



THE STATE
of **ALASKA**
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
DIRECTOR'S OFFICE

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September 19, 2019

Power Systems & Supplies of Alaska
and Ward Cove Industries
Attn: David Spokely
6841 N Tongass Highway
Ketchikan, AK 99901

Godspeed, Inc.
Attn: John Binkley
5325 Chena Small Tracts Road
Fairbanks, AK 99709

Re: Ward Cove Redevelopment Plans - Power Systems & Supplies of Alaska- Cruise Ship Dock and Ward Cove Industries – Barge Landing Ramp/Dock

Dear Mr. Spokely and Mr. Binkley:

The Department of Environmental Conservation (DEC) Division of Spill Prevention and Response – Contaminated Sites Program has reviewed the U.S. Army Corps of Engineers permit applications submitted by Power Systems & Supplies of Alaska (PSSA) and Ward Cove Industries, respectively, for the projects referenced above. As you are aware, the former Ketchikan Pulp Company Ward Cove Pulp Mill and surrounding area is a contaminated site that has been addressed through a risk-based cleanup and remains subject to the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and applicable Alaska environmental statutes and regulations.

DEC understands that the proposed redevelopment plans may adversely impact the sediment cap and underlying materials which can potentially cause chronic exceedances of water quality standards.

BACKGROUND

The former Ketchikan Pulp Company (KPC) Mill Site located in Ward Cove was subject to a cleanup under CERCLA in the late 1990s. The site is divided into two Operable Units (OUs): the Uplands OU and the Marine OU. Both areas are subject to an Institutional Control (IC) Plan and an Environmental Protection Easement and Declaration of Restrictive Covenants signed by KPC and the Ketchikan Gateway Borough (KGB). The easement and covenants travel with the land and apply to all successors and assigns. Current owners at the site are KPC, PSSA, and the Alaska Department of Transportation and Public Facilities (ADOT&PF)/Alaska Marine Highway System (AMHS). KPC owns the landfill; PSSA owns the upland pulp mill site and a large portion of the marine property; and ADOT&PF owns a portion of the upland and marine properties. PSSA leases its property to Ward Cove Industries LLC.

Upland Areas

During the mid- to late 1990s, soil contaminated with petroleum, lead, PCBs, benzo(a)pyrene, and dioxins was removed from several areas around the site to support commercial/industrial land use.

The institutional control requirements established on the Upland OU include:

- Maintain acceptable risk levels for soils for industrial/commercial exposure scenarios;
- Restrict residential land use (or similar non-industrial/commercial land use resulting in around the clock residence by people or daily use by children);
- Comply with requirements identified in the *Management Plan for Arsenic in Rock and Soil* to reduce exposure to arsenic in soil and rock;
- Prohibit drilling of water wells and use of groundwater;
- Identify and address source areas (if any) during demolition and excavation activities using applicable or relevant and appropriate requirements such as current risk-based concentrations or standards and criteria; and
- Properly characterize and manage soils excavated from the near-shore fill subarea or underneath paved areas or structures and from other locations that were not evaluated or characterized in the remedial investigation.

Marine Areas

Mill operations affected marine sediments through the release of large quantities of organic material as by-products from wood pulping. This organic material altered the physical structure of the sediments, and thus the type and amount of benthic (bottom-dwelling) organisms. Degradation of the organic-rich pulping and by-product led to anaerobic conditions in the sediment and production of ammonia, sulfide, dioxins and 4-methylphenol in quantities that were potentially toxic to benthic organisms in sediments on the bottom of Ward Cove. The chemicals of concern in sediments are ammonia, sulfide, and 4-methylphenol. Ward Cove had been listed as an impaired water on the State's Clean Water Act (CWA) §303(d) listing for Toxic & Other Deleterious Organic and Inorganic Substances water quality standards for the sediment toxicity and was moved to Category 2 (2010) due to the effectiveness of the CERCLA response actions. In addition to the contaminants of concern in the sediment, the Ward Cove waterbody is listed as impaired on the State §303(d) listing for residue and dissolved oxygen from the historical discharges and associated activity from the KPC pulp mill operations, with a Total Maximum Daily Load (TMDL) established for these two parameters.

