State of Oregon
Department of
Environmental
Quality

STANDARD AIR CONTAMINANT DISCHARGE PERMIT REVIEW REPORT

Department of Environmental Quality
Eastern Region

Source Information:

SIC	4491
NAICS	488320

Source Categories (Table 1 Part, Code)	Part B, 85
Public Notice Category	III

Compliance and Emissions Monitoring Requirements:

FCE	No
Compliance Schedule	No
Unassigned Emissions	No
Emission Credits	No
Special Conditions	Yes

Source test [date(s)]	30 days after startup
COMS	No
CEMS	No
PEMS	No
Ambient Monitoring	No

Reporting Requirements:

Annual Report (due date)	2/15
Quarterly Report (due dates)	No

Monthly Report (due dates)	No
Excess Emissions Report	15 days

Air Programs

Synthetic Minor (SM)	No
SM -80	No
NSPS (list subparts)	No
NESHAP (list subparts)	No
Part 68 Risk Management	No
CFC	No

NSR	No
PSD	No
RACT	No
TACT	No
Other (specify)	No

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PERMITTING

PERMITTEE IDENTIFICATION

1. Ambre Energy has submitted an application for a Standard Air Contaminant Discharge Permit (ACDP) for approval to construct and operate an enclosed coal bulk transfer facility to be located at 72000 Dewey West Lane at the Port of Morrow in Boardman, Oregon. The facility is registered with the state of Oregon Corporations Division as Coyote Island Terminal.

PERMITTING ACTION

2. The proposed Air Contaminant Discharge Permit (ACDP) is a new permit that regulates air emissions from a new coal transfer facility. The proposed ACDP does not circumvent applicable permitting requirements, certifications or obligations established by other federal, state or local regulating authorities.

OTHER PERMITS

3. Other permits to be issued by the DEQ for this source include: a Water Pollution Control Facilities (WPCF) Permit and a general 1200-C National Pollutant Discharge Elimination System (NPDES) storm water permit for construction activities.

ATTAINMENT STATUS

4. This source is located in an area that is in attainment for all pollutants. This source is not located within 10 kilometers (6.2 miles) of a Class I air quality protection area.

SOURCE DESCRIPTION

OVERVIEW

5. The applicant proposes to operate a coal transfer station where up to 8,800,000 tons per year of sub-bituminous coal would arrive by railcar and be transferred to barges on the Columbia River. The coal transfer station facility proposes to operate three shifts, 8-hours per day, and employ up to 28 full time positions annually. Upon arrival the coal is to be unloaded from railcars and conveyed through fully enclosed spaces to either enclosed cargo holds on a barge or temporarily stored in a storage building at the facility. The components of the facility to be regulated by the proposed permit consist of an indoor rotary railcar unloading station, an enclosed transfer conveyor system with completely enclosed conveyor to conveyor drop points, three coal storage buildings, and barge loading equipment. The coal transfer terminal will operate with all power and water provided by the Port of Morrow. No electrical generation or emergency generator units are proposed to be installed and operated at the terminal.

6. Ancillary facilities that are not part of the actual coal transfer operations include a small Operations Building located southwest of the storage buildings. It will house a shift office, control room, maintenance office, change/shower rooms, restrooms, lunch room, warehouse, and shop/tool storage space. There will also be an administration building located on site. It will house the administration staff and will have a small conference room/visitors center.

7. The facility is to be designed with an electric powered positioning system for maneuvering railcars through the railcar unloading building. The railcars will enter an unloading building which will be enclosed, except for entrance and exit doorways for the railcars. The entrance and exit of the unloading building are only marginally larger than the railcars to limit influence by ambient winds. Below ground hoppers will receive the coal as it is unloaded via a rotary dump mechanism. The unloading building will have an advanced dust extractor/scrubber system and a water fogging system located under the railcars. The dust extractor/scrubber system will be operated with two sizeable blowers. These systems are designed to contain dust within the building and prevent dust from settling on the railcars during unloading. The dust extraction/scrubber system will draw air from the railcar unloading building which in turn will draw air inward through the entrance and exit of the unloading building, creating a net flow of air towards the underside of the railcar and through the wet scrubbers. In the event that there is a small amount of counter air flow during unloading, the water spray fogging system under the railcar is designed to entrain the dust particles so that they can more readily be collected with the extraction/scrubber system. A closed loop wash water system will be used after each train to clean-up the railcar unloading station.

8. After unloading from the railcars to the underground hoppers, the coal will be transferred via fully enclosed conveyors either directly to barges on the Columbia River (via the bypass to the Loadout Conveyor) or to one of three planned storage buildings. The conveyor belt system is designed to operate at capacity of 850 feet per minute, transferring up to 3,000 tons of coal per hour. The coal storage buildings are to be identical. The path that leads to Coal Storage Building #1 and to a barge from the railcar unloading station involves the fewest number of conveyor to conveyor drop points at six (6). The path that leads to the Coal Storage Building #2 and to a barge involves the average number of conveyor to conveyor drop points at seven (7). The path that leads to the Coal Storage Building #3 and to a barge involves the most number of conveyor to conveyor drop points at eight (8). An average of seven (7) fully enclosed conveyor to conveyor drop points will be used throughout the year when transferring coal through the three storage buildings and to a barge. There will be multiple wash down and dust suppression fogger stations throughout the conveyor belt system. The wash down stations are designed to periodically rinse down areas where coal dust may accumulate as a housekeeping measure and to prevent coal dust from becoming re-suspended in the transfer terminal system. The dust suppression foggers are designed to control particulate matter emissions by operating along designated sections of the enclosed conveyor system and at each conveyor transfer drop point.

