20 from 40 CFR Part 60 Appendix A, or an equivalent method agreed to in advance by ORCAA.
CO	42 lbs/hr, 1-hr average	EPA Methods 1-4, and 10 from 40 CFR Part 60 Appendix, or an equivalent method agreed to in advance by ORCAA.

Pollutant	Limit	Reference Test Methods
VOC (Per EPA's Wood Products Protocol 1)	8.92 lbs/hr, 1-hr average	EPA Method 1-4, and 25A from 40 CFR Part 60 Appendix A, or equivalent method agreed to in advance by ORCAA. Concurrent testing for both methanol and formaldehyde. VOC must be determined using EPA Method OTM-26 (see condition 8). Formaldehyde and methanol testing methods (or equivalent methods agreed to in advance by ORCAA): <ul style="list-style-type: none"> • Methanol: EPA Method 308 or 320 from 40 CFR Part 63 Appendix A or NCASI method CI/WP-98.01 • Formaldehyde: EPA Method 316 or 320 from 40 CFR Part 63 Appendix A or NCASI Method CI/WP-98.01
HCl	0.028 lbs/hr, 1-hr average	EPA Methods 1-4, and 26 or 26A (M26 or M26A) from 40 CFR part 60, appendix A-8.
Hg	0.0006 lbs/hr, 1-hr average	EPA Methods 1-4, and 29, 30A, or 30B from 40 CFR Part 60, appendix A-8. For Method 29, collect a minimum of 4 dscm per run; for Method 30A or Method 30B, collect a minimum sample as specified in the method; for ASTM D6784 collect a minimum of 4 dscm.
Opacity	5%, 6-minute average	EPA Method 9 from 40 CFR Part 60 Appendix A.

- b) At all times, except during startup as allowed by condition 9, emissions from the furnace and dryer must exhaust through the air pollution control system consisting of the pair of cyclones, Wet Electrostatic Precipitator (WESP) and Regenerative Thermal Oxidizer (RTO).
- c) The WESP must be equipped with a means to continuously monitor and record VDC and mADC of each WESP field.
- d) The cake produced by the WESP decanter centrifuge must be properly disposed of and must not be recycled back into the furnace fuel feed system or in the pellet feedstock.
- e) All combustion chambers of the RTO must be equipped with thermocouples to continuously measure and record combustion chamber temperature.
- f) Except as provided by conditions 9 and 10, emissions exhausting through either the furnace or dryer bypass stacks are presumed to be in violation of the limits and standards of this condition.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

6. **Wet Hammer Mill and Pellet Mill.** In addition to applicable general emissions limits and standards, the following limits and standards apply to emissions from the wet hammer mills, dry hammer mills, pelletizers and pellet coolers:
 - a) At all times, exhaust from the wet and dry hammer mills must exhaust through their respective baghouses and the Regenerative Catalytic Oxidizer (RCO).
 - b) At all times, emissions from the pellet coolers must exhaust through their respective baghouses and the RCO.
 - c) All baghouses must be equipped with a working manometer to read pressure drop across the filters.
 - d) All combustion chambers of the RCO must be equipped with thermocouples to continuously measure and record combustion chamber temperature directly after the catalyst bed.
 - e) Emissions from the RCO stack must not exceed the following limits:

Pollutant	Limit	Reference Test Methods
PM ₁₀ (filterable + condensable)	3.0 lbs/hr, 1-hr average	EPA Methods 1-4, 5, 201, or 201A, plus EPA Reference Method 202 from 40 CFR Part 60 Appendix A-1, or equivalent methods agreed to in advance by ORCAA. Use of EPA Reference Method 5 assumes all filterable particulate is PM ₁₀ .
VOC (Per EPA's Wood Products Protocol 1)	9.0 lbs/hr, 1-hr average	EPA Method 1-4, and 25A from 40 CFR Part 60 Appendix A, or equivalent method agreed to in advance by ORCAA. Concurrent testing for both methanol and formaldehyde. VOC must be determined using EPA Method OTM-26 (see condition 8). Formaldehyde and methanol testing methods (or equivalent methods agreed to in advance by ORCAA): <ul style="list-style-type: none"> Methanol: EPA Method 308 or 320 from 40 CFR Part 63 Appendix A or NCASI method CI/WP-98.01 Formaldehyde: EPA Method 316 or 320 from 40 CFR Part 63 Appendix A or NCASI Method CI/WP-98.01
Opacity	5%, 6-minute average	EPA Method 9 from 40 CFR Part 60 Appendix A.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

7. Facility-wide Annual Emissions Limits. Facility-wide annual emissions must not exceed the following limits in terms of tons per consecutive 12-month period:

Pollutant	Facility-Wide Limit	Compliance Determination Methods
PM ₁₀ (filterable + condensable)	98 tons/12-month period	Compliance determined by calculating tons of each pollutant based on ORCAA-approved emissions factors and the actual fuels combusted, tons of pellets produced, and operating schedule over the previous 12-month period according to condition 8.
NO _x	230 tons/12-month period	
CO	186 tons/12-month period	
VOC (Per EPA's Wood Products Protocol 1)	68 tons/12-month period	

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

8. Monitoring Facility-Wide Emissions. Compliance with facility-wide annual emissions must be determined monthly by calculating facility-wide total tons of each pollutant for the previous 12-consecutive month period as follows:

- a) For the drying line (furnace and dryer):
 - i) PM₁₀ and VOC emissions must be calculated based on emission factors in terms of pounds per oven dried ton of pellets (lb/ODT) determined through source testing, times the actual tons of pellets produced, or an alternative method of calculation approved by ORCAA. Emissions factors must be updated with each required source test.
 - ii) VOC emissions must be determined using EPA's Interim VOC Measurement Protocol for the Wood Products Industry – July 2007 (otherwise known as Other Test Method 26 or OTM-26) and must include quantification of the individual contributions of methanol and formaldehyde based on the most recent source test results. VOC emissions calculated using this method are referred to as "WPP1 VOC".
 - iii) NO_x and CO emissions must be determined using data from the NO_x and CO continuous emission rate monitoring systems (CERMS) required by condition 11.

- iv) Emissions from the dryer line during any period when pellets are not produced such as, but not limited to, startup, shutdown, and idle mode, must be included in the facility-wide total emissions.
 - b) For the RCO exhaust (pellet mill and wet hammer mills):
 - i) Emissions of NO_x, CO, PM₁₀, and VOC must be calculated based on emission factors in terms of pounds per oven dried ton of pellets produced (lb/ODT) determined through source testing, times the actual tons of pellets produced, or an alternative method of calculation approved by ORCAA. Emissions factors must be updated with each required source test.
 - ii) VOC emissions must be determined using EPA's Interim VOC Measurement Protocol for the Wood Products Industry – July 2007 (otherwise known as Other Test Method 26 or OTM-26) and must include quantification of the individual contributions of methanol and formaldehyde based on the most recent source test results. VOC emissions calculated using this method are referred to as "WPP1 VOC".
 - iii) Emissions from the dryer line and pellet mill during any periods when pellets are not produced such as, but not limited to, startup, shutdown, and idle mode, must be included in the facility-wide total emissions.
 - c) PM₁₀ emissions from process units (baghouses, cyclo-filters, silo vents) must be calculated based on 0.004 grains per standard cubic feet, and each unit's exhaust rate and the hours they operated, or an alternative method of calculation approved by ORCAA.
 - d) PM₁₀ emissions from road dust created by traffic (front end loaders and trucks) must be calculated based on equations from AP-42 Section 13.2.2 and vehicle miles traveled at the facility by front end loaders and haul truck, or an alternative method of calculation approved by ORCAA.
 - e) PM₁₀ emissions from process fugitive sources (truck dumpers, storage piles, chip screening) must be calculated based on equations from Particulate Matter Potential to Emit Emissions Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country (EPA Region 10, May 8, 2014) and actual production over the 12-month period, or an alternative method of calculation approved by ORCAA.
- [Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

9. **Furnace/Dryer Startups.** In addition to applicable general emissions limits and standards, the following requirements apply to operation of the furnace and drum dryer during startups:
- a) Cold startup must be initiated using clean, dry fuels including dry wood and ultra-low sulfur diesel.
 - b) Furnace exhaust during a startup may bypass the drying line air pollution control system through the furnace bypass stack provided:
 - i) Bypass of the air pollution control system (cyclones, WESP, RTO) does not exceed 30 minutes during any single startup;
 - ii) The number of startups that bypass the air pollution control systems and exhaust through the furnace bypass stack does not exceed 10 startups per each 12-month period;

- iii) Operation of the air pollution control system including the WESP and RTO are initiated so that these units are fully functional and ready to accept emissions from the furnace and dryer as soon as possible after a startup is initiated;
 - iv) Exhausting through the air pollution control system is initiated as soon as possible after a startup is initiated.
- c) A sufficient amount of clean dry fuel must be maintained at all times to minimize emissions during startups.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-400-081; WAC 173-460-040(3)]

10. Furnace/Dryer Planned Shutdowns. In addition to applicable general emissions limits and standards, the following requirements apply to operation of the furnace and drum dryer during planned shutdowns:

- a) The air pollution control system must be fully functioning during a planned shutdown;
- b) Exhaust of hot gases through the furnace bypass stack during a planned shutdown may commence once there is no combustion occurring on the furnace grates;
- c) Exhaust of hot gases through the dryer bypass stack during a planned shutdown may commence once there is no combustion on the furnace grates and no material remaining in the drum dryer.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-400-113(2); WAC 173-460-040(3)]

11. Dryer Line Emissions Monitoring. Ongoing compliance with the drying line NO_x and CO limits in condition 5a must be continuously monitored using continuous emission rate monitoring systems (CERMS) for measuring NO_x and CO pollutant mass rates in lb/hr.

- a) The NO_x and CO CERMS must meet applicable requirements from 40 CFR Part 60, Appendix B.
- b) The NO_x and CO CERMS must meet applicable procedures and requirements from 40 CFR Part 60, Appendix F, including requirements and schedules for Relative Accuracy Test Audits (RATA).

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2)]

12. Performance Testing. The following requirements apply to all performance testing. For purposes of this condition, performance testing includes the RATA of the NO_x and CO CERMS.

a) **Performance Testing Schedule.**

- i) The following performance tests must be completed within 180-days of commencing operation of the facility to demonstrate compliance with emissions limits and determine emissions factors:
 - (1) Emissions from the RTO stack must be tested for each pollutant in Condition 5a.
 - (2) Emissions from the RCO stack must be tested for each pollutant in Condition 6e.
 - (3) Acetaldehyde, acrolein, propionaldehyde and phenol emissions from the RTO stack and the RCO stack must be tested according to EPA Method 320 from 40 CFR Part 63 Appendix A, or an alternative method approved by ORCAA.
- ii) Following the initial performance tests required in (i), the following performance tests must be completed every five years or whenever required by ORCAA:
 - (1) Emissions from the RTO stack must be tested for each pollutant in Condition 5a.

- (2) Emissions from the RCO stack must be tested for each pollutant in Condition 6e.
- b) **Performance Testing Requirements.**
- i) Performance testing must be conducted during operating conditions with highest emissions unless otherwise approved by ORCAA.
 - ii) Compliance with each emissions limit must be determined from the average of three separate 1-hour test runs unless otherwise approved by ORCAA.
 - iii) RATA of the NO_x and CO CERMS must be conducted:
 - (1) According to the requirements from 40 CFR Part 60, Appendix F; and
 - (2) Concurrently with RTO performance testing.
 - iv) Testing for formaldehyde and methanol must be conducted concurrently with VOC testing.
 - v) Testing for NO_x and CO must be conducted concurrently.
- c) **Notifications, Plans, and Reports.**
- i) Performance testing must be conducted consistent with an ORCAA approved test plan.
 - ii) A test plan must be submitted to ORCAA for approval at least 45 days prior to conducting a required performance test.
 - iii) The test plan must describe:
 - (1) Air emissions test methods;
 - (2) Target operating conditions for testing;
 - (3) Performance indicators that will be monitored during the testing; and,
 - (4) Methods for calculating emissions factors.
 - iv) A test report must be submitted to ORCAA within 45 days of conducting any performance test.
 - v) The test report must include for each test run:
 - (1) The concentrations and pollutant mass rates in pounds per hour for each pollutant measured;
 - (2) Emissions factors in terms of pounds of pollutant per oven dry ton of pellets produced;
 - (3) The rate of pellet production;
 - (4) Key operating indicators of the source and pollution control technology.
- [Regulatory Basis: ORCAA Rule 6.1.4(a)(2); WAC 173-40-113(2); WAC 173-460-040(3)(a); ORCAA Rule 6.1.2(l); WAC 173-400-111(10)]

13. **Operation and Maintenance Plan.** The owner or operator must devise and implement an operation and maintenance plan (O&M Plan) to minimize emissions from all sources and modes of operation at the facility. The O&M Plan must be submitted to ORCAA for approval within the first six months from commencement of operation of the facility. The O&M Plan must include, but is not limited to, the following elements:
- a) Dust prevention plan describing company policies to prevent fugitive dust emissions including, at a minimum, vehicle speed limits, application of dust suppressants to haul roads, minimizing material drop heights, surveying the facility for fugitive dust; procedures for minimizing for fugitives during truck loading; and minimizing visible dust during feedstock and fuel dumps;

- b) Cyclo-filter maintenance plan that describes how acceptable operating pressure drop ranges will be determined and applied, how and when cyclo-filters will be inspected, and how filters will be maintained;
- c) WESP maintenance plan that describes how acceptable performance indicators will be determined, how quality of flush water will be maintained, how centrifuge cake will be disposed of, and detailed startup and shutdown procedures;
- d) RTO maintenance plan that describes how RTO performance will be monitored, when thermocouples will be changed out, and detailed startup and shutdown procedures;
- e) RCO maintenance plan that describes how RCO performance will be monitored, how performance of the catalyst will be monitored and maintained, and detailed startup and shutdown procedures;
- f) Detailed startup and shutdown procedures for the furnace and dryer;
- g) How proper combustion in the furnace will be monitored and maintained;
- h) Plan describing the means and methods for monitoring time emissions bypass air pollution control systems for both the dryer line and pellet mill.

[Regulatory Basis: ORCAA Rule 6.1.4(a)(2)]

14. **Emissions Inventory.** On an annual basis, the owner or operator must complete and submit to ORCAA an annual emissions inventory (inventory) of all regulated pollutants from all emissions units. Actual emissions must be based on actual operating data and ORCAA approved emission factors. The inventory must be accompanied by all associated calculations and data and must be certified by a Responsible Official as defined under WAC 173-401-200(27) as being true and accurate.

[Regulatory Basis: ORCAA Rule 8.11]

15. **Required Records.** The following records must be kept and made available when requested:

- a) The O&M plan required by condition 13;
- b) Manufacturer specifications for all cyclo-filters and baghouses as built identifying design air flow rates, pressure drops, and filtering efficiencies;
- c) Manufacturer specified or certified filtering efficiency for all silo vent filters;
- d) The number of truck dumps per day;
- e) Tons of pellets produced per day;
- f) Combustion chamber temperatures of the RTO and RCO;
- g) WESP KVA and MA of each of the three WESP fields;
- h) Number of occurrences, duration for each occurrence, and reason for emitting through either the furnace or drum dryer bypass stacks;
- i) The amount of diesel and clean, dry wood used during each cold startup;
- j) Daily record of the operating pressure drop across each baghouse and cyclo-filter;
- k) Monthly record of emissions calculations to demonstrate compliance with the emissions limits in condition 7; and,
- l) NOx and CO CERMS certification and quality assurance records.

[Regulatory Basis: ORCAA Rule 8.11]

16. **Required Notifications, Reports and Applications.** The following notifications, reports, and applications must be submitted to ORCAA by the deadline specified:

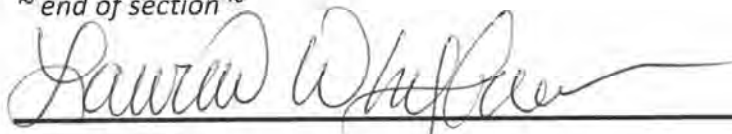
- a) Any updates or revisions to the O&M plan required by condition 13 must be submitted to ORCAA for approval prior to implementing them;
- b) Notification by phone or email message of any complaint as soon as possible but in no case later than 24 hours of receiving the complaint;
- c) Title V Air Operating Permit (AOP) application within 12 months from commencing operation of the facility;
- d) Notification by phone or email of any emissions through the furnace or drum dryer bypass stacks as soon as possible but in no case later than 24 hours from initiation of the event;
- e) Notification of any excess emissions determined through the NOx or CO CERMS as soon as possible but in no case later than 24 hours from the beginning of each event; and,
- f) Notification of any exceedances with respect to all facility-wide emission limits as soon as possible, but no later than 30 days after the end of the month during which the exceedance was discovered.

