

**Former Rayonier Mill
Port Angeles**

Responsiveness Summary

for

**Agreed Order and Management Plans
for the
Remedial Investigation –Feasibility Study
of the
Uplands Environment**

**Washington Department of Ecology
Lower Elwha Klallam Tribe**

March, 2004

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More Information

The Agreed Order, Management Plans for the Remedial Investigation – Feasibility Study of the Uplands Environment, and other site materials are available at these information repositories:

- North Olympic Library System
Reference Desk
2210 South Peabody Street
Port Angeles, WA 98362
(360) 417-8500

- Peninsula College Library
Reference Desk
1502 East Lauridsen
Port Angeles, WA 98362
(360) 452-9277

- Department of Ecology
Southwest Regional Office
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(360) 407-6243

Selected documents are also available on the Washington Department of Ecology's web site at <http://www.ecy.wa.gov/>

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Introduction

This responsiveness summary addresses comments received during the public comment period on the draft MTCA Agreed Order and “Management Plans for the Remedial Investigation – Feasibility Study of the Uplands Environment, Former Rayonier Mill, Port Angeles, Washington” (Uplands RI/FS Management Plans). The public comment period was open from April 7, 2003, through May 7, 2003.

The Washington State Model Toxics Control Act (MTCA; Chapter 173-340 WAC) requires that a minimum 30-day public comment period be held for MTCA Agreed Orders for site cleanup. The Washington Department of Ecology (Ecology) and the Lower Elwha Klallam Tribe are working cooperatively to provide oversight of the cleanup at the Former Rayonier Pulp Mill in Port Angeles. The cleanup is being conducted by Rayonier Properties, LLC (formerly Rayonier, Inc.) under the authority of MTCA.

Ecology and the Tribe have jointly reviewed and responded to all comments. The comments as they are presented in this document may be paraphrased from the original to clarify references to specific locations in the Uplands RI/FS Management Plans.

This responsiveness summary is organized into five sections:

- Introduction – describes the purpose and scope of the responsiveness summary, describes the organization of the summary, and provides contact information
- Summary of Public Involvement – describes the public involvement process for the Agreed Order and Uplands RI/FS Management Plans.
- List of Commentors
- Responses to Common Concerns – Comments from different public reviewers often covered the same topics. To reduce redundancy, comments addressing the same topic were grouped under a set of common themes with responses provided to those common themes.

Responses to Individual Comments – All comments received during the public comment periods are also addressed individually. In several cases where an individual comment focuses on an issue which has already been addressed by the Response to Common Concerns section, the response will refer to the appropriate text in that section. In some such cases, the response may also provide some additional discussion as warranted.

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Summary of Public Involvement

MTCA mandates public involvement in the site cleanup process. The public involvement process established by Ecology and the Lower Elwha Klallam Tribe for the former Rayonier Port Angeles Pulp Mill Site provides for participation by a regulatory technical advisory group, periodic distribution of public notices and fact sheets, and public outreach meetings and presentations.

Regulatory Technical Advisory Group

Recognizing that several other regulatory agencies have a stake in the cleanup at the site, Ecology, the Lower Elwha Klallam Tribe, and Rayonier established a regulatory technical advisory group (RTAG) to provide representation of the member agencies' interests and concerns at key points in the cleanup process. The agencies represented on the RTAG include:

- City of Port Angeles
- Clallam County Environmental Health Division
- Washington Department of Natural Resources
- Washington Department of Fish and Wildlife
- The Agency for Toxic Substance and Disease Registry
- The National Oceanic and Atmospheric Administration
- Washington Department of Health
- U.S. Fish and Wildlife Service

Although not officially a member of the RTAG, the technical advisor for the Olympic Environmental Council (OEC) is also included in meetings and communications between Ecology and the RTAG.

Public Notices/Fact Sheets

The following public notices and focus sheets were distributed in association with the Uplands RI/FS Management Plans and Agreed Order for this site:

- April 8, 2003 — Mail focus sheet, announcing comment period for draft documents (distributed to approximately 214 addresses).
- April 8, 2003 — E-mail the text of the focus sheet and the internet location of the full focus sheet to approximately 70 addresses. This list included RTAG representatives, Port Angeles media contacts, OEC's project coordinator, OEC's technical advisor, OEC Coalition contacts, previous commentors of record, and project staff.
- April 15, 2003 — Notice of public comment period in Ecology Site Register.
- April 17, 2003 — Display ad announcing April 30 public meeting in the Port Angeles *Peninsula Daily News*.
- April 23, 2003 — Mail meeting notice for April 30 public meeting (distributed to approximately 206 addresses).
- April 24, 2003 — E-mail announcement of April 30 public meeting to approximately 65 addresses.

- April 24, 2003 — Display ad announcing April 30 public meeting in the Port Angeles *Peninsula Daily News*.

Public Outreach Meetings/Presentations

The following public outreach meetings/presentations have taken place in conjunction with the draft Agreed Order and Uplands RI/FS Management Plans:

- April 30, 2003 — Held public meeting hosted by Ecology and the Lower Elwha Klallam Tribe (attended by approximately 35 people).

Public Comment Period

The public comment period was open from April 7, 2003 through May 7, 2003. Ecology and the Lower Elwha Klallam Tribe held a public meeting on April 30, 2003.

List of Commentors

Persons providing comments to the draft “Management Plans for the Remedial Investigation – Feasibility Study of the Uplands Environment, Former Rayonier Mill, Port Angeles, Washington” and/or the Agreed Order are identified in the following table.

Name	Affiliation
<i>Edwin R. Johnson</i>	
<i>Darlene Schanfald</i>	<i>Olympic Environmental Council</i>
<i>Bob Lynette</i>	
<i>J. Anne Shaffer</i>	<i>Washington Department of Fish and Wildlife</i>
<i>Dr. Gerald Hauxwell</i>	
<i>Eycke Strickland</i>	
<i>Tina Lipman</i>	
<i>Pam Johnson</i>	<i>People for Puget Sound</i>
<i>Peter deFur</i>	<i>Olympic Environmental Council</i>
<i>Viola Nixon</i>	
<i>Brad Collins</i>	<i>City of Port Angeles</i>
<i>Robbie Mantooth</i>	<i>Friends of Ennis Creek</i>
<i>Joanne Snarski</i>	<i>Washington Department of Natural Resources</i>

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Responses to Common Concerns

Land Use

Comments were received from many reviewers concerning the cleanup levels and land uses that were discussed in the draft Upland RI/FS Management Plans. The principal concern expressed was that the site should be cleaned up to levels that would present no restrictions on the future uses of the site. Under Washington's Model Toxics Control Act (MTCA), Ecology does not direct the future land use at a particular site through the cleanup process. Rather, Ecology considers the site's historical and current uses, projected future use, and local zoning designations in making a determination of the appropriate cleanup levels to be applied in a cleanup. Typically, Ecology will consult with the owner of the property, and the local land use planning authorities on the range of future uses of the site. The Rayonier Mill site is somewhat unusual in the respect that it is effectively a vacant parcel with Rayonier anticipating that it will sell the property, and a new owner's plans for site redevelopment may at some point need to be factored into an evaluation of cleanup for future use.

However, the RI/FS for the site will provide for an evaluation of the site conditions against both unrestricted and industrial land use cleanup criteria. Following the public review and finalization of the RI/FS reports, Ecology will develop and issue a draft Cleanup Action Plan (CAP), which will identify the proposed cleanup action. The draft CAP will also specify the cleanup levels which the cleanup action is expected to attain. The public will have the opportunity to review the draft CAP and comment on the proposed cleanup action, including the determination of cleanup levels within the framework described in MTCA.

If the cleanup action which is finally selected is based on industrial cleanup levels, but the site is later redeveloped in a use for which the industrial cleanup levels would not be protective of human health and the environment, additional investigation and cleanup may be necessary.

Ennis Creek Habitat Restoration

Many reviewers expressed their concerns about the condition of Ennis creek and their interest in seeing the creek's habitat functions restored. The mill cleanup process is being carried out under the Model Toxics Control Act (MTCA). The goal of MTCA at the mill site is to conduct an investigation and any remediation necessary to protect human health and the environment from the effects of releases of hazardous substances to soils, sediments, ground and surface waters, and air. Restoration of resources is only performed under the authority of MTCA when the damage to the resources resulted from such releases of a hazardous substance. In such cases, MTCA and other regulations may apply to guide the restoration of the resource to a previous condition. Where MTCA does not apply, management of the creek environment would be a part of future site development activities, subject to SEPA and NEPA requirements as well as any other permits required for such development.

In the course of the cleanup, some significant measures have been made to improving the physical nature of Ennis Creek. The 2002 Ennis Creek-Finishing Room Interim Action included the removal of affected soil and sediment from the west shoreline of Ennis Creek adjacent to the Finishing Room and the placement of clean sand in a manner that reduced the degree of channelization of the affected reach of the creek.. Large woody debris was placed along the stream bank and the bank was revegetated with native plants. These habitat enhancements were voluntarily accommodated by Rayonier within the cleanup action. Such cooperative habitat improvement actions are likely to continue as there are many individuals and organizations including Rayonier that have pledged support and financing to continue the restoration activities of Ennis Creek beyond those that may be taken as part of cleanup activities.

Evaluation of Off-site Soils

Several reviewers expressed reservations about the approach proposed in the draft Upland RI/FS Management Plans for evaluating impacts of air-borne emissions from the mill on the surrounding off-site properties. The draft work plan proposes to develop a model to identify the areas in which particulates emitted from the former mill stacks would have been deposited. The areas of particulate deposition indicated by the model would be compared to the sampling locations from EPA's 1998 Expanded Site Investigation (ESI).

In the ESI, EPA collected soil samples from 21 locations surrounding the mill. Samples were collected from 12 nearby residences, the Olympic Memorial Hospital, Veterans Memorial Park, residential areas on the bluffs east and west of the site, and residential areas further to the south and west of the mill site. All samples were analyzed for the presence of metals, volatile organic compounds, semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs), and dioxins/furans.

Any areas of deposition indicated by the modeling but missed in the ESI sampling would be identified for additional evaluation in the RI/FS. Additional sampling will be performed as needed to support this evaluation.

Comments generally suggested that soil sampling should be conducted in place of atmospheric deposition modeling. The modeling is not meant to take the place of field sample collection, nor does field sample collection replace the use of the model. The model helps guide and interpret sample collection efforts by predicting where particulates emitted from the stack would have fallen given emission, meteorological, and topographical characteristics. Field sampling identifies the chemical concentrations present in those areas and then further supports the risk analyses.

Although collection and analysis of soil samples seems straightforward, the interpretation of the results is complicated by the fact that there were multiple sources of emissions in the area. For example, there have historically been other pulp/paper mills operating in Port Angeles that generated similar types of stack emissions; other industries are present that have stacks that emit chemicals; the Olympic Memorial Hospital had a waste incinerator that is expected to have emitted hazardous substances; vehicles emit

hazardous substances. Simply stated, analytical results from a soil sample collected from a specific off-site location will show what chemicals are present in the sample, but may not provide a clear indication of the source of the chemical. Atmospheric deposition modeling will provide insight into the distribution pattern of particulates associated with stack emissions from the mill.

The RI/FS will use an approved EPA model, available meteorological data from the mill site and Port Angeles area, and mill-specific information on emission rates and locations to generate the best possible estimate of particulate deposition from the stacks at the mill. A considerable quantity of air quality information is also available for the Port Angeles area from a variety of sources. This additional information will be reviewed and included in the evaluation of off-site impacts of mill stack emissions in the Uplands RI/FS as needed.

The atmospheric deposition modeling results, and comparing those results with the available information which includes data from the 21 off-site soil samples collected as part of EPA's Expanded Site Inspection, will provide a reasonable and defensible basis for characterizing the off-site impacts of mill stack emissions.

Analytical Methods

Concern was raised by several reviewers that the most sensitive and definitive analytical methods should be used during the Uplands RI/FS. Many comments specifically noted this with respect to analyses for dioxins/furans. The Uplands RI/FS Management Plans describe the analytical methods to be used to analyze soil, groundwater, and tissue samples. Data quality objectives are presented in the Sampling and Analysis Plan and in the Quality Assurance Project Plan that describe the analytical detection limits that need to be achieved to make meaningful remedial decisions. The Quality Assurance Project Plan also described other quality control and quality assurance requirements that will be achieved during the Uplands RI/FS. The analytical methods described in the management plans are expected to meet or surpass all these requirements and are therefore suitable for use in the Uplands RI/FS.