9. Initially one coal storage building is to be constructed with two future coal storage buildings to be constructed at a later date. Each of the coal storage buildings will have a design storage capacity of 100,000 tons of coal. Each coal storage building will utilize five (5) wet scrubbers for a combined total of fifteen (15) wet scrubbers. Three of the five wet scrubbers in a coal storage building located nearest to where the coal is being loaded or unloaded are to be operated to control dust and particulate emissions at all times. The wet scrubber systems are designed to achieve complete capture of the particulate emissions generated within the coal storage buildings. The wash down and wet scrubber water used in the system will be collected and conveyed in a closed loop system for treatment and re-use. The solids collected in the treatment system are to be returned to the coal stream and the treated water is to be re-circulated back to scrubbers and wash down systems.

10. All access points to all conveyor systems and each storage building are to remain secured and closed during operations. When transferring coal to storage, the coal will be diverted through the Tripper Conveyor line to a storage building. There will be three (3) man doors on the Tripper Conveyor line at the building ridge. There will be one (1) door at both end walls and one (1) exiting out the side of the roof through a dog-house as an emergency exit. Each storage building will have six (6) man doors at grade level. There will be two (2) on each end and one (1) on each side of a storage building. All man doors will be of steel construction and some may be constructed with ½ clear-light reinforced glass inserts. All doors will be equipped with self-closers. There will be four (4) roll up doors with two (2) on each end of a storage building. The roll up doors will have the approximate dimension of 16-ft x 16-ft. Each roll up door will be powered and will be interlocked through the control system to assure they are shut during coal placement in the building or when drawing coal out of the building. Doors will only be opened during maintenance work and this will only be performed when the building is not in operation. These doors will be metal slat roll up doors with weather stripping to ensure a good seal.

11. At the barge loading station the facility proposes to operate a retractable telescoping loading chute that will be used to off load coal into below deck cargo holds. The telescoping chute is designed with internal collapsible cascading cones that will minimize the drop velocity of the material, greatly reducing the potential for creating suspended dust. The outer wall of the telescoping chute provides a barrier that contains the formation of any fugitive dust within the chute. The outer wall of the telescoping chute will be attached to a flexible boot that maintains contact with the pile of loaded coal within the barge by the incorporation of sensors. As a result, any dust generated inside the load-out chute has nowhere to go. It settles and becomes re-entrained with the material passing through the internal cones. In addition, a resitain valve assembly will be installed at the base of the retractable telescoping loading chute prior to the skirt. The resitain valve is a trap door closure that will be open when coal is actively being loaded into a below deck cargo hold in a barge and closed at all other times.

12. Four (4) enclosed empty barges in tow will arrive at the dock loading area with all hatches closed. The barges will be positioned next to the dock and two (2) barges end to end will be attached to the barge positioning system and released from the tow for loading. As this

transition is taking place the barge hatches on these two barges will be opened. When the first barge is loaded and while loading the second barge, the first barge hatches will be closed. When the second barge is loaded the tugboat will position the remaining two barges at the upstream dock and they are attached to the positioning system. As this occurs the second barge's hatches will be closed and the third and fourth barge hatches will be opened. As the third and fourth barges are being loaded the tugboat would tie onto the first two (2) loaded barges and will position them next to the third and fourth barges to complete the tow. Upon loading the third and fourth barges, hatches will be closed. At this time all four (4) barges are full and fully enclosed.

PROCESS AND CONTROL DEVICES

13. The moisture content of sub-bituminous coal is typically in the range of 20% to 30%, which is higher than other types of coals, such as bituminous coal or anthracite. Sub-bituminous coal is therefore generally less dusty when handled. In addition, the dust suppression foggers located in the Railcar Unloading Building and Conveyor System will add moisture to the coal. The moisture in the coal will help to prevent fugitive emissions from occurring. Other emissions controls at the facility will include the following:

    a. The rotary railcar unloading dust extractor equipment system includes two (2) Engart Type 46 (200 hp, 460 volt) Dust Extractor Units or equivalent. Pre-filters are connected to individual ductwork manifolds with collection hoods located along the length of each side of the railcar. Each Engart unit is designed to pull exhaust ventilation and dust extraction independently from each side of the railcar.
    b. Wash down stations are included along conveyor systems for periodic housekeeping measures. The dust suppression foggers are to be located at every conveyor to conveyor drop point and along each conveyor system. All conveyor drop points and conveyor lines are fully enclosed systems.
    c. Each storage building will be equipped with five (5) wet scrubber systems. Each system will include an Engart Type 33H (75 hp, 460 volt) Dust Extractor Unit or equivalent. Pre-filters are connected to individual ductwork manifolds with collection hoods located along the length of each side of storage building.
    d. The retractable telescoping loading chute is designed to control potential particulate dust emissions by utilizing sensors that allow a one (1) meter long shroud attached to the tip of the loading chute to maintain contact with the surface of the coal pile in the barge hull while loading. The shrouded tip is designed to cover and contain particulate dust generated during loading. The internal cascading drop mechanism within the retractable telescoping loading chute is designed to minimize the drop velocity of the coal to further reduce particulate dust formation at the shrouded tip. In addition to the shrouded tip, a resitain valve assembly will be used to contain any residual coal within the chute between loading barges and when docked. The resitain valve will be remotely activated to close before the shrouded tip rises above a barge hatch and does not re-open until the shrouded tip is lowered below the next barge hatch.