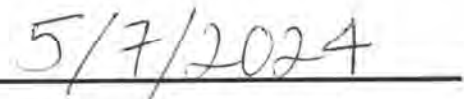
[Regulatory Basis: WAC 173-401-500; ORCAA Rule 8.11; ORCAA Rule 8.7; ORCAA Rule 5.1]

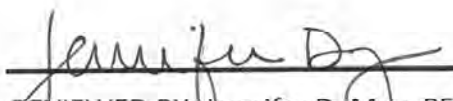
18. Final Determination to Approve

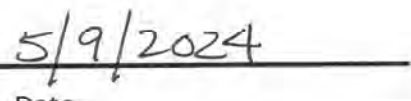
This Final Determination documents ORCAA staff's determinations with respect to the applicable criteria of approval in ORCAA Rule 6.1 and the Washington State Implementation Plan under 40 CFR part 52.2470(c), Table 6. ORCAA staff recommends approval of PNWRE's proposal to construct a new wood pellet manufacturing facility, provided the conditions identified in Section 17 of this Final Determination are implemented through an enforceable Order of Approval (AKA: Air Permit). Emissions calculations, modeling summary and other data supporting this Final Determination are provided in the permit application.

~ end of section ~


 PREPARED BY: Lauren Whybrew, Engineer II


 Date


 REVIEWED BY: Jennifer DeMay, PE


 Date

Attachment 1: Applicable General Performance Standards that apply to Pacific Northwest Renewable Energy (PNWRE) in Hoquiam, Washington

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	Applies to
False or Misleading Statements ORCAA Rule 7.2	Prohibits any person from willfully making a false or misleading statement to the Board or its representative as to any matter within the jurisdiction of the Board.	Applies generally to all air pollution sources
Unlawful Reproduction or Alteration of Documents ORCAA Rule 7.3	Prohibits reproducing or altering, or causing to be reproduced or altered, any order, registration certificate or other paper issued by the Agency if the purpose of such reproduction or alteration is to evade or violate any provision of these Regulations or any other law.	Applies generally to all air pollution sources
Display of Orders and Certificates ORCAA Rule 7.4	Any order or registration certificate required to be obtained by these Regulations shall be available on the premises designated on the order or certificate. In the event that the Agency requires order or registration certificate to be displayed, it shall be posted. No person shall mutilate, obstruct, or remove any order or registration certificate unless authorized to do so by the Board or the Executive Director.	The Approval Order issued in conjunction with this NOC approval must be retained on site.
General Requirements WAC 173-400-040(1)(c) ORCAA Rule 8.3	All emissions units are required to use reasonably available control technology (RACT).	Applies generally to all air pollution sources.
Visible Emissions WAC 173-400-040(2) ORCAA Rule 8.2(a)	Prohibits emissions with opacity of greater than 20% for more than three (3) minutes in any one hour.	Applies generally to all air pollution sources
Sulfur Dioxide WAC 173-400-040(7)	No person shall cause or allow the emission from any emissions unit in excess of one thousand ppm of sulfur dioxide on a dry basis, corrected to seven percent oxygen for combustion sources, and based on the average of any period of sixty consecutive minutes.	Applies generally to facilities that emit Sulfur Dioxide.
Control Equipment Maintenance and Repair ORCAA Rule 8.8	ORCAA Rule 8.8 requires that all air contaminant sources keep any process and/or air pollution control equipment in good operating condition and repair.	Applies generally to all air pollution control devices.
Fallout WAC 173-400-040(3) ORCAA Rule 8.3(e)	Prohibits particulate emissions from any source to be deposited, beyond the property under direct control of the owner or operator of the source, in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material was deposited.	Applies generally to all air pollution sources.
Fugitive Emissions WAC 173-400-040(4)(a)	The owner or operator of any emissions unit engaging in materials handling, construction, demolition, or other operation which is a source of fugitive emission shall take reasonable precautions to prevent the release of air contaminants from the operation.	Applies generally to any activity that results in fugitive emissions.

Title Citation	Brief Description (Consult rule/regulation for specific requirements)	Applies to
ORCAA Rule 8.3(c)		
Odor WAC 173-400-040(5) ORCAA Rule 8.5	ORCAA Rule 8.5 contains general requirements for controlling odors and a general prohibition of odors that unreasonably interfere with the use or enjoyment of a person's property.	Applies generally to all air pollution sources.
Emissions Detrimental to Persons or Property WAC 173-400-040(6) ORCAA Rule 7.6	Prohibits causing or allowing the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.	Applies generally to all air pollution sources
Concealment and Masking WAC 173-400-040(8) ORCAA Rule 7.5	Prohibits installation or use of any device or means to conceal or mask emissions of an air contaminant, which causes detriment to health, safety, or welfare of any person, or causes damage to property or business.	Applies generally to all air pollution sources
Fugitive Dust WAC 173-400-040(9)	The owner or operator of a source or activity that generates fugitive dust must take reasonable precautions to prevent that fugitive dust from becoming airborne and must maintain and operate the source to minimize emissions.	Applies to any activity that results in fugitive dust.
Particulate Standards for Process units ORCAA Rule 8.3(a) WAC 173-400-060	Prohibits emissions from any process unit in excess of 0.1 grain/dscf. EPA test methods from 40 CFR Appendix A shall be used should demonstration of compliance be required.	Applies to generally to all stationary process units that exhaust to the atmosphere.
Particulate Standards for Combustion Units ORCAA Rule 8.3(a) WAC 173-400-050(1)	Prohibits emissions from any combustion unit in excess of 0.1 grain/dscf. EPA test methods from 40 CFR Part 60 Appendix A shall be used should demonstration of compliance be required.	Applies generally to all stationary combustion units that exhaust to the atmosphere.
Excess Emissions Provisions WAC 173-400-107; WAC 173-400-108 ORCAA 8.7	Requires excess emissions be reported to the Agency as soon as possible and within 24 hours and establishes criteria qualifying excess emissions as unavoidable.	Applies generally to all air pollution sources
Record Keeping and Reporting. ORCAA Rule 8.11	Requires the following: 1. Maintenance of records on the nature and amounts of emissions and other related information as deemed necessary by ORCAA; 2. Reporting of emissions to ORCAA upon request.	Required of all facilities registered with ORCAA.

Attachment 2: List of Abbreviations and Acronyms

AOP	Air Operating Permit
AP-42	Compilation of Emission Factors, AP-42, Fifth Edition, Volume I, Stationary Point and Area Sources – Published by EPA
ASIL	Acceptable Source Impact Level pursuant to Chapter 173-460 WAC
BACT	Best Available Control Technology
FCAA	Federal Clean Air Act
CAM	Compliance assurance monitoring (40 CFR 64)
CFR	Code of Federal Regulations
CO	Carbon monoxide
EPA	United States Environmental Protection Agency
HAP	Hazardous air pollutant listed pursuant to Section 112 FCAA
MACT	Maximum Achievable Control Technology
NESHAP	National Emission Standards for Hazardous Air Pollutants
NAAQS	National Ambient Air Quality Standard
NO _x	Nitrogen oxides
NOC	Notice of Construction
NSPS	New Source Performance Standards
NSR	New Source Review
ORCAA	Olympic Region Clean Air Agency
PM	Total particulate matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
RCW	Revised Code of Washington
SO ₂	Sulfur Dioxide
SQER	Small Quantity Emission Rate listed in Chapter 173-460 WAC
TAP	Toxic Air Pollutant pursuant to Chapter 173-460 WAC
tBACT	Best Available Control Technology for toxic air pollutants
VOC	Volatile Organic Compound
WAC	Washington Administrative Code

Units of Measurement

'	minute (measurement of angle)
"	second (measurement of angle)
°	degree
acfm	actual cubic feet per minute
atm	atmosphere
BHP	Brake horsepower
Btu	British thermal units
cfm	cubic feet per minute
dscfm	dry standard cubic feet per minute
°F	degree Fahrenheit
ft	feet
g	grams
g/s	grams per second
gal	gallon
gr	grain
hr	hour
hp	horsepower
in	inches
K	degree Kelvin
kg	kilograms
km	kilometers
kW	kilowatt
L	liter
lb	pounds
m	meters
M	thousand
min	minute
Mbf	thousand board feet
MMbf	million board feet
MM	million
µg	micrograms
MMBtu	million British thermal units
mmHg	millimeters of mercury
mph	miles per hour
MW	megawatts
ppm	parts per million
ppmvd	parts per million, dry volume
ppb	parts per billion
psi	pounds per square inch
s	second
scfm	standard cubic feet per minute
tpy	tons per year

Attachment 3: CO and VOC PTE for Five Pellet Storage Silos

Total Pellet Throughput 440800 tons/yr

Five Pellet Storage Silos

Pollutant	CO	VOC	Units
Emission Factor	0.0036	0.0013	lb/ton
	1595.70	560.86	lbs/year
PTE	0.18	0.06	lbs/hour
	0.80	0.28	Tons per Year

softwood VOC Emission Factor (Soto-Garcia, L. et al., 2015)

0.064 mg/(kg-day) *60,000 tons storage capacity total across the five silos. 50.3 dry ton/hr = storing them for about 9 days.
 0.000128 lb/(ton-day)
 0.0013 lb/ton

softwood CO Emission Factor (Tumuluru, J. et al., 2015)

1.81 mg/kg
 0.0036 lb/ton

References

- Soto-Garcia, L., Ashley, W. J., Bregg, S., Walier, D., LeBouf, R., Hopke, P. K., & Rossner, A. (2015). VOCs Emissions from Multiple Wood Pellet Types and Concentrations in Indoor Air. *Energy & Fuels*, 29(10), 6485–6493. <https://doi.org/10.1021/acs.energyfuels.5b01398>
- Tumuluru, J., Lim, C., Bi, X., Kuang, X., Melin, S., Yazdanpanah, F., & Sokhansanj, S. (2015). Analysis on storage off-gas emissions from woody, herbaceous, and torrefied biomass. *Energies*, 8(3), 1745–1759. <https://doi.org/10.3390/en8031745>

Attachment 4: Wet Hammer Mill TAP PTE

VOC emissions from Wet (Green) Hammermills (WHM)

Value	Units	Notes
86	mg VOC/m ³ s	Vendor supplied (both GHM)
34,729	m ³ /hr	flowrate of GHM, to the RTG (vendor supplied)
7.95	lb VOC/hr	Before Regenerative Catalytic Oxidation (RCO) control
0.37	lb VOC/hr	accounting for 95% RCO control
1.61	TPY	additional VOC from GHM from RCO exhaust

Estimated Facilitywide MAPs (using MAP-VOC ratio from Armony and Wiggins testing)

Pollutant	Potential to Emit: From WHM			Facilitywide Totals		
	lb/hr	lb/day	lb/yr	Prev. Facilitywide Total (lbs/yr)	New Facilitywide Total w/ WHM (TPY)	New Facilitywide Total w/ WHM (TPY)
Methanol		0.0224	0.535	196	0.0575	474
Acetaldehyde		0.0112	0.268	98	0.0490	379
Acrolein		0.0225	0.538	197	0.0985	105
Formaldehyde		0.00667	0.160	58.4	0.0192	627
Propionaldehyde		0.00362	0.0890	14.2	0.00711	71.6
Total		N/A	N/A	0.283		1634

WAC 175-460 Check (right)

Pollutant	Potential to Emit (see Avg. Period at WAC 175-460-150)		Modeled Impacts	
	Total Prev. Facilitywide	Increase from de w/ WHM	Was it modeled originally?	Original Facilitywide Modeled Result (µg/m ³)
Methanol	1.30	0.536	1.84	0.00858
Acetaldehyde	0.29	0.112	0.402	0.0405
Acrolein	0.52	0.539	0.851	0.0133
Formaldehyde	6.27	58.4	64.7	N/A - still below SQER
Propionaldehyde	0.196	0.0890	0.285	N/A - still below SQER

Modeled Results (lbs/day) - for 1 ft/s - 100 ft High

RTG 24-HR	5.89011	µg/m ³
RCO 24-HR	12.85289	µg/m ³
Emerg Gen	164.03279	µg/m ³
ALL	171.46792	µg/m ³

Modeled Results (lbs/year) - for 1 ft/s

RTG	0.25641	µg/m ³
RCO	1.52239	µg/m ³
Emerg Gen	15.27243	µg/m ³
ALL	16.57908	µg/m ³

BECAUSE 1 ft/s was used for release points in their model,

Impact (µg/m³) = [PTE (lbs/day or lbs/hr) * (1 hr/7 937 lbs) * avg time, either day/24 hr or year/8760 hr] * Model Result (daily or annual)

AERMOD Inputs

Source Group EG	Emergency Eng. Release Point
Source Group EPO4	RTG Release Point
Source Group EPO8	RCO Release Point

Source Testing Results from other facilities' Other Wet (Green) Hammermills

Estiva Armony Green Hammermills (Oct. 2013)		Estiva Wiggins Green Hammermills (Oct. 2013)	
12.71 Tons of VOC	1.47 lbs/hr (as C1)	21.1 Tons of VOC	4.3 lbs/hr (as C1)
1.37 Tons of Methanol	0.16 lbs/hr	0.27 Tons of methanol	0.058 lbs/hr
		0.61 Acetaldehyde	0.131 lbs/hr
		1.24 Acrolein	0.263 lbs/hr
		0.37 Formaldehyde	0.078 lbs/hr
		0.09 Propionaldehyde	0.019 lbs/hr

*Note: Percent wet below MCL and 2 out of 3 runs for Propionaldehyde were below MCL.

Lauren Whybaver:
 Consideration added max impact for the increased RCO/GHM to the PTE, though the max impacts don't necessarily occur at same receptor and time. Overestimates impacts, but for purpose of determining whether it is below ASL. It is overly conservative and therefore sufficient.

Information provided by PNWRE that ORCAA Staff used to estimate PTE:

PNWRE proposes to route the emissions to the RCO. Green hammermill VOC emissions calculations are below.

96 mg/Nm³ x 34,729 Nm³/h = 3.34 kg/h = 7.35 lb/h

ATTACHMENT 2

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org).
3. Duty to Correction Application: An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name: Pacific Northwest Renewable Energy	For ORCAA use only File No: 432 County No: 27 Source No: 926 Application No: 23 NOC 1606 Date Received: <div style="text-align: center; color: red; font-weight: bold;"> Received JUL 20 2023 ORCAA </div>
Mailing Address: P.O. Box 391, Sth Egrement, MA 01258	
Physical Address of Project or New Source: 411 Moon Island Road, Hoquiam, WA 98550	
Billing Address: P.O. Box 391, Sth Egrement, MA 01258	
Project or Equipment to be installed/established: Wood pellet manufacturing facility	
Anticipated startup date: <u>02</u> / <u>01</u> / <u>2025</u> Is facility currently registered with ORCAA? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option: <input type="checkbox"/> SEPA was satisfied by _____ (government agency) on ___/___/___ (date) - Include a copy of the SEPA determination <input checked="" type="checkbox"/> SEPA threshold determination by <u>City of Hoquiam</u> (government agency) is pending - Include a copy of the environmental checklist <input type="checkbox"/> ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist <input type="checkbox"/> This project is exempt from SEPA per _____ (WAC citation).	
Name of Owner of Business: Farnese Partners, LTD	Agency Use Only
Title: <u>Owner</u>	
Email: <u>pheasman@pnwrenewable.com</u> Phone: _____	
Authorized Representative for Application (if different than owner): Mark Boivin	
Title: <u>CEO</u>	
Email: <u>mboivin@pnwrenewable.com</u> Phone: <u>(413) 244-7360</u>	
I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.	
Signature of Owner or Authorized Representative: (sign in Blue Ink)	
	Date: <u>7/20/23</u>
IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.	

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1D- Contact Information

Business Name Pacific Northwest Renewable Energy	FOR ORCAA USE
Physical Site Address (Street address, city, state, zip) 411 Moon Island Road Hoquiam, WA 98550	FILE # 432
	CTY # 27
	SRC # 926
Previous Business Name (if applicable)	Date Received Received JUL 20 2023 ORCAA

Contact Information

Inspection Contact	
Name Kim Alexander	Title VP of Operations
Phone (864) 367-2767	Email kalexander@pnwrenewable.com
Billing Contact	
Name Steeve Wintle	Title CFO
Phone (207) 651-4580	Email swintle@pnwrenewable.com
Emission Inventory Contact	
Name Kim Alexander	Title VP of Operations
Phone (864) 367-2767	Email kalexander@pnwrenewable.com
Complaint Contact	
Name Kim Alexander	Title VP of Operations
Phone (864) 367-2767	Email kalexander@pnwrenewable.com
Permit Contact	
Name Brandon Henderson	Title Director of Engineering
Phone (254) 813-3260	Email bhenderson@pnwrenewable.com

The **inspection contact** is the on-site person responsible for the everyday operation of the site and is available for inspections.