The Upland RI/FS Management Plans specify that dioxin analysis will be performed using EPA Method 1613B. Several commentators questioned the use of this method instead of EPA Method 8290, which was used in EPA's 1998 Expanded Site Inspection. Methods 1613B and 8290 are very similar in that both use the high-resolution gas chromatography/mass spectrometry analytical equipment and the same extraction and sample clean-up techniques. However, Method 1613B provides finer analytical resolution because it uses seven standards to calibrate the analytical equipment for the various dioxins/furans being measured, versus the single standard used in Method 8290. EPA currently recommends the use of Method 1613B for analysis of dioxins/furans. For more information, see: <http://www.epa.gov/epahome/Standards.html>.

Agreed Order Language

Several comments were received to the effect that the draft Agreed Order must repeat exactly sections of the texts of the MTCA statute or regulation as those texts pertain to several issues discussed in the draft Agreed Order, or that specific language from the statute or regulation must be added to the draft order language. Most of these comments were made in regard to Section VII of the draft Agreed Order, which describes the enforcement provisions of the order. Agreed Orders are routinely used by Ecology to implement cleanup actions under MTCA, and describe the actions that a potentially liable party must undertake in order for Ecology to agree not to take enforcement action to compel a cleanup action. In this case, should Rayonier elect to withdraw from this order, Ecology could issue an Enforcement Order against Rayonier compelling Rayonier to perform the work described in the draft Management Plans. Ecology's entering into an Agreed Order with Rayonier does not diminish Ecology's rights to further pursue cleanup action within its statutory authorities, or the rights of any other parties to pursue action as provided under the MTCA statute. All of the enforcement provisions of MTCA remain in effect and do not need to be repeated in the Agreed Order in order for Ecology to take action under those provisions.

Responses to Individual Comments

Response to comments by Edwin R. Johnson

Comments were received in a letter dated April 13, 2003.

Comment #1:

Regarding the clean up of the Rayonier mill site in Port Angeles Washington at the mouth of Ennis Creek, I would hope that the creek is dug out so it becomes wider, and that some side channels are dug as well so as to create an estuary that provides for the exchange of fresh and salt water an adequate distance upstream to accommodate salmon and steelhead, so the juveniles can have time to get used to salt water as they prepare to go into the Strait. This would lower their stress and significantly increase their rate of survival.

If the creek remains channelized at the mouth to make room for development, the opportunity to restore salmon and steelhead runs to Ennis Creek will be forever lost.

Response #1:

Response to this comment is provided in the Responses to Common Concerns – Ennis Creek Habitat Restoration.

Responses to Comments by Darlene Schanfald on behalf of Olympic Environmental Council (OEC)

Comments were received in two e-mails and two letters dated May 5, 2003.

Comment #2:

[In the draft Agreed Order, at Section II, Paragraph 2, the text] should read: Rayonier (1930-1968), ITT-Rayonier (1968-1994) and again Rayonier (1994-1997) operated a chlorine dependent dissolving sulfite pulp mill...

Response #2:

Information on the historical ownership of the mill and on the nature of the chemical inputs to the pulping processes that were used at the mill is provided in Volume I, Section 2.1 of the draft Management Plans, which the draft Agreed Order incorporates by reference. The draft Agreed Order and the draft Management Plans are issued as complementary documents and should not be read in isolation from one another.

Comment #3:

[In the draft Agreed Order, at Section II, Paragraph 3,] define "uplands."

Response #3:

The term "uplands" as used in the draft Agreed Order and the companion draft Management Plans is intended to distinguish this portion of the study from the Marine Remedial Investigation for the mill site, which is being addressed under a separate order and set of management plans. Volume I of the draft Management Plans describes the mill property and its surroundings, and establishes the expected geographic scope of the uplands remedial investigation.

Comment #4:

Unfortunately the Management Plan lacks language referring to soils in and around Pt Angeles. There is no description. Therefore, it is necessary to write language in the AO specifically relevant to the soil testing and analysis in the larger community. Please insert such language. Nothing in this AO should be assumed.

Response #4:

Volume I, Section 4.2.4 of the draft Management Plans describes the phased evaluation of soils in areas surrounding the mill property. The first phase involves analysis of the existing soils data generated by EPA in its 1998 ESI. Please refer to the discussion of this issue provided in the Responses to Common Concerns – Evaluation of Off-site Soils. The second phase of the evaluation would involve collection and analysis of additional soil samples as needed to address data gaps identified in the first phase.

Comment #5:

If Rayonier withdraws from this Order, be specific as to the Dept. of Ecology's terms and conditions if this should happen.

Response #5:

This is an Agreed Order, which describes the actions that must take place in order for Ecology to agree not to take enforcement action for the RI/FS. In the event Rayonier elects to withdraw from the order, Ecology could issue an Enforcement Order against Rayonier compelling Rayonier to perform the work described in the draft Management Plans. The administrative mechanisms available to Ecology for engaging a potentially liable party in a cleanup are well-documented in the MTCA statute (RCW 70.105D) and the MTCA cleanup regulation (WAC 173-340). This draft Agreed Order does not diminish Ecology's rights to further pursue cleanup action within its statutory authorities.

Comment #6:

The [Public Participation Plan] as recently amended is not up on the [Ecology's] web site. Only the original June 2000 plan (Web site, no. 8), which DOE agreed was invalid and needed to be reworked (and was reworked November 2001) is on the web, and with old information. It should have a 2002 date. Please cite this recent date and get the PPP on the web. As well, information about the Marine Resource and the Soil documents should be posted on the Ecology web site.

Response #6:

The draft Agreed Order has been corrected to refer to the March 2002 amendment to the Public Participation Plan (PPP). Ecology has not agreed that the June 2000 plan was "invalid". Rather, Ecology agreed that the PPP should be updated, and worked with OEC and other interested parties to amend the plan. The amended PPP is now available on Ecology's website. Appendix B of the PPP, containing the MTCA statute, has been updated to reflect changes made to the statute since the PPP was amended.

Comment #7:

[In the draft Agreed Order, at Section V, Paragraph 8,] Cite the WAC which discusses time period company must retain cleanup records. (WAC 173.340.850).

Response #7:

Response to this comment is provided in the “Responses to Common Concerns – Agreed Order Language.”

Comment #8:

[In the draft Agreed Order, at Section V, Paragraph 9,] Add the letter "s" to Ecology: "Ecology's resolution of the dispute...."

Response #8:

The suggested edit has been made to the final Agreed Order.

Comment #9:

[Referring to the draft Agreed Order, at Section VII, Paragraph 1.A.,] The law read[s] "The Attorney General shall bring an action...." Delete "may" and insert "shall."

Response #9:

As previously noted, this is an Agreed Order, which describes the actions that must take place in order for Ecology to agree not to take enforcement action for the RI/FS. The section of the Agreed Order which is the object of this comment describes the Ecology's options for enforcement under MTCA if it deems that Rayonier has failed to fulfill the terms and conditions of the order. The Agreed Order does not diminish Ecology's rights to further pursue cleanup action within its statutory authorities.

Comment #10:

[Referring to the draft Agreed Order, at Section VII, Paragraph 1.B.,] Replace with the legal RCW 70.105D.050 (3) language, "The attorney general shall seek, by filing an action if necessary, to recover the amounts spent by the department for investigative and remedial actions and orders, and agreed orders." The law does not say "may," it says "shall" and that is how this Agreed Order should read.

Add .050 (4) “The attorney general may bring an action to secure such relief as is necessary to protect human health and the environment under this chapter.”

Add .050 (5)(a) “Any person may commence a civil action to compel the department to perform any nondiscretionary duty under this chapter. At least thirty days before commencing the action, the person must give notice of intent to sue, unless a substantial endangerment exists. The court may award attorneys' fees and other costs to the prevailing party in the action.” Public rights should be included.

Response #10:

Response to this comment is provided in the “Responses to Common Concerns – Agreed Order Language.”

Comment #11:

Speaking for the Olympic Environmental Council Coalition which represents citizens throughout WA State, we urge the Soils RI/FS be rewritten with language to insure extensive soil sampling and analysis in and outside the City of Port Angeles, basing site sampling and analysis on the abundant, hard, existing evidence gathered over years by agencies--including Ecology's obtained and verified data, by Rayonier, by citizen groups and reported through the media.

"Upland" means upland of the Rayonier Mill, as well as the mill site. The plan lacks information on where to look for polluted soils beyond the mill site. It speaks about "phasing." There is no need for this approach. Air emissions beyond the mill site have been well documented for decades and thus should be the template for developing a community soils sampling and analytical plan. Modeling is therefore unnecessary and a waste of money and effort and gives the impression of the attempt to delay and avoid sampling of soils in the community. The public is saying they want soils sampled, not time and money spent "modeling."

We enclose a variety of documents and references to documents that support where Rayonier air emissions went. These documents and reference include citizen complaints, Olympic National Park periodic wind roses for SO₂, ozone and wind, other wind rose information, maps (odor, hotline and death), photos, news articles and air particulate recordings.

Data from the EPA TRI as well as the EPA ESI underscore the importance of doing such testing.

The issue bears repeating. The abundance of existing data on mill emission direction and the resulting impacts, yet the paucity of this information in the draft plan show that appropriate time was not given to do this literature research. This is one example of why rushing this process is wrong. Rayonier has many, many air deposition sources to check. This needs doing to do proper soil sampling. Following is a significant body of air emission data to use, with more in the community and agency files left to review.

Wind and Emission Direction Data

- May 1, 1969. R. W. Beck. Background notes for Clallam County PUD, Proposed Nuclear Power Plant Site).
- November 16, 1992. TRC Environmental Corporation. REPORT: ITT Rayonier Port Angeles Mill Evaluation of Odor Impacts.
- 1994, 1995, 1996. Olympic National Park Annual & Quarterly Wind Roses for wind, ozone and SO₂.

(SO₂ is a point source. The Olympic National Park SO₂ measurements were instigated because local mill SO₂ output. Pt Angeles is one of the few park sites where measuring for SO₂. The Park has many years of SO₂ wind roses. These serve as vectors for overall pollution deposition. They are quarterly and annual wind roses (examples enclosed). If the quarterly and annual wind roses were based on daily records, these too may be available.)

Confirmation of depositions:

- A sampling of photos documenting different emission directions taken from:
 - Rayonier RI/FS Soil Plan's front cover
 - Clean Air Now
 - PDN 1980 and 2-20-90
- Clean Air Now Calls (citing specific information including addresses of where impacts occurred)
 - Number of calls between. May 1991 & 1992 -- 1734 complaints (approx 450 callers) verified as valid by WSDOE; (calls enclosed)
 - 825/Rayonier, 23/Daishowa, 12/KPLY; the rest did not single out the origin of the "mill pollution"
 - Most calls between May - October
 - Calls came from 10+ miles west of Pt Angeles to Cline Spit/Sequim area
 - Predominant number from Pt Angeles and east of Lincoln St.
 - about 3000 calls collected through 1996

Maps:

- Clean Air Now area map of caller complaints from 1991-1992
- 16 November 1992. TRC Environmental Corporation. Report: ITT Rayonier port angeles mill evaluation of odor impacts -- impact radius is about 3 miles
- Reference. WSDOH 1990-1997 Pt Angeles subcensus tract elevated death rates: Approx. 2/3s of the tracts had death rates above state average
- DOE - SO2 Map

A SAMPLING of complaints to Clean Air Hotline between 1991-early 1993:

- odor
- headaches
- metal corrosion
- breathing difficulty -- e.g., asthma
- nausea
- inability to be in their yard
- skin rashes
- having to leave town to breathe
- burning eyes

CAN Summary 4-28-93 relative to mill pollution

CAN Air Quality Forum Summary 4-28-93 Calls, locations

3 yrs list of CAN calls 3-7-93

CAN PPG Final Observations 1992-3

1996-7. USEPA TRI Pollution Releases Ranked by Potential Human Health Risks

May 7, 1980. The Daily News. Moving from Port Angeles helps asthmatic regain health (lived in the 1000 block of E. 4th Street under Rayonier plums of smoke.

