Rayonier Mill Site Cleanup Report Vol 3
Comments on behalf of the Olympic Environmental Council
October 20, 2019

A public comment period is set from August 29 to October 28, 2019 to provide a chance to comment on Volumes I, II, and III before they are finalized.

An open house was held on September 25, 2019, from 6:30 to 8:30 p.m. at the Olympic Medical Center, Linkletter Hall.

Volume I is the report on contamination in the upland soils in the vicinity of the former Rayonier plant.

Volume 2 is the report on contamination in the marine areas, including sediment, water and marine animals, such as fish and crabs.

Volume 3 is the description and analysis of cleanup techniques and approaches considered for the Rayonier site. In this document, Rayonier has described a series of specific methods for cleaning up the contamination at the Rayonier site in Port Angeles, including the parts of the harbor that are included in this action. The report and this action do not address the contamination associated with the landfills that received Rayonier during the operation and demolition of the pulp mill.

Summary

The document relies too much on Institutional Controls (ICs) for managing the interaction between people and the contaminated material that is left behind and neither treated nor removed. Institutional Controls are intended to control the behavior of people and not do anything with the contamination. Some examples of Institutional Controls include deed restrictions on private or public property, signage to keep people out of an area, and fish consumption warnings in cases of contaminated fish. Long term costs of leaving contamination in place will include fences, signs and employees to inspect and monitor, including full time, as needed.

The cost factors for remedial expenses and costs of leaving contaminants in place are not based on a sufficiently long period of time. The metals, PCBs and dioxins will not breakdown at all (metals) or not breakdown in a measurable period of time (PCBs and dioxins). The remedy must be effective for a sufficiently long period of time to account for the permanence of the chemicals. Additionally, the costs do not seem to account for the costs of leaving contaminants in place. Those costs include annual or more frequent inspections and monitoring, maintaining signage, inspecting the site and inspecting the remedy, even if only a cover of sand is the remedy. The costs of leaving contamination and covering it up will include the costs of dirt, the hauling fees, any fees for spreading, and more.

11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com

This site is already subject to weather extremes, and the changing climate that brings global warming will make the problem worse. Extreme weather will be the tides, storm surges, rainfall and drought, and high temperatures as well as rising sea level.

P3-10: "MTCA rules stipulate that soil cleanup actions using this conditional POC ['POC= Point of Compliance'- with the applicable regulation or legal remedy] for the protection of terrestrial ecological receptors must include institutional controls (ICs) to ensure that the cleanup action remains protective. All of the soil remediation alternatives developed in Section 5 include ICs."

Exactly how does an IC control wildlife behavior so as to reduce or prevent exposure? An IC cannot. This option is just silly. Institutional Controls have been shown as ineffective and not reliable in the long term (US GAO 2005 and 2006). Moreover, wildlife exposure cannot be controlled via Institutional Controls.

Page 4-1 The document and public need to note that the EPA considers General Response Actions in the following order:

- Treatment is preferred
- Removal is the second option
- Containment (covering up and walling off) is the choice of last resort

The other general response actions listed in the report are not active remediation and should not be considered in the same section. Institutional controls (ICs) are discussed below because this approach has been used throughout and has been evaluated and found defective and ineffective by no less than the U.S. Government Accountability Office (USGAO 2005 and 2006).

Monitored natural recovery (MNR) and monitored natural attenuation (MNA) are not preferred and are specifically noted as inappropriate for chemicals that do not breakdown at all (such as all metals) or breakdown at an imperceptible rate (such as dioxins and PCBs). Using natural processes to cover up such chemicals as metals, dioxins and PCBs should be rejected out of hand. Both MNR and MNA should be rejected outright.

This section fails to consider extraction / removal followed by treatment, such as pump and treat technology for groundwater or dredging sediments and biological or chemical treatment to breakdown the contaminants. Such options are used in cases of even extensive soil removal that can include streams. One Superfund Site that used removal and treatment is the Ward Site in Raleigh North Carolina with approximately 400,000 cubic yards of PCB contaminated soil. The remedy selected and used was thermal desorption following soil removal. Thermal desorption is a high temperature industrial oven that collects and treats all vapors. The closed desorption unit was located on site and operated at a temperature sufficiently high to treat the PCBs.

11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com

The section on methods fails to include a method that has been used in Washington State at a number of sites and may well be useful here- the Remediators. This firm is local and uses biochar to treat both organic chemicals and metals. The method has been applied in a number of situations, including low level PCB contamination.

Institutional Controls

A special note is due the consideration of Institutional Controls that are used at a number of contaminated sites around the country. This approach involves changing human behavior in order to prevent or limit human interaction between the population and the contamination. Institutional Controls do not work for wildlife and are completely inappropriate for wildlife, by definition, regardless of MTCA.

Institutional Controls are not effective in achieving the intended objective, as described in the reports by the US Government Accountability Office (USGAO 2005 and 2006). In this report, USGAO describes the investigation conducted by this office in reviewing the remedies at Superfund sites around the nation. The controls that had been put in place included deed restrictions, signage, fish consumption advisories and property use restrictions. The full report (USGAO 2006) provides more details on the limitations of Institutional Controls, and to summarize issues,:

- When properties are sold or transferred, the new owner disregards the Control;
- Signs are not maintained;
- Signage is ignored or not encountered;
- EPA project managers neglected to implement controls in the final remedy;
- State responsibility was not clearly assigned;
- Site reviews were either not conducted or did not include Institutional Controls.