The **billing contact** is the person invoices are sent.

The **emission inventory contact** is the person requests for emissions information and material use information are sent.

The **complaint contact** is the person who receives and responds to complaints received on-site and who is contacted regarding complaints ORCAA receives.

The **permit contact** is the person responsible for filling out permit applications and receiving approval from ORCAA.

FORM 4 FACILITY EMISSIONS SUMMARY

Facility: Pacific Northwest Renewable Energy - Port of Grays Harbor Wood Pellet Facility

Page 1 of 3

Instructions: on back.

Emission Unit ID#	TSP	PM-10	SOx	NOx	VOC	CO
TD-01	0.41	0.19	0	0	0	0
TD-02	0.46	0.22	0.03	0	0	0
TD-03	0.27	0.13	0	0	0	0
SP-01	0.65	0.32	0.16	0	0	0
SP-02	0.65	0.32	0.16	0	0	0
SP-03	0.65	0.32	0.16	0	0	0
VEH-01	10.70	3.18	0	0	0	0
VEH-02	17.69	5.29	0	0	0	0
EP-01	29.81	7.45	0	0	0	0
EP-02	8.38	2.10	0	0	0	0
EP-03	8.38	2.10	0	0	0	0
Facility Total						

FORM 4 FACILITY EMISSIONS SUMMARY

Facility: Pacific Northwest Renewable Energy - Port of Grays Harbor Wood Pellet Facility

Page 2 of 3

Instructions: on back.

Emission Unit ID#	TSP	PM-10	SOx	NOx	VOC	CO
EP-04	33.88	55.81	18.05	227.76	28.80	183.96
EP-05	0.07	0.07	0	0	0	0
EP-06	0.07	0.07	0	0	0	0
EP-08	8.19	8.30	0.01	1.70	37.67	0.72
EP-09	0.07	0.07	0	0	0	0
EP-10	3.85	2.35	0	0	0	0
EP-11	3.85	2.35	0	0	0	0
EP-12	3.85	2.35	0	0	0	0
EP-13	3.85	2.35	0	0	0	0
EP-14	3.85	2.35	0	0	0	0
EP-15	0.02	0.01	0	0	0	0
Facility Total						

FORM 4 FACILITY EMISSIONS SUMMARY

Facility: Pacific Northwest Renewable Energy - Port of Grays Harbor Wood Pellet Facility

Page 3 of 3

Instructions: on back.

Emission Unit ID#	TSP	PM-10	SOx	NOx	VOC	CO
GEN-01	0.01	0.01	0.05	0.17	0.06	0.14
Facility Total	108	88	18	230	67	185

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: PNWRE - Port of Grays Harbor

Emission Unit ID#: Facility-wide

Page 1 of 5

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
1,1,1-Trichloroethane	71-55-6	2.69E-01	1.34E-04
Acetaldehyde	75-07-0	4.17E-01	1.65E-01
Acetophenone	98-86-2	1.64E-04	7.16E-04
Acrolein	107-02-8	5.77E-02	5.27E-02
Benz(a)anthracene	56-55-3	8.40E-04	4.21E-05
Benzene	71-43-2	4.69E-01	3.45E-02
Benzo(a)pyrene	50-32-8	9.40E-05	4.76E-06
Benzo(b)fluoranthene	205-99-2	4.96E-05	2.57E-06
Benzo(k)fluoranthene	207-08-9	7.75E-05	3.97E-06
Biphenyl	92-52-4	9.96E-05	4.36E-04
Facility Total			

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: PNWRE - Port of Grays Harbor

Emission Unit ID#: Facility-wide

Page 2 of 5

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
Bis-(2-ethylhexyl phthalate)	117-81-7	8.18E-04	3.58E-03
Bromomethane	74-83-9	7.15E-05	3.13E-04
Carbon disulfide	75-15-0	4.60E-05	2.01E-04
Carbon tetrachloride	56-23-5	3.07E-05	1.34E-04
Chloromethane	74-87-3	2.81E-04	1.23E-03
Cumene	98-82-8	1.76E-04	7.72E-04
Di-N-butyl phthalate	84-74-2	5.88E-05	2.57E-04
Dibenzo(a,h)anthracene	53-70-3	2.92E-04	1.46E-05
Ethyl benzene	100-41-4	9.71E-06	4.25E-05
Formaldehyde	50-00-0	6.55E-01	3.13E-01
Facility Total			

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: PNWRE - Port of Grays Harbor

Emission Unit ID#: Facility-wide

Page 3 of 5

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
Hexane	110-54-3	2.21E-02	9.69E-02
Hydroquinone	123-31-9	1.53E-04	6.71E-04
Indeno(1,2,3,c,d)pyrene	193-39-5	1.88E-04	9.47E-06
m,p-Xylene	1330-20-7	1.44E-01	1.44E-01
Methanol	67-56-1	5.41E-02	2.37E-01
Methyl isobutyl ketone	108-10-1	6.13E-03	2.69E-02
n-Hexane	110-54-3	2.21E-02	9.69E-02
Naphthalene	91-20-3	4.63E-02	2.35E-03
o-Xylene	95-47-6	3.58E-05	1.57E-04
Phenol	108-95-2	2.82E-02	1.23E-01
Facility Total			

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: PNWRE - Port of Grays Harbor

Emission Unit ID#: Facility-wide

Page 4 of 5

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
Propionaldehyde	123-38-6	8.18E-03	3.58E-02
Styrene	100-42-5	3.07E-04	1.34E-03
Toluene	108-88-3	2.10E-01	3.39E-02
Antimony	7440-36-0	6.51E-05	6.51E-05
Arsenic	7440-38-2	1.84E-04	8.05E-04
Beryllium	7440-41-7	9.21E-06	4.03E-05
Cadmium	7440-43-9	4.73E-05	2.07E-04
Chromium, hexavalent	CRVICOMP	2.88E-05	1.26E-04
Chromium, total	7440-47-3	1.90E-04	8.33E-04
Cobalt	7440-48-4	5.46E-05	2.39E-04
Facility Total			

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: PNWRE - Port of Grays Harbor

Emission Unit ID#: Facility-wide

Page 5 of 5

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
Lead	7439-92-1	4.02E-04	1.76E-03
Manganese	7439-96-5	1.32E-02	5.78E-02
Mercury	7439-97-6	5.80E-04	2.54E-03
Nickel	7440-02-0	2.98E-04	1.30E-03
Phosphorus	7723-14-0	2.22E-04	9.75E-04
Selenium	7782-49-2	2.34E-05	1.02E-04
1,3-Butadiene	106-99-0	1.96E-02	9.78E-04
Methylene Chloride	75-09-2	1.61E-03	7.05E-03
Facility Total		2.18	1.32



FORM 7
PSD APPLICABILITY FORM

This form is an aid to help determine if a proposed project will be required to undergo PSD review. Please submit this form with the cover sheet of the Notice of Construction application to the Local Air Authority. For locations in eastern Washington where the Department of Ecology is the delegated local air authority, submit this form to the appropriate Ecology Regional Office.

It is the responsibility of the applicant to ensure that all preconstruction permits are obtained before commencement of construction.

COMPANY INFORMATION

Company or owner name: Pacific Northwest Renewable Energy - Port of Grays Harbor

Mailing address: P.O. Box 391
Sth Egrement, MA 01258

Facility address: 411 Moon Island Road
Hoquiam, WA 98550

Contact: Brandon Henderson

Telephone: (254) 813-3260

Facility industrial classification and SIC: 2499

PROCESS INFORMATION AND EMISSIONS CALCULATIONS

This section is intended to furnish a best estimate of annual emissions and sufficient information for agency technical staff to verify the applicant's conclusions in answering the questions in the next section. Please provide:

- (1) A description of the process with a flow diagram indicating points of emissions to the air.
- (2) Design and operating parameters for the process (i.e., hours of operation per year, maximum and normal production rates, fuel and raw material requirements).
- (3) Estimates of the potential emissions for all air pollutants from each emissions point and a description of the method or basis used to make the emission estimates (in enough detail so that one can follow the logic and the calculation steps). Potential emissions are based on the maximum rate from each emission point taking into account air pollution control equipment.

For either a new or modified source, calculate its potential to emit each regulated pollutant based on operation at maximum capacity (such as 8760 hours/year) with emissions control equipment operating.

For a modified source, subtract the actual emissions of the existing source from the potential to emit of the modified source to calculate the emissions increase(decrease). Actual emissions are the average of the last 24 months of operation, if that period is representative of normal operations.

Regulated Pollutant Under PSD	Potential To Emit Tons/Year	Actual Emissions Tons/Year	Emissions Increase (Decrease)	Significant PSD Rate Tons/Year
Carbon Monoxide	185			100
Nitrogen oxides	230			40
Sulfur dioxide	18			40
Particulate matter PM ₁₀	88 / 71			25 15
Ozone (VOCs)	67			40
Lead (elemental)	1.76E-03			0.6
Fluorides	--			3
Sulfuric acid mist	--			7
Total reduced sulfur (including H ₂ S)	--			10
Reduced sulfur compounds (including H ₂ S)	--			10
Municipal waste combustor organics Dioxins and furans Metals	--			3.5x10 ⁻⁶ 15
Municipal waste combustor acid gasses	--			40

QUESTION 1

Does the proposed source or, in the case of a modification to a source, the existing source fall within one of the following 28 source categories?

1. Fossil fuel-fired steam electric plants of more than 250 million Btu/hr heat input
 2. Coal cleaning plants with thermal dryers
 3. Kraft pulp mills
 4. Portland cement plants
 5. Primary zinc smelters
 6. Iron and steel mill plants
 7. Primary aluminum ore reduction plants
 8. Primary copper smelters
 9. Municipal incinerators capable of charging more than 250 tons of refuse per day
 10. Hydrofluoric acid plants
 11. Sulfuric acid plants
 12. Nitric acid plants
 13. Petroleum refineries
 14. Lime plants
 15. Phosphate rock processing plants
 16. Coke oven batteries
 17. Sulfur recovery plants
 18. Carbon black plants (furnace process)
 19. Primary lead smelters
 20. Fuel conversion plants
 21. Sintering plants
 22. Secondary metal production plants
 23. Chemical process plants
 24. Fossil fuel boilers (or combinations) totaling more than 250 million Btu/hr heat input
 25. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels
 26. Taconite ore processing plants
 27. Glass fiber processing plants
 28. Charcoal production plants
- YES ___ (Please circle number.) GO TO QUESTION 2.
 NO^x ___ GO TO QUESTION 3.

QUESTION 2

Will emissions of any one regulated pollutant (including fugitive emissions) from the proposed or existing source exceed 100 tons per year?

YES ___ GO TO QUESTION 6.

NO ___ PSD IS NOT REQUIRED. DO NOT ANSWER ANY MORE QUESTIONS. SUBMIT THIS FORM WITH THE NOTICE OF CONSTRUCTION APPLICATION.

QUESTION 3

Does the proposed source or, in the case of a modification to a source, the existing source fall within one of the following source categories?

1. Municipal Incinerators (50 tons/day)
2. Asphalt concrete plants
3. Storage vessels for petroleum liquids, 40,000 gallons, construction after 06/11/73 and prior to 05/19/78.
4. Storage vessels for petroleum liquids, 40,000 gallons, construction after 05/18/78
5. Sewage treatment plants with sludge incinerators
6. Phosphate fertilizer industry: Plants manufacturing wet-process phosphoric acid, superphosphoric acid, diammonium phosphate, triple superphosphate, and granular triple superphosphate storage facilities.
7. Glass melting furnace 4,555 kilograms glass/day, (except all electric melters)
8. Grain elevators
9. Stationary gas turbines 10.7 gigajoules/hour heat input
10. Lead acid battery manufacturing plants
11. Automobile and light-duty truck assembly plant surface coating operations

YES ___ (Please Circle Number) GO TO QUESTION 4

NO^x ___ GO TO QUESTION 5

QUESTION 4

Will the emissions of any one regulated pollutant (including fugitive emissions) from the proposed or existing source exceed 250 tons/year?

YES ___ GO TO QUESTION 6
NO ___ PSD IS NOT REQUIRED. DO NOT ANSWER ANY MORE QUESTIONS. SUBMIT THIS FORM WITH THE NOTICE OF CONSTRUCTION APPLICATION.

QUESTION 5

Will emissions of any one pollutant (not including fugitive emissions) from the proposed or existing source exceed 250 tons per year?

YES ___ GO TO QUESTION 6.
NO ^x ___ PSD IS NOT REQUIRED. DO NOT ANSWER ANY MORE QUESTIONS. SUBMIT THIS FORM WITH THE NOTICE OF CONSTRUCTION APPLICATION.

QUESTION 6

Is the project located within 10 kilometers (6.2 miles) of the boundary of a Class I area? Class I areas in Washington State are Mount Rainier National Park, North Cascade National Park, Olympic National Park, Alpine Lakes Wilderness Area, Glacier Peak Wilderness Area, Goat Rocks Wilderness Area, Mount Adams Wilderness Area, Pasayten Wilderness Area, and the Spokane Indian Reservation.

YES ___ PSD REVIEW IS REQUIRED IF THE IMPACT OF ANY REGULATED POLLUTANT IS EQUAL TO OR GREATER THAN 1 µg/m³, (24-hour average).
NO ___ CONTINUE

QUESTION 7

Is the proposed project a

1. ___ new source? GO TO QUESTION 8.
2. ___ modification, expansion, or addition to an existing source? GO TO QUESTION 9.

QUESTION 8

For which regulated pollutants does the potential to emit of the new source exceed the PSD significant rate?

PSD REVIEW IS REQUIRED FOR THESE POLLUTANTS. YOU MUST MEET WITH THE DEPARTMENT OF ECOLOGY TO DISCUSS THE PSD APPLICATION PROCEDURE.

QUESTION 9

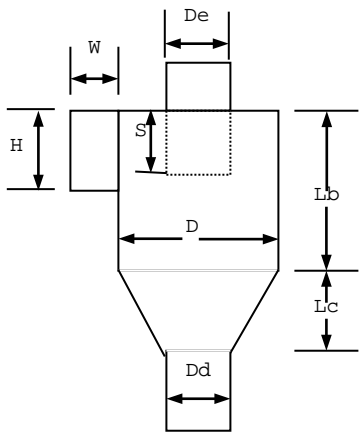
For which regulated pollutants do the emissions increase from the modified source exceed the PSD significant rate?

PSD REVIEW IS REQUIRED FOR THESE POLLUTANTS. YOU MUST MEET WITH THE DEPARTMENT OF ECOLOGY TO DISCUSS THE PSD APPLICATION PROCEDURE.

OLYMPIC REGION CLEAN AIR AGENCY

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NOC FORM 13 CYCLONES

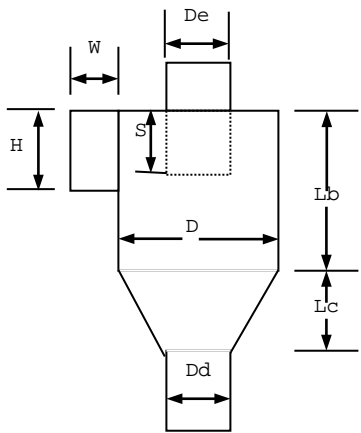
GENERAL INFORMATION		
Facility Name: Pacific Northwest Renewable Energy Port of Grays Harbor Wood Pellet Facility	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: 24 ___ hrs/day, 7 ___ days/wk, 52 ___ wks/yr Check days when operating: M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> Th <input type="checkbox"/> F <input type="checkbox"/> Sat <input type="checkbox"/> Sun	Cyclone Operating Schedule: 24 ___ hrs/day, 7 ___ days/wk, 52 ___ wks/yr Check days when operating: M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> Th <input type="checkbox"/> F <input type="checkbox"/> Sat <input type="checkbox"/> Sun	
X ___ new unit ___ modification ___ # identical units	Manufacturer: TBD	Model & Serial #s: TBD
TECHNICAL SPECIFICATIONS		
Air Flow: design acfm 37664 operating acfm	System Parameters: pressure drop (inches water) fan power (hp) temperature (°F or ambient) ambient	
Cyclone Design Parameters		
S (in.) H (in.) De (in.) Dd (in.) W (in.) D (in.) Lb (in.) Lc (in.)		Describe location of cyclone including height and related stack (use additional pages if necessary): Chips Cleaning Line Cyclone EP-01 Stack diameter = 47 inches Stack height = 50 feet
Describe operation of cyclone including use of safety bypass stacks (use additional pages if necessary): A scalper roll sorts forest residual chips from impurities/overs and cyclone captures airborne particulate, cyclone product capture sent to dryer.		
PARTICULATE EMISSIONS DATA		
Describe Particulate Emissions: wood and dirt residue		
OTHER INFORMATION		
The following information is needed to complete the application: 1. Manufacturer brochure or technical fact sheet for cyclone.		