Odor Survey - Map 3 mi radius. ITT significant source of odor in community. Recovery boiler and the hog fuel boiler were two principle source of odor. Source Identification by Wind Direction. SO2 monitoring--3rd & Chestnut monitor had the

greatest concentrations & exceeded state standards -- OAPCA (aka ORCAA since 2003)

3/93 CAN Newsletter

PDN Special - 1980

DOE FOCUS SHEETS-- August 1991, March 1992, September 1992

September 7, 1991. Sequim Citizen Petition - eye irritations, nasal congestions, loss of equilibrium from heavy emission of fumes in early morning hours. (Know to close windows at night (verbal reports)

1988-1997 USEPA TRI data

- Emission amounts
- Comparison between 1996-7
- 1991 chemicals

Examples: SARA Title III Releases - 1988 - 1992

February 19, 1988. Section 311: Community Right to Know. List of Chemicals with Immediate Health Hazards

May 7, 1988. The Daily News. Stations across Peninsula monitor air quality. Lists various air monitoring sources and data banks of mill emissions and directions.

WA State DOH Port Angeles Health Survey - 1992 -1993 -- some data and 4-23-93 PDN, Chris Camara: PA health survey shows problems--Report of Port Angeles schoolchildren indicates more air quality monitoring is needed.

11 August 1992. City of Port Angeles. Letter to Ron Gross, ITT-Rayonier. Local efforts to minimize public laws to benefit Rayonier.

Response #11:

Ecology appreciates the efforts put forth by OEC to compile the materials which were delivered with OEC's comments. As noted in "Responses to Common Concerns – Evaluation of Off-site Soils", the use of the atmospheric deposition model proposed in the draft Management Plans is expected to provide a reasonable and defensible basis to guide the characterization of the off-site soils. The materials provided by OEC will supplement the model and other information contributing to the evaluation of the off-site soils.

With regard to the schedule for the Uplands RI/FS, there is sufficient time to adequately review and incorporate all relevant information into the RI/FS report. Remedial decision making will be based upon sufficient information that will be thoroughly evaluated. It should be noted that much of the cleanup process schedule time is allotted to agency and public involvement. For the Uplands RI/FS, the agencies and public have adhered to the standard 30 day document review schedules that have enabled the process to move at an accelerated pace. Ecology and the Tribe are grateful for this cooperation.

Comment #12:

Needed Changes to the Draft RI/FS Soil Sampling Plan:

- This is a CERCLA level cleanup and the cleanup should meet these standards. Contamination is to be sought until none is found. Phasing is inappropriate, particularly because volumes of documentation exists as to where the Rayonier air pollutants went.
- In this case there is hard data as to where the emissions traveled; modeling and modeling accuracy is uncalled for.
- Widespread soil study throughout Pt Angeles neighborhoods identified by present air emission data; Gayle's Edition should be thoroughly sampled as it had the highest impact from mill emissions. ONP soils should be sampled and analyzed, especially in the Heart of the Hills area where reports were made of SO₂ damaged trees.
- Outdoor & Indoor testing. Commonly, contaminants are trapped indoors on properties they settled.
- Have Rayonier check their files for homes they repaired and repainted, and telephone wires, etc. they replaced due to their acidic emissions. Soils in these areas should be tested.
- Other air emission files to be checked should include OAPCAs, Ecology's, EPA's, ONP's. There is data from the 1970s on.
- Test soils for all possible Rayonier contaminants.
- Do split sampling for community soils.
- Dioxins must be sampled by Method 8290. This is true for all dioxin analysis. There is little to no savings to replace this "gold standard" with something less accurate.
- Soils taken in and around Pt Angeles should be evaluated by Battelle Lab for heavy metals as they have some of the nation's most heavy metal sensitive detecting equipment.
- Sulfur and sulfate were major outputs, thus Rayonier should sample for these in the soil.
- Cleanup mill site and residential sites to residential quality. Mill site is now "unrestricted" as a public trail exists there and mill site abuts residential and medical properties.

Those already bearing the health costs of earlier exposure need not be further exposed. Others not earlier exposed need not be exposed if they come on to contaminated properties. A high quality sampling and analytical plan as well as soil cleanup should be required.

Again, in this case we have plenty of direction as to where to sample soils off the mill site. Most likely drift has gone many places. We can take a lesson from WTC air monitoring; a UC Davis research team found air pollution levels in lower Manhattan at extremely high levels at a monitoring station one mile north of the trade center out of the path of prevailing winds.

Response #12:

Concern: CERCLA consistency - As identified in the 2000 Deferral Agreement, the cleanup is being conducted under MTCA, which is generally equivalent in approach and

scope to CERCLA. Ecology has considerable experience working with the U.S. EPA on cleanups which meet the requirements of both CERCLA and MTCA. Investigations under MTCA and CERCLA are often not designed such that “contamination is to be sought until none is found” in the sense that soil sampling is conducted outward from a source until chemicals of concern can no longer be detected, particularly when the chemicals of concern include metals and persistent compounds with numerous and widespread sources in addition to sources associated with the facility which is the object of the cleanup.

Concern: Off-site soils evaluation - Please refer to “Responses to Common Concerns – Evaluation of Off-site Soils” regarding the general comments on mill emissions and off-site sampling. It should be noted that as part of EPA’s Expanded Site Inspection, two soil samples were collected from the Olympic National Park near the Heart O’ the Hills campground. The only organic chemicals detected in these two soil samples were benzoic acid (naturally occurring in vegetation) and dioxins/furans. Dioxin concentrations (expressed as a 2,3,7,8-TCDD toxic equivalent) measured in the two soil samples were less than 1ng/kg. Ecology conducted a study of dioxin occurrence in soils of Washington State in 1999 (see <http://www.ecy.wa.gov/pubs/99309.pdf>) and found dioxin to be detected in soils throughout the state including soils collected in remote wilderness areas. The mean dioxin concentration (expressed as a 2,3,7,8-TCDD toxic equivalent) measured in samples from commercial forests was 1.4 ng/kg and from samples collected from non-commercial forest was 3.3 ng/kg. This data suggests that the dioxin concentrations measured in the two soil samples from the Olympic National Park are consistent with concentrations found in forests throughout the state.

Sampling of indoor dust may be appropriate if results of outdoor soil sampling show there is a potential health risk. In that event, results of indoor dust sampling would be useful for developing mitigation measures to reduce or eliminate human exposures to soil-borne chemicals. Sampling of indoor dust will be considered as part of a second phase of the off-site soil evaluation.

The comment alludes to damages to off-site properties due to emissions from the mill. Rayonier has reported to Ecology indicate that the repainting of several nearby houses was the result of an incident that occurred during start-up of the effluent treatment system's deep tanks. During an extended mill maintenance shutdown, the level of effluent in the deep tanks had been lowered and the air blowers had been turned off. As the mill was getting ready to restart manufacturing, the blowers in the deep tanks were restarted. Mill personnel did not consider that during the shutdown the effluent continued to breakdown and had produced a significant quantity of sulfides. As the blowers started, the built-up sulfide vapors were quickly vented out of the open-topped tanks. The sulfides impacted the area south of the mill near the water filtration plant, where they reacted with lead-based paints on the outside of some of the houses, darkening the paint. This is the only known situation that resulted in repainting of houses and the incident would not have produced any of the particulate emissions which are the subject of the current investigation.

Rayonier has also reported to Ecology that it is aware of only one incident involving Rayonier's replacement of phone wires. This occurred when an insulator on a Rayonier-owned electrical line failed, resulting in a wire falling and striking a non-Rayonier telephone line. While the incident appeared to be the result of an equipment failure unrelated to mill emissions, Rayonier offered to pay for the repair of the non-Rayonier line.

Concern: Chemicals to be analyzed - With regard to the range of chemicals to be analyzed, Section 3.1.1.7 of Volume I of the Uplands Management Plans describes EPA's collection of 146 soil samples from the site as part of the 1998 Expanded Site Inspection. EPA analyzed those samples for the full suite of priority pollutants (167 chemicals). This large dataset was used to identify the chemicals of potential concern at the site that are the focus of the Uplands RI/FS. Given the available information, testing for all possible chemicals is unnecessary.

The comment also suggests that soils should be sampled for sulfur and sulfate. Sulfur dioxide was the major sulfur-containing chemical used in the pulping process at the mill. The Agency for Toxic Substances and Disease Registry's toxicity profile for sulfur dioxide states that it will typically be found in a gaseous state once released into the environment. (See <http://www.atsdr.cdc.gov/toxprofiles/tp116-c5.pdf>) Although sulfur dioxide is very soluble in water, it will readily evaporate from water. Once in the soil, sulfur dioxide can be converted into other sulfurous compounds. The major potential affect of elevated levels of sulfur dioxide and other sulfur-containing chemicals in soil is the acidification of the soil. As the soil becomes more acid, inorganic substances become more mobile and can migrate into the groundwater. The potential for increased mobility of inorganic substances will be evaluated during the Upland RI/FS groundwater sampling and evaluation task.

Concern: Split sampling - Appendix B of Volume II of the Uplands RI/FS Management Plans describes the plan for collecting split samples from the mill site. Split sampling will be conducted on off-site soil samples at the discretion of Ecology or the Tribe.

Concern: Analytical methods - Please refer to "Responses to Common Concerns – Analytical Methods" for a further discussion of specific analytical methods. Regarding the selection of analytical laboratory, a laboratory meeting the requirements established under MTCRA has been selected for analyzing samples collected during the Uplands RI/FS. The Quality Assurance Project Plan (Volume III of the Uplands RI/FS Management Plans) sets the detection limits and all other quality assurance/quality control parameters that are required to be achieved by the lab. The commercial laboratory selected for the project meets all these parameters.

Concern: Land use and cleanup levels – Please refer to "Responses to Common Concerns – Land Use."

Comment #13:

Vol. I, Section 2. Site Background & Setting - Para 1: Good addition, "residential and commercial properties" but still should add "medical and educational." Strengthens reason for sampling above mill site and gives further direction on where to sample. Private and public, medical facilities/offices and public parks soil sampling are a must.

Response #13:

Please refer to "Responses to Common Concerns – Evaluation of Off-site Soils". If the evaluation indicates a need for additional sampling of off-site soils, a supplemental plan will be developed to direct that sampling. The particular uses of nearby off-site properties may be a consideration in identifying specific locations for sampling.

Comment #14:

[Vol. I, Section 2] Para 2: Insert reference to RTAG.

Response #14:

While the Regulatory Technical Advisory Group plays a consultative role, the agreements for management of the cleanup are among Rayonier, the Tribe, and Ecology.

Comment #15:

[Vol. I, Section 2] P. 2-7 Bottom para - Still says nothing about untreated effluent discharges -- both pre-treatment days and accidental. There was a significant number of years of such discharges. This information should be included.

Response #15:

The first full paragraph on page 2-7 of Volume I of the draft Management Plans states "From 1930 until 1972, process wastewater and stormwater were discharged directly into Port Angeles Harbor through five nearshore outfalls (Figure 2-4). In 1972, a primary treatment plant and extensive sewer system was constructed at the mill." It is implicit in this statement that there were a significant number of years of untreated discharges.

Comment #16:

[Vol. I, Section 2] P. 2-12, Top. - Still no visuals of wind roses/meteorological conditions supporting Rayonier's "light to moderate" statement during 1997-9, the dismantling period. It is not the "general" that is important but the information during the heavy wind seasons, the changing winds by season, the changing wind patterns over the years, etc..

Insert quarterly wind rose information from Olympic National Park-- wind, SO₂, ozone.

The critical ones are SO₂ and wind. Also, the TRC odor graph.

Response #16:

A detailed evaluation of existing meteorological data will be presented as part of the off-site soil evaluation, as described in Section 4.2.4 of Volume I of the draft Management Plans.

Comment #17:

[Vol. I, Section] 2.2.6.1 Upland Environment - Para 1: Again, "residential and commercial properties added" but still should add "medical and educational."

Response #17:

This section is describing the setting principally in terms of habitat characteristics for ecological receptors. For that purpose, the draft Management Plans' level of detail in identifying the land uses in the area is sufficient.

Comment #18:

[Vol. I, Section] 2.2.6.3.1 Phytoplankton & Other Marine Plants - Para 3: Discusses eel grass, there is no mention of the importance of the eel grass, both to the grass's environment for animals that inhabit the grass and their importance as a food to other animals, as well as the grass's importance to the Brandt, or that the USFWS Dungeness Refuge was set aside because of the importance of the eel grass to the Brandt duck. This information should be inserted somewhere.

Response #18:

The discussion suggested by the comment would provide a level of detail beyond what is necessary to describe the biological setting in the Management Plans.

Comment #19:

[Vol. I, Section] 3.1.1.2 - Para 4: State where the TPH-affected removed soil was sent.

Response #19:

The disposition of soils removed during the interim actions is detailed in the Interim Action Report, which is on file at the project information repositories.

