

Section 4.1 Environmental Health

4.1.2 Risk of Fire or Explosion

4.1.2.2 Operations

Fire Prevention and Suppression

The following paragraphs of this section have been edited as shown in underlined text for new/added items and strikethrough for deletions.

The Applicant will consult with the Port, City fire officials, and public fire and emergency responders to develop an Operations Fire Prevention and Control program coordinated with existing local response capabilities. Appendix B to the DEIS (Chapter 6, section 2.8: Fire Department Response-Facility) identified two primary VFD response gaps for the Facility: (1) provide fire department connections on the Facility side of the fire protection systems; and (2) provide training for VFD on the design, operation, and interaction with Facility fire protection system. The Applicant has agreed to both of these recommendations (Makarow 2016). VFD connections are identified in the Fire Protection Basis of Design Engineering Evaluation Report, attached as Appendix N.1 to the May 2016 ASC, fire department connections at each of the fire pumps in Areas 200, 300, and 400 are identified in the following drawings.

- 0200-FP-001 – Unloading Building Area Fire Protection; Diagram 2: Unloading Building Fire Protection Fire Pump Diagram
- 0300-FP-001 – Storage Area Fire Protection; Diagram 2: Storage Area Fire Protection Fire Pump Diagram
- 0400-FP-001 – Marine Terminal Fire Protection; Diagram 2: Marine Terminal Area Fire Protection Fire Pump Diagram.

The training for VFD on the Facility fire protection system will occur as a normal part of design review, construction, and commissioning of the Facility, as well as through ongoing training activities.

The Applicant will also provide training to local firefighters as described in the subsection “Local Firefighter Training” below. ~~consult with local responders to identify gaps in existing firefighting equipment, and will provide training opportunities at the nationally recognized Texas A&M Engineering Extension Service Emergency Training Services Institute on a biannual basis. Such training would include crude oil train derailment response, crude oil transshipment response at a marine terminal, industrial rescue, industrial fire suppression, flammable liquids handling and fire suppression, and foam application. Participants would also obtain NFPA 1081 certification.~~

The following mitigation measure has been added as shown in underlined text to this section.

The Applicant will commit to have installed an additional waterline loop to add redundancy to the water distribution system for the Port to ensure sufficient fire-fighting water pressure at the Facility at no cost to the City (Larrabee 2016, Makarow 2016). This will require coordination with the City to connect to its water system. The waterline loop will consist of approximately 1,760 linear feet of 12-inch-diameter ductile iron waterline connecting two existing 12-inch-

diameter ductile iron waterlines already in-place within the Port. The waterline will connect to an existing waterline located northeast of 3201 NW Lower River Road (Lat: 45.643249, Long: -122.705639) and extend to the west/southwest of the 3201 building and extending west along the rail corridor to a connection point located immediately southwest of the Parcel 1A wetland (Lat: 45.6444420, Long: -122.711852. The additional redundancy provided by the looping will increase the residual pressures for fire flow available within the Port for the Applicant's proposed fire suppression systems.

Explosion Prevention

The following text is added as shown in underlined text for new/added items and strikethrough for deletions to reflect the correct nomenclature of the Fire Protection Plan and to address the Applicant's commitment to update the preliminary plan in response to EFSEC's review comments.

The Applicant has prepared a preliminary Fire Protection Plan (Appendix D.3). Prior to the beginning of Facility operation, the Applicant will revise this preliminary plan to address EFSEC's review comments on the plan at Appendix M of the ASC, page M-31, to ensure full compliance with WAC 296-24-567 (Makarow 2016).

In addition to the Fire Protection ~~Response~~ Plan, a ~~licensed~~ Fire Protection Engineer licensed from in the state of Washington will be responsible for the 100 percent design documents, shop drawings, ~~system~~ supervision of the installation contractor to ensure system installation meets design requirements, and final commissioning/acceptance testing of the fire suppression and detection systems for these facilities. The respective Fire Protection Engineer will work closely with the fire department and local code enforcement agencies to ensure the systems are code compliant and within the limitations of the codes and standards adopted by the local jurisdiction applicable to these facilities.