Note: See back side of form for ORCAA approved equipment and operations.

OLYMPIC REGION CLEAN AIR AGENCY

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NOC FORM 13 CYCLONES

GENERAL INFORMATION		
Facility Name: Pacific Northwest Renewable Energy Port of Grays Harbor Wood Pellet Facility	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: 24 ___ hrs/day, 7 ___ days/wk, 52 ___ wks/yr Check days when operating: M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> Th <input type="checkbox"/> F <input type="checkbox"/> Sat <input type="checkbox"/> Sun	Cyclone Operating Schedule: 24 ___ hrs/day, 7 ___ days/wk, 52 ___ wks/yr Check days when operating: M <input type="checkbox"/> T <input type="checkbox"/> W <input type="checkbox"/> Th <input type="checkbox"/> F <input type="checkbox"/> Sat <input type="checkbox"/> Sun	
X ___ new unit ___ modification ___ # identical units	Manufacturer: TBD	Model & Serial #s: TBD
TECHNICAL SPECIFICATIONS		
Air Flow: design acfm 10593 operating acfm	System Parameters: pressure drop (inches water) fan power (hp) temperature (°F or ambient) ambient	
Cyclone Design Parameters		
S (in.) H (in.) De (in.) Dd (in.) W (in.) D (in.) Lb (in.) Lc (in.)		Describe location of cyclone including height and related stack (use additional pages if necessary): Wet Hammermill Cyclones EP-02 and EP-03 Stack diameter = 24 inches Stack height = 50 feet
Describe operation of cyclone including use of safety bypass stacks (use additional pages if necessary): 2 wet hammermills reduce wet wood material size for optimum drying. One cyclone per wet hammermill recovers airborne product and sends to the dryer.		
PARTICULATE EMISSIONS DATA		
Describe Particulate Emissions: wood dust		
OTHER INFORMATION		
The following information is needed to complete the application: 1. Manufacturer brochure or technical fact sheet for cyclone.		

Note: See back side of form for ORCAA approved equipment and operations.

OLYMPIC REGION CLEAN AIR AGENCY

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FORM 35 Oxidizer

General Information		
Facility Name: Pacific Northwest Renewable Energy - RTO EP-04	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: <u>24</u> hrs/day, <u>7</u> days/wk, <u>52</u> wks/yr Circle days when operating: (M) (T) (W) (Th) (F) (Sat) (Sun)	Oxidizer Operating Schedule: <u>24</u> hrs/day, <u>7</u> days/wk, <u>52</u> wks/yr Circle days when operating: (M) (T) (W) (Th) (F) (Sat) (Sun)	
<input checked="" type="checkbox"/> new unit installation <input type="checkbox"/> modification	Manufacturer: TBD	Model & Serial #s: TBD
Technical Specifications (attach additional pages if needed)		
Oxidizer Type: <input type="checkbox"/> catalytic oxidizer <input checked="" type="checkbox"/> regenerative thermal oxidizer <input type="checkbox"/> recuperative thermal oxidizer <input type="checkbox"/> thermal (direct fired) oxidizer	Air Flow: blower acfm <u>124031</u> blower hp _____ combustion retention time (sec.) _____ pressure drop (in. H ₂ O) <u>25</u>	Burner: type of fuel <u>Natural Gas</u> maximum fuel usage <u>8</u> MMBtu/hr gas inlet temperature (°F) <u>176</u> set point temperature (°F) <u>1500</u>
For catalytic oxidizers: 1. What is the catalyst material? 2. What is the expected catalyst lifetime? 3. Describe the catalyst cleaning and replacement procedures and frequency.		
For regenerative thermal oxidizers: 1. What is the media type? <u>Ceramic</u> 2. How many chambers are there and what are the chamber dimensions? <u>4 chambers. 11 feet wide by 23 feet long by 8 feet tall</u>		
For recuperative thermal oxidizers: 1. Describe the type of heat exchanger? 2. What are the dimensions of the combustion chamber?		
For direct fired thermal oxidizers: 1. What are the dimensions of the combustion chamber?		
Describe monitoring of oxidizer, including temperature, airflow, fuel consumption, and pressure drop. Include a description of the data analyzer and how records will be kept: <u>TBD</u>		
Emissions		
VOC control efficiency (%) <u>> 95%</u> Maximum VOC emissions (ppm or lbs/hr) <u>6.575 lb/hr</u>	Maximum NOx emissions (ppm or lbs/hr) <u>52 lb/hr</u> Maximum CO emissions (ppm or lbs/hr) <u>42 lb/hr</u>	
Exhaust Parameters		
Stack height (feet) <u>90</u> Stack internal diameter (feet) <u>87 inches</u>	Exhaust airflow (scfm) <u>103229</u> Exhaust temperature (°F) <u>131</u>	
Other Information		
The following information is needed to complete the application: 1. Brochure or technical fact sheet from manufacturer or consultant. See Appendix D 2. Scaled technical drawings of the oxidizer, including location of thermocouple and other monitoring equipment. TBD 3. Plan of facility showing locations of oxidizer, stack, and nearby buildings (including maximum heights). See Appendix B 4. Describe any concentrators or particulate control devices associated with the oxidizer. <u>2 cyclone precleaners, wet electrostatic precipitator</u>		

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FORM 12 BAGHOUSE

GENERAL INFORMATION		
Facility Name: Pacific Northwest Renewable Energy Dry Hammer Mill Cyclofilters (x4)	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check days when operating: M <input checked="" type="checkbox"/> T <input checked="" type="checkbox"/> W <input checked="" type="checkbox"/> Th <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/> Sun	Baghouse Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check days when operating: M <input checked="" type="checkbox"/> T <input checked="" type="checkbox"/> W <input checked="" type="checkbox"/> Th <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/> Sun	
<input checked="" type="checkbox"/> new unit installation <input type="checkbox"/> modification	Manufacturer: TBD	Model & Serial #s: TBD
TECHNICAL SPECIFICATIONS		
Air Flow: design acfm 29500 operating acfm temperature (F°)	System Parameters: pressure drop (inches water) water vapor content (lbs water/lb dry air) fan power (hp)	
Describe filter material:		
Describe bag cleaning mechanism and cycle:		
Describe operation of baghouse including use of safety bypasses, monitoring and maintenance schedules and any other pertinent information relating to particulate emissions (use additional pages if necessary):		
PARTICULATE EMISSIONS DATA		
Particulate Emissions: inlet (gr/scf) _____ outlet (gr/scf) 0.002	Particulate Control Efficiency: filtering velocity (acfm/ft ² cloth) particulate control efficiency (%):	
Describe Particulate Emissions: Wood residue from pellet cooling and handling		
Micron Range:	Inlet Loading (% of total)	Outlet Loading (% of total)
0 - 5	_____%	_____%
5 - 10	_____%	_____%
greater than 10	_____%	_____%
OTHER INFORMATION		
The following information is needed to complete the application: 1. Manufacturer brochure or technical fact sheet for filter material. 2. Scaled technical drawings of the baghouse including top, side and interior views. 3. Manufacturer brochure or technical fact sheet for baghouse.		

Note: See back side of form for ORCAA approved equipment and operations.

REQUIREMENTS FOR NEW BAGHOUSES
ORCAA 1/4/96

1. **BACT for Particulate Control:** ORCAA may require demonstration of compliance based on measured stack grain loading in accordance to the procedures outlined in 40CFR Part 60 and in accordance with ORCAA's approved particulate source test procedures.

1.1 Low Temperature Process Streams - Grain Elevators, Barley Processing, Forest Products Dust, Large Cabinet Shops:

Particulate Limit:0.01 gr/dscf
Opacity Limit: 5% for entire process stream.

These limits are appropriate for low temperature dust control when NOMEX bags are feasible.

1.2 High Temperature Process Streams - Ceramics, Metal Dust:

Particulate Limit:0.01 gr/dscf
Opacity Limit: 5% for entire process stream.

1.3 Combustion Sources - Boilers, Asphalt Plants:

Particulate Limit:0.02 gr/dscf (back half included)

Opacity Limit: 5% for entire process stream.

2. **Stack:** Emissions shall exit through a vertical stack at least 2 meters above the highest point of the baghouse. Permanent sampling ports and platforms shall be installed on the stack prior to commencement of operation. The sampling ports shall meet the requirements of 40, CFR Part 60, Appendix A, Method 1.

3. **Opacity Monitor (wood fired boilers):** Owners and operators of baghouses installed on wood fired boilers shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for continuously monitoring the boiler stack gas opacity prior to exiting to the atmosphere.

3.1 The opacity CEMS shall be certified and installed in accordance 40CFR Part 60, Performance Specification 1 (appendix B).

3.2 The opacity CEMS shall be equipped with a strip chart recorder or data acquisition system (DAS) capable of computing and recording stack gas opacity in three consecutive minute averages. The data acquisition system or strip chart recorder shall record and display opacity values to 0.5% opacity.

3.3 Prior to installation of the CEMS, the owner or operator shall provide ORCAA a written manufacturers certificate of conformance with Performance Specification 1.

3.4 An opacity CEMS quality assurance plan conforming with 40 CFR Part 60 Appendix F and the EPA publication "Recommended Quality Assurance Procedures for Opacity Continuous Emissions Monitoring Systems" (EPA 340/1-86-010) shall be developed and submitted to ORCAA for approval no later than 180 days after commencement of operation.

3.5 The opacity CEMS shall be operational and tested for compliance with 40 CFR Part 60, Appendix B Performance Specification 1 no later than 90 days after initial startup.

4. **Other:** Other requirements include; 1) monitoring of pressure drop across baghouse, 2) bag monitoring and maintenance schedule, 3) full set of replacement bags on-site, 4) emission inventory reporting, and 5) excess emissions reporting.

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FORM 12 BAGHOUSE

GENERAL INFORMATION		
Facility Name: Pacific Northwest Renewable Energy	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check days when operating: M <input checked="" type="checkbox"/> T <input checked="" type="checkbox"/> W <input checked="" type="checkbox"/> Th <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/> Sun	Baghouse Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check days when operating: M <input checked="" type="checkbox"/> T <input checked="" type="checkbox"/> W <input checked="" type="checkbox"/> Th <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/> Sun	
<input checked="" type="checkbox"/> new unit installation <input type="checkbox"/> modification	Manufacturer: TBD	Model & Serial #s: TBD
TECHNICAL SPECIFICATIONS		
Air Flow: design acfm operating acfm temperature (F°)	System Parameters: pressure drop (inches water) water vapor content (lbs water/lb dry air) fan power (hp)	
Describe filter material:		
Describe bag cleaning mechanism and cycle:		
Describe operation of baghouse including use of safety bypasses, monitoring and maintenance schedules and any other pertinent information relating to particulate emissions (use additional pages if necessary):		
PARTICULATE EMISSIONS DATA		
Particulate Emissions: inlet (gr/scf) _____ outlet (gr/scf) 0.002	Particulate Control Efficiency: filtering velocity (acfm/ft ² cloth) particulate control efficiency (%):	
Describe Particulate Emissions: Wood residue from pellet cooling and handling		
Micron Range:	Inlet Loading (% of total)	Outlet Loading (% of total)
0 - 5	_____ %	_____ %
5 - 10	_____ %	_____ %
greater than 10	_____ %	_____ %
OTHER INFORMATION		
The following information is needed to complete the application: 1. Manufacturer brochure or technical fact sheet for filter material. 2. Scaled technical drawings of the baghouse including top, side and interior views. 3. Manufacturer brochure or technical fact sheet for baghouse.		

Note: See back side of form for ORCAA approved equipment and operations.

REQUIREMENTS FOR NEW BAGHOUSES
ORCAA 1/4/96

1. **BACT for Particulate Control:** ORCAA may require demonstration of compliance based on measured stack grain loading in accordance to the procedures outlined in 40CFR Part 60 and in accordance with ORCAA's approved particulate source test procedures.

1.1 Low Temperature Process Streams - Grain Elevators, Barley Processing, Forest Products Dust, Large Cabinet Shops:

Particulate Limit: 0.01 gr/dscf
Opacity Limit: 5% for entire process stream.

These limits are appropriate for low temperature dust control when NOMEX bags are feasible.

1.2 High Temperature Process Streams - Ceramics, Metal Dust:

Particulate Limit: 0.01 gr/dscf
Opacity Limit: 5% for entire process stream.

1.3 Combustion Sources - Boilers, Asphalt Plants:

Particulate Limit: 0.02 gr/dscf (back half included)

Opacity Limit: 5% for entire process stream.

2. **Stack:** Emissions shall exit through a vertical stack at least 2 meters above the highest point of the baghouse. Permanent sampling ports and platforms shall be installed on the stack prior to commencement of operation. The sampling ports shall meet the requirements of 40, CFR Part 60, Appendix A, Method 1.

3. **Opacity Monitor (wood fired boilers):** Owners and operators of baghouses installed on wood fired boilers shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for continuously monitoring the boiler stack gas opacity prior to exiting to the atmosphere.

3.1 The opacity CEMS shall be certified and installed in accordance 40CFR Part 60, Performance Specification 1 (appendix B).

3.2 The opacity CEMS shall be equipped with a strip chart recorder or data acquisition system (DAS) capable of computing and recording stack gas opacity in three consecutive minute averages. The data acquisition system or strip chart recorder shall record and display opacity values to 0.5% opacity.

3.3 Prior to installation of the CEMS, the owner or operator shall provide ORCAA a written manufacturers certificate of conformance with Performance Specification 1.

3.4 An opacity CEMS quality assurance plan conforming with 40 CFR Part 60 Appendix F and the EPA publication "Recommended Quality Assurance Procedures for Opacity Continuous Emissions Monitoring Systems" (EPA 340/1-86-010) shall be developed and submitted to ORCAA for approval no later than 180 days after commencement of operation.

3.5 The opacity CEMS shall be operational and tested for compliance with 40 CFR Part 60, Appendix B Performance Specification 1 no later than 90 days after initial startup.

4. **Other:** Other requirements include; 1) monitoring of pressure drop across baghouse, 2) bag monitoring and maintenance schedule, 3) full set of replacement bags on-site, 4) emission inventory reporting, and 5) excess emissions reporting.

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FORM 35 Oxidizer

General Information		
Facility Name: Pacific Northwest Renewable Energy - RCO EP-08	Contact Person: Brandon Henderson Phone Number: (254) 813-3260 Email: bhenderson@pnwrenewable.com	
Facility Operating Schedule: <u>24</u> hrs/day, <u>7</u> days/wk, <u>52</u> wks/yr Circle days when operating: (M) (T) (W) (Th) (F) (Sat) (Sun)	Oxidizer Operating Schedule: <u>24</u> hrs/day, <u>7</u> days/wk, <u>52</u> wks/yr Circle days when operating: (M) (T) (W) (Th) (F) (Sat) (Sun)	
<input checked="" type="checkbox"/> new unit installation <input type="checkbox"/> modification	Manufacturer: TBD	Model & Serial #: TBD
Technical Specifications (attach additional pages if needed)		
Oxidizer Type: <input checked="" type="checkbox"/> catalytic oxidizer <input type="checkbox"/> regenerative thermal oxidizer <input type="checkbox"/> recuperative thermal oxidizer <input type="checkbox"/> thermal (direct fired) oxidizer	Air Flow: blower acfm <u>137000</u> blower hp _____ combustion retention time (sec.) _____ pressure drop (in. H ₂ O) <u>25</u>	Burner: type of fuel <u>Natural Gas</u> maximum fuel usage <u>4.5</u> MMBtu/hr gas inlet temperature (°F) <u>176</u> set point temperature (°F) <u>1500</u>
For catalytic oxidizers: 1. What is the catalyst material? 2. What is the expected catalyst lifetime? 3. Describe the catalyst cleaning and replacement procedures and frequency.		
For regenerative thermal oxidizers: 1. What is the media type? 2. How many chambers are there and what are the chamber dimensions?		
For recuperative thermal oxidizers: 1. Describe the type of heat exchanger? 2. What are the dimensions of the combustion chamber?		
For direct fired thermal oxidizers: 1. What are the dimensions of the combustion chamber?		
Describe monitoring of oxidizer, including temperature, airflow, fuel consumption, and pressure drop. Include a description of the data analyzer and how records will be kept: TBD		
Emissions		
VOC control efficiency (%) <u>> 95%</u> Maximum VOC emissions (ppm or lbs/hr) <u>8.6 lb/hr</u>	Maximum NOx emissions (ppm or lbs/hr) <u>0.04 lb/hr</u> Maximum CO emissions (ppm or lbs/hr) <u>0.02 lb/hr</u>	
Exhaust Parameters		
Stack height (feet) <u>90</u> Stack internal diameter (feet) <u>83 inches</u>	Exhaust airflow (scfm) <u>99795</u> Exhaust temperature (°F) <u>214</u>	
Other Information		
The following information is needed to complete the application: 1. Brochure or technical fact sheet from manufacturer or consultant. See Appendix D 2. Scaled technical drawings of the oxidizer, including location of thermocouple and other monitoring equipment. TBD 3. Plan of facility showing locations of oxidizer, stack, and nearby buildings (including maximum heights). See Appendix B 4. Describe any concentrators or particulate control devices associated with the oxidizer. cyclones and combined cyclone/fabric filters		

SEPA ENVIRONMENTAL CHECKLIST

A. Background

1. Name of proposed project, if applicable:

Port of Grays Harbor Plant Project

2. Name of applicant:

Pacific Northwest Renewable Energy (PNWRE)

3. Address and phone number of applicant and contact person:

Applicant:

Mark Boivin, CEO

PO Box 391 South Egremont, MA 01258

413.244.7360

mboivin@pnwrenewable.com

Contact:

Sharese Graham

1201 Third Ave, Suite 550, Seattle, WA 98101

206.739.5454

sharese.graham@scjalliance.com

4. Date checklist prepared:

June 14, 2023

5. Agency requesting checklist:

City of Hoquiam

6. Proposed timing or schedule (including phasing, if applicable):

Construction is anticipated to begin in January 2024.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no plans for additional construction after commencement of normal operations identified in the project description.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- Air Quality Analysis
- Contaminated Media Management Plan
- Federal Aviation Administration (FAA) Obstruction Review
- Phase I Environmental Site Assessment
- Wetlands and Streams Delineation (prepared for a previous proposal at the same site)
- Cultural Resources Assessment (prepared for a previous proposal at the same site)

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no known pending applications for other projects or proposals directly affecting the property for this proposed project.