Comment #20:

[Vol. I, Section] 3.1.1.6 Drainage Ditch - Para 2: What were the results of the two composite soil samples? It should state this.

Response #20:

The composite soil samples were analyzed for total metals and polynuclear aromatic hydrocarbons. Arsenic was reported as undetected at the laboratory's reporting limit of 6 mg/kg, and copper was detected at 41.5 mg/kg. The MTCA Method A cleanup level for arsenic in soils is set at 20 mg/kg, which reflects the influence of natural background concentrations. The MTCA unrestricted use cleanup level for copper is 2960 mg/kg. The PAHs were all reported as undetected at 8.6µg/kg. The MTCA unrestricted use cleanup level for individual PAHs is set at 137µg/kg.

Comment #21:

[Vol. I, Section] 3.1.2.4 - Thank you for explanation on "FA."

Response #21:

Comment noted.

Comment #22:

[Vol. I, Section 3.2.1] TABLE 3-2. - Good that 6 chemicals were inserted here and throughout the Plan. Antimony, Cobalt, Nickel, Selenium, Silver & Vanadium.

Response #22:

Comment noted.

Comment #23:

[Vol. I, Section 3.3] NOTE: Typo. End of [4th] bullet, eliminate slash.

Response #23:

The text will be corrected.

Comment #24:

[Vol. I, Section] 3.3.5.1 - Exposure Pathways of Concern - Bullet #1: Disagree. Exposure into the urban area is not of "secondary concern." The Pt Angeles "urban" area is not concreted like NYC and other large urban areas, and the density is different. This is a ruralish community with much vegetation that has been polluted. The "urban area" should be addressed as "primary."

Response #24:

Human exposure to chemicals released into the nearby off-site soils is identified as an exposure pathway of primary concern. The statement to which the comment refers discusses the potential exposures of environmental (i.e., ecological) receptors in the off-site areas adjacent to the mill. Because the types of land uses, and hence the habitat for those receptors, are more characteristic of an urban area than of unmodified habitat, it is reasonable to designate the exposure pathway as being of secondary concern. Section 5.4.2.1 of Volume I and Section 2.3.4 of Volume II of the Uplands RI/FS Management Plans describe the approach for the ecological risk analyses for the upland soils. This approach focuses on an extensive sampling and analysis of the forested areas on the mill property that run along the marine bluffs and Ennis Creek corridor as well as a focused sampling within the developed portion of the mill site. Because of their closer proximity to the mill, these areas are expected to have the highest soil chemical concentrations. Chemical concentrations are expected to be lower as one moves away from the mill site. Based upon results of the atmospheric deposition modeling and the evaluation of the on-site areas of ecological concern, a determination will be made whether the ecological evaluation needs to be extended to off-site areas of potential ecological concern.

Comment #25:

[Vol. I, Section] 3.3.5.1. Marine Discharges - Humans bathe in these waters. This should be a "primary concern."

Response #25:

As stated in the third bullet in Section 3.3.5 of the Management Plans, the primary exposure pathway for humans in the marine environment is the ingestion of marine biota.

And as noted at this location and in Section 3.3.5, the exposure of humans to chemicals present in surface water and sediment is limited by the restricted access to marine waters adjacent to the mill property and by the cold water temperatures found in Port Angeles Harbor (i.e., swimming is a relatively uncommon occurrence). Therefore, human exposure to surface water and sediment in and around the mill site is considered to be of secondary concern.

Comment #26:

[Vol. I, Section 4.2.1] TABLE 4-1 - STILL NO MENTION OF COMMUNITY SOILS!!!
#16. Insufficient. Look where the data has already been collected. Forego the modeling.

Response #26:

As the comment notes, Table 4-1 does in fact identify planned RI activities for off-site soils as item 16. Regarding the second part of the comment, please refer to “Responses to Common Concerns – Evaluation of Off-site Soils.”

Comment #27:

[Vol. I, Section] 4.2.2.2 - Para. 2: Still 8260 ra. than 8290. 8290 is the "gold standard;" 8260 is a lesser standard. Replace 8260 with 8290.

Response #27:

This section discusses analytical methods to be applied to groundwater samples. EPA Method 8260 is used to analyze for a series of volatile organic compounds, while EPA Method 8290 is used to analyze for polychlorinated dibenzodioxins and polychlorinated dibenzofurans. As the two methods target entirely different classes of compounds, they are not interchangeable. The text’s citation of Method 8260 is correct.

Comment #28:

[Vol. I, Section] 4.2.3 Ennis Creek Sediments - OEC would like to see its suggested language adopted re: where to look for "background" levels.

Response #28:

The suggested language was not included in the comments submitted by OEC, nor has OEC identified where the suggested language can be found.

Comment #29:

[Vol. I, Section] 4.2.4.1 Dioxin Pattern Analyses - Para. 3: We know sufficiently well the nearby reach (in and around P.A.)of Rayonier's emissions, with dioxin.

Response #29:

Please refer to “Responses to Common Concerns – Evaluation of Off-site Soils.”

Comment #30:

[Vol. I, Section 4.2.4.1] - Para 6: "Bright '99" is not sufficient citing.

Response #30:

The citation in the text is “Bright et al. (1999)”. This is consistent with conventional standards provided in style manuals. The full bibliographic reference for this citation is located in Section 9, Volume I of the Management Plans.

Comment #31:

[Vol. I, Section] 5.4 - There is sufficient information to use the Precautionary Principle as a cleanup standard and not Risk Assessment.

Response #31:

The cleanup is being conducted under the provisions of MTCA. MTCA, like CERCLA, is intended to characterize the nature and extent of contamination associated with a site, and to make decisions regarding the management of risks presented by the contamination. The underlying driver for that process is risk assessment, as is reflected in the MTCA cleanup regulation. The Precautionary Principle is not recognized in MTCA as a basis to establish cleanup levels.

Comment #32:

[Vol. I, Section 5.4.1.3] Table 5-2 – Suggest addition: Off-Site, ingestion: place a dot under air. We can breathe in air-level particles.

Response #32:

The air respiration exposure pathway to off-site residents is identified as a primary evaluation pathway in Table 5-2. Footnote “a” explains that this pathway includes the inhalation of fugitive dust associated with historical stack emissions and wet and dry deposition to local soils.

Comment #33:

[Vol. I, Section] 5.4.2.1 Upland Soils - This does not meet CERCLA....sampling must continue looking until contamination is not found. Tiering is unacceptable. Air depositions can deposit further away than nearby for a number of natural and human activity reasons. Rayonier should not get an "exclusion" clause from sampling.

Response #33:

The comment appears to be predicated on the use of the term “tier” as meaning phasing of the remedial investigation. However, this section of the Management Plans discusses the process to be used to conduct ecological risk analyses. Here, the use of the term “tier” is used in reference to the MTCA terrestrial ecological evaluation procedures, and signifies the degree of complexity of the evaluation based on a series of factors identified in the MTCA cleanup regulation. For additional explanation of the terrestrial ecological evaluation, see <http://www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm>.

Comment #34:

[Vol. I, Section 5.4.2.1, page 5-12] bullet #2: DNR and others have asked for soil sampling beneath pavement. Contaminants leach through pavement as well as through surrounding soil to underneath the pavement.

Response #34:

This section of the Management Plans discusses the process to be used to conduct ecological risk analyses in accordance with MTCA's terrestrial ecological evaluation procedures. The text which is the object of this comment explains the rationale which could result in the site being subject to a site-specific evaluation under that process. It's not clear why the description of those rationale would be impacted by requests from DNR and others for soil sampling beneath paved areas. However, the Uplands RI/FS Management Plans describes the collection of 100 soil samples (see Table 2-8 on page 2-59 thru 2-61 of Volume II), many of which will be taken from beneath concrete slabs and asphalt.

Comment #35:

[Vol. I, Section] 6.4.1 - If there is a change re: FS analysis, RTAG should be at the table.

Response #36:

This section of the Management Plans describes the task of initial screening of alternatives for a cleanup action under MTCA. As the text notes, there are two fairly specific criteria on which that screening may done. MTCA clearly assigns to Ecology the responsibility for making any determinations regarding initial screening. However, Ecology expects to keep the RTAG agencies apprised of its considerations as the initial screening process of the FS phase proceeds.

Comment #37:

[Vol. I, Section] 6.5, Para. starting "MTCA guidance..." - Explain, here, the term "disproportionate cost analysis."

Response #37:

The disproportionate cost analysis is described in MTCA [WAC 173-340-360(3)(e)]. The basic intent of the analysis is to determine if the incremental costs of a particular alternative over the costs of a lower-cost alternative exceed the incremental degree of benefit achieved by the particular alternative over that of the lower-cost alternative. Please refer to the cited section of MTCA for additional detail on the procedures for performing this analysis.

Comment #38:

[Volume II, Section 2.3.9, Page 2-51] Table 2-7 was Table 2-8 - # of soil samples for industrialized area decreased from 7 to 3; totals decreased from 15 to 19. Decreased industrialized area sampling also for plants and worms. Why the decreases?

Response #38:

The comment refers to a change which occurred between an earlier RTAG review draft of the Management Plans and the public review draft. In the public review draft, Table 2-7 shows that three ecological samples will be collected from the industrialized area of the mill site from which soil, plant, and worm samples will be collected. These three locations were selected based on the presence of worms and plants as described in

Appendix A of Volume I. This sampling scheme is identical to the RTAG review draft of the Management Plans. However, the RTAG draft of the Management Plans also included three other ecological soil samples from the industrial area that were located under elevated concrete slabs. These three samples were identical to soil samples MR20, SR21, and RB20 that are identified for sampling elsewhere in Volume II of the RTAG review draft of the Management Plans. The purpose for including these three samples in the RTAG review draft of the Management Plans was to identify that soil samples were being collected under elevated concrete pads. It was subsequently felt that noting these soil samples twice in the work plan was redundant and somewhat confusing, so reference to these samples was removed from the ecological sampling sections. However, soil samples will be collected from these locations (i.e., MR20, SR21, and RB20; see Table 2-8 of Volume II of the public draft of the Uplands RI/FS Management Plans) as part of the Uplands RI/FS.

Comment #39:

[Volume II, Section 2.3.9] P.2-52 CORRECTION: Para. starting "A survey was conducted...", Line 5 - West Roll Storage accidentally eliminated. Write "Four" but cite 3 sites.

Response #39:

The comment refers to a change which occurred between the earlier RTAG review draft of the Management Plans and the public review draft. In the RTAG review draft, the West Roll Storage Area was identified as a location for biota and soils to be sampled to support the terrestrial ecological evaluation. However, this location was eliminated in the public review draft after considering the results of a preliminary survey which showed limited availability of biota at the location, the similarities in potential contaminants with the East Roll Storage Area sampling location, and the possible effects of past inundation of the West Roll Storage Area location by Ennis Creek during periods of high flow. The text will be corrected to refer to three areas of sufficient biomass.

Comment #40:

[Volume II, Section 2.3.10, Table 2-8] DIOXINS 1613B METHOD!!! Again, 8290 should be used.

Response #40:

Please refer to "Responses to Common Concerns – Analytical Methods" for a further discussion of specific analytical methods.

Comment #41:

[Volume II, Appendix B] We NOTE that in the New Appendix B section, split sampling is only mentioned for the mill site. This should also be done for all samples taken in the community.

Response #41:

The text of the memorandum from the Lower Elwha Klallam Tribe specifies that "the Tribe proposes to conduct a split sampling program to include any or all environmental

media (including surface and subsurface soil, groundwater, and sediment) to be collected as part of the proposed RI.” Any sampling of off-site soils conducted by Rayonier under these Management Plans would fall within that scope. The Agreed Order specifies that Rayonier shall allow split or replicate samples to be taken by Ecology. Ecology and the Tribe will collect split samples at their discretion.

Comment #42:

Finally, no new materials, such as the graving yard soils, should be stored on the Mill site until all the testing, analysis and cleanup decisions are made. Rain, wind, etc. can move "stored" soil around, including into Ennis Creek where ongoing sediment testing and planned restoration is intended. As well, to do so would undermine the public process on cleanup determination.

Use of these soils would invoke the 2003 revised WAC 173-350. If the proposed fill placed on the site is contaminated, unclean dirt (as per the definition in the state solid waste regulation) -- MTC A does not determine sufficient cleanliness of the soils or sediments for this site given the on site human traffic and the adjacent neighborhoods, then it is a solid waste, or some form of contaminated waste. Using contaminated dirt, sediment, or waste invokes getting a solid waste (garbage dump) license, RCRA license or another disposal site license.