14. The unit descriptions, activities and pollution control devices at the facility include the following:

Unit Description	Device Description	Pollution Control Devices	
		Description	**PCD ID**
Railcar Unloading Building	Rotary Railcar Drop into Underground Hopper in the Railcar Unloading Building	(2) Engart/Type 46 Wet Scrubbers	WS-R01 & WS-R02
		(2) Dust Fogger Systems	Enclosed Drop
First Unloading Conveyor	Enclosed Drop from Railcar Unloading Building to First Unloading Conveyor	Dust Fogger System	Enclosed Drop
Second Unloading Conveyor	Enclosed Drop from First Unloading Conveyor to Second Unloading Conveyor	Dust Fogger System	Enclosed Drop
Transfer Conveyor	Enclosed Drop from Second Unloading Conveyor Diverter to Transfer Conveyor for Coal Storage Buildings #2 and #3	Dust Fogger System	Enclosed Drop
Loadout Conveyor Drop	Enclosed Drop from Second Unloading Conveyor Diverter to Barge Loadout Conveyor, bypassing storage	Dust Fogger System	Enclosed Drop
Tripper Conveyor	Enclosed Drop from Second Unloading Conveyor Diverter to Tripper Conveyor for Coal Storage Building #1	Dust Fogger System	Enclosed Drop
Three Coal Storage Buildings with Reclaim Conveyors	Tripper Conveyor Drops to Storage Building Piles	Engart/Type 33 Wet Scrubbers	WS-01 thru WS-15 (5 per building)
	Storage Building Pile Extraction Drops to the Reclaim Conveyor		
Loadout Conveyor	Enclosed Drop from Reclaim Conveyors to the Loadout Conveyor	Dust Fogger System	Enclosed Drop
Transfer Conveyor	Enclosed Drop from Loadout Conveyor to Transfer Conveyor	Dust Fogger System	Enclosed Drop
Barge Loading Conveyor	Enclosed Drop from Transfer Conveyor to the Barge Loading Conveyor	Dust Fogger System	Enclosed Drop
Barge Loading	Barge Loading Conveyor Drop through the Retractable Telescoping Chute into a Barge Cargo Hold	Internal Cascading Cone Drops, Resitain Valve, and Shrouded Tip	TLC-01

EMISSIONS

15. The pollutant emitted from the proposed facility is particulate matter ($PM/PM_{10}/PM_{2.5}$). The potential particulate matter emissions from the facility were calculated based on AP-42 Section 13.2.4.3 (11/2006), Page 13.2.4-3, for batch/continuous drop operations. The calculated potential particulate matter emissions for $PM/PM_{10}/PM_{2.5}$ are provided in the Emissions Detail Sheets at the end of this report. The following is the equation provided in AP-42, Section 13.2.4.3. The calculations are based on the particulate matter size, physical conditions of the coal at the facility, along with the capture and control efficiencies of the enclosures and control devices used to minimize emissions:

AP-42 Equation with Control & Capture Efficiencies:			
Emission Factors (lbs/ton) for $PM/PM_{10}/PM_{2.5}$	=	Particle size multiplier [K]x0.0032*(wind speed [U]/5)$^{1.3}$ /(moisture content [M]/2)$^{1.4}$	
Where:			
PM particle size multiplier (k)	=	0.74	Aerodynamic Particle Size Multiplier [AP-42
PM_{10} particle size multiplier (k)	=	0.35	Section 13.2.4.3 Predictive Emission Factor
$PM_{2.5}$ particle size multiplier (k)	=	0.053	Calculations]
	=	2 mph	Estimated air movement within full enclosures (conveyor drop points and storage buildings).
	=	4 mph	Estimated air movement within railcar unloading building (partial enclosure)
Wind Speed [U]	=	25.3 mph	Estimated air movement for open railcars and Fully Loaded railcars & telescoping chute based on 24-hr highest annual 24-hr average wind speed at the Port of Morrow: (ref: PGE Coyote Springs 1995 Wind Speed Collection Data)
Moisture Content [M]	=	20%	Low end of moisture content for the sub-bituminous coal
	=	5%	Estimated moisture content of coal at the surface of the loaded railcars that enter the facility.
Loaded railcars entering the facility. The control efficiency is based on the first 1/4 foot of uncovered coal in a fully loaded railcar being exposed to wind erosion. Coal below the 1/4 foot depth is not subject to wind erosion because it is completely enclosed by the sides and bottom of the railcar:			
Fully Loaded Railcar Control Efficiencies:	=	97.6%	Engineering Estimate for worst case
Conveyor process control efficiencies are estimated based on fully enclosed conveyors and the utilization of fogging systems:			
Enclosed Conveyor Control Efficiencies:	=	95%	Engineering Estimate for worst case
Telescoping Retractable Loading Chute control efficiency is estimated based on internal cascading cone drop design and shrouded tip:			
Loading Chute Control Efficiency	=	80%	Engineering Estimate for worst case

The Capture and Control Efficiencies of each wet scrubber used in the Railcar Unloading Building and in each Storage Building are as follows:			
Unloading Building Capture Efficiency	=	90%	Estimated capture efficiency of the dust extractor system
Storage Building Capture Efficiency	=	100%	Storage Buildings must vent through scrubber system
PM Scrubber Control Efficiency	=	99.7%	Control efficiencies provided by wet scrubber manufacturer/vendor
PM_{10} Scrubber Control Efficiency	=	98.4%	
$PM_{2.5}$ Scrubber Control Efficiency	=	94.99%	