10. List any government approvals or permits that will be needed for your proposal, if known.

State Approvals/Permits

- ORCAA – Air Quality Permit
- Department of Ecology – National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit and Industrial Stormwater Permit
- FAA – Clearance Letter

Local Approvals/Permits

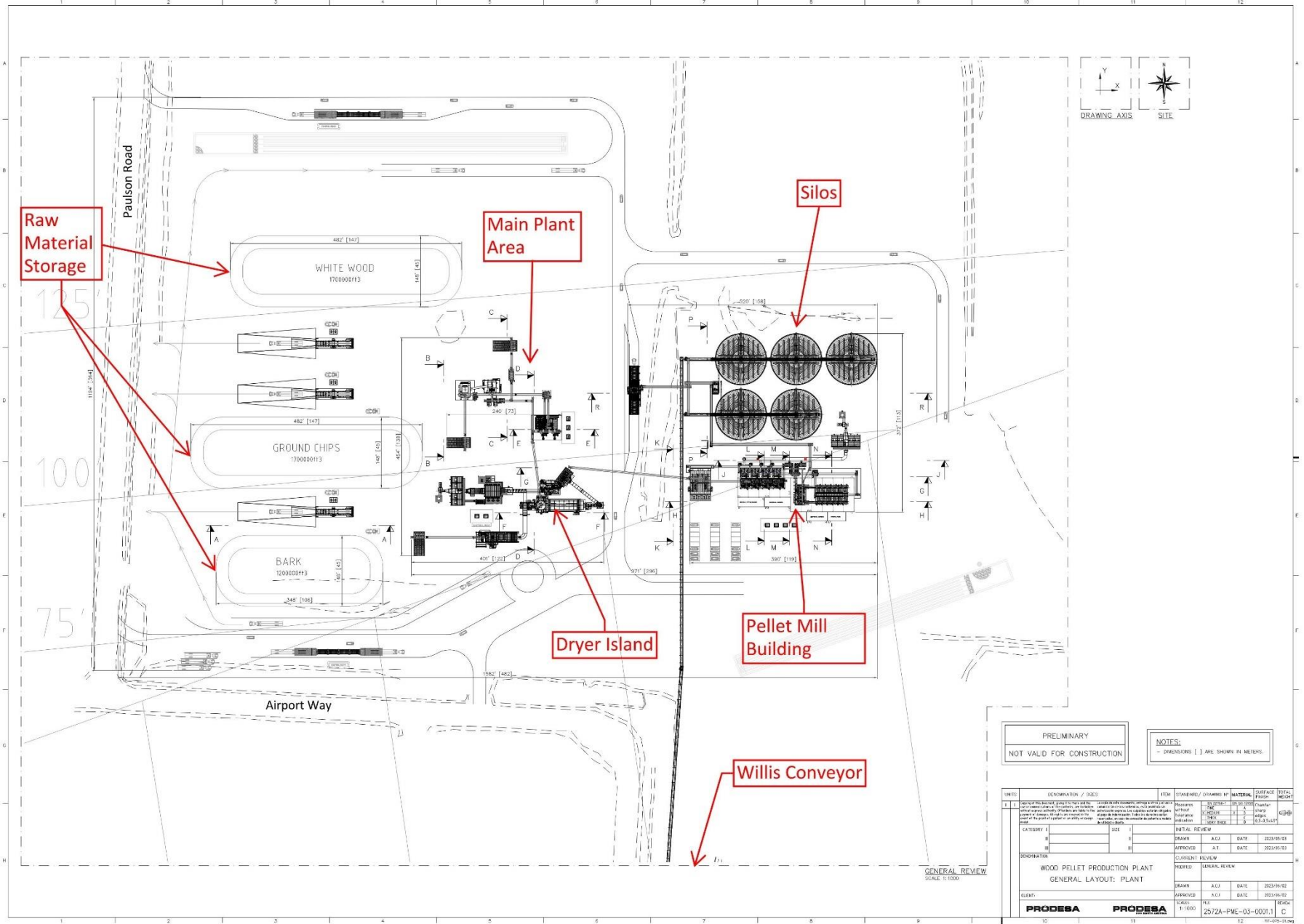
- City of Hoquiam – Zoning Conditional Use Permit, Critical Areas Review, Floodplain Permit, Construction Permits, Binding Site Plan
- Port of Grays Harbor – Approval of Operation Agreement and Lease Agreement

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

PNWRE is proposing to construct and operate a biomass facility (pellet plant) in Hoquiam, Grays Harbor County. Wood pellets will be manufactured at the project site and exported, via vessel, to international markets, including Asia and Europe. The adjacent chip mill site is expected to be one of the sources of raw material, thus reducing truck trips to and from the site.

The processing of wood chips at the proposed facility includes the use of three truck tippers, a chips cleaning line, two wet hammermills controlled by cyclones, one hog fuel furnace and dryer controlled by a wet electrostatic precipitator (WESP) and a regenerative thermal oxidizer (RTO), four dry hammermills each controlled by a cyclone, 12 pellet production and cooling lines controlled by two cyclones, and a regenerative catalytic oxidizer (RCO) controlling the combined dry hammermills and pellet cooling lines, five wood pellet storage silos, and a ship loadout area. The wet raw materials for pellet production and hog fuel for the furnace will be delivered to the facility via truck. The facility could process up to 440,800 tons per year (TPY) of dried wood pellets. The Project Site Plan is shown in Figure 1.

Figure 1 Project Site Plan



PRELIMINARY
NOT VALID FOR CONSTRUCTION

NOTES:
- DIMENSIONS [] ARE SHOWN IN METERS.

NO.	DESCRIPTION / REVISION	DATE	STATUS / DRAWN BY	MATERIAL	SURFACE TOTAL
1	GENERAL LAYOUT		AW		
2	GENERAL LAYOUT		AW		
3	GENERAL LAYOUT		AW		
4	GENERAL LAYOUT		AW		
5	GENERAL LAYOUT		AW		
6	GENERAL LAYOUT		AW		
7	GENERAL LAYOUT		AW		
8	GENERAL LAYOUT		AW		
9	GENERAL LAYOUT		AW		
10	GENERAL LAYOUT		AW		
11	GENERAL LAYOUT		AW		
12	GENERAL LAYOUT		AW		

REVISION	DATE	BY	REVIEW	DATE
INITIAL REVIEW				
CURRENT REVIEW				
GENERAL REVIEW				

PROJECT:	WOOD PELLET PRODUCTION PLANT
CLIENT:	PRODESA
SCALE:	1:1000
DATE:	2023/05/03
REVISION:	C

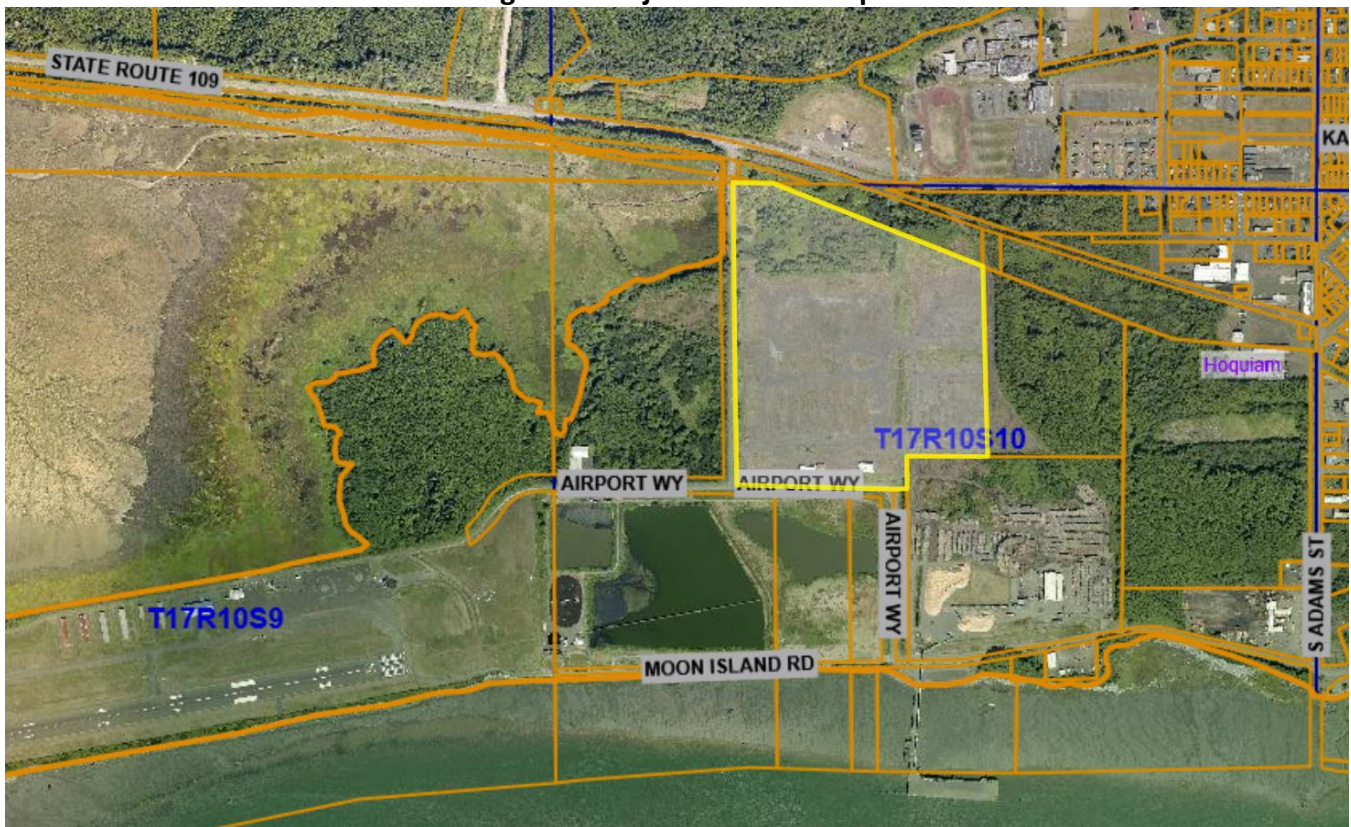
GENERAL REVIEW
SCALE: 1:1000

The steel silos (which are similar to grain silos) and conveyor will connect to the existing conveyor that leads from the Willis Enterprises chip plant to Terminal 3. The conveyor was recently renovated by Willis Enterprises. The storage silos will have a total capacity of up to 50,000 metric tons and shall aggregate pellets until enough volume is accumulated for bulk shipments of 20,000-45,000 metric tons per ship.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of areas, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project address is 411 Moon Island Road, TLN 056401000400, at the corner of Paulson Road and Airport Way near an existing wood chip plant (Willis Enterprises), and the Port of Grays Harbor Terminal 3 in the City of Hoquiam (Figure 2).

Figure 2 Project Location Map



B. Environmental Elements

1. Earth

a. General description of the site:

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

The project site is generally bare, undeveloped ground.

The lowlands were formed by historic tidelands and riverine floodplains from the mainstem Hoquiam River and its major lower tributaries.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope is less than 2%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The Natural Resource Conservation Service indicates the following soils in or near the project site:

- Fluvaquents, tidal, 24.0%
- Udorthents, level, 76.0%

The Project site was initially filled over 50 years ago. The initial fill included placement of sandy material dredged from Grays Harbor, while subsequent fill included angular rock used.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

According to the City of Hoquiam, the project site is mapped as having High Liquefaction susceptibility. The capacity of soft soils to amplify earthquakes has been mapped by the Department of Natural Resources.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Grading will be needed to prepare the building site, and other site components. Approximately 110,279 cubic yards of material will be excavated at the Project Site, from within an area approximately 46.5 acres in size, associated with construction of the facilities. A total of approximately 41.2 acres of the site will be graded to prepare the site.

Table 1 describes the grading quantities for the project site.

Table 1 Project Grading Quantities

Site Area	Depth of Excavation (feet)	Area of Excavation/Clearing (square feet)	Total Quantity (cubic feet)
Silos	8.2	49406	405,129
Pelleting line building		21797	178,735
Wet milling line building		5167	42,369
Truck dumper 1		1550	12,710
Truck dumper 2		1550	12,710
Truck dumper 3		1550	12,710
Rampa truck dumper 1	4.9	6329	31,012
Rampa truck dumper 2		6329	31,012
Rampa truck dumper 3		6329	31,012
Truck scale 1		1,507	7,384
Truck scale 2		1,507	7,384
Moving floor 1		1,130	5,537
Moving floor 2		1,130	5,537
Moving floor 3		1,130	5,537
Chips cleaning system		3,617	17,723
Drying island		51,150	250,635
Pelleting silos + RCO		5,328	26,107
North pound	2.0	35,715	71,430
South pound		27,728	55,456
Clearing for circulation, parking, etc.	1.0	1,795,689	1,795,689
		TOTAL CUBIC FEET	3,005,818
		(Cubic yards)	111,327

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

There is a minimal, temporary risk that short-term soil erosion will occur during construction as a result of grading and earthwork activities at the project site. There are no significant cumulative impacts to earth resources resulting from the project.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Around 16% of the site will be covered with impervious surfaces after completion of construction.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

The use of construction Best Management Practices (BMPs) will reduce the minimal risks and will include the adherence to a Temporary Erosion and Sediment Control (TESC) plan. PNWRE will obtain a National Pollution Discharge Elimination System (NPDES) Construction Stormwater Permit and a City of Hoquiam grading permit prior to construction and grading activities at the project site.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Air quality impacts at the project site resulting from construction are not expected to be significant. Construction activities could result in temporary, localized increases in particulate concentrations due to emissions from typical construction-related sources. Emissions from diesel equipment could temporarily reduce ambient air quality, but the project will use equipment that complies with applicable current regulations to minimize risk. Implementation of reasonable precautions during construction and compliance with regulations regarding engines, off-site odors, and off-site dust are expected to prevent significant air quality impacts. Additionally, compliance with the Olympic Regional Clean Air Agency (ORCAA) permit will be required.

Operational air impacts from the project will result from equipment and vehicle emissions. Particulate matter and visible emissions will be emitted during facility, vehicle, and vessel operations.

Stationary sources of diesel particulate matter (DPM) would be emitted at rates greater than regulatory de minimis levels by the emergency generator and diesel engines that power the emergency fire water pumps, but these sources would only operate during an emergency, and would fall within acceptable cancer risk and ORCAA thresholds.

Mobile DPM source emissions would result from diesel-powered trucks and marine bulk vessels traveling to and from the Project Site to deliver fiber feedstock and receive pellets respectively. Feedstock will be trucked to the site each day. It is assumed that construction workers will contribute to a temporary increase in traffic in the area.

Although the final number of truck movements will depend on the capacity of trailers, compaction rates of fiber feedstock (mill and harvest residuals) and pellets, it is estimated that at full operations, approximately 128 trucks per day, operating 7 days per week, will serve the site.

Trucks delivering fiber feedstock to the terminal, and vessels carrying the product from the Project Site, will be operated by third parties. Total GHG emissions from the Project would represent minor contributions to local, regional, and global GHGs and would not be a significant source of emissions when compared to standard benchmarks.