The Marine OU consists of the entirety of Ward Cove, with a subsection of it designated the Area of Concern, which includes both capped and uncapped areas of impacted sediments. The ICs in effect for the Marine OU protect the sediment remedy in Ward Cove and require that anyone who conducts post-remediation activities within the Area of Concern that materially damage the thin-layer cap or mounds will be required to redress such damage, at the direction of EPA. These restrictions are formalized in a 2000 Consent Decree, which prohibits persons from using the Site in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures implemented by the Consent Decree. If projects or activities materially damage the sediment cap applied to patented tidelands, the current owner and/or the lessee shall be required, at the direction of EPA, to redress such impacts, specifically to repair or replace the impacted portions of the sediment cap if site use activities expose substantial areas of non-native organic-rich sediments and thus adversely affects the continued recovery of the benthic community in the sediments. These requirements are binding on current and future owners.

The institutional control requirements established on the Marine OU include:

- For any action that could materially damage (e.g., erode or displace) any portion of the area of the AOC that has a sediment cap, the following actions must be taken:
 - The property owner of the tidelands will notify the EPA project coordinator for the Marine OU at least 3 months prior to initiation of such action. The property owner shall provide all information requested by EPA for EPA's evaluation of the proposed action.
 - The property owner of the tidelands will notify the KPC/Louisiana-Pacific project coordinator for Ward Cove at least 3 months prior to initiation of such action.
 - The EPA project coordinator will notify the appropriate contact at the State of Alaska Department of Natural Resources.

- EPA will determine the methods needed to assess the magnitude of the damage to or disruption of the cap.
- The property owner will assess the magnitude and scale of the cap disruption using the methods specified by EPA.
- EPA will determine the appropriate response action to address the damage.
- The property owner will ensure replacement of portions of the cap that are materially damaged, as specified by EPA.
- The property owner will submit two copies of a written report summarizing the completed action(s) to the EPA project coordinator for approval. The report shall describe all work performed (work completed, work dates, results of analyses, project personnel, problems encountered, and resolutions) and shall include as-built drawings of the completed construction work signed and stamped by a professional engineer registered in the State of Alaska. The report shall be revised in response to EPA comments.
- The property owner of the tidelands will be liable for EPA's costs associated with reviewing and overseeing the action or proposed action that is deemed by EPA to violate the institutional control.
- These procedures and requirements do not act to relieve current and future owners of any obligations under the CERCLA Consent Decree.

PROPOSED DEVELOPMENT PROJECT

The proposed barge landing and dock projects fall within the marine Area of Concern, with the footprints impacting both the thin layer sand cap as well as areas where a sand cap could not be feasibly applied. DEC is concerned that the proposed development and operations may significantly damage the sediment cap portion of the Area of Concern and disturb other areas where recovery has occurred, exposing waste left in place. This could cause a release of contaminants and degradation of benthic habitat that would render the CERCLA remedy for the Marine OU no longer protective of human health and the environment, potentially violating the terms of the 2000 Consent Decree.

Construction Activities

Marine area - As the projects are currently described, construction impacts are predicted to occur as a result of anchoring and maneuvering by barges that will be used during the construction of the facilities; pile driving and removal; and placement of over 12,000 cubic yards of gravel and concrete rubble fill for the barge landing ramp. A total of 22 piles 16" in diameter will be installed for the barge facility. Another 48 temporary and 46 permanent piles ranging from 30" to 48" in diameter will be installed for the cruise ship dock, 22 of which will occur through the sand cap, while the others will occur in areas of the Marine OU that have not been capped. Together, these activities may impact contaminated waste left in place and the benthic habitat that has recovered in this area.