16. The unloading, conveying, storage, and loading activities will generate particulate matter emissions to some extent because the coal is disturbed during these activities. Other potential sources of emissions are the loaded uncovered railcars located at the site prior to unloading. The application did not include an estimate of the emissions from these railcars. DEQ assumes that the emissions from the railcars will most likely be negligible because the coal will not be disturbed and the coal will be loaded into the railcars before arriving at the site using techniques that will minimize emissions during transit (e.g., loading profiles and topping agents). Three separate topping agents have been proposed. Each topping agent manufacturer specifications claims to control at least 85 percent of coal dust erosion compared to coal cars without topping agents. In addition, any fine material at the surface of the railcar will most likely be emitted (e.g., eroded by wind) before the railcars arrive at the site. However, as a conservative estimate, DEQ calculated potential emissions assuming that there will be some wind erosion from the surface area of the coal in each railcar. For these calculations, DEQ used the highest 24-hour average wind speed for the Boardman area at 25.3 mph. The potential particulate matter emissions from the facility were calculated based on AP-42 Section 13.2.5.2 (11/2006), Page 13.2.5-13, wind erosion from flat area covered with coal dust. The emission calculations and detail sheets are provided at the end of this review report. The variables used in the equations are provided in the following table:

AP-42 Section 13.2.5.5 Equations for wind erosion from flat area covered with coal dust:				
(EQ 2) Emission Factor	(E)	=	$(k)\sum P_i$	
(EQ 3) Erosion Potential Function	(P)	=	$58(u^*-u_t^*)^2 + 25(u^*-u_t^*)$	
(EQ 4.) Equivalent Friction velocity	(u^*)	=	(0.053) x (u^+_{10m})	
		=	0.54 m/s	Fine coal dust on concrete pad conservative est.
Control Efficiency (Manufacturer Spec.)		=	85%	
Where:				
PM particle size multiplier (k)		=	1.0	
PM_{10} particle size multiplier (k)		=	0.5	
$PM_{2.5}$ particle size multiplier (k)		=	0.075	
Wind Speeds	(u^+_{10m})	=	25.3 mph	Estimated air movement for open fully loaded uncovered railcars based on 24-hr highest annual 24-hr average wind speed at the Port of Morrow. *(ref: PGE Coyote Springs 1995 Wind Speed Collection Data)*

17. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limits (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	0	0	0	0	24	24
PM_{10}	0	0	0	0	14	14
$PM_{2.5}$	0	0	0	0	9	9

a. The baseline emission rate and the netting basis are zero because this facility was constructed after the baseline period of 1977-1978 for all pollutants. In addition, the source is not subject to New Source Review (NSR).
b. The proposed PSEL for particulate matter pollutants are equal to the Generic PSEL in accordance with OAR 340-222-0040(1).
c. Generic PSELs are not established for SO_2, NO_x, CO, VOC, and greenhouse gases (GHG) because the source would generate less than the deminimis level for each of these criteria pollutants. (Note: Emissions from mobile source engines - locomotives and tug boats - are not regulated by this permit.)
d. A PSEL was not established for GHG emissions because the source does not have the potential to generate 2,500 metric tons, or more, of carbon dioxide equivalent of greenhouse gases per year. (See also Section 31 of this review report.)
e. The PSEL is a federally enforceable limit on the potential to emit.

SIGNIFICANT EMISSION RATE ANALYSIS

18. The proposed PSELs are greater than the netting basis for all pollutants as shown below:

Pollutant	Significant Emission Rate (tons/yr)	Generic PSEL (tons/yr)	Increase Due to Proposed Activities (tons/yr)
PM	25	24	1.6
PM_{10}	15	14	<1
$PM_{2.5}$	10	9	<1

19. Since the PSELs are less than the significant emission rate, an air quality impact analysis is not required in accordance with OAR 340-222-0041.

REGULATORY REQUIREMENTS

20. The proposed facility is required to obtain an Air Contaminant Discharge permit in accordance with Oregon Administrative Rule (OAR) 340-216-0020 (Table 1, Part B, Category 85).

21. The proposed facility is subject to the following emission limits and standards:

    a. OAR 340-208-0110: 20% opacity (visible emissions) limits
    b. OAR 340-208-0210: minimize fugitive emissions to the extent practicable
    c. OAR 340-208-0300: prohibits nuisances
    d. OAR 340-208-0400: prohibits masking emissions
    e. OAR 340-208-0450: prohibits particulate matter fallout; and
    f. OAR 340, Division 222: Plant Site Emission Limits

22. In addition to the emissions limits and standards identified above, the facility is also subject to the rules for highest and best practicable treatment and control in OAR 340-226-0100 through 340-226-0140.

    a. Based on the design of the facility, particulate matter and visible emissions, which is an indicator of particulate matter emissions, should be minimal.
    b. Therefore, the permit includes requirements for conducting routine visible emission surveys and requiring the permittee to take corrective action when visible emissions are observed.
    c. In addition, the permit requires the permittee to develop and implement a best work practices plan to ensure that the activities, process equipment, and emissions control equipment are operated and maintained in a manner that will minimize emissions to the extent practicable (see further discussion below). The initial plan must be submitted to DEQ 30 days prior to receiving coal. DEQ will review the plan for completeness. The plan must be reviewed and updated by the permittee on an annual basis.