Response #42:

Ecology notes that under WAC 173-350, the distinction between clean and contaminated soils is largely based on the planned uses of the soil and the characteristics of the location where the soil will be managed or disposed. Use of soils from the WSDOT graving facility in a cleanup action would require a review for compliance with the substantive requirements of WAC 173-350. In that event, Ecology would ask the Clallam County Environmental Health Division (CCEHD), the local agency with primary authority for the regulation of solid waste, to identify those substantive requirements.

If soils were to be imported prior to the selection of a cleanup action, the proposed handling of those soils would be evaluated for compliance with WAC 173-350. CCEHD would make the determination on the need for and any conditions of a solid waste permit governing the management of the soils under WAC 173-350.

Ecology and the Tribe have provided Rayonier with their expectations for conditions under which soils might be imported to the site prior to completing the site characterization and the selection of a cleanup action. Those include the recognition that any soils brought onto the site in anticipation of use in a final cleanup action must be considered to be stockpiled until a cleanup action making use of the soils is formally adopted and implemented, and a plan for managing the soils in stockpiles. The stockpiling plan must show where the soils are to be stockpiled and must include any appropriate engineering details such as provision for drainage, height and steepness of slopes, erosion control, and, where appropriate, compaction and similar specifications. Ecology and the Tribe have also set the expectation that Rayonier must provide a written

plan for the ultimate disposition of the soils in the event they are not used in a final cleanup action and that Rayonier demonstrate its financial ability to implement the plan.

To date, however, no soils have been imported to the mill site from the WSDOT graving facility project, nor have WSDOT or its contractors proposed that any soils will be.

Responses to Additional Comments by Darlene Schanfald on behalf of Olympic Environmental Council (OEC)

Comments were received in an e-mail dated May 7, 2003.

Comment #43:

I've already identified in a number of ways where air emissions from the Rayonier mill drifted. If I locate more photos (time permitting), I will submit these after May 7.

Response #43:

Ecology appreciates OEC's efforts to compile the materials which were delivered with OEC's comments. As noted in the "Responses to Common Concerns – Evaluation of Off-site Soils", the use of the atmospheric deposition model proposed in the draft Management Plans is expected to provide a reasonable and defensible basis to guide the characterization of the off-site soils. The materials provided by OEC will supplement the model and other information contributing to the evaluation of the off-site soils.

Comment #44:

One of the issues to keep in mind for this cleanup is that of the Orca Pass International Stewardship Area. Governments at all levels and NGOs, between Canada and the U.S., have been working on further protections and restorations throughout the Puget Sound, including the Strait of Juan de Fuca, for marine protection stewardship areas. Our area, rich with marine resources, yet known to have lost species and to be harming species, can be considered for restoration.

Many federal dollars have gone into this effort and the cleanup of the Rayonier site can be critical to enriching this effort.

Response #45:

Comment noted.

Response to Additional Comment by Darlene Schanfald on behalf of Olympic Environmental Council (OEC)

Comment was received in an e-mail dated May 7, 2003.

Comment #46:

I want to be sure that the samples taken are not blended but are unique to be analyzed separate, rather than analyzing of compromised samples.

Response #46:

Ecology interprets this comment as expressing a preference for discrete samples over composited samples. The majority of samples to be collected in the uplands RI will be discrete samples. However, there are instances where composited samples will be

collected. Composite samples are sometimes necessary to obtain adequate mass of a material to allow for chemical analysis, as with the collection of earthworms to support the terrestrial ecological evaluation. In other cases, composite samples may be appropriate to support the evaluation of risks to receptors which are exposed to contaminants from numerous locations across the overall area being sampled.

Responses to Comments by Bob Lynette

Comments were received in an e-mail dated May 5, 2003.

Comment #47:

CHANGES NEEDING TO BE MADE TO THE DRAFT SOILS CONTAMINANT INVESTIGATION PLAN

This is a CERCLA level cleanup and the cleanup should meet these standards. Contamination is to be sought until none is found rather than "phased."

Activate a widespread soil study throughout Pt Angeles neighborhoods identified by present air emission data; Gayle's Edition should be thoroughly sampled as it had the highest impact from mill emissions. A few sample sites per each block where deposition likely occurred should be taken.

In this case there is hard data as to where the emissions traveled; modeling is uncalled for. The upland soil assessment needs to be based on hard data including photographs, reports from the hot line, records of damage in the community, etc.

Have Rayonier check its files for homes it repaired and repainted, and telephone wires, etc. they replaced due to their acidic emissions. Soils in these areas should be tested.

Other air emission files to be checked should include OAPCAs, Ecology's, EPA's, ONP's (ONP has data from the 1970s or early 1980s on).

"Phased" soil sampling in and around Pt Angeles is inappropriate, particularly because volumes of documentation exists as to the Rayonier air emissions' directions.

Test community soils for all possible Rayonier contaminants. Outdoor & Indoor testing. Commonly, contaminants are trapped indoors on properties they settled.

The Olympic National Park has reported damage to the natural resources from SO₂ emissions over the years. Soil samples in the upland areas need to extend into the ONP. Photos of emission plumes show that the Rayonier plume did carry that far and the ONP has reports of the damage to vegetation. ONP soils should be sampled and analyzed, especially in the Heart of the Hills area where reports were made of SO₂ damaged trees.

The off-site assessment also needs to attempt to identify an indicator chemical or two. Manganese and arsenic are two candidate chemicals that might serve as indicators. This way many more samples could be taken and assessed in a shorter period.

Heavy metal samples of soils taken in and around Pt Angeles should be evaluated by Battelle Lab in Sequim as they have some of the nation's most sensitive heavy metal detecting equipment.

The present cleanup standards rely on industrial standards for the mill site ("restricted"). Citizens urge application of "unrestricted" standards, consistent with the presence of the hiking trail on the site and the immediate neighborhoods which are residential and medical.

The method for measuring dioxin has to be analyzed carefully. The work plan now proposes to use method 1613b for measuring dioxin, yet EPA used method 8290 for confirming measurements of dioxin contamination in soils on site and in the neighborhood. I urge Ecology to use method 8290, the "gold standard" dioxin test.

I applaud Ecology for including split sampling in the work plan for the mill site. This should also be done for soil samples taken from in and around the Pt Angeles community.

The soils in the mill site need to have biological tissue sampling conducted even if the soil is sandy and does not support worms. In the sandy soils, other soil animals can be substituted, or the soils can be returned to the laboratory and used for toxicity testing and chemical uptake. The fact that soils are sandy and/or covered with concrete does not mean that these soils will be safe for decades to come or will not serve as a source of contamination for the marine animals in the near shore environment.

I recommend adding two groundwater wells in the area west of the spent sulfite liquor lagoon (SSLL), where there has been no groundwater testing. One of the groundwater wells near shore and north of the SSLL had contamination and this result indicates the potential for more groundwater contamination in that area of the site.

Sulfate needs to be treated as an indicator compound and flagged as a Compound of Concern. The work plan shows that every groundwater well had elevated sulfate levels, indicating contamination. The sulfate is a product of sulfuric acid or sulfite waste or other sulfurous waste contamination. Thus, the presence of extremely high sulfate is a good indicator of contamination from mill wastes.

No new materials, such as the graving yard soils, should be stored on the Mill site. Rain, wind, etc. can move the soil around, including into Ennis Creek where ongoing sediment testing and planned restoration is intended.

Response #47:

Many of the concerns expressed in this comment are addressed in response #12. The comment regarding storage of graving yard soils on the mill site is addressed in response #42.

The comment suggests the use of indicator chemicals in the assessment of off-site soils. The chemicals of interest for the remedial investigation that are associated with stack emissions for the mill site are metals, dioxins/furans, and polycyclic aromatic hydrocarbons. These chemicals have been measured in the 21 off-site soil samples collected by EPA as part of the Expanded Site Inspection. Evaluation of that data shows that metals, dioxins/furans, and polycyclic aromatic hydrocarbons are indeed the chemicals of concern in off-site soils. Results of the atmospheric deposition modeling will provide a good indication of where particles emitted from the mill site stacks were most likely to accumulate. If evaluation of the EPA soils data and results of the atmospheric deposition model show that the additional soil sampling is required to characterize the patterns of off-site soil chemical occurrence, additional soil samples will be collected and analyzed for the presence of metals, dioxins/furans, and polycyclic aromatic hydrocarbons. In this approach, it's unclear what benefit the use of indicator chemical analysis would provide. Arsenic and manganese are found naturally at fairly high concentrations in soil (see "Natural Background Soil Metals Concentrations in Washington State" at <http://www.ecy.wa.gov/pubs/94115.pdf>). Therefore, arsenic and manganese would not make suitable indicator chemicals because the low levels expected to be deposited in the soil from stack emissions would be masked by the background concentrations already present.

The comment suggests that soils which do not currently support the biota to be assessed in the terrestrial ecological evaluation should be sampled and assessed using other species, or should be removed to a lab for some form of bioassay testing. Section 5.4.2.1 of Volume I of the Management Plans describes the approach for evaluating potential effects on plants and animals of soil-borne chemicals found at the mill site. It includes the collection of soil, plant, and earthworm tissue samples from the forested areas along the marine bluffs and Ennis Creek corridor as well as on the developed portion of the mill site. Appendix A of Volume I provides the results of a survey of the developed portion of the mill site that identified areas where worms and plants could be collected and three areas suitable for collection of worms and plants were ultimately identified. During that survey, no alternate soil animals were identified that could be collected in place of earthworms. However, Section 5.4.2.1 of Volume I describes a method for calculating soil-to-worm and soil-to-plant bioaccumulation factors (BAFs). Once the results of the soil, plant, and earthworm analysis are available, site-specific BAFs will be derived which can be used to predict concentrations of chemicals in worm and plant tissue based upon soil concentration data only. The site-specific BAFs may then be used to predict chemical concentrations in plants and worms for areas on the mill site where plants and worms do not currently occur.

The comment also suggests the addition of two monitoring wells in the area west of the SSL lagoon. Figure 3-1 of Volume II of the Management Plans shows that monitoring wells PZ-9 and PZ-10 are located west of the SSL Lagoon. Examination of analytical results from samples collected between 1997 and 2002 from PZ-9 and PZ-10 shows that few organic chemicals were detected in any sample and no concentrations exceeded ecological or human health standards. These results could be anticipated because few mill processes occurred in the area between the SSL Lagoon and Ennis Creek. The area

was used primarily for water treatment and storage of finished rolls of pulp. An SSL pipeline ran along the shoreline from the main process area to the SSL Lagoon and monitoring well PZ-9 and soil samples SSL21 and SSL20 are placed adjacent to the pipeline to determine whether any release had occurred from the pipeline.

With regard to the occurrence of sulfate in groundwater samples, Table 3-5 on page 3-30 of Volume I of the Management Plans shows the sulfate concentration in groundwater samples ranging from 23,000 to 1,000,000 µg/L. The sulfate concentration of seawater is approximately 2,700,000 µg/L. Since some of the wells are located close to the harbor, the appearance that sulfate concentrations in some of the groundwater wells are elevated is probably a reflection of seawater intrusion. Examination of the existing groundwater data shows that the highest sulfate concentrations are found in wells located close to the shoreline. The observed ranges of sulfate concentrations for the shoreline wells are:

- PZ-3: 25,000 – 1,100,000 µg/L
- PZ-9: 99,000 – 1,000,000 µg/L
- MW-54: 1,700,000 – 2,000,000 µg/L
- MW-55: 1,500,000 – 2,300,000 µg/L

Sulfate is considered a secondary contaminant under Washington's water quality standard for groundwater (173-200 WAC), which are established to ensure the aesthetic qualities of groundwater such as taste, odor, or clarity. The sulfate standard is 250,000 µg/L. Sulfate concentrations in wells located on the interior of the mill site were generally well below 250,000 µg/L with only a few samples exceeding that level. Typical sulfate concentrations in groundwater range from 0 to 230,000 µg/L (UNEP/WHO/UNESCO/WMO 1990). Therefore, sulfate concentrations in groundwater from wells located on the interior of the mill site do not appear to be elevated.

Reference: UNEP/WHO/UNESCO/WMO. 1990. GEMW/WATER data summary. 1985-87. Burlington, Canada Centre for Inland Waters

Responses to Comments provided by J. Anne Shaffer, Area Marine Habitat Biologist, Washington Department of Fish and Wildlife (WDFW)

Comments received by e-mail and letter dated May 6, 2003.