The project will induce emissions of air contaminants in the region, thereby requiring an approved Notice of Construction (NOC) application from the Olympic Region Clean Air Agency (ORCAA). The facility is not expected to generate criteria pollutant emissions in quantities that would trigger the need for a Prevention of Significant Deterioration (PSD) permit but is anticipated to trigger the need for a Title V Air Operating Permit. The facility would be an area source of hazardous air pollutants (HAP) as potential emissions of each individual HAP are less than the applicable major source threshold of 10 TPY. Total HAP is less than the combined HAP major source threshold of 25 TPY.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no known off-site emissions or odors that may affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to the air, if any.

Implementation of reasonable precautions during construction and compliance with regulations regarding engines, off-site odors, and off-site dust are expected to prevent significant air impacts. Additionally, the contractor will comply with the ORCAA permit.

3. Water

a. Surface Water:

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe the type and provide names. If appropriate, state what stream or river it flows into.

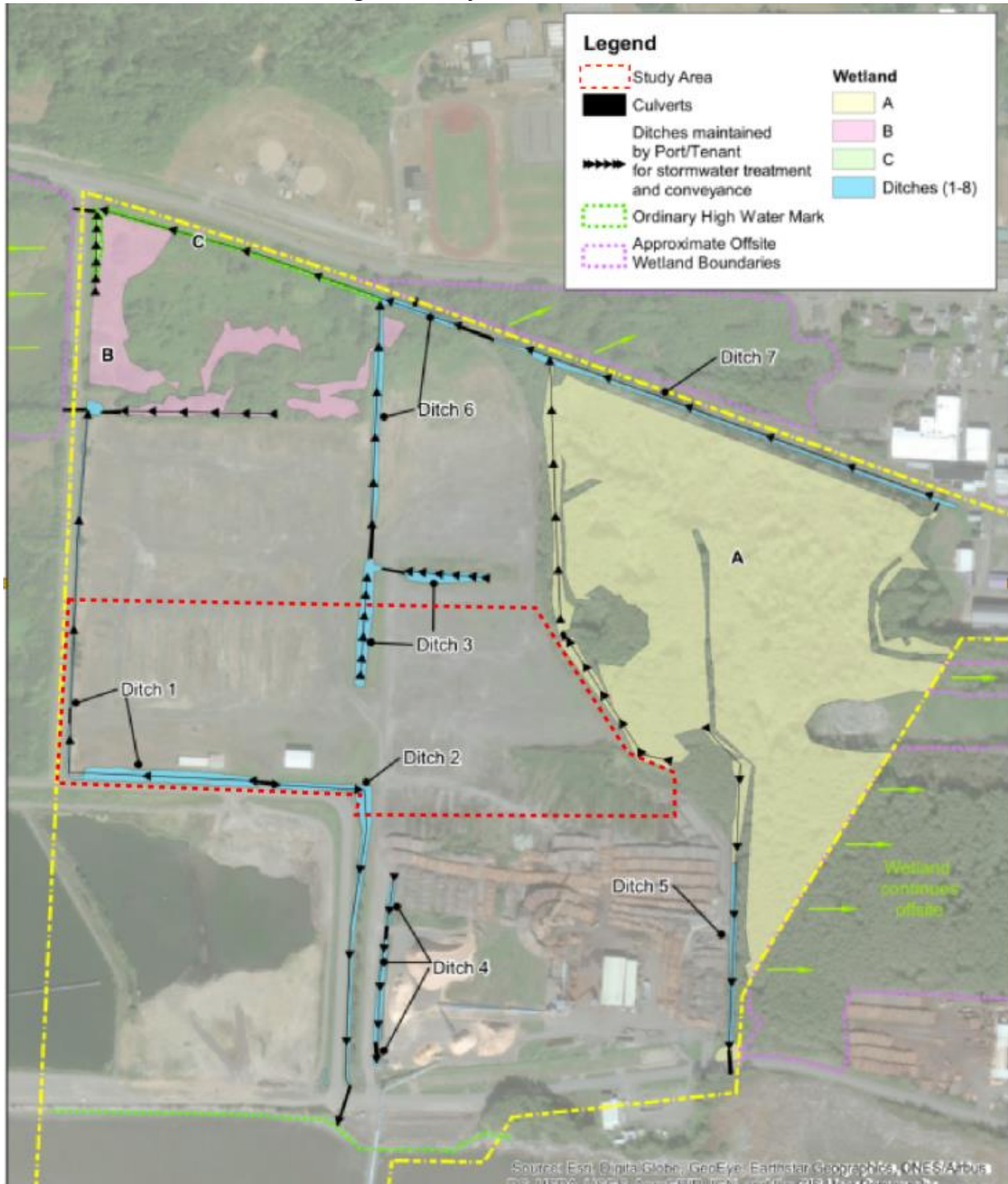
The following is a summary of the Wetland and Waterbody Delineation and Assessment Report (WSP, 2019), which was conducted for a previously proposed potash export facility (proposed by BHP but not constructed) that was included on the subject parcel.

Wetland A (offsite) is directly to the west of the Project Area. Wetland B and C are north of the Project site. Based on the City's SMP (HMC 11.05) which establishes buffers for all regulated wetlands, there is a 150-foot buffer associated with Wetland A. Ditches are exempt from regulation as wetland under the SMP, and as such, they do not have a regulatory buffer.

According to the *Wetland and Waterbody Delineation and Assessment Report* (BergerABAM, December 2017), there are wetlands offsite to the north and west and three ditches (Ditches 1, 2 and 3) within the Project Area. The water features are shown on Figure 3.

Ditch #1 is a shallow ditch that runs parallel to the north side of a portion of Airport Way. And then continues north along the east side of Paulson Road. The ditch collects stormwater and runoff from the western half of the site and conveys it north to an outfall at the north end of the ditch which conveys water to the Refuge to the west. This ditch was constructed as part of the NPDES general permit (WAR000130), to convey treated stormwater to an outfall to the west toward the Refuge and Grays Harbor. Vegetation identified in Ditch 1 includes reed canary grass, soft rush, colonial bent grass, velvet grass, white clover, horsetail, and cattail, among other species. Soils within this ditch exhibited primary indicators of hydrology at the time of the field investigations, as well as indicators of hydric soil conditions.

Figure 3 Project Water Features



Ditch #2 is a shallow ditch that flows east along Airport way, and then south along the eastern side of Paulson Road. Ditches #1 and #2 are hydrologically isolated from one another by a rock-filled driveway/access. This ditch was constructed as part of NPDES general permit (WAY000132), to convey treated stormwater to an outfall south of the study area along Grays Harbor shoreline. Vegetation, hydrology, and soil conditions are similar to those in Ditch #1.

Ditch #3 consists of two wide, shallow ponds/swales located near the center of the study area. These two ponds are hydrologically connected by a culvert, though the culvert is currently in disrepair. These ponds were created as part of NPDES general permit (WAR000131), for the purpose of detaining and treating stormwater and then conveying it northward toward similar drainage features excavated into Wetlands B and C, and ultimately on to waters of Grays Harbor through the outlet in the northwest corner of Wetland C. Vegetation, hydrology, and soil conditions in the ponds that comprise Ditch #3 are similar to those species present in Ditch #1 and Ditch #2. At the time of the site investigation, the eastern pond appears to have had a recent modification in hydrologic regime, as most of the vegetation, including several willows, has died.

The project has been designed to avoid all direct impacts to the water features described.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The project will not require any work over, nor within 200 feet, of state shorelines.

3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

There will be no fill or dredge material that would be placed in or removed from the surface water or wetlands.

4. Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

The project will not require any surface water withdrawal or diversion.

5. Does the proposal lie within a 100-year floodplain? If so, note the location on the site plan.

A small portion of the northeast corner of the parcel is within the 1% annual chance floodplain, but that section is outside of the project footprint (Figure 4)

6. Does the proposal involve any discharge of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The project does not involve any discharge of waste materials to surface waters.

Figure 4 Flood Hazard Areas



b. Ground Water:

- 1. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

No groundwater will be withdrawn from a well for drinking water or other purposes. The City of Hoquiam’s municipal drinking water will be used on the project site.

- 2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

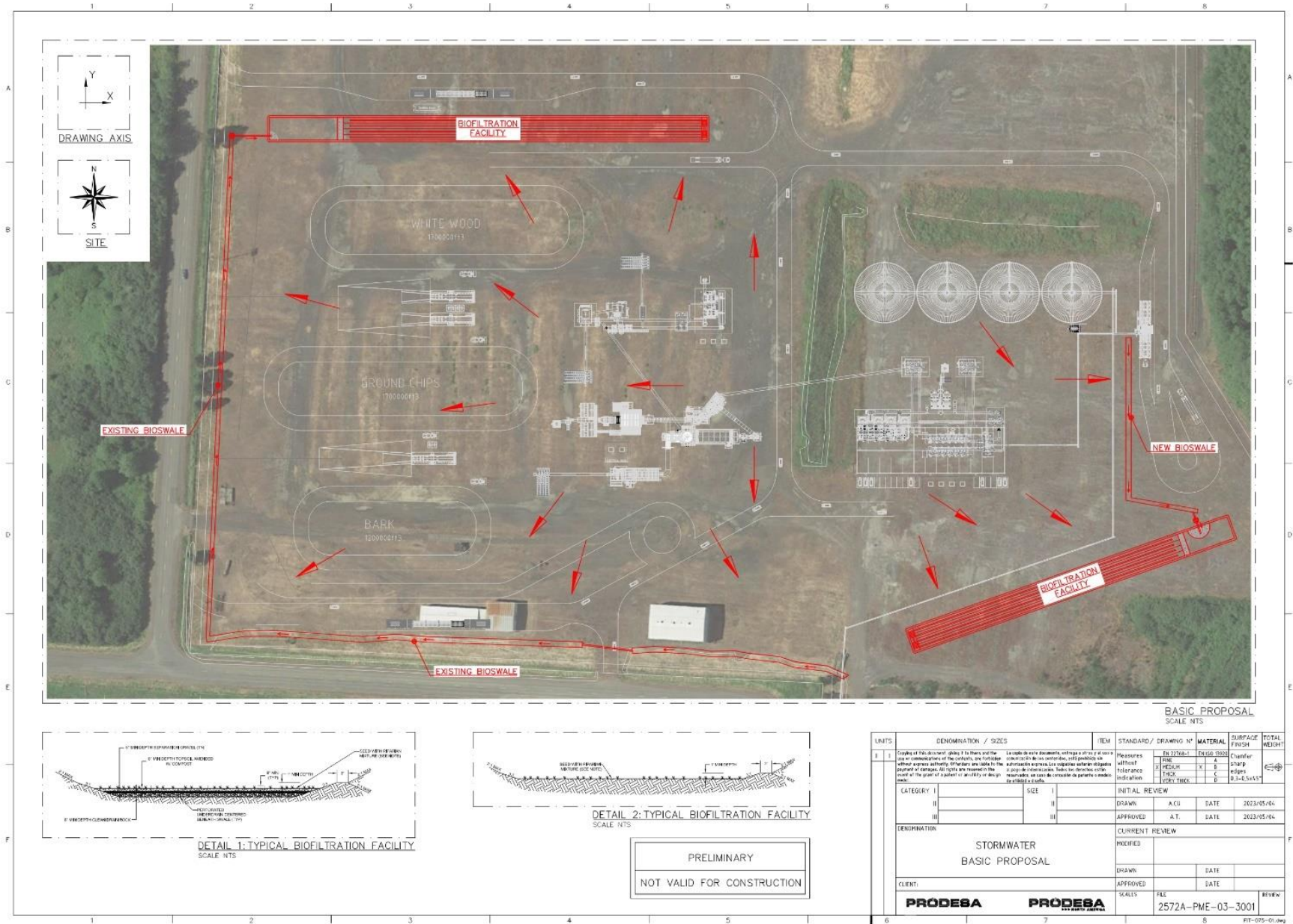
No waste material will be discharged into the groundwater from septic tanks or other sources.

c. Water Runoff (including stormwater):

- 1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

A stormwater basic proposal is provided below, which depicts the locations of two biofiltration facilities, one existing bioswale, and one new bioswale (Figure 5).

Figure 5 Stormwater Plan



Stormwater runoff during construction will be managed through implementation of BMPs consistent with construction stormwater permit requirements and plans, and may include the following:

- Construction activities will be conducted in compliance with Ecology's construction stormwater NPDES permit requirements, the Surface Water Quality Standards for Washington (WAC 173-201A), or other conditions as specified in the Water Quality Certificate (WQC).
- Project construction will be completed subject to a water quality certification and in compliance with Washington State Water Quality Standards (WAC 173-201A), including limits on turbidity.
- Petroleum products, fresh cement, lime, concrete, chemicals, or other toxic or deleterious materials will not be allowed to enter into surface waters or onto land where there is a potential for reentry into surface waters.
- Fuel hoses, oil drums, oil or fuel transfer valves, fittings, etc., will be checked regularly for leaks, and materials will be maintained and stored properly to prevent spills.
- The contractor will prepare a Spill Prevention Control and Countermeasure (SPCC) plan and use it during all in-water demolition and construction operations. A copy of the plan will be maintained at the work site.
- The SPCC plan will outline BMPs, responsive actions in the event of a spill or release, and notification and reporting procedures. The plan will also outline management elements, such as personnel responsibilities, Project Site security, site inspections, and training.
- The SPCC plan will outline the measures to prevent the release or spread of hazardous materials found on site and encountered during construction but not identified in contract documents, including any hazardous materials that are stored, used, or generated on the construction site during construction activities. These items include, but are not limited to, gasoline, diesel fuel, oils, and chemicals.
- Applicable spill response equipment and material will be designated in the SPCC plan.

2. Could waste materials enter ground or surface waters? If so, generally describe.

Stormwater at the site has a low potential to be impacted; cleanup of any spills of dry material in the facility would be accomplished with vacuum equipment and the material would be returned to product storage, loaded into the vessel, or disposed off-site.

3. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The project will not alter or otherwise affect drainage patterns in the vicinity of the project site.

4. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any.

The project will include the following mitigation measures to reduce impacts associated with stormwater runoff below the level of significance:

- The proposed stormwater detention and treatment facilities have been designed at two locations (shown on stormwater basic proposal above) to preserve existing drainage patterns to the largest extent possible.

- The project will comply with City of Hoquiam stormwater regulations (HMC 11.05).
- The project will include new stormwater detention and treatment ponds to provide flow control and water quality treatment of stormwater, if necessary, before discharge through existing outfalls on the site.
- Catch basins will be blocked in the event of a pellet spill, and potentially impacted runoff will be contained and discharged to the wastewater system or to an approved disposal facility.
- Stormwater management will be conducted and managed in accordance with state and local regulatory requirements.

The project will comply with the following measures to protect water resources during project operations:

- Secondary containment will be provided at the onsite fueling station to contain any accidental releases.
- The facility will control risks during operations by following the industrial Stormwater Pollution Prevention Plan (SWPPP) and SPCC plan to prevent liquid products from leaving the containment areas. Spill kits will be placed in strategic and easily accessible locations for use if small spills occur; containment, control, and cleanup procedures will be immediately implemented, including notifying Ecology and other resource agencies as required by law.
- Stormwater treatment facilities would infiltrate stormwater runoff from new and existing impervious surfaces to the extent possible, or the stormwater runoff will be collected, treated, and discharged to the bay via existing outfalls. Stormwater treatment would comply with the most current version of Ecology’s Stormwater Management Manual for Western Washington.
- The wood biomass pellets will be transferred to the product storage building and vessels via covered conveyors in order to protect pellets from rain exposure and avoid fiber feedstock or pellets blowing or spilling from the conveyors. Spill pans and side skirts will contain spills or fugitive dust from the return belt.
- All equipment will be routinely checked for leaks and other problems that could result in the discharge of petroleum-based products or other materials into the waters of Grays Harbor.
- Pellet spills on land will be cleaned up by sweeping, vacuum truck, or other means, and returned to product storage or disposal.

4. Plants

a. Check the types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other**
- evergreen tree: fir, cedar, pine, other**
- shrubs**
- grass**
- pasture**
- crop or grain**
- orchards, vineyards, or other permanent crops.**
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**
- water plants: water lily, eelgrass, milfoil, other**
- other types of vegetation**

b. What kind and amount of vegetation will be removed or altered?

The impacts to onsite vegetation at the project site have been minimized and avoided to the extent practicable by locating buildings and roads in previously disturbed areas where possible; however, the majority of the site has been previously disturbed and will be cleared for construction of the new facility. The project will require the removal and/or alteration of all vegetation that is within the footprint.

c. List threatened and endangered species known to be on or near the site.

The US Fish and Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) tool does not indicate the presence of any threatened or endangered plant species known to be on or near the project site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

Prior to the issuance of building permits, PNWRE will develop a landscape design for the project to control erosion and to satisfy the City of Hoquiam Landscaping and Screening ordinance (HMC 10.05.065).

e. List all noxious weeds and invasive species known to be on or near the site.