23. The rules for the review and approval of new federal major sources (OAR 340, Division 224) that include requirements for the best available control technology (BACT) and ambient air quality impact analysis do not apply to this facility because it is not a federal major source of pollutant emissions. A federal major source for this type of activity is one that has the potential to emit 250 tons or more of any criteria pollutant. Secondary emissions, which include emissions from the tug boats and locomotives, are not included in the calculations for determining whether a source is a major source in accordance with OAR 340-224-0100 and the definition of "secondary emissions" in OAR 340-200-0020.

24. There are no federal standards (New Source Performance Standards – 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants – 40 CFR Part 63) that apply to this facility.

25. The mobile sources used to transport coal to and from the facility (e.g., locomotives and tug boats) are not regulated under DEQ's stationary source air permitting program. Other state and federal standards (engine emission standards) may apply to the mobile sources, depending on the model year and regulation.

SPECIAL CONDITIONS

26. The permittee must notify DEQ in writing of the date the new facility is started up as soon as practicable, but not more than seven (7) days after the facility starts operating.

27. The permittee must develop, install, and maintain best management practices to minimize fugitive and visible dust emissions. Design measures shall include enclosed material handling processes with enclosed storage and air pollution equipment. The following best management practices are proposed at the coal transfer terminal:

    a. The permittee may only receive coal that has been prepared for shipping using techniques that will minimize fugitive emissions from the railcars. These techniques include loading profiles that minimize emissions while in transit, as well as the application of topping agents that form a surface crust. These loading procedures should prevent fugitive emissions from occurring while the loaded railcars are on site before they enter the unloading building since the coal will not be disturbed before it is unloaded. However, if that is not the case and fugitive emissions do occur, the permit includes a requirement for the permittee to submit a plan for controlling the fugitive emissions. Once approved by DEQ, the plan must be implemented by the permittee. Additional measures for controlling fugitive emissions may include installing a system for applying a topping agent to the coal in the railcars as they arrive at the site or covering the railcars while on site before they are unloaded.
    b. Two wet scrubbers will be used in the rotary railcar unloading building. The building will be constructed and operated in a manner that minimizes wind movement at the rotary dump mechanism.
    c. Each storage building will be equipped with five (5) wet scrubbers. All emissions originating within a storage building must exit though a properly functioning wet scrubber system.
    d. All conveyor to conveyor drop points are to occur and be maintained within a fully enclosed structure.
    e. There will be wash down for housekeeping and dust suppression fogger stations used to control particulate emissions along sections of the enclosed conveyor system and located at all conveyor to conveyor transfer drop points.
    f. Permittee must manage all access points to storage buildings and conveyor system to ensure fugitive emissions are minimized at all times.
    g. The barges are to be loaded with a retractable telescoping loading chute with internal collapsible cascading cones, an attached flexible boot that maintains contact with the pile of the coal in the barge, and a resitain valve that will remain closed when not loading coal into the barges.

28. The permittee must provide the Regional office of DEQ with written notification within five days of all nuisance complaints received by the permittee during the operation of the facility. Documentation must include date of contact, time of observed nuisance conditions, description of nuisance condition, location of receptor, and status of plant operation during the observed period.

COMPLIANCE

29. The permittee is required to conduct an initial performance test for demonstrating compliance with the visible emissions standards. The testing must be performed in accordance with EPA's reference test Method 9 modified to determine compliance with DEQ's emission standard, which is based on a 3 minute aggregate in any 60 minute period instead of a 6-minute average. Each emission source at the facility will be tested.

30. For ongoing compliance assurance:

    a. The permit includes requirements for conducting weekly visible emission surveys. If any visible emissions are observed for more than 30 seconds from the emission sources, the permittee is required to take corrective action immediately.
    b. The permit requires the permittee conduct periodic inspections of the process equipment and make repairs, as necessary.
    c. The permit requires the permittee to monitor emission control parameters to ensure that the control equipment remains effective for controlling emissions from the unloading and storage buildings.

31. In addition, the facility will be inspected by DEQ personnel at least twice within the first year of operation to ensure compliance with the permit conditions.

TITLE V MAJOR SOURCE APPLICABILITY

CRITERIA POLLUTANTS

32. A major source is a facility that has the potential to emit 100 tons/yr or more of any criteria pollutant. For greenhouse gases, the source must also have the potential to emit 100,000 tons/year or more of CO_2e to be a major source. This facility is not a major source of criteria pollutant emissions.

    The permitted activities are not combustion sources so carbon dioxide and nitrous oxide greenhouse gases will not be emitted from the facility. There is some potential for methane emissions which is contained in coal when it is mined. However, DEQ has determined that the methane emissions will be well below the GHG deminimis level of 2,500 metric tons per

year. This determination is based on studies that have determined the rate at which the methane desorbs from the coal, a conservative estimate of the amount of time it takes for the coal to arrive at the facility from the mine, and the amount of time that the coal will be at the facility.

HAZARDOUS AIR POLLUTANTS

33. A major source is a facility that has the potential to emit 10 tons/yr or more of any single Hazardous Air Pollutant (HAP) or 25 tons/yr or more of combined HAPs. This source is not a major source of hazardous air pollutants. The HAP emissions detail for the proposed Coyote Island Terminal is provided at the end of this report. A complete list of regulated HAPs is provided on the USEPA website at http://www.epa.gov/ttnatw01/187polls.html.