The following subsection is added as shown in underlined text to describe the Applicant's commitment to fund training of local fire responders, including backfill pay.

Local Firefighter Training

The Applicant will offer training to the Vancouver Fire Department (VFD) and Clark County firefighters at the Texas A&M Engineering Extension Service Emergency Training Services Institute. Additionally, as explained in section 1.4.1.18, Applicant has committed to a Mitigation Fund that can be used to cover backfill pay for emergency responders from those departments who attend that training. Because the number of training slots is limited in any one year, the Applicant will work with the City and other fire districts within Clark County to select and prioritize the training of firefighters. Training will be offered to no fewer than 9 to 12 firefighters per year as agreed upon in coordination with the City and County fire districts.

Additionally, the Applicant and BNSF will continue to offer training to emergency responders in communities along the rail route to improve emergency response preparedness in the event of a rail incident.

The Applicant and BNSF will conduct emergency response training and tabletop drills at three locations in the rail corridor as indicated in sections 1.4.1.14 and 4.1.6.2, including Spokane, Vancouver, and a location in the Columbia River Gorge to be determined. These training and tabletop exercises will serve two purposes: (1) extending the training opportunities to include a

broad array of interested parties; and (2) identifying any gaps in response strategy, response equipment, resources, or training.

The Applicant and BNSF will identify participants and the scope of the drills with EFSEC and Ecology coordination.

Each of the three exercises would result in preparation of a report that identifies any gaps and recommendations on how stakeholders will implement changes to address gaps.

It is anticipated that first responders can use the information obtained through these exercises to pursue federal and state funding to resolve any training or equipment gaps identified in these exercises and identified in the final reports. For example, several federal and state agencies administer grants that fund first responder planning, preparedness, and equipment needs for hazardous materials incidents, including the following:

- Sec. 7203 of the recent FAST Act reforms an underutilized grant program administered by the United States Department of Transportation to get more resources to states and Indian tribes for emergency response, while also granting states more power to decide how to spend their planning and training grants to improve emergency response. It helps better leverage training funding for hazardous materials employees and those enforcing hazardous material regulations. (FAST Act PL 114-94, 129 Stat 1312 (2015)).
- PHMSA administers a Hazardous Materials Grant Program that consists of several emergency preparedness grants, including Hazardous Materials Emergency Preparedness (HMEP) Planning Grants that fund efforts to develop, improve, and carry out emergency plans under the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA); HMEP Training Grants that fund efforts to train public sector employees to respond to accidents or incidents involving the transport of hazardous materials; Supplemental Public Sector Training (SPST) Grants that fund national nonprofit fire service organizations to train instructors and conduct hazmat response training programs for individuals with a statutory responsibility to respond to hazmat accidents and incidents; and Hazardous Materials Instructor Training (HMIT) Grants that provide funds to nonprofit employee organizations for expertise in conducting training programs for hazmat employees.
- The Federal Emergency Management Administration (FEMA) administers several grants designed to facilitate first responder preparedness and training, including Staffing for Adequate Fire and Emergency Response (SAFER) Grants, which provide funding directly to fire departments and volunteer firefighter interest organizations to help increase or maintain the number of trained, “front line” firefighters available in their communities; and Assistance to Firefighters Grants that provide financial assistance to help fire departments, nonaffiliated Emergency Medical Service organizations and State Fire Training Academies attain needed resources to protect the public, train emergency personnel, and foster interoperability.
- Ecology offers equipment response cache grants to emergency responders for oil and hazardous materials response equipment, firefighting public safety equipment, and training.

The Applicant believes that this alternate mitigation, including the three specific exercises, will provide the appropriate structure to identify specific equipment gaps and the appropriate venues and responsibilities to fill the gaps.

In addition, in section 1.4.1.18, Applicant has identified a plan for performance based facility throughput limitation that can be imposed to further reduce the probability of the transportation risk pending demonstration of specified performance measures.

Finally, in section 1.4.1.18 of the ASC, Applicant has proposed a voluntary Mitigation Fund that can be used to contribute the Facility's proportional share of the costs of additional mitigation efforts that address potential impacts that are attributable to the Facility or its operation.