Reed canary grass and Himalayan blackberry were both identified in the project vicinity.

5. Animals <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals>

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

- **Birds:** hawk, heron, eagle, songbirds, other: osprey
- **Mammals:** deer, bear, elk, beaver, other:
- **Fish:** bass, salmon, trout, herring, shellfish, other:

b. List any threatened and endangered species known to be on or near the site.

Information regarding listed species was obtained from the U.S. Fish and Wildlife Service (USFWS) Information Planning and Consultation (IPaC), the WDFW database Priority Habitats and Species (PHS) on the Web and SalmonScape, and NOAA Fisheries Northwest Region website. Table 2 identifies the species listed under the ESA that have the potential to occur within or near the Project Site.

Table 2 ESA-listed Species in the Project Area

Species Name	ESA Listing Status	Critical Habitat
Birds		
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Threatened	None
Western Snowy Plover (<i>Charadrius nivosus nivosus</i>)	Threatened	None
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Threatened	None
Fishes		
Bull Trout (<i>Salvelinus confluentus</i>)	Threatened	None
Insects		
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	None

c. Is the site part of a migration route? If so, explain.

The City of Hoquiam is located in the Pacific Flyway, which extends from Mexico northward into Canada and the state of Alaska. Non-ESA listed migratory birds that are likely to be found in the area include but are not limited to: eagles, osprey, swifts, gulls, grebes, grosbeaks, flycatchers, hummingbirds, and dowitchers.

d. Proposed measures to preserve or enhance wildlife, if any.

According to the Biological Evaluation (WSP, May 2019) and Critical Areas Assessment (WSP, July 2019), birds, fish, and mammals may experience minimal, temporary impacts during construction, increased vessel traffic, noise, and construction lighting, but these impacts do not rise to a level of significance.

Even though the impacts to animals are not considered significant, PNWRE has incorporated mitigation measures into its Project to minimize water quality and noise impacts, which will also reduce construction impacts to terrestrial animals.

Construction activities with the potential to affect nesting migratory birds, such as tree and vegetation removal, would be conducted consistent with the provisions of the Migratory Bird Treaty Act (MBTA), which requires that nests of migratory birds be removed only at times when nests are inactive. Tree and vegetation removal would be conducted outside the active nesting season to the extent practicable. If any tree or vegetation removal is required within the time when nests could potentially be active (generally January to August), pre-disturbance nest surveys would be conducted to document whether any trees or vegetation to be removed contain active nests.

An osprey nest that is located on a power pole on the western boundary of the site may be affected by the project, so it will be relocated when the nest is inactive as part of the project, in accordance with USFWS best practices. Finally, to minimize the likelihood that vehicles will strike wildlife during construction, PNWRE will require that construction contractors operating vehicles receive training for awareness and avoidance of wildlife in the area.

Because the Project is located in a developed, industrial area, no significant, adverse environmental impacts to birds, fish, and mammals are anticipated from the Project's operation. The Project may slightly increase the impacts from truck traffic, noise, and lighting, but these impacts do not rise to a level of significance.

e. List any invasive animal species known to be on or near the site.

There are no known invasive animal species known to be on or near the site.

6. Energy and Natural Resources

1. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Construction of the project will require the use of electric, natural gas, and petroleum fuels.

The project will use electric and natural gas energy to meet the completed project's needs. The electricity will be provided by Grays Harbor Public Utilities District and will power conveyors, rotating equipment, the WESP/RTO/RCO/Drying system, the ship loader, other equipment, and support facilities (e.g., heating, lighting, etc.) needed to operate the site. The site will also include emergency diesel powered generators and fire pumps. These will be used only when power is not available to the site in an emergency or during a fire and during routine testing. The generators will only supply power to safely shut down the facility and not to operate all systems.

The biomass drying system will use natural gas to start-up the grate furnace, operate the RTO, and operate the RCO. PNWRE estimated the energy consumption for the proposed biomass export facility for use in the air quality and GHG analysis. The total energy consumption is estimated to be 18.5MW.

2. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The project includes the construction of five, 105-foot diameter by 102-foot-high silos, which will be the largest structures on the site. The silos would not interfere with the use of solar energy by adjacent properties, nor would any other part of the project.

3. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Energy conservation measures that will be part of the facility design will include the following.

- Compliance with the Washington State Energy code.
- Selecting energy-efficient equipment, including electrical motors designed for energy efficiency.
- Using LED lighting at the site

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

A Phase I Environmental Site Assessment (Phase I) was performed by Stantec Consulting Services, Inc. and is summarized in this section (Stantec, May 11, 2023).

The property was tidal mudflats until the early 1970s when dredged material was used to raise the surface grade and rock was imported for surfacing material. Aerial photographs indicate the Subject Property was used for lumber storage for most of the 1980s and 1990s. Lumber storage was phased out in the late 1990s and there has been no apparent use since that time.

The site has two prefabricated metal buildings located along Airport Way. The buildings appear to have been constructed in the late 1970s or early 1980s and were used for office space, storage space, and vehicle maintenance. The buildings have not been used in approximately 25 years and are currently in poor condition. There is a small wood-frame building associated with truck scales on the north side of the westernmost building.

During the construction of the plant, silos and new conveyor system, the contractor will adhere to the City of Hoquiam's noise, dust, vibration, and hazardous waste standards.

The environmental health hazards within the plant are noise, vibration, dust, and potential for fire. The specialized equipment and techniques will be implemented to limit dust emission, degradation in storage, self-heating and potential ignition. The plant, storage, and conveyor systems will be constructed to meet all the relevant safety guidelines. See Noise section, below, for relevant standards.

The Project will adhere to the City of Hoquiam Air Quality Standards (10.05.120, Chapter 70.94, 173-400 through 173-401, and 173-460 WAC).

The Project will adhere to the City of Hoquiam's Vibration and Concussion standards, which state that no use on a parcel shall generate vibration or concussion that other parcels can detect without the aid of instruments except during periods of construction (Ord. 04-07 §19, 2004; Ord. 00-09 §4, 2000).

The Project will adhere to the City of Hoquiam's Use and Storage of Hazardous Substances. The use and/or storage of hazardous substances, as defined in RCW 70.105.010(14) shall be permitted only in the C-1, C-2, and I district. All hazardous substances shall be stored and/or transported in approved containers that prevent any leakage to the air, earth, and/or surface or ground water.

The Project is not anticipated to have impacts from spills, noise, or vibration associated with construction or the completed project.

1. Describe any known or possible contamination of the site from present or past uses.

The Project site appears on the Recovered Government Archive State Hazardous Waste Site (RGA HWS) List. The listing is dated 1995 and this corresponds to the Project area's use as a log and lumber storage yard for the adjoining Rayonier mill. The Rayonier mill is listed as having had previous soil and groundwater impacts from petroleum products, lead, PCBs, and dioxins and furans. The facility was also included on the CSCSL list. Ecology's Site Cleanup Details database indicates that the initial investigation of the Rayonier facility was conducted in July 1992 and Ecology issued an Early Notice Letter in September 1992. The database information indicates that confirmed impacts to soil from petroleum, lead, PCBs, dioxins, and groundwater impacts from petroleum and lead were remediated and the facility received a No Further Action (NFA) determination in January 2002. The reports reference sampling and remedial excavation of soil in the "east ditch" along Airport Way and remedial excavation of lead-impacted soil from the maintenance area. The NFA Letter references several investigations and reports beginning in September 1992 reviewed towards the NFA determination.

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

Phase I identified the presence of arsenic in groundwater and dioxins/furans in soil above their applicable allowable levels. No other contaminants were identified. All soil excavated during construction will be handled and disposed of in accordance with the Contaminated Media Management Plan prepared for the project. Soil excavated as part of Project development will be isolated and stored on an impervious layer prior to disposal offsite at an approved facility.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Construction equipment will use petroleum-based fuels and petroleum- or vegetable- based lubricants. The contractor will prepare and implement an SPCC plan to avoid, minimize, and, if necessary, respond to fuel and lubricant releases during construction. Toxic or hazardous chemicals will be stored within containment. Basic safety measures for storage of any chemicals are detailed on the individual safety data sheets, and PNWRE will follow those prevention, response, and storage directions.

Because fiber feedstock is not a hazardous substance, the risks to human health and the environment from a fiber feedstock spill are low. Generally, any fiber feedstock spill is likely to be of a small quantity (from a trace amount to pounds) and would be readily cleaned up due to Project design (impervious surfaces at points where spill could occur). The risk of a marine spill is low based on the Project's location relative to the marine environment. The risk of a truck spill is highest on the Project Site, but truck speeds and impervious site conditions would minimize the risk of spill and allow for cleanup to occur should a spill occur.

4. Describe special emergency services that might be required.

Fire suppression equipment (sprinklers) will be installed and used throughout the process. Buildings will comply with local and Washington State requirements for fire suppression systems. The storage silos will be designed with nitrogen injections systems. No special emergency services are anticipated at this time.

5. Proposed measures to reduce or control environmental health hazards, if any.

No additional measures to reduce or control environmental health hazards beyond those previously mentioned are required.

b. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Noise in the project area is generated by adjacent uses and includes heavy equipment, rotating equipment operation, conveyance equipment, marine shipping traffic, vehicle traffic, and air traffic from a nearby airport. There is no noise in the area that is anticipated to affect the project.

2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?

Noise would be generated during construction from the use of equipment such as:

- Bulldozers
- Front-End Loaders
- Cranes
- Excavators
- Road Graders
- Dump Trucks
- Semi-Trucks
- Pile Driving Equipment
- Concrete trucks
- Skid Steer

After construction, operation of the facility would be a new source of noise. The primary source of noise would be operation of the hammermill equipment. The estimated noise levels for planned equipment are shown in Table 3 below. The facility will include noise suppression within the plant to minimize the effects offsite.

Table 3 Equipment Noise Levels

Equipment	Noise Level	Placement
Wet Hammer mill	100 dBA	Outdoor

Wet Hammer mill fan	88 dBA	Outdoor
Dry Hammer mill	96 dBA	Indoor
Dry Hammer mill fan	85 dBA	Outdoor
Pellet mill	93 dBA	Indoor
Cooler fan	97 dBA	Indoor

The land used immediately adjacent to the site is mostly industrial in nature and would not be affected by the noise from the pellet plant. There is a forested area between the facility and the schools and residences to the northeast of the railroad tracks that will provide a noise buffer.

3. Proposed measures to reduce or control noise impacts, if any.

Construction of the project would adhere to City of Hoquiam code (HMC 3A.30.010) for the generation of construction noise only between the hours of 7:00 am through 8:00 pm. Noise minimization methods will include prohibiting pure-tone backup alarms, restrictive diesel-powered equipment locations, using continuous loading methods, and installing temporary noise barriers.

Equipment at the completed plant will be mounted to isolation pads to reduce vibration and sound impacts.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The Project is located in an existing industrial area zoned and designated for industrial use by the Hoquiam Municipal Code (HMC) and Comprehensive Plan and designated as High Intensity by the Shoreline Master Program. The Project will have no significant, adverse environmental impacts to land and shoreline use because it will comply with the policies and regulations of the Hoquiam Municipal Code and Shoreline Master Program. The Project is outside of the Shoreline Buffer. The Project will not affect current land uses nearby or adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The project site has not been used as working farmlands or working forest lands.

1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?

The Project will not affect or be affected by surrounding working farm or forest land normal business operations.

c. Describe any structures on the site.

The site has two prefabricated metal buildings located along Airport Way. The buildings appear to have been constructed in the late 1970s or early 1980s and were used for office space, storage space, and vehicle maintenance. The buildings have not been used in approximately 25 years and are currently in poor condition. There is a small wood-frame building associated with truck scales on the north side of the westernmost building.

d. Will any structures be demolished? If so, what?

All structures on the site will be demolished.

e. What is the current zoning classification of the site?

The site is zoned as Industrial.

f. What is the current comprehensive plan designation of the site?

The site has a comprehensive plan designation of Industrial.

g. If applicable, what is the current shoreline master program designation of the site?

The project site is not within the shoreline zone.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

According to the City of Hoquiam's Comprehensive land Use Plan (February 2009), HMC 11.05.830 states "The city does not contain any critical aquifer recharge areas." Therefore, CARAs will not be impacted by the project.

The Project area is classified as a Tsunami hazard zone. The Project site also is mapped as having High Liquefaction susceptibility. The capacity of soft soils to amplify earthquakes has been mapped by DNR.

The Project site is mapped class D to E, as susceptibility to earthquake damage.

i. Approximately how many people would reside or work in the completed project?

No people would reside at the Project Site. The completed facility will employ approximately 52 employees.

j. Approximately how many people would the completed project displace?

The project will not displace anyone.

k. Proposed measures to avoid or reduce displacement impacts, if any.

No measures are required.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The Project is consistent with existing land uses and the current Hoquiam Comprehensive Plan and zoning requirements.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any.

The project will not affect any agricultural or forest lands.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing is included as part of the Project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing would be eliminated as part of the Project.

c. Proposed measures to reduce or control housing impacts, if any.

No measures are required.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest structures included in the Project are four, 102-foot-high storage silos, which will be constructed of metal. The exhaust stack will be approximately 80 feet high.

b. What views in the immediate vicinity would be altered or obstructed?

The Project would be visible from the east, north and south views and would alter some views in the area, however these existing views are of an industrial site. No views would be obstructed or materially blocked by the Project. The Project will have no impact on adjacent residential views of the shoreline.

c. Proposed measures to reduce or control aesthetic impacts, if any.

No measures are required to reduce or control aesthetic impacts.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Lighting used during night-time construction or times of low light, if needed, will be used only in active work areas and for safety. Construction night-time lighting, if nighttime construction is needed, will be directional and will minimize glare and light spillage to the extent practicable.

Light spillage onto adjacent properties or to water during nighttime construction will be minimized to the extent practicable using shaded fixtures and directional lighting aimed only in areas for worker comfort and safety.

The Project will adhere to the City of Hoquiam Light and Glare Standards. Any land use creating intensive glare or light shall obscure the view of this glare or light from any point along the property line through the use of fences, walls, or hedge. Outside lighting will point away from the Wildlife Refuge.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Lights will be generally aimed downward and back towards the site if close to property line, thus reducing spillage. The Project will incorporate lighting design and associated directional lighting to minimize glare and light spillage to the extent practicable while still providing the necessary lighting levels for workers' safety and for Federal Aviation Administration (FAA) lighting requirements due to the proximity to Bowerman Airport.

c. What existing off-site sources of light or glare may affect your proposal?

Off-site lighting is typical of urban areas and consists of street and building lights. The adjacent Bowerman Airport includes high-intensity runway lights that are activated on approach. This existing lighting will not affect the project as it does not include activities that are sensitive to light. Lighting of adjacent industrial sites and the high school property to the north also have no effect on the proposal.

d. Proposed measures to reduce or control light and glare impacts, if any.

The project will incorporate lighting design and associated directional lighting to minimize glare and light spillage to the extent practicable. FAA-approved lighting will be mounted on buildings and structures for aviation safety. No other measures are required.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The John Gable Community Park and Hoquiam Skate Park are located north of the Project Site, north of Emerson Avenue. The facilities include concrete structures for skating, playground equipment, baseball fields, and parking.

The Grays Harbor National Wildlife Refuge is located west of the Project site and is part of the Grays Harbor Estuary. The refuge, established in 1990, encompasses almost 1,500 acres of intertidal flats, open water, salt marsh, and forested habitats and contains walking trails.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Construction of the Project could result in indirect impacts from noise to recreational uses on lands adjacent to or near the site, but these impacts will be temporary and are not expected to rise to the level of significance.

The Project Site is an existing industrial facility that does not have any recreational uses. Existing recreational uses would be indirectly affected, but not displaced, by Project construction. Operation of the proposed facility is not anticipated to significantly displace or restrict access to any recreational uses as the proposed facility will be an industrial site used similarly to the existing wood chip facility and current shipping uses at Terminal 3.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

Recreational facilities in the area have some exposure to noise and diesel emissions from truck traffic, and other diesel vehicles from existing industrial uses in the area. The Project is not anticipated to significantly add to the existing noise and emissions; thus, no measures are required.