Comment #48:

Under the Model Toxics Control Act (MTCA), the Washington Department of Ecology is required to address concerns identified by the WDFW for the protection of fish life. The draft RI/ FS and Agreed Order as currently written are inadequate to protect fish life from toxic exposure as detailed below. These errors and omissions need to be corrected prior to finalization of these documents, including the Agreement Order, and initiation of the RI/FS.

Response #48:

The MTCA statute provides an exemption from permits authorized under particular statutes for cleanup actions that might otherwise require permits. [RCW 70.105D.090] However, the MTCA regulation directs Ecology to ensure that a cleanup action complies

with the substantive requirements of a permit if the exemption were not provided. Further, Ecology is directed to consult with state agencies and local governments to identify potential permits and to obtain written documentation from the consulted agencies regarding the substantive requirements for permits [WAC 173-340-710(9)(d)(i)]. Accordingly, Ecology has a duty to address WDFW's comments that are related to the cleanup and which would otherwise fall within WDFW's permitting authority. The comment appears to suggest that WDFW expects Ecology to address any and all concerns regarding the site that WDFW may identify, including concerns beyond WDFW's permitting authority.

Comment #49:

The site is not upland, it is nearshore, with heavily impacted areas of creosote piles (a well documented impactor to fish life and habitat) as well as with concrete slabs and fill. Classifying the site as "upland" is inaccurate and does not evade the fundamental issue of impacts of toxic creosote piles and fill and sedimentation and stormwater run off to critical nearshore resource and habitat of three federally listed species that use this site, including Puget Sound chinook/Hood Canal/SJdF summer chum, coho, and bull trout . These include Elwha and Morse creek stocks critical for recovery of the Strait salmonid stocks. Forage fish including long fin smelt, surf smelt, sand lance and herring, critical food species for these and other listed species, all use the shoreline of Rayonier site for feeding and migration. Sand lance spawn within two miles of the site.

Response #49:

The term "upland" has been used in these management plans to distinguish this portion of the study from the marine remedial investigation for the mill site, which is being addressed under a separate set of management plans. There is considerable text (see page 1-1 of Volume I) and ample figures/maps contained throughout the Upland RI/FS Management Plans for reviewers to understand the physiographic position of the mill site. A description of the marine resources adjacent to the mill site is provided in Sections 2.2.6.2, 2.2.6.3, and 2.2.6.4 of Volume I, and presents information of endangered and threatened species, forage fish including the herring and sandlance, and other species of marine animals and plants.

Comment #50:

Nearshore elements of the site must be adequately characterized, including accurate native and current elevations and bathymetry, and current site characteristics including fill location and composition, pile location and quantity throughout the site. Both fill and piles need to be characterized as sources of contaminants and sampling revised accordingly. Systematic sampling across the site for sediment and groundwater contamination is appropriate and necessary to adequately then protect fish life.

Response #50:

The information collected through the Marine and Upland RI/FS processes will support the selection of cleanup actions which will be protective of human health and the environment. Additional detailed information may be needed for the design and actual cleanup, but the identification of those data requirements is best left to a later stage in the

cleanup process when those needs can be better defined. (e.g., elevation and bathymetry data). The location and composition of fill will be defined through the evaluation of boring logs generated during Uplands RI/FS sampling as well as those generated during previous groundwater and soil sampling efforts. Chemistry data from the 246 soil samples collected as part of EPA's Expanded Site Inspection and the Uplands RI/FS Management Plans and from the multiple sampling events of the 20 on-site monitoring wells will provide sufficient information to adequately assess current and future impacts to marine environment. Treated pilings can be a source of chemical release into the environment (e.g., polycyclic aromatic hydrocarbons). The Marine and Uplands RI/FS Management Plans include sufficient sampling of soil, sediment, groundwater, and biota near pilings to adequately characterize the potential impacts of those pilings on the adjacent environments.

Comment #51:

Defining nearshore marine interactions including stormwater run off from both Ennis Creek and the site itself, groundwater interactions with the nearshore, and long shore transport processes and interactions with site sediment and water quality is also necessary to adequately address protection of fish life. Net shore transport processes should be fully addressed. These include disruption of nearshore transportation, transportation of sedimentation and contaminants from the site via the shore and Ennis Creek, nutrient loading to the nearshore from site runoff and disruption of long shore transport by the pier. The interaction of these events should also be analyzed for specific impacts to nearshore including contamination and habitat shifts within nearshore habitats, including alterations in physical habitats and forcing of macroalgae blooms (See Frankenstein 2000; Shaffer and Burge 1999; Shaffer 2001).

Response #51:

Chemical data from sediment and biota samples collected as part of EPA's Expanded Site Inspection and the Marine RI and results of sediment bioassays performed during the Marine RI will provide the information necessary to determine the nature and extent of contamination and evaluate risk to human health and the environment. As part of its work for the Marine RI, Rayonier has developed a transport model that describes the potential for particulates released from the former nearshore and deepwater outfalls to disperse in Port Angeles Harbor. However, an assessment of disruption of nearshore transportation and nutrient loading fall outside of the scope of the cleanup under MTCA.

Comment #52:

To address these issues, at a minimum the following are needed: 1) A map showing location and number of piles, location, depth, and identify and location of fill; 2) A map depicting the native bathymetry/elevation of the entire site- which is critical to determining what appropriate cleanup actions will be; 3) Sediment toxicity (surface and subsurface) and groundwater sampling plan should be revamped so that the entire site is sampled systematically; 4) Areas with known piles and contaminated fill need to be sampled adequately for sediment toxicity; 5) Hydrologic analysis must include nearshore transport as a vector of surface and ground run off contamination and address impacts to nearshore habitat composition and toxicity.

Response #52:

- 1) The assessment of the potential impact of piles on the adjacent environments does not necessitate that all piles be located and mapped. The characterization of fill material will be presented in the Uplands RI report.
- 2) Bathymetry and elevation maps already exist (e.g., Figure 2-6 on page 2-15 of Volume I) and will be presented in the Marine and Upland RI/FS reports. More detailed bathymetry and elevation data may be needed if a cleanup action is required and this information will be better defined at a later stage in the cleanup process.
- 3) A comprehensive sediment sampling analytical and toxicity testing program has been conducted in the areas of the log pond, the dock, and the deep water outfall. See the Marine RI Management Plans for details. Results of that sampling program will be reported in the Marine RI Report.
- 4) Areas around the dock and in the former East Roll Storage building contain the highest concentrations of pilings. Data from EPA's Expanded Site Inspection and the Marine and Uplands RI/FS sampling programs should provide sufficient data to evaluate the extent of contamination and human health and ecological risks. However, in the event that additional sampling needs are identified during preparation of the RI/FS reports, additional sampling can be conducted.
- 5) Rayonier has developed a transport model that describes the potential for particulates released from the nearshore and deepwater outfalls to disperse in Port Angeles Harbor. This model is referenced in the Marine RI Management Plans.

Comment #53:

The RTAG nearshore/habitat subcommittee made clear direction to the DoE on these specific nearshore issues at the subcommittee meeting and subsequent summary entitled "*Ennis Creek habitat: priority considerations for the restoration and redevelopment from the Rayonier TAG habitat meeting*" dated 10 July 2002 (another copy attached). WDFW again advises these steps be taken.

Response #53:

Please refer to "Responses to Common Concerns – Ennis Creek Habitat Restoration." The recommendations contained in WDFW's summary of the July 2002 meeting are generally oriented toward restoration of fisheries habitat, and fall outside of the scope of remediation under MTCA.

Comment #54:

We found the following errors and omissions in Section 3. Please correct the plan and implement accordingly.

- Title - The site being characterized in nearshore, not upland
- 3.17 - Where are results of PZ-10?
- Table 3.2 (page 3.24) - PAHs, Pentaclorophenols, and Peteroleum Hydr carbons are all ecological COPC and need to be included in the analysis

- Figure 3.33 - Add piles as a potential contaminant source

Response #54:

Regarding the title, see response #49.

A summary of several groundwater studies conducted on the mill site are presented in Volume I, Section 3.1.2.5. The reviewer is encouraged to obtain copies of the referenced documents for additional details. Monitoring well PZ-10 is included in the groundwater study for the Uplands RI/FS (see Section 3 of Volume II) and results of groundwater sampling of PZ-10 will be presented in the Uplands RI/FS report.

The process that was used to select ecological chemicals of potential concern (COPCs) is described in Section 5.4.2.1 and Table 5-3 in Volume I of the Uplands RI/FS Management Plans. In accordance with MTCA, ecological COPCs were identified by comparing the maximum detected concentration of chemicals from EPA's Expanded Site Inspection soil data against the lowest of the MTCA ecological soil indicator concentrations. Polycyclic aromatic hydrocarbons were not identified as an ecological COPC because their maximum detected concentrations did not exceed the lowest ecological soil indicator concentration. Although the maximum detected pentachlorophenol concentration exceeded the ecological soil indicator concentration, the 95 percent upper confidence limit did not, which allows it to be eliminated from selection as a site-wide COPC under MTCA. Total petroleum hydrocarbons were not analyzed by EPA during the Expanded Site Inspection. However, interim actions have already been conducted on the mill site to address most of the petroleum contamination and impacts from petroleum are generally limited to groundwater and subsurface soil where ecological exposures are minimal. Therefore, petroleum hydrocarbons were not identified as an ecological COPC.

Pilings have not been specifically called out in the Management Plans as a potential source of contamination. However, impacts of the release of any chemicals from the pilings are addressed in the both the Uplands and Marine RI/FS Management Plans and will be presented in the RI/FS reports.

Comment #55:

The following data gaps need to be added to Table 4.1 and addressed in the RI work plan and feasibility study (again these were identified by the TAG a year ago): 1) Fill location and composition; 2) Pile location and number; 3) Systematic sampling for sediment and groundwater toxicity throughout the site, and; 4) The nearshore hydrodynamic processes, including sediment, fill, stormwater, groundwater, marine, and long shore mechanisms need to be specifically analyzed for source and transport of toxins. These should also be added to Table 4.3 (potential concerns) and addressed accordingly

Response #55:

See response #52. Many of the data elements suggested in the comment appear to be intended to support a site restoration project, but are not generally within the scope of site remediation.

Comment #56:

To adequately address impact to fish life, including a number of critical and federally listed species the Remedial Investigation tasks (Section 5) needs to be revised to address the points made above and the following:

- 1) The RI tasks need to focus on defining and remedying sources of contamination, including piles and fill, on the site.
- 2) A number of federally listed species use the site (as detailed above). If we are limited to the levels provided in this section, Tier 3 criteria are therefore the minimum appropriate criteria to use for defining investigation and clean up parameters. It is not appropriate to discuss clean up criteria that are based on potential future fill or building on the site (as recommended for Tier 1). The only criteria that should define site clean up activities are levels of contaminants, and what steps are necessary to bring the site to the highest possible standard for future use

Response #56:

The Uplands RI/FS will identify sources of contamination and remediate those sources and their effects as required under MTCA. As the Management Plan explains in Section 5.4.2.1, the site does not qualify for the exclusions that would allow an exemption for the evaluation (referred to in the Management Plans as Tier 1), nor does it meet the criteria that would allow the use of the simplified, or Tier 2, evaluation. Consequently, the site will undergo a site-specific, or Tier 3, terrestrial ecological evaluation in accordance with MTCA.

Comment #57:

Throughout sections 5.3 and 5.4 (for example page 5.13 sentence 5) impact to fish life must be included in the data validation and evaluation of this work.

Response #57:

The Uplands RI/FS Management Plans primarily address the terrestrial habitat. The exception is that the plans also include the evaluation of potential ecological impacts of groundwater discharge into aquatic environment as well as potential ecological impacts of chemicals detected in sediment of Ennis Creek. The reviewer is referred to the Marine RI Management Plans for additional information regarding the assessment of impacts to aquatic biota in the marine environment.

Comment #58:

Once the site is adequately characterized the plan must sufficiently address contaminant source removal. Specifically:

- 1) The site needs to be cleaned up to the highest and best standard, not industrial standards.
- 2) Piles at the site must be pulled as part of the clean up plan.
- 3) Contaminated fill be removed as part of the clean up plan.

- 4) Conveyance of contaminants to the nearshore and impediments to long shore transport that result in an accumulation of contaminants and sedimentation changes must be remedied.
- 5) Restoration of the nearshore, including the longshore transport and connection between Ennis Creek and the nearshore is critical for future fish life must be implemented.