INFORMATION MEETINGS

34. DEQ held three information meetings in December 2012 prior to preparing the draft permit. The meetings were held in Boardman, Clatskanie, and Portland. At each meeting, there was a question and answer period followed by a comment period. DEQ also received numerous written comments before, during, and after the public meetings. The meetings were not formal hearings, so DEQ has not prepared a formal response to the comments. However, DEQ has reviewed the comments and taken them into consideration while preparing the draft permit. Provided below is a summary of the comments received and general responses to those comments:

    a. Meeting participation: At each meeting, DEQ asked those attending the meeting to sign an attendance sheet and provide their e-mail address if they wanted electronic notices of permit actions regarding the proposed facility. Personal observations and newspaper reports suggest that many more people attended the meetings than signed in on the attendance sheet. However, according to the attendance sheets, the following number of people attended each meeting:

Boardman meeting (12/4/12):	147 people signed in on the attendance sheet
Clatskanie meeting (12/5/12):	132 people signed in on the attendance sheet
Portland meeting (12/6/12):	587 people signed in on the attendance sheet

    b. Written comments: In addition to those that attended the meetings and provided comments at the meetings (not all commented, but many did), DEQ received 5,379 written comments via e-mail and mail. Most of the people that commented submitted form letters in opposition to the proposed facility. There were 10 comments received that specifically addressed the permit application.

35. Most of the comments addressed three areas of general concern: 1) Global impacts related to the combustion of coal, such as greenhouse gas emissions and climate change, regional haze, mercury emissions, and other hazardous air pollutant emissions; 2) transportation

issues, such as increased train traffic, locomotive and tugboat emissions, noise, spills, and fugitive dust while the coal is in transit; and 3) economic benefits associated with the project, such as jobs for Oregonians and revenue for local communities. DEQ acknowledges that these are significant concerns, but are not within DEQ's authority to address in an air contaminant discharge permit action. To the extent possible, given DEQ's limited resources and authority, DEQ has prepared question and answer (Q&A) documents that provide general responses to these concerns. The Q&A documents are available at the following website: http://oregon.gov/DEQ/Pages/CoalExport.aspx.

36. Comments specific to the permit application: DEQ received a few comments specifically related to the permit application, which were considered while drafting the permit. The comments and DEQ's general responses are as follows:

a. **Comment:** Emissions were underestimated using incorrect assumptions for wind speeds, coal moisture content, and control efficiencies for enclosures and add-on control equipment.

Response: *DEQ has carefully reviewed the information provided in the permit application, as well as the comments, and developed emission estimates based on recognized procedures for estimating emissions from material handling operations. The basis for the estimates is provided in this review report and the attached emissions detail sheets. DEQ does not agree that average wind speeds in the Boardman area should be used in the calculations for emissions from activities that occur within enclosures that are protected from the wind. However, there are a few activities that do not have full enclosures. For these activities, DEQ did use average maximum wind speeds for calculating the emissions.*

b. **Comment:** Secondary emissions from locomotive and tug boat engines were not included in the stationary source's emission inventory.

Response: *DEQ does not agree that emissions from tugboat and train engines that bring material to and from the source should be included in the emission inventory for the source. These emissions are considered "secondary emissions", as defined in OAR 340-200- 0020 and are not included in the determination of whether a source is a major source in accordance with OAR 340-224-0100.*

c. **Comment:** The results of an air dispersion modeling exercise showed violations of the National Ambient Air Quality Standards.

Response: *DEQ's regulations do not require air dispersion modeling for sources that are not major sources. This source is not considered a major source. If modeling were required, DEQ has requirements for developing a modeling protocol to ensure that the modeling is performed in accordance with EPA models and guidelines, including identifying the emission points to be modeled, the emissions from the emissions points, the appropriate models, receptor grids, and*

meteorological data to be used in the models. The modeling does not address mobile source emissions.

d. **Comment:** Fugitive emissions will not be adequately controlled.

Response: *DEQ has reviewed the proposed design of the facility and obtained additional clarifying information from the applicant. Based on this information, DEQ has determined that the emissions will be effectively controlled, as indicated by the emissions estimates provided in this review report. To ensure adequate control, DEQ has included requirements for a Best Management Practices Plan, initial compliance testing, and routine visible emissions monitoring. Based on the design of the facility, visible emissions from the activities should not occur, but if there are visible emissions, the emissions should not last long. Therefore, DEQ has structured the monitoring such that if visible emissions are observed for more than 30 seconds, corrective action must be taken by the operators to minimize the emissions. In addition, the permittee must notify DEQ of complaints and DEQ will conduct at least two inspections of the facility in the first year of operation.*

PUBLIC NOTICE

37. Pursuant to OAR 340-216-0066(4)(a)(A), issuance of Standard Air Contaminant Discharge Permits requires public notice in accordance with OAR 340-209-0030(3)(c), which requires DEQ to provide notice of the proposed permit action and a minimum of 35 days for interested persons to submit written comments. In addition, two hearings have been scheduled to allow interested persons to submit oral or written comments. The date, time and location of the public hearings is provided below. DEQ will provide a minimum of 30 days notice for the hearing. **The public notice was issued on May 31, 2013 and originally expired on July 12, 2013. On July 1, 2013 DEQ extended the comment period to August 12, 2013.** Hearing details did not change.