13. Historic and Cultural Preservation

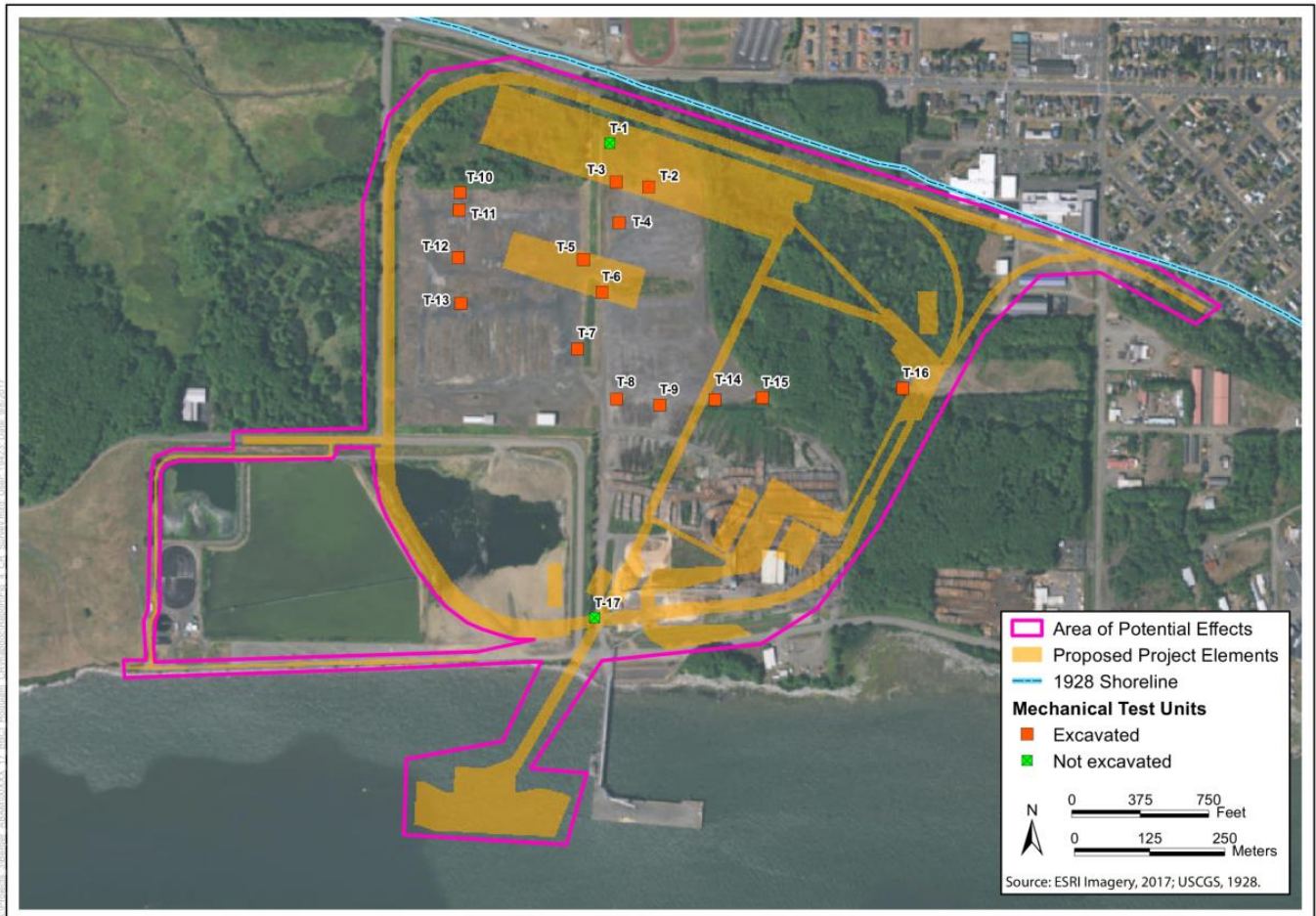
a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are no buildings, structures, or sites located on or near the site that are over 45 years listed in or eligible for listing in the national, state, or local preservation registers.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No archaeological deposits were identified during subsurface investigations for the previous BHP proposal (*Cultural Resources Tech Report*, ICF 2019). Across much of the Area of Potential Effects (APE), the pre-development ground surface appears to be between 17 and 18 feet below the ground surface, with the exception of four locations where the pre-development ground surface was at a greater depth than the maximum reach of the excavator that was being used (21 feet).

Figure 6 Area of Potential Effects and Cultural Survey Sites (BHP Proposal)



- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The APE is defined as a geographic area or areas within which the proposed project may directly or indirectly cause a change of character or use of historic properties.

According to the Cultural Resources Report (*Cultural Resources Tech Report*, ICF 2019), the City of Hoquiam maintains a local register of historic places which includes individually registered city landmarks, historic districts, or conservation districts (Hoquiam Municipal Code, Chapter 10.06). The upland portions of the Project Site are not currently accessed by tribal members and use of the uplands would not affect access to the Quinault’s treaty resource areas. The Quinault Indian Nation have indicated that members fish in Grays Harbor near the Project Site and areas required for the positioning of vessels for product loading and shipment.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

There are no measures proposed to avoid, minimize, or compensate for loss, changes to, and disturbance to resources, as there were none identified within the APE. The Project would have minor effects on fishing by Quinault Indian Nation members during construction and operation of the PNWRE Project. PNWRE is currently coordinating with the Quinault Indian Nation to inform them of the Project and receive input on the proposal.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The street network in the Project vicinity is shown on the site plan and vicinity maps (Figures 1 and 2) in Section A, above. Roadways in the vicinity include Highway 101, State Route 109/West Emerson Avenue, Paulson Road, and Airport Way.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The site is not directly served by public transit. The closest Grays Harbor Transit bus stop is located at Emerson Avenue and Adams Street, approximately one mile from the Project site.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Private roads connecting the site to the existing roadway network and for interior circulation will be constructed of aggregate for facility traffic and employees only.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The operation of the Project will use shipping vessels from Terminal #3, which is in existing use by Willis Enterprises. The Project would increase vessel traffic by approximately one ship every 5 to 6 weeks, or 10 per year.

There is a rail spur located to the north, between the Project site and Emerson Avenue. The Project will not use rail and is not anticipated to affect existing rail traffic.

The Project Site is located approximately 0.25 miles to the east of Bowerman Airport. The Project was designed to minimize indirect impacts to Bowerman Airport. The layout of the storage building and other structures at the site are dictated primarily by the FAA's regulations governing the safe, efficient use and preservation of the navigable airspace in 40 C.F.R. Part 77. Consultation with the FAA is ongoing to ensure the proposed facility does not represent an obstruction to air navigation. The Project will comply with FAA provisions for lighting to ensure no impacts to Bowerman Airport.

- e. **How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?**

The completed Project will include approximately 128 traffic trips per day (truck and employee traffic).

- f. **Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

The Project would not interfere with, affect, or be affected by the movement of agricultural and forest products on road or streets in the area.

- g. **Proposed measures to reduce or control transportation impacts, if any.**

Truck traffic from the completed Project will be routed to avoid local surface streets and rail crossings within plant design requirements. No other measures are required.

15. Public Services

- a. **Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, others)? If so, generally describe.**

PNWRE plans to provide its own site security and utilize fire protection and emergency systems that meet or exceed applicable building standards. It is not anticipated that the Project will result in an increased need for public services.

- b. **Proposed measures to reduce or control direct impacts on public services, if any.**

No measures are required.

16. Utilities

- a. **Circle utilities currently available at the site:**

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

- b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

The facilities will use potable water (City), sanitary sewer (City), electricity (Grays Harbor PUD), natural gas (Cascade Natural Gas) and communication services (private). All services will tie into existing nearby utility lines.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

A handwritten signature in black ink, appearing to read "M.D. Boivin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Type name of signee: Mark D. Boivin

Position and agency/organization: CEO, PNWRE

Date submitted: 6/19/2023

ATTACHMENT 3

**CITY OF HOQUIAM - NOTICE OF APPLICATION
ZONING CONDITIONAL USE PERMIT AND SEPA THRESHHOLD
DETERMINATION OF NON-SIGFICANCE; CASE #SEPA 2023-02**

Description of Proposal:

Pacific Northwest Renewable Energy (PNWRE) is proposing to construct and operate a biomass facility (pellet plant) in Hoquiam, Washington. Wood pellets will be manufactured at the project site and exported, via vessel, to international markets, including Asia and Europe.

The processing of wood chips includes the use of three truck tippers, a chips cleaning line, two wet hammermills controlled by cyclones, one hog fuel furnace and dryer controlled by a wet electrostatic precipitator (WESP) and a regenerative thermal oxidizer (RTO), four dry hammermills each controlled by a cyclone, 12 pellet production and two cooling lines controlled by two cyclones, and a regenerative catalytic oxidizer (RCO) controlling the combined dry hammermills and pellet cooling lines, five wood pellet storage silos, and ship loadout area. The wet raw materials for pellet production and hog fuel for the furnace will be delivered to the facility via truck. The facility could process up to 440,800 tons per year (TPY) of dried wood pellets.

Proponent: PNWRE
Mark Boivin, CEO
PO Box 391 South Egremont, MA 01258

Key Dates: Application Submitted: June 19, 2023
Application Determined Complete: July 20, 2023
Notice of Application: July 27, 2023
Zoning Conditional Use Permit Hearing: September 14, 2023 at 1 PM
Hoquiam City Hall, 609 8th Street, Hoquiam, WA 98550
Zoning Conditional Use Permit Written Comments Due Date: August 21, 2023
SEPA Comments Due Date: August 14, 2023

Permits:

- ORCAA Air Quality Permit
- Department of Ecology- National Pollutant Discharge Elimination System Construction Stormwater Permit and Industrial Stormwater Permit
- FAA- Clearance Letter
- City of Hoquiam Building Permit
- City of Hoquiam Zoning Conditional Use Permit (for structures over 55 feet)
- City of Hoquiam Critical Areas Review
- Port of Grays Harbor-Approval of Operation Agreement and Lease Agreement.

Location of Proposal: The project address is 411 Moon Island Road, at the corner of Paulson Road and Airport Way, near the existing Willis Enterprises Chip Plant and the Port of Grays Harbor's Terminal 3. Gray's Harbor County Assessor's Parcel # 056401000400.


Lead Agency: City of Hoquiam

Threshold Decision: The lead agency for this proposal has determined that it does not have probable significant impact on the environment. An environmental impact statement (EIS) is not required per RCW43.21C.031. This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request by contacting the Hoquiam Planning and Building Department.

This Determination of Non-Significance (DNS) is issued under WAC 197-11-340(2). The lead agency will not act on this proposal the 14 days from the date below. Comments must be submitted by August 10, 2023.

Responsible Official: Brian Shay, City Administrator
609 8th Street, Hoquiam, WA 98550
bshay@cityofhoquiam.com

Date: July 25, 2023

Signature: 

TO: All Permit and Review Authorities

ENVIRONMENTAL RECORD

The environmental review consisted of analysis based on the following documents included in the environmental record.

DOCUMENTS/REFERENCES:

- Environmental Checklist dated June 19, 2023.

Unless otherwise noted, the above documents are available for review at the City of Hoquiam, 609 8th Street, between the hours of 8 am to 5 pm Monday through Friday.

A. BACKGROUND

1. PROPOSAL DESCRIPTION

Pacific Northwest Renewable Energy (PNWRE) is proposing to construct and operate a biomass facility (pellet plant) in Hoquiam, Washington. Wood pellets will be manufactured at the project site and exported, via vessel, to international markets, including Asia and Europe.

The processing of wood chips includes the use of three truck tippers, a chips cleaning line, two wet hammermills controlled by cyclones, one hog fuel furnace and dryer controlled by a wet electrostatic precipitator (WESP) and a regenerative thermal oxidizer (RTO), four dry hammermills each controlled by a cyclone, 12 pellet production and two cooling lines controlled by two cyclones, and a regenerative catalytic oxidizer (RCO) controlling the combined dry hammermills and pellet cooling lines, five wood pellet storage silos, and ship loadout area. The wet raw materials for pellet production and hog fuel for the furnace will be delivered to the facility via truck. The facility could process up to 440,800 tons per year (TPY) of dried wood pellets.

II. PERMITS/APPROVALS REQUIRED FOR CONSTRUCTION

- ORCAA Air Quality Permit
- Department of Ecology- National Pollutant Discharge Elimination System Construction Stormwater Permit and Industrial Stormwater Permit
- FAA- Clearance Letter
- City of Hoquiam Building Permit
- City of Hoquiam Zoning conditional use permit
- City of Hoquiam Critical Areas Review
- Port of Grays Harbor-Approval of Operation Agreement and Lease Agreement.

III. PUBLIC COMMENT –

IV. RESPONSIBLE OFFICIAL'S AMENDMENT TO CHECKLIST ITEMS

The applicant's environmental checklist is incorporated by reference. The following discussion is intended to address potential environmental impacts not addressed by the environmental checklist.

B.

1. EARTH

The environmental checklist description regarding earth is adequate.

2. AIR

The environmental checklist description regarding air is adequate. During construction, there will be engine emissions (e.g., carbon monoxide, volatile organic compounds, and particulates) and dust created by construction equipment. Construction activities could result in temporary, localized increases in particulate concentrations due to emissions from typical construction-related sources.

Emissions from diesel equipment could temporarily reduce ambient air quality, but the project will use equipment that complies with applicable current regulations to minimize risk. Implementation of reasonable precautions during construction and compliance with regulations regarding engines, off-site odors, and off-site dust are expected to prevent significant air quality impacts. Additionally, compliance with the Olympic Clean Air Agency (ORCAA) permit will be required.

3. WATER

The environmental checklist description regarding water is adequate.

The project will not require any work over, nor within 200 feet, of state shorelines. There will be no fill or dredge material that would be placed in or removed from the surface water or wetlands. The project will not require any surface water withdrawal or diversion. The project does not involve any discharge of waste materials to surface waters.

No groundwater will be withdrawn from a well for drinking water or other purposes. The City of Hoquiam's municipal drinking water will be used for the project site. No waste material will be discharged into the groundwater from septic tanks or other sources. Stormwater runoff during construction will be managed through implementation of BMPs consistent with construction stormwater permit requirements and plans. Stormwater at the site has a low potential to be impacted; cleanup of any spills of dry material in the facility would be accomplished with vacuum equipment and the material would be returned to product storage, loaded into the vessel, or disposed off-site.

4. PLANTS.

The environmental checklist description concerning plants is adequate.

The impacts to onsite vegetation at the project site have been minimized and avoided to the extent practicable by locating buildings and roads in previously disturbed areas where possible; however, the majority of the site has been previously disturbed and will be

cleared for construction of the new facility. The project will require the removal and/or alteration of all vegetation that is within the footprint.

5. ANIMALS

The environmental checklist description concerning animals is adequate.

6. ENERGY AND NATURAL RESOURCES

The environmental checklist description concerning energy and natural resources is adequate.

7. ENVIRONMENTAL HEALTH

The environmental checklist description concerning environmental health is adequate.

8. LAND AND SHORELINE USE

The environmental checklist description concerning land and shoreline use is adequate. The site is zoned Industrial and not within the shoreline. The project will not affect current land uses nearby or adjacent properties.

9. HOUSING

The environmental checklist description concerning housing is adequate. No housing is included as part of the project. No housing will be eliminated as part of the project.

10. AESTHETICS

The environmental checklist description concerning aesthetics is adequate. The project would be visible from the east, north and south views and would alter some views in the area, however these existing views are of an industrial site. No views would be obstructed or materially blocked by the project. The project will have no impact on adjacent residential views of the shoreline.

11. LIGHT AND GLARE

The environmental checklist description concerning light and glare is adequate. Lighting used during night-time construction or times of low light, if needed, will be used only in active work areas for safety. Any night-time lighting needed will be directional and will minimize glare and light spillage to the extent possible.

12. RECREATION

The environmental checklist description concerning recreation is adequate. The John Gable Community Park and Hoquiam Skate Park are located north of the project site, north of Emerson Ave. The facilities include concrete structures for skating, playground equipment, baseball fields, and parking. The Grays Harbor National Wildlife Refuge is located west of the project site and is part of the Grays Harbor Estuary. The refuge, established in 1990, encompasses almost 1,500 acres of intertidal flats, open water, salt marsh, and forested habitat and contains walking trails.

Construction of the project could result in indirect impacts from noise to recreational uses on lands adjacent to or near the site, but these impacts will be temporary and are not expected to rise to the level of significance.

13. HISTORIC AND CULTURAL PRESERVATION

No known historical or cultural resources are known to exist on the site. There are no buildings, structures, or sites located on or near the site that are over 45 years listed in or eligible for listing in the national, state or local preservation registers.

14. TRANSPORTATION

The environmental checklist description concerning transportation is adequate. The site is not directly served by public transit. The closest Grays Harbor Transit bus stop is located at Emerson Ave and Adams St, approximately one mile from the project site.

15. PUBLIC SERVICES

PNWRE plans to provide its own security and utilize fire protection and emergency systems that meet or exceed applicable building standards. It is not anticipated that the project will result in an increased need for public services.

16. UTILITIES

The environmental checklist description concerning utilities is adequate. The facilities will use potable water (city), sanitary sewer (city), electricity (Grays Harbor PUD), natural gas (Cascade Natural Gas), and communication services(private). All services will connect into existing nearby utility lines.