Response #58:

- 1) Please refer to “Response to Common Concerns – Land Use.”
- 2) Pilings are not identified as potential source of contamination. However, impacts of the release of any chemicals from the pilings are addressed in the Uplands and Marine RI/FS Management Plans and will be presented in the RI/FS reports. A full suite of remedial alternatives will be considered during the FS in a manner consistent with MTCA and the most appropriate alternatives will be selected if remedial action is required.
- 3) The purpose of the Uplands RI/FS is to determine if chemicals present in soil, groundwater, and sediments from Ennis Creek pose a risk to human health or the environment. A full suite of remedial alternatives will be considered during the FS in a manner consistent with MTCA and the most appropriate alternatives will be selected if remedial action is required.
- 4) Migration of chemicals from the mill site to the marine habitat will be evaluated in the fate and transport section of the Uplands RI/FS. If required, remedial actions will be taken to control migration. Sufficient data will be available in the Marine RI to determine if sediments need to be remediated and the Marine FS will evaluate remedial alternatives. However, modification of sedimentation patterns for purposes other than the cleanup of hazardous substances is outside the scope of the MTCA cleanup process.
- 5) Please refer to “Response to Common Concerns – Habitat Restoration.”

Comment #59:

All of these directions fall within the legally applicable requirements and are relevant and appropriate requirements for site clean up and will be necessary for this process to comply with state laws including (but not limited to) federal and state cleanup, including MTCA, CERLA and hydraulics WACs.

Response #59:

Cleanups conducted under MTCA must comply with applicable state and federal laws, including legally applicable requirements and those requirements which Ecology determines to be relevant and appropriate. Legally applicable requirements are defined as cleanup standards, standards of control, and other environmental protection requirements, criteria, or limitations adopted under state or federal law that specifically address a hazardous substance, cleanup action, location or other circumstances at the site. The MTCA regulation gives Ecology the authority to make the final interpretation of whether applicable state and federal laws have been properly identified and are legally applicable or relevant and appropriate [WAC 173-340-710].

Responses to Comments provided by Dr. Gerald Hauxwell

Comments received by e-mail dated May 6, 2003.

Comment #60:

Considering the high probability that the site will become a multi-use site, partitioned into sections, the sampling plan should recognize and accommodate such action. When results are complete, areas should be clearly identified as restricted and unrestricted such that the site could be parceled into sections for various uses. This may require some further review and revision of your current sampling plan.

Response #60:

The information generated during the Upland RI/FS as well as data from earlier mill site investigations can be used to identify areas where land uses other than industrial uses may be practiced without additional cleanup. However, future land use options can not be completely defined until a buyer is identified and a development plan is generated. Any cleanup actions which may have been implemented up to that point will need to be reviewed to determine if the assumptions on which the cleanup standards were based will be consistent with the proposed site uses.

Responses to Comments provided by Eycke Strickland

Comments received by e-mail dated May 6, 2003.

Comment #61:

It has been established that the bodies of humans and other creatures have accumulated many more toxins than was anticipated at the dawning of the “chemical age.” We now know that hundreds of toxins have caused the significant deterioration of our environment and great harm to humans and animals.

Response #61:

Ecology recognizes the cumulative impacts of toxic chemicals in the environment, and is carrying out numerous efforts surrounding this issue. The cleanup of contaminated sites is one such effort.

Comment #62:

The areas including residential property in close proximity and at a distance from the mill, the site itself, ground water on and near the site should be tested much more stringently than presented by the draft Plan. “Phased” soil sampling and “modeling” of emissions are not sufficient.

Response #62:

Please refer to “Response to Common Concerns – Evaluation of Off-site Soils.”

Regarding the stringency of sampling, EPA collected 146 soil samples from the mill site during the Expanded Site Inspection. An additional 100 soil samples will be collected from the mill site as part of the Uplands RI/FS. The combined set of 246 soil samples represents a sampling program that will provide data from all known or suspected areas of concern on the mill site. Likewise, the 20 monitoring wells that form the basis of the

Uplands RI/FS groundwater sampling are distributed throughout the mill site. Many of them have been sampled from 1997 to the present. These sources of chemical data are expected to provide sufficient information to characterize the mill site. However, unforeseen issues may be identified during the RI/FS process that may require additional sampling. Additional sampling can be readily accommodated in the cleanup process if needed.

Comment #63:

In addition to testing by Rayonier, data from air and soil tests that have been done over the years by various agencies (EPA, Ecology, OAPCA and ONP) should be taken into consideration.

Response #63:

Please refer to “Response to Common Concerns – Evaluation of Off-site Soils.”

Comment #64:

The site itself should be cleaned up to "unrestricted" standards instead of "restricted." Even if the site or portions of it were to be used for industrial purposes at some time in the future Ennis Creek will continue to flow through it, wildlife will continue to cross it, humans will enter the site via the Discovery Trail, the hospital will remain in close proximity, and last but not least humans would once again begin to work there.

Response #64:

Please refer to “Response to Common Concerns – Land Use.”

Comment #65:

Unless time and great care were taken to test the graving yard soil for pollutants the site should not be used as a "dumping ground."

Response #65:

Please see the response to comment #42.

Comment #66:

In Port Angeles we have the chance to have a polluted mill site cleaned up so that it once again can become a part of our beautiful waterfront. Let's take it slowly and do it right.

Response #66:

The process for cleanup under MTCA requires that Ecology consult with other state and federal agencies with responsibility for managing resources affected by contaminants or by potential cleanup actions at the site. In addition, MTCA requires public review and comment at several decision points in the process. Although the development of the RI/FS Management Plans and their implementation are being expedited, the requirements for interagency consultation and for public review requirements, including the timeframes for comment periods, have been and will continue to be met.

Responses to Comments provided by Tina Lipman

Comments received by e-mail dated May 6, 2003.

Comment #67:

I am concerned about many aspects of the sampling plan. Mainly that it seems to be directed toward the "restricted use" level clean up rather than the unrestricted use. Its use, by the existence of the Olympic Trail is certain qualifies it as public access and therefore as a CERCLA cleanup should be nothing less than Unrestricted.

Response #67:

Please refer to "Response to Common Concerns – Land Use."

Comment #68:

My comments about testing the dock have been referred to sediment testing. Testing the sediment under the dock is not the same as testing for contaminants on the dock. Is the dock considered upland soil or sediment? The dock has been a major point of transfer where contaminants were sure to have been exposed to the harbor. The dock structure itself should be extensively tested.

Response #68:

The dock has been present at the mill site for many years. It is reasonable to expect that chemicals that may have been spilled on the dock have since been washed into the harbor following years of exposure to rains. Similarly, chemicals associated with the structure itself can reasonably be expected to have had sufficient time to have leached from the structure and affect the surrounding sediments and marine biota. The RI is designed to identify whether hazardous substances associated with the dock or dock usage migrated into the marine environment and if those substances are adversely affecting human health or the environment. This will be addressed by evaluating the sediment and tissue samples collected from Port Angeles Harbor as well as evaluating the results of bioassays conducted on sediment collected from the Log Pond and dock areas. The dock is not considered soil or sediment because soil and sediment have specific characteristics that are associated with exposure pathways to humans and ecological receptors.

Comment #69:

The risk assessment for larger animals in our vicinity such as Bald Eagles, Peregrine Falcons, Whales, migratory birds, Salmon and marine mammals is largely ignored. Where have they related this issue in the clean up plan?

Response #69:

The ecological risk assessment for the uplands environment at the mill site described in Section 5.4.2 of Volume I of the Uplands RI/FS Management Plans follows the approach specified in MTCA for conducting a terrestrial ecological evaluation [WAC 173-340-7490]. The wildlife receptors specified in MTCA (i.e., vole, robin, and shrew) are highly exposed to soil-borne contaminants due to their small home ranges and foraging characteristics (e.g., shrews and robin forage primarily on earthworms during a large part of the year which bioaccumulate chemicals from the soil). Therefore, results of risk assessment conducted on these species will be protective of other species which are less

exposed to soil-borne chemicals at the mill site (e.g., peregrine falcons have a large foraging range and feed on prey, like pigeons, that will bioaccumulate less chemicals from the soil because of lowered exposure to soil).

Comment #70:

I am also deeply concerned about the discussions at the 4-30-03 public meeting that imply a cooperative effort between Rayonier and the Dept. Of Transportation's Graving Yard. Rushing the mill clean up to accomodate DOT time restraints is unthinkable. The discussion that fill material from the excavation of the graving yard could be stored at the former mill site seemed to already be an agreed upon arraangement. Having any material added to the former Rayonier Mill site could interfere with the clean up and should not be allowed .

Response #70:

Please see the response to comment #42.

Responses to Comments provided by Pam Johnson on behalf of People for Puget Sound

Comments received by e-mail dated May 6, 2003.

Comment #71:

Before itemizing specific concerns with the workplan, People For Puget Sound has a few general comments on the process by which this RI/FS is following. It was only a year ago that we commented on the draft marine RI workplan, and were anxious to see that plan turn into real study and cleanup. In the midst of that process, it was suggested that the upland RI/FS needed to go on the "fast track" in order to accommodate the wishes of the liable party, Rayonier, to use fill from a different site that was not fully characterized, nor guaranteed available on a timeline that works with an adequate RI/FS process. Ecology, by accepting this request to speed up the process into completely unrealistic time frames (more detailed comments later), and put aside work on the marine RI, makes our organization question the integrity of this and any future timelines, and commitment to a cleanup based on science and community acceptance. Instead, it is another example of how this process is being unduly influenced by the liable party. To continue this type of decision-making does not at all serve those whom the Model Toxics Control Act strives to protect: the community and its ecosystem.

Response #71:

Ecology acknowledges that the expedited RI/FS for the uplands has represented a shift in the public emphasis of the project over the short term. However, Ecology expects that the milestone dates for the overall cleanup of the site will still be met. It should also be noted that Ecology, the Tribe and Rayonier have also continued to devote a substantial amount of effort on review and analysis of data for the marine RI while the uplands RI/FS process has been moving forward.

The schedule for the Uplands RI/FS includes time to adequately review and incorporate all relevant information into the RI/FS report, including all public review periods as

mandated under MTCA. Decisions regarding cleanup actions will be based upon a thorough evaluation of the information necessary to support those decisions.

Comment #72:

This document is also a perfect example why there should be no planned introduction of new contaminants and soils to the site once this document is finalized. Investigations, risk assessments, and cleanup alternatives will be developed based on the site's current characterization outlined in this document. To bring in new elements will both change the basic site characterizations on which all decisions are being based, and will bias the preferred cleanup alternative to an action which can use the soil that has already been placed on site. Ecology must refuse to let such an action take place.

Response #72:

The Uplands RI/FS will be based on data representing the current conditions present at the mill site. Please see the response to comment #42 for further discussion regarding importation of soils from the WSDOT grading facility to the Rayonier mill site.

Comment #73:

[Volume I, Section] 2.2.6 - This is a list of species that may currently occupy the site. This does not include an inventory of species that historically used this site, and may use again once cleanup has been completed. We must assume habitat will regain some of its functions when cleaned up, and therefore the cleanup must be protective of not only the current survivors of the contamination, but also of the organisms that may repopulate the area. An analysis of these organisms should be part of this workplan.

Response #73:

The species described in this section of the Management Plans are species that could occur on the site and commonly occur in the area. Much of the terrestrial portion of the mill site has been created with fill material, resulting in fundamental modifications in habitat function independent of any contaminants that may have been released from the mill. Few animals utilize the developed portion of the mill site because there is little or no habitat (i.e., food or cover) present to attract or support wildlife.

The ecological risk assessment for the uplands environment at the mill site described in Section 5.4.2 of Volume I of the Uplands RI/FS Management Plans follows the approach specified in MTCA for conducting a terrestrial ecological evaluation (WAC 173-340-7490). The wildlife receptors specified in MTCA (i.e., vole, robin, and shrew) are highly exposed to soil-borne contaminants due to their small home ranges and foraging characteristics (e.g., shrews and robin forage primarily on earthworms during a large part of the year which bioaccumulate chemicals from the soil). Therefore, results of risk assessment conducted on these species will be protective of other species which are less exposed to soil-borne chemicals at the mill site (e.g., peregrine falcons have a large foraging range and feed on prey, like pigeons, that will bioaccumulate less chemicals from the soil because of lowered exposure to soil).

Comment #74:

[Volume I, Section] 2.2.6.3 - The workplan lists marine species found in Port Angeles by category, but fails to list birds and marine mammals.

Response #74:

Marine birds and mammals were not identified under a separate category, but are discussed in Sections 2.2.6.1 and 2.2.6.4. Please note that the ecological risk assessment for marine wildlife that was presented in the Marine RI Management Plans contains additional information on marine birds and mammals.