Hearing Details:

When: 8:00 AM – 8:00 PM
Tuesday, July 9, 2013

Where: **Blue Mountain Community College**
Room 134
975 SE Columbia Drive
Hermiston, OR 97838

- And -

Oregon Convention Center
Rooms C-121 and C-125
777 NE Martin Luther King Jr. Blvd.
Portland, OR 97232

EMISSIONS DETAIL SHEETS

Proposed $PM/PM_{10}/PM_{2.5}$ Emission Calculations:

Loaded Uncovered Railcars: $PM/PM_{10}/PM_{2.5}$					
EU ID	**Operating Parameters (tons/yr)**	**Emission Factors (lbs/ton)**		**Reference**	**Emissions (tons/yr)**
Uncovered railcars fully loaded	8,800,000	PM	2.00E-04	AP 42 - Section 13.2.5.5 with Topping Agent Control	8.8E-01
		PM_{10}	1.00E-04		4.4E-01
		$PM_{2.5}$	1.50E-05		6.6E-02

For these emission factor calculations, DEQ used the highest 24-hour average wind speed for the Boardman area at 25.3 mph based on 24-hr highest annual 24-hr average wind speed at the Port of Morrow. The emission factors were conservatively developed assuming there would be a constant wind speed of 25.3 mph at the transfer facility throughout the entire year. *(ref: PGE Coyote Springs 1995 Wind Speed Collection Data)*.

Railcar Unloading Building Wet Scrubbers/Fogging System: $PM/PM_{10}/PM_{2.5}$					
EU ID	**Operating Parameters (tons/yr)**	**Emission Factors (lbs/ton)**		**Reference**	**Emissions (tons/yr)**
WS-R01 WS-R02	8,800,000	PM	7.24E-06	AP 42 Section 13.2.4.3 and wet scrubber vendor	3.2E-02
		PM_{10}	3.82E-06		1.7E-02
		$PM_{2.5}$	7.33E-07		3.2E-03

Coal Storage Building Wet Scrubbers: $PM/PM_{10}/PM_{2.5}$					
EU ID	**Operating Parameters (tons/yr)**	**Emission Factors (lbs/ton)**		**Reference**	**Emissions (tons/yr)**
Drop to Storage Pile					
WS-01 thru WS-15	8,800,000	PM	8.59E-08	AP 42 Section 13.2.4.3 and wet scrubber vendor	3.8E-04
		PM_{10}	2.17E-07		9.5E-04
		$PM_{2.5}$	1.03E-07		4.5E-04
Storage Pile Drop to Reclaim Conveyor					
WS-01 thru WS-15	8,800,000	PM	8.59E-08	AP 42 Section 13.2.4.3 and wet scrubber vendor	3.8E-04
		PM_{10}	2.17E-07		9.5E-04
		$PM_{2.5}$	1.03E-07		4.5E-04

Enclosed Conveyor to Conveyor Drop Points: $PM/PM_{10}/PM_{2.5}$							
	Emission Factor (lbs/ton)				Emissions (tons/yr)		
Emission Point ID	PM	PM_{10}	$PM_{2.5}$	Reference	PM	PM_{10}	$PM_{2.5}$
Railcar Unloading Building to First Unloading Conveyor (BC-0.5)	1.43E-06	6.77E-07	1.03E-07	AP 42 - Section 13.2.4.3 with enclosure control efficiencies	6.30E-03	2.98E-03	4.51E-04
First Unloading Conveyor to Second Unloading Conveyor (BC-01)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Second Unloading Conveyor diverter gate drop to Loadout Conveyor to bypass storage.	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Second Unloading Conveyor diverter gate drop to Tripper Conveyor (BC-02)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Second Unloading Conveyor diverter gate drop to Storage Transfer Conveyor (BC-04)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Storage Transfer Conveyor diverter gate drop to the Tripper Conveyor (BC-05)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Storage Transfer Conveyor) diverter gate drop to Transfer Conveyor (BC-07)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Transfer Conveyor drop to the Tripper Conveyor (BC-08)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Storage Reclaim Conveyor drop to the Loadout Conveyor (BC-10)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Loadout Conveyor drop to the Transfer Conveyor (BC-11)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04
Transfer Conveyor drop to the Barge Loading Conveyor (BC-12)	1.43E-06	6.77E-07	1.03E-07		6.30E-03	2.98E-03	4.51E-04

Telescope Loading Chute: $PM/PM_{10}/PM_{2.5}$					
EU ID	**Operating Parameters (tons/yr)**	**Emission Factors (lbs/ton)**		**Reference**	**Emissions (tons/yr)**
TLC-01	8,800,000	PM	1.55E-04	AP 42 Section 13.2.4.3 and enclosure control efficiencies	6.83E-01
		PM_{10}	7.34E-05		3.23E-01
		$PM_{2.5}$	1.11E-05		4.89E-02

Total Emissions: $PM/PM_{10}/PM_{2.5}$			
	Emissions (tons/yr)		
Emission Point ID	**PM**	**PM_{10}**	**$PM_{2.5}$**
Uncovered railcars fully loaded	0.88	0.44	0.07
Railcar Unloading Building Rotary Dump	3.19E-02	1.68E-02	3.23E-03
Railcar Unloading Building to First Unloading Conveyor (BC-0.5)	6.30E-03	2.98E-03	4.51E-04
First Unloading Conveyor to Second Unloading Conveyor (BC-1)	6.30E-03	2.98E-03	4.51E-04
Second Unloading Conveyor to Storage Transfer Conveyor (BC-04	6.30E-03	2.98E-03	4.51E-04
Storage Transfer Conveyor to Transfer Conveyor (BC-07)	6.30E-03	2.98E-03	4.51E-04
Transfer Conveyor to Tripper Conveyor for Storage (BC-08)	6.30E-03	2.98E-03	4.51E-04
Tripper Conveyor drop to Storage Pile in Storage Building #3	3.78E-04	9.54E-04	4.52E-04
Storage Pile drop to Storage Reclaim Conveyor (BC-09)	3.78E-04	9.54E-04	4.52E-04
Reclaim Conveyor to the Loadout Conveyor (BC-10)	6.30E-03	2.98E-03	4.51E-04
Loadout Conveyor to Transfer Conveyor (BC-11)	6.30E-03	2.98E-03	4.51E-04
Transfer Conveyor to Barge Loading Conveyor (BC-12)	6.30E-03	2.98E-03	4.51E-04
Barge Loading Conveyor through the Telescope Loading Chute to a Barge Hull	6.83E-01	3.23E-01	4.89E-02
Total Particulate Emissions (tons/yr):	**1.65**	**0.81**	**0.12**
Total Particulate Emissions (pounds/yr):	**3295**	**1612**	**246**