The proposed mitigation will supplement ongoing developments in federal, state, and Ecology regulations and industry efforts that are designed to address this issue and further bolster first responder preparedness to hazardous materials incidents, more generally. For example, as indicated in item PD-49 in the response to DR 12, since the issuance of the DEIS various federal and state requirements have been enacted regarding emergency response planning and spill response preparedness with respect to rail transportation of crude oil. For example, Ecology adopted Chapter 173-185 WAC, Oil Movement by Rail and Pipeline Notification and Chapter 173-186 WAC, Oil Spill Contingency Plan – Railroad, respectively on August 24 and 31 2016. Additionally, the BNSF has purchased a new foam trailer for Bingen to supplement its robust system of existing response equipment caches. And the Applicant has participated in a training conducted by USACE with BNSF and the Union Pacific Railroad on September 21-22, 2016 to train USACE staff to exercise one or more Mid-Columbia GRP booming strategies. As a result of these regulatory requirements and voluntary ongoing coordination and training by and between local, state, and federal agencies, and rail and marine carriers, gaps will continue to be identified and addressed on an ongoing basis.

4.1.3 Releases or Potential Releases to the Environment Affecting Public Health

4.1.3.3 Operations

Wastes Resulting from Normal Operations

The following information is added as shown in underlined text to clarify that Area 600 combined boiler plant effluent is not anticipated to classify as a dangerous waste.

As indicated in section 2.9.1, the Area 600 combined boiler plant effluent may be hauled off site. A preliminary characterization of Area 600 effluent was included in the National Pollutant Discharge Elimination System Engineering Report (provided in section 5.3 of the ASC) and summarized in Table 2.9-2 of the ASC. These estimates were produced by evaluating the constituents in the City of Vancouver supply water with consideration of water treatment and the concentrating effects of boiler operation. These estimates indicated that the water would meet the pretreatment requirements of the City for wastewater discharge to the City's sanitary sewer, and that the effluent would not classify as dangerous waste if hauled off site (Stott 2016).

4.1.4 Safety Standards Compliance

4.1.4.1 Washington State Safety and Health Standards

WAC 296-800, Safety and Health Core Rules

The following mitigation measure is added as shown in underlined text to this section.

The Applicant will provide fire retardant clothing (FRC) to employees in accordance with WAC 296-800-160 through 296-800-16070: Personal protective equipment, as identified in section 4.1.4.1 of the May 2016 ASC (Makarow 2016). The use of FRC was also identified in various work procedures described in Appendix D.3, for example “Site Specific Procedures – Road Power Locomotive – Daily Inspection and Air Brake Test,” under the heading Personal Protective Equipment – “Vancouver Energy Approved Uniform (FRC).”

4.1.6 Emergency Plans

4.1.6.1 Emergency Response Infrastructure

The following text is clarified to indicate the most recent update to the Clark County Hazardous Materials Emergency Response Plan and is shown in underlined text.

The LEPC is responsible for developing and maintaining the Clark County Hazardous Materials Emergency Response Plan (Clark County, April 2012), which describes the procedures and responsibilities for responding to emergencies caused by releases of hazardous materials within the County. This plan was updated in January 2014 (Clark County 2014). The plan provides direction related to incident notification and response procedures as required by federal regulations. This plan is activated and followed if the release of a hazardous material results in the following; casualties or injuries, evacuations, request from a facility and/or transporter operator for response, required notifications under EPCRA or CERCLA, and when a release may involve multiple jurisdictions or agencies.

Facilities that are required to plan under WAC 118-40-300 and EPCRA are required to coordinate with the LEPC to ensure the LEPC’s planning for emergencies is up-to-date. The Applicant will conduct this coordination as required under WAC 118-40-300.

4.1.6.2 Facility Emergency Plans

The following information is added as shown in underlined text to reflect Vancouver Energy’s compliance with WAC 173-185, in effect October 1, 2016 and its commitment to conduct three training exercises:

The Applicant will also comply with the advance notification requirements of WAC 173-185-050, and will provide notification of railcars anticipated to be received in accordance with the information and timing requirements specified therein.