These and other problems were identified in the USGAO (2005 and 2006) reports.

Page 4-6 Section 4.2.2.2 Bioremediation.

This section does not include the bacterial breakdown used on PCBs, dioxins and several chlorinated organics used in California and other sites by Biotech Restorations (https://biotechrestore.com/). This method has proven to be effective in breakdown of a range of organic chemicals, notably chlorinated organic pesticides and industrial chemicals. This method has been used in numerous situations and should have been evaluated for the Rayonier site.

Nor does this section contemplate using multiple techniques used either simultaneously or in sequence. The report does not account for the more cost effective method of BioTech Restorations. Biotech Restorations has developed a method that uses bacteria to breakdown chlorinated organic chemicals such as PCBs and dioxins. Because this method is not included, the analysis therefore assumes or miscalculates that a combination of methods is too expensive and perhaps not effective. Combining bioremediation with metal extraction is cost effective using the BioTech Restoration 3

method and metal extraction, allowing unrestricted use and in many sites, eliminates long term costs of monitoring and maintenance.

Remediation Alternatives Section 5

Under any and all remedial action taken at this site, as should be the case for all MTCA (and federal Superfund) Sites, the final order needs to indicate and require completion by a date certain, or within a specified time. Such requirements that the work be completed are normal at such sites, even though this one has continued for more than 20 years.

Upland Soil:

5.1.6. SL-5 – Excavation is the best selection and the only option that provides a permanent long-term solution. In addition, this alternative will be the least expensive in the long term because there will be no monitoring in the future and no maintenance costs. The complete excavation offers the advantages of no maintenance, no monitoring and no additional liability for the company or effort for the agency. In a related decision in Seattle, on the Lower Duwamish River, at Slip 4, the Boeing Co chose complete removal and elimination of further costs for maintenance, monitoring and the liability on the corporate accounting books.

Groundwater:

The report may well be correct that all three options use methods that have been used at other sites and some other uses have been in somewhat similar circumstances. Both air sparging (pumping a gas, such as air, through groundwater) and chemical oxidation (adding a chemical that will react with the contaminants and render the chemicals less toxic or inert) are well proven technologies. Reactive barriers (a physical barrier that is made of or soaked in a chemical that reacts with and de-toxifies the contaminants), however, have a less successful track record, especially under the specific conditions in the groundwater at the Rayonier site. The report is correct that any option will have to be pilot tested to be sure that the final design and operation is appropriate to the specific site conditions.

The Remedial options should have considered combinations of the different methods.

Sediment:

All options assume removal of the mill dock and jetty, per section 7.*4: "Additional costs would be incurred for other components, including removal of the mill dock and jetty and restoration of the Ennis Creek Estuary (pending NRD-related agreement)."* Apparently, the remedy options leave the mill dock and jetty removal to the NRD action (presumably because of the habitat restoration value of the action in this area). While this approach is mentioned in the section describing the sediment alternatives, this approach may not have been entirely clear to the public. The removal needs to be part of the final decision document and a legal commitment on the part of the company and Ecology.

11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com

Section 5.3.6 S-5 The sediment contaminants include dioxins/furans, PCBs, mercury, PAHs (chemicals that make up creosote), phthalates, Complete removal of all contaminated sediment is both the most protective in the long term, and the most permanent. In addition, the remedy that covers the contamination with sand or "clean soil" will incur additional direct and indirect costs to include hauling materials through the Port Angeles community.

Section 6 presents the criteria by which the remedy options are evaluated as presented in the report. Unfortunately, the cost estimates do not include the financial benefits of a complete removal and cleanup over a long period of time. These financial benefits are not only for monitoring and maintenance, but also include administrative savings of not having a contaminated site.

The report ranks all alternatives equally with regard to public input because the public comment period remains open. This approach is not the one used in most EPA analysis in which no ranking is conducted until the public comments are received. As of the present point in the process, the public has repeatedly called for complete removal of the dock, jetty and all contamination.

Section 7 is the selection of remedies for each category- soil, groundwater and sediment. The brief section simply restates the information that is contained in sections 4, 5 and 6 along with the conclusions of the consulting firm that prepared the document.

The previous text of this comment letter explains why the choices are insufficient and will not satisfy the criterion of permanence, nor meet the preference for treatment over removal or containment.

Permanence is ever more important for remedies at the shore in the current era. The Port Angeles region is facing rising sea levels and higher temperatures in the coming years. The near-shore areas will be inundated more frequently than in previous years; some shoreline intertidal areas will be subtidal and thus permanently under water.

It is clear that permanence needs to be given the highest priority. The options that work for the best and most permanent solution, as indicated in Volume 3 are:

Upland soil (SL): SL 5- Removal of all soil that has chemicals above the regulatory limit presented in Vol 3 and remove that soil off site for disposal. Any holes or such excavations will be filled in with clean soil. No long term maintenance will be needed.

Groundwater (GW): GW 3- Chemically treat the contaminated groundwater to breakdown the contaminants.

Sediment (S): S 5- Remove contaminated sediment from the log pond, around the dock, in the near shore area, and all other areas where contamination is present. Covering would not be needed.

11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com

Prepared by Environmental Stewardship Concepts, LLC, Henrico VA environsc@gmail.com. 20 October 2019.

11223 Fox Meadow Dr., Henrico VA 23233 ph: 804-690-4153 environsc@gmail.com