The maximum potential emissions were calculated assuming that all 8.8 million tons/year of the coal are conveyed through the maximum number of possible drop points to and from the furthest Storage Building #3. The emission factors incorporate capture and control efficiencies of enclosures and air pollution equipment where applicable. Emission factors are established by reference from the USEPA Technology Transfer Network Clearinghouse for Inventories & Emissions Factors, AP 42 website: (http://www.epa.gov/ttn/chief/ap42/).

Emission Factors Based on Coal Transfer Activity

Coal Transfer Locations [(1)]	Pollutant	Emission Factor (lbs/ton)
Tons of Uncovered Coal Received by Railcar	PM	2.00E-04
	PM_{10}	1.00E-04
	$PM_{2.5}$	1.50E-05
Tons of Coal Transferred From The Railcar Unloading Building Into Coal Storage Building #1	PM	1.16E-05
	PM_{10}	6.07E-06
	$PM_{2.5}$	1.14E-06
Tons of Coal Transferred From The Railcar Unloading Building Into Coal Storage Building #2	PM	1.31E-05
	PM_{10}	6.74E-06
	$PM_{2.5}$	1.25E-06
Tons of Coal Transferred From The Railcar Unloading Building Into Coal Storage Building #3	PM	1.45E-05
	PM_{10}	7.42E-06
	$PM_{2.5}$	1.35E-06
Tons of Coal Transferred From a Coal Storage Building to a Barge	PM	1.60E-04
	PM_{10}	7.56E-05
	$PM_{2.5}$	1.15E-05
Tons of Coal Transferred From The Railcar Unloading Building Directly to a Barge, Bypassing Storage	PM	1.70E-04
	PM_{10}	8.06E-05
	$PM_{2.5}$	1.24E-05

(1) Emission Factors were developed from AP-42 Section 13.2.5.5 for the loaded uncovered railcars and AP-42 Section 13.2.4.3 Predictive Emission Factor for drop points along with control and capture efficiencies.

The emission factors provided in the table above are based on coal arriving at the Coyote Island Terminal having to be transferred to one of the three coal storage buildings, transferred from a coal storage building to a barge, or transferred from the railcar unloading building directly to a barge. The emission factors for each drop and transfer point between these specified locations have been aggregated. Recordkeeping of the tons of coal transferred between these locations may be used to calculate actual particulate matter emissions. The facility will have the ability to measure the weight of coal (in tons) upon arriving at the transfer facility. There will be no weights available between or after the storage buildings. To conservatively estimate emissions the permittee must assume all coal received at the transfer facility will take the longest route prior to being loaded into a barge. Therefore, emission will be calculated assuming that all coal is transferred through storage building #3 prior to being loaded in a barge. The table below provides emission factors to determine the monthly and annual emission:

Aggregate Emission Factors based on the entire Coal Transfer Facility:

Combined Coal Transfer Emission Factors	Pollutant	Emission Factor (lbs/ton)
Emission Factors for coal received by railcar, transferred through Storage Building #3, and transferred into a barge cargo hold	PM	3.74E-04
	PM_{10}	1.83E-04
	$PM_{2.5}$	2.79E-05

Emission factors were developed from AP-42 Emission Factors Section 13.2.5.5 for the loaded uncovered railcars entering the transfer facility and AP-42 Section 13.2.4.3, Predictive Emission Factors was used to calculate emissions for all drop points within the transfer facility. The AP-42 emission factors are adjusted to incorporate established control and capture efficiencies of the controls and pollution control devices such as topping agents, wet scrubbers, and the dust suppression fogger stations.

Hazardous Air Pollutants:

Hazardous Air Pollutants Calculations		
Hazardous Air Pollutant	**Fraction of PM 1/**	**Potential to Emit (tons/year)**
Antimony	4.90E-07	6.81E-08
Arsenic	2.60E-06	3.61E-07
Beryllium	5.40E-07	7.51E-08
Cadmium	2.10E-07	2.92E-08
Chromium	6.10E-06	8.48E-07
Cobalt	1.90E-06	2.64E-07
Lead	3.00E-06	4.17E-07
Manganese	2.60E-05	3.61E-06
Mercury	1.30E-07	1.81E-08
Nickel	4.60E-06	6.39E-07
Selenium	1.10E-06	1.53E-07
Uranium	1.30E-06	1.81E-07
Total Annual HAP Emissions (tons/yr):		**6.67E-06**
Total Annual HAP Emissions (pounds/yr):		**0.01334**

1. Stricker, G.D., and Ellis, M.S., "Coal Quality and Geochemistry, Powder River Basin, Wyoming and Montana" in U.S. Geological Survey Professional Paper 1625-A, Chapter PQ, 1999, Table PQ-1. (http://pubs.usgs.gov/pp/p1625a/Chapters/PQ.pdf)