The Applicant proposes the following alternative mitigation to address the issue of first responder preparedness. This alternative mitigation seeks to better specify training opportunities and methods to identify and fill gaps:

The Applicant will offer training to the VFD and Clark County firefighters at the Texas A&M Engineering Extension Service Emergency Training Services Institute. Additionally, as explained in Section 1.4.1.18, Applicant has committed to a voluntary Mitigation Fund that can

be used to cover backfill pay for emergency responders from those departments to attend that training. Because the number of training slots is limited in any one year, the Applicant will work with the City and other fire districts within Clark County to select and prioritize the training of firefighters. Training will be offered to no fewer than 9 to 12 firefighters per year as agreed upon in coordination with the City and County fire districts.

Additionally, the Applicant and BNSF will continue to offer training to emergency responders in communities along the rail route to improve emergency response preparedness in the event of a rail incident.

The Applicant and BNSF will conduct emergency response training and tabletop drills at three locations in the rail corridor as indicated in sections 1.4.1.14 and 4.1.2.2, including Spokane, Vancouver, and a location in the Columbia River Gorge to be determined. These training and tabletop exercises will serve two purposes: (1) extending the training opportunities to include a broad array of interested parties; and (2) identifying any gaps in response strategy, response equipment, resources, or training.

The Applicant and BNSF will identify participants and the scope of the drills with EFSEC and Ecology coordination.

Each of the three exercises would result in preparation of a report that identifies any gaps and recommendations on how stakeholders will implement changes to address gaps.

It is anticipated that first responders can use the information obtained through these exercises to pursue federal and state funding to resolve any training or equipment gaps identified in these exercises and identified in the final reports. For example, several federal and state agencies administer grants that fund first responder planning, preparedness, and equipment needs for hazardous materials incidents, including the following:

- Sec. 7203 of the recent FAST Act reforms an underutilized grant program administered by the United States Department of Transportation to get more resources to states and Indian tribes for emergency response, while also granting states more power to decide how to spend their planning and training grants to improve emergency response. It helps better leverage training funding for hazardous materials employees and those enforcing hazardous material regulations. CITE to FAST Act.
- The PHMSA administers a Hazardous Materials Grant Program that consists of several emergency preparedness grants, including HMEP Planning Grants, that fund efforts to develop, improve, and carry out emergency plans under the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA); HMEP Training Grants that fund efforts to train public sector employees to respond to accidents or incidents involving the transport of hazardous materials; SPST Grants that fund national nonprofit fire service organizations to train instructors and conduct hazmat response training programs for individuals with a statutory responsibility to respond to hazmat accidents and incidents; and, HMIT Grants that provide funds to nonprofit employee organizations for expertise in conducting training programs for hazmat employees.
- FEMA administers several grants designed to facilitate first responder preparedness and training, including SAFER Grants that provide funding directly to fire departments and volunteer firefighter interest organizations to help increase or maintain the number of trained, “front line” firefighters available in their communities; and Assistance to Firefighters Grants

that provide financial assistance to help fire departments, nonaffiliated Emergency Medical Service organizations and State Fire Training Academies attain needed resources to protect the public, train emergency personnel, and foster interoperability.

- Ecology offers equipment response cache grants to emergency responders for oil and hazardous materials response equipment, firefighting public safety equipment, and training.

The Applicant believes that this alternate mitigation, including the three specific exercises, will provide the appropriate structure to identify specific equipment gaps and the appropriate venues and responsibilities to fill the gaps.

In addition, in section 1.4.1.18, Applicant has identified a plan for performance based facility throughput limitation that can be imposed to further reduce the probability of the transportation risk pending demonstration of specified performance measures.

Finally, in section 1.4.1.18 of the ASC, Applicant has proposed a voluntary Mitigation Fund that can be used to contribute the Facility's proportional share of the costs of additional mitigation efforts that address potential impacts that are attributable to the Facility or its operation.