Upland area - no information was provided in the permit application on the extent of the planned disturbance, but a verbal description provided by the developers stated that the cruise ship trestle will extend inland 35' from the rip-rap at the shoreline and require an excavation of approximately 2.5' in depth, as well as trenching for an unspecified length and width for installation of utilities. Excavation and disturbance from the barge ramp construction were not described.

Future Operational Activities

The purpose of the proposed projects is to support future operation of large cruise vessels and barges in the Area of Concern (AOC) to access the proposed facilities. The department's review of the projects therefore must consider and evaluate the project purpose and how it may impact the remedy for the Marine OU.

As described in the permit application for the barge facility, the applicant's stated purpose is to allow transportation of goods and services from barges, allow the haul out of barges and other vessels for maintenance and repairs, and to provide additional moorage space for vessels. Additional detail about these vessels, including docking, maneuvering, and navigation routes, is not provided.

The cruise dock is proposed to be used by the Norwegian Bliss, a post-Panamax ship with an overall length of 1,094 ft., beam 136.2 ft., and maximum draft 29.53 ft. The ship has 20 decks, 2,220 cabins and can carry 4,000 passengers. Project proponents estimate two vessel dockings per day, with passengers to be transported by bus to downtown Ketchikan and elsewhere. The developers have also stated that smaller cruise ships of unspecified dimensions and capacity will also use the facility.

Of greatest concern from the proposed operations is scouring that may occur with cruise vessels during navigational maneuvering and docking. While the 2000 Record of Decision (ROD) states, that “EPA does not intend to restrict vessel access or restrict anchoring of vessels in the MOU, ... and that the Selected Remedy is designed to be compatible with future economic development in the Cove” such as cruise ships, DEC does not believe that the remedy in the ROD anticipated the operation of this magnitude of vessel in Ward Cove, nor conceived of the type of propulsion systems now in use for such vessels. Newer generation (since 2000) vessels are now equipped with Azipod propulsion systems. The Norwegian Bliss, part of a new class of very large cruise ships (VLCS), was first introduced in 2018 and uses an ABB Azipod XO system that is capable of power up to 22 MW per unit, for a total capacity of 44 MW. Even in 2000, concerns about scouring from significantly lower power Azipod systems were raised by the industry:

“Ports need to prepare for the impacts of Azipod. The high water velocity generated by conventional thrusters during a berthing operation already can threaten support structures such as piles and sheet piles in some ports. The scouring and undermining from this high water velocity can eventually cause a failure of a pile or wall. If one considers that Azipods can be nearly 10 times as powerful as conventional thrusters, it is easy to see that there indeed is a need for planning. An Azipod utilizes about 14 MW, while a conventional thruster uses about 1.5 MW.” (New Cruise Ship Designs Impact Terminal Ops and Logistics, Maritime Reporter and Engineering News 2000).

Comments concerning the proposed cruise ship operations submitted by an individual pilot for the Southeast Alaska Pilots’ Association indicate that scouring from these systems is a real concern (Capt. Johnson, SE AK Pilots Association, August 2019). A Ward Cove scour assessment commissioned by ADOT&PF specifically for Alaska Marine Highway System (AMHS) ferry vessels (smaller and equipped with a different propulsion system), found scouring would occur in the AOC sufficient to damage the cap (CH2MHill, 2009). Some of the conclusions were countered in peer reviews, but there was also recommendation for additional study and that transit be limited to periods when wind and current conditions do not require tug assists and large engine power levels (Dalton, Olmsted & Fuglevand, Inc., and Windward Environmental LLC, 2009; PND, 2009). As a result of this scour study, ADOT&PF relocated their proposed facility to outside the AOC. Finally, although Skagway Harbor is a shallower port, a sediment risk assessment documented scouring by large cruise ships that is significant enough to constitute dredging. Although project developers have given some limited verbal descriptions of ship docking, the project proposal itself does not provide a written analysis of ship maneuvers in and out of the cove under various tidal stages, wind, and current conditions, and does not provide specific details on how ships will dock at the facility. Project proponents have also indicated that ship pilots will have the final say on docking maneuvers in any condition. Furthermore, the developers have stated that smaller cruise ships will also use the facility which may result in the Azipod thrusters on these vessels being located in shallower waters closer to shore. To date, the project proponents have not provided a study or information about the potential impacts from operation of these vessels in Ward Cove at the dock facility currently proposed.