The proposed mitigation will supplement ongoing developments in federal, state, and Ecology regulations and industry efforts that are designed to address this issue and further bolster first responder preparedness to hazardous materials incidents, more generally. For example, as indicated in item PD-49 in the response to DR 12, since the issuance of the DEIS various federal and state requirements have been enacted regarding emergency response planning and spill response preparedness with respect to rail transportation of crude oil. For example, Ecology adopted Chapter 173-185 WAC, Oil Movement by Rail and Pipeline Notification and Chapter 173-186 WAC, Oil Spill Contingency Plan – Railroad respectively on August 24 and 31 2016. Additionally, the BNSF has purchased a new foam trailer for Bingen to supplement its robust system of existing response equipment caches. And the Applicant has participated in a training conducted by USACE with BNSF and the Union Pacific Railroad on September 21-22, 2016 to train USACE staff to exercise one or more Mid-Columbia GRP booming strategies. As a result of these regulatory requirements and voluntary ongoing coordination and training by and between local, state, and federal agencies, and rail and marine carriers, gaps will continue to be identified and addressed on an ongoing basis.

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Section 4.2 Land and Shoreline Use

4.2.4 Recreation

4.2.4.4 Mitigation Measures

The following construction mitigation measure is added as shown in underlined text.

As part of its Construction Communication Plan (see section 2.16.6), the Applicant will distribute the proposed schedule of construction activities to all potentially affected recreational sites within 2 miles of the Facility so recreational users are aware of construction-related disruptions and can schedule active ties accordingly to avoid disruption.

4.2.5 Historic and Cultural Preservation

4.2.5.6 Cultural Resource Assessment

Impacts

The following information supplements the discussion of impacts to historical and cultural resources, as shown in underlined text.

Assessment of Facility-Related Vessel Transit Impacts

The Applicant conducted an investigation to assess the potential for Project-related vessel wakes to impact cultural resources (that includes archaeological sites and districts, historic structures, as well as Traditional Cultural Properties) situated along the Oregon and Washington shorelines of the Columbia River from River Mile 1 to River Mile 104 (Butler 2016a, Butler et al. 2016 [see Appendix A.4]). The investigation consisted of background research, geographic information system (GIS) analysis, field investigation, and preparation of a report that provides the study results, conclusions, and recommendations. This report used the cultural resource data from a previous study performed by AECOM for the Millennium Coal Export Terminal Project that looked at the potential for identical types of impacts from River Mile 1 to River Mile 63.

The methodology for the shoreline erosion study consisted of several components. These components consisted of:

- A review of previous environmental studies conducted to analyze the causes of shoreline erosion along the Columbia River;
- A review of Oregon State Historic Preservation Office and Washington Department of Archaeology and Historic Preservation site files for previously recorded cultural resources situated on the Columbia River;
- A review of existing anthropogenic (human-made) features, such as shoreline armoring, pile dikes, road fill, and riprap, which can affect intensity of wave erosion as represented in existing GIS data;
- A review of geomorphic surfaces and bank soil texture in the vicinity of the previously recorded cultural resources to determine relative susceptibility to erosion and sediment transport; and

- Measuring of the distance from the Columbia River ship channel to cultural resource locations (along the shoreline).

As a result of the file search, the study identified 94 cultural resources along the Columbia River shoreline from River Mile 1 to River Mile 104 in Oregon and Washington. Using three variables (soil types, distance from the ship channel, and presence/absence of anthropogenic features) as a screening mechanism, it was determined that 22 of the 94 cultural resources could be potentially susceptible to shoreline erosion from vessel wakes. The 22 sites are situated near or in erodible soils, in close proximity to the Columbia shipping channel, and noted by archaeologists in previous reports as subject to erosion.

A field team consisting of a geoarchaeologist, archaeologist, and historian visited the 22 cultural resource locations to assess the relative susceptibility of the sites to damage from boat wake-induced erosion. As a result of the field assessment, this shoreline erosion study concluded that there is a low probability that Project-related vessel wake erosion would impact previously recorded cultural resources along the shoreline from River Mile 1 to River Mile 104 in Oregon and Washington. In general, the study found that several of the previously recorded cultural resources have already been impacted by shoreline erosion, development, recreation, looting, or the placement of dredge spoils. It was also found that many of the individual sites exhibited some form of shoreline protection, such as vegetation, forebeaches, riprap, or pile dikes, that would tend to inhibit or reduce boat wake energy thus minimizing the potential for measurable erosion from boat wakes.

The study considered additional variables that were not considered in EFSEC's DEIS (EFSEC 2015, section 3.13.3.3) that contribute to analyzing the magnitude and intensity of potential impacts to archaeological sites from wake. These variables include the proximity of the site to the shipping channel, the geomorphology and structure of the shoreline where the site exists, the erodibility of the existing soil types, exposure of the shoreline to river currents and winds, seasonal fluctuations in river flows and elevations, presence of anthropomorphic features (such as dikes, roads, riprap, dredge fill, etc.), and the relative physical integrity of the site. The study data showed that individual archaeological site conditions would tend to inhibit, reduce, and/or minimize boat wake energy thus minimizing the potential for measurable erosion from vessel wakes. The study also revealed that the existing sites had already been impacted by manmade or natural erosion, manmade structures, looting, or destruction due to use as modern fishing locations. This combination of factors suggests that the potential for Facility-related vessel transit effects on shoreline cultural resources would be low, and do not result in a need for mitigation measures.

Mitigation measures presented in EFSEC's DEIS (EFSEC 2015, section 3.6.5) would not be effective, as the areas studied for impacts to aquatic species from wake stranding (such as County Line Park, Sauvie Island, and Barlow Point) have been significantly modified by levees, dredged materials, pile dikes, and shoreline armoring thus reducing the likelihood of these locations featuring intact cultural resources. All of these locations also feature broad forebeaches with a slope that is less than 5 percent (Pearson et al. 2008). Due to the minimal slope, wave energy would be significantly reduced prior to reaching any potentially exposed shore bank. Lastly, no previously recorded cultural resources were identified at Barlow Point or County Line Park and previously recorded cultural resources situated on Sauvie Island would have little potential to be affected by vessel wakes due to the types of sites identified along the Island's

shoreline, the shoreline structure, the placement of dredged materials, and other shoreline protection measures that have been undertaken.

4.2.5.7 Mitigation Measures

Operations

The following information supplements the discussion of mitigation measures as shown in underlined text.

Facility-Related Vessel Transit Impacts

Although the impacts were deemed to be “minor,” EFSEC’s DEIS recommended mitigation for impacts to cultural resources potentially resulting from vessel wakes, (EFSEC 2015, section 3.6.5)¹. Such measures would not be effective, as the areas studied for impacts to aquatic species from wake stranding (such as County Line Park, Sauvie Island, and Barlow Point) have been significantly modified by levees, dredged materials, pile dikes, and shoreline armoring thus reducing the likelihood of these locations featuring intact cultural resources. All of these locations also feature broad forebeaches with a slope that is less than 5 percent (Pearson et al., 2008). Due to the minimal slope, wave energy would be significantly reduced prior to reaching any potentially exposed shore bank. Lastly, no previously recorded cultural resources were identified at Barlow Point or County Line Park. Previously recorded cultural resources situated on Sauvie Island would have little potential to be affected by vessel wakes due to the types of sites identified along the Island’s shoreline, the shoreline structure, the placement of dredged materials, and other shoreline protection measures that have been undertaken. Mitigation measures for Facility-related vessel transit impacts to cultural resources are, therefore, neither warranted nor proposed.

¹ See section 3.13.3.3 of EFSEC’s DEIS, page 3.13-17: “Mitigation measures identified in section 3.6.5 to reduce impacts to aquatic species from wake stranding would also reduce this potential impact to cultural resources.” The measures identified in section 3.6.5 applicable to wake effects were: *“Develop mitigation for wake stranding and wake effect impacts in consultation with appropriate state and/or federal agencies. Examples might include the addition of fine-scale beach features such as strategically placed logs or vegetation in susceptible areas to provide refuge from wakes for habitat types important to juvenile fish.”* and *“Develop mitigation for wake stranding and wake effect impacts in consultation with appropriate state and/or federal agencies. Examples might include the addition of fine-scale beach features, such as strategically placed logs or vegetation in susceptible areas to provide refuge from wakes for habitat types important to juvenile fish.”*

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