DEC REQUESTS

On September 10, 2019 DEC met with project proponent John Binkley and his contractors to discuss the project, DEC concerns, and potential solutions. In order to address concern over the potential for damaging the existing remedy and creating release of, or exposure to, residual contaminants, Mr. Binkley agreed conceptually to the following items. DEC has added specificity to the requests:

1. Prior to the commencement of construction activities, a pre-construction benthic seafloor survey and sampling/analysis plan be submitted for DEC and EPA approval to document baseline conditions prior to construction in the areas of the Marine OU where construction activities for both facilities are proposed to occur. The work plan objectives should mimic those described in the long-term monitoring and reporting

plan submitted by Exponent in 2001 and reiterated in the [2007 Monitoring Report for Sediment Remediation in Ward Cove, Alaska](#), authored by Integral Consulting, Inc. and submitted in April 2009.

2. Submission of a benthic seafloor monitoring plan for DEC and EPA approval prior to the commencement of cruise vessel operations, which assesses conditions in the areas of the Marine OU where vessel activity will occur. The work plan objectives should mimic those described in the long-term monitoring and reporting plan submitted by Exponent in 2001 and reiterated in the 2007 Monitoring Report for Sediment Remediation in Ward Cove, Alaska, authored by Integral Consulting, Inc. and submitted in April 2009. Monitoring under the approved plan will be conducted after the first season of operations and may be required for a second year, based on facility operations and results of the first year of monitoring. (Note, the documents are not attached to letter due to their size.)
3. Within 90 days prior to operation, submission to DEC, EPA, and other agencies (such as USCG) as appropriate, of a best management practices operation plan that is developed in coordination with cruise vessel pilots and tug operators along with the other users of Ward Cove. The plan should outline the general navigational route and docking locations for the types of vessels and tugs and their propulsion systems. The plan should describe maneuvering scenarios under a variety of wind, current, and traffic conditions as well as location and depths of those activities and the potential for scour impacts (if any). The plan should describe how operations will occur to avoid impacts to the Marine OU under the scope of anticipated (wind, current, traffic) conditions. It should include but not necessarily be limited to procedures for documenting and reporting on adherence with the plan; measures for improvements; and signatories (participants) in the plan.
4. A work plan be submitted for DEC and EPA approval for the proposed upland excavation activities including sampling and analysis to:
 - a. Comply with requirements identified in the *Management Plan for Arsenic in Rock and Soil* to reduce exposure to arsenic in soil and rock;
 - b. Identify and address source areas (if any) during demolition and excavation activities using applicable or relevant and appropriate requirements such as current risk-based concentrations or standards and criteria; and
 - c. Properly characterize and manage soils excavated from the near-shore fill subarea or underneath paved areas or structures and from other locations not evaluated or characterized in the remedial investigation.

If you have any questions regarding this matter, please feel free to contact John Halverson at (907) 269-7545 or john.halverson@alaska.gov.

Sincerely,



Denise Koch
Director

cc (via email):

Michael R. Gala, U.S. Army Corps of Engineers, Alaska District
Phil Benning, KPC/Louisiana Pacific
Richard Harney, Ketchikan Gateway Borough, Director
Kathy Cerise, EPA Region 10, Remedial Project Manager
Justine Barton, EPA Region 10
Mark Minnillo, ADF&G
Robin Reich, Solstice AK
Kirk Miller, ADOT&PF/Alaska Marine Highway System (AMHS)