Comment #75:

[Volume I, Section] 2.2.6.3.1 - An explanation of the ecological uses of eelgrass should be included. Not just that this grass is native to Pt. Angeles Harbor, but also that it is important spawning habitat for herring.

Response #75:

Please see response to comment #18.

Comment #76:

[Volume I, Section] 2.2.6.4 - Nesting populations of bald eagle within a mile of the project site that are known to forage there are both near and on the site.

Response #76:

The comment appears to be suggesting that the presence of a nesting territory approximately one mile from the site should be characterized as being near the site. On page 2-26 of Volume I, the Management Plan states: "...the bald eagle, which is listed as threatened, may be found near the project site. No nesting bald eagles are located on or near the project; however, they are known to forage along this stretch of shoreline. The closest nesting territory (Morse Creek #258) is located approximately 1 mile east of the project site." Ecology believes that this text adequately describes the circumstances of the site with respect to its relationship to the bald eagle population in the area.

Comment #77:

[Volume I, Section] 3.1.2.2 - Because groundwater can become re-contaminated after initial cleanup attempts, there should be more sampling of the finishing room. It has been 5 years since ground or surface water that could be impacted was tested and those areas should be sampled as part of the RI.

Response #77:

Groundwater monitoring data is available from the Finishing Room area from as recently as August 2001. The results show that few chemicals were detected, none with detected concentrations exceeding human health or ecological criteria. Also, interim actions were conducted in the Finishing Room area in 1999 and 2002 which resulted in the removal of petroleum hydrocarbon and polychlorinated biphenyl affected soil and sediment from the Finishing Room and adjacent Ennis Creek areas. With the exception of a localized area of

petroleum contamination near the bridge at the northern limit of the interim action area, the contamination was largely removed.

Comment #78:

[Volume I, Section] 3.1.3 - The background locations for freshwater sediment samples could have been easily contaminated by atmospheric deposition from the site, therefore this set of data should not be used.

Response #78:

The three sediment samples collected upstream of the mill site during the ESI were identified as background samples by EPA for the purposes of the ESI. As the commentor notes, the sample locations may have been subject to aerial deposition of contaminants from the mill's stack emissions, and thus should not be considered as being representative of an area unaffected by contaminants from the mill. The RI/FS will be conducted in accordance with Washington's Sediment Management Standards, which evaluate sediments in terms of contaminants' concentrations and biological effects, rather than relying on comparisons to background chemical concentrations.

Comment #79:

[Volume I, Section] Table 3-2 - PAHs, Penta, TPH should all be added as Ecological COPCs.

Response #79:

Please see the third paragraph of the response to comment #54.

Comment #80:

[Volume I, Section] 3.3.1 - This section is confusing. The narrative does not match up with the flow chart. It states there are four potential source identified, then goes on to list 6. It is unclear if "ash from boilers" is meant to capture all historic air emissions. It is also unclear why there would not be ecological receptors for off and on site contamination from air pollutants. It is unclear why humans are not receptors for dermal exposure to marine or freshwater surface water and sediments. This assumes that currently there is no possible human contact with these waters, and it assumes there will never be, which again, should not be the assumption if the waters will be cleaned up to standards that encourage future recreational and commercial use of this area.

Response #80:

The text will be corrected to read six potential sources. As described in Section 3.3.1 of Volume I, ash from the boilers is a potential source of contamination. Section 3.3.2 identifies accidental spills and stack emissions as primary release mechanisms.

With regard to the identification of receptors, please see the responses to comments #24 and #25.

Comment #81:

[Volume I, Section] 3.3.5 - Dermal exposure to vertebrates should be considered a primary exposure. The skin not covered in “thick fur or feathers” is the most likely the skin in contact with the ground or water. Direct contact to invertebrates should also be considered a primary exposure

Response #81:

Dermal exposure of wildlife to soil-borne chemicals has rarely, if ever, been addressed within the context of an ecological risk assessment because it is considered to be a minor pathway of exposure and there is too little information available to quantify dermal exposure. The approach in the Management Plans considers that mammals and birds constantly groom themselves and can ingest soil that adheres to them and that this is a primary exposure route. The ecological risk assessment for the uplands assumes that the target receptors consume a prescribed quantity of soil every day from the mill site.

Comment #82:

[Vol. I, Section] 3.3.5.1 - Why are ecological receptors, already acknowledge earlier in the report considered of secondary concern, just because it is an urban area?

Response #82:

Please refer to the response to comment #24.

Comment #83:

[Vol. I, Section] 4.1.2.1 - The first line should read “The data generated from the field investigations will be used to 1: fill existing data gaps, including the extent of all contamination *on and off site*.”

Response #83:

As the text indicates, the extent of contamination is one of the data gaps that is expected to be filled by the RI. The potential extent of contamination and hence the scope of the investigation is not limited to the mill property. Section 4.2.4 of Volume I discusses the approach to evaluating the extent of contamination beyond the mill property.

Comment #84:

[Vol. I, Section 4.2.1] Table 4-1 [Item] 16 - Evaluation of off-site soil. In addition to phase one activities, soil samples for chemicals other dioxin should be measured off-site. Persistent contaminants such as PCBs and metals are potential airborne contaminants from the boiler ash, and should be sampled as well.

Response #84:

Please refer to “Response to Comments – Evaluation of Off-site Soils.” Polychlorinated biphenyls are not common contaminants associated with boiler ash. However, metals and dioxins are chemicals of potential concern associated with the mill site stack emissions and will be included in the off-site soil analyte list, if off-site soil sampling is determined to be required.

Comment #85:

[Volume I, Section 4.2.2] Table 4-2 - Groundwater samples should be collected down gradient of the finishing room (see comment 3.1.2.2)

Response #85:

Please refer to the response to comment #77.

Comment #86:

[Volume I, Section] 4.2.3 - Eight samples are far to few to fully characterize the sediment of Ennis creek. The samples were also taken over 5 years ago, and a number of contaminate pathways still exist to the creek. Samples should be taken where the most potential for recontamination exists. Subsurface Sediment samples should also be taken where the greatest potential for historic contamination exist, in order to evaluate the potential from recontamination if the sediments are disturbed via human or natural causes. Samples of resident organisms should also be sampled to evaluate the extent of bioaccumulation, and to assess exposure pathways if elevated contamination is found.

Response #86:

Section 4.2.3 of Volume I describes the results of EPA's Expanded Site Inspection of Ennis Creek and shows that the sediment quality in the creek was not impaired by surface water runoff or groundwater discharges from the mill process area. This determination was based on the evaluation of eight surface sediment samples collected from Ennis and White Creeks. In addition, sediments adjacent to the former Finishing Room were removed from Ennis Creek as part of the 2002 interim action because of potential migration of petroleum hydrocarbons and polychlorinated biphenyls into the subsurface sediments. The reach of Ennis Creek adjacent to the former Finishing Room is believed to be adequately characterized. However, one sediment sample location in Ennis Creek was included in the Uplands RI/FS Management Plans upgradient of this area to confirm the acceptable nature of the sediment quality on Ennis creek (see Table 4-3 on page 4-12 of Volume I). Since existing information does not suggest that Ennis Creek is currently impacted by chemicals from the mill site, collection of tissue samples is deemed unwarranted.

Comment #87:

[Vol. I, Section] 4.2.4 - Again, dioxin is not the only chemical of potential concern. PCBs and metals should also be sampled off site. It seems like the method suggested for modeling first, sampling later, is exactly backward. The extent of contamination should be verified first, and then afterward the process of assigning liability can proceed. Information already known about the plume can advise sampling efforts off site.

Response #87:

Please refer to "Response to Comments – Evaluation of Off-site Soils" and the further discussion in the response to comment #84.

Comment #88:

[Vol. I, Section] 5.4.1.2 - It is absolutely wrong to assume this site will forever be an industrial site. This assumption cannot be made based on “best guesses.” A site like this, on the waterfront of a city working diligently on economic development, must be cleaned up to a level that allows the city to get the highest and best use from the property. It must, no matter what the future use, be based on cleanup levels that protect all humans, not just an “industrial worker” scenario from harm from the contaminants. Because of this assumption, the receptors and exposure pathways described in the human health risk assessment are completely irrelevant.

Response #88:

Please refer to “Responses to Common Concerns – Land Use.”

Comment #89:

[Vol. I, Section] 5.4.2 - Ecological receptors must include fish and wildlife in the marine waters since the contaminants are not only contained on the mill’s “upland site”. COPCs such as penta and PAHs and TPH must be added. PCBs are certainly associated with boiler ash, and must be a COPC on all portions of the mill site. To have different COPCs for different parts of the mill site is not acknowledging that all of these contaminants, by water, air, and soil transport, have potentially contaminated all parts of the site and beyond. Fish and Wildlife that represent higher trophic levels, such as the Bald Eagle should be a receptor of concern, because of the bioaccumulative nature of some of the COPCs.

Response #89:

Assessments of impacts to fish and marine wildlife are addressed in the Marine RI. Please refer to the third paragraph of the response to comment #54 and to the response to comment #69 for further discussion regarding the selection of COPCs and species for the terrestrial ecological evaluation.

Comment #90:

[Volume I, Section]5.4.2.2. - Again, Ennis creek sediments should be sampled to adequately do an ecological risk assessment.

Response #90:

Please refer to response to comment #86.

Comment #91:

[Volume I, Section] 6.4.1 - Ecology should include all cleanup action alternatives in the FS, instead of “screening” It is possible to have public comment on a larger, but not final list, and using the public comment on the technical feasibility and cost, develop a second list which is then analyzed in more detail.

Response #91:

Please refer to the response to comment #36.

Comment #92:

[Volume I, Section 7, Page 7-1,] Table 7-1 - Final RI/FS Management Plans: The target date only gives Ecology little more than a week to review, evaluate, and respond to any comments submitted during this public review period. This timeline suggests that those comments will not be seriously considered. Is this date realistic to have response to comments done and produce a final workplan?

Response #92:

The schedule for generation of the final Uplands RI/FS Management Plans has been updated to reflect the current project status.

Comment #93:

[Volume I, Section 7, Page 7-1, Table 7-1] Complete Final Activities: This schedule assumes that there are parts of this document that are not going to change because of public review. In fact, to do sampling without review of the Sampling and Analysis Plan is absolutely admitting that Ecology will not be taking all comments seriously. Sampling should cease immediately, and not start until all comments have been received and evaluated.

There must be final dates for the rest of the documents, and the public should be able to review those dates before this document is final. The timeline of the cleanup process can be one of the biggest limiting or useful factors, impacting the amount of time for genuine and adequate agency and public review and adequate and appropriate sampling windows. Timelines that are reviewed by the public should then have some kind of consequences if they are not met and when there is a change in schedules or deadlines, Ecology must share this information with the public.

The timeline does not include when there will be public review of documents. There should, at the minimum, be a 30 day review period for the Draft RI/FS Report, and the Final.

Again, this schedule offers little information to base any substantive comments. Given that this entire process has been “expedited” we cannot believe that dates cannot be assigned to the tasks, for the public to understand how this will move forward.

Response #93:

In discussions with Rayonier regarding the sequencing of tasks under the schedule Rayonier proposed for the RI/FS, Ecology and the Lower Elwha Klallam Tribe pointed out that by sampling without having an approved management plan in place, Rayonier was taking a risk that elements of the sampling program might be determined to be either unnecessary or inadequate, based on information that might come to light through the public review. Ecology indicated that, in the event that it determined the sampling program to be inadequate, it could require Rayonier to perform additional sampling. However, Ecology also acknowledged that data produced by sampling before approval of a management plan would not be inherently invalid and could be considered in the RI if the sampling and analysis was carried out in a manner consistent with the management

plan that is eventually approved. Considering the previous review of the draft Management Plans by the RTAG representatives and OEC's technical advisor, Rayonier evaluated its risk, and elected to move forward with the sampling prior to approval of a final management plan.

The Management Plan commits Rayonier to the possibility of additional sampling if a second phase of the off-site soils evaluation is found to be needed. If the second phase is found to be needed to determine the extent of contamination, a sampling and analysis plan will then be developed and issued for public review and comment, and the sampling and analysis carried out. The resulting data would be integrated into the RI/FS reports before the RI/FS process can be completed. There is a substantial amount of uncertainty associated with the length of time that may be necessary to complete each of these steps. There are also numerous other factors that could impact the completion of the draft RI report. Consequently, while specific dates could be identified for the issuance of draft and final RI reports, they would necessarily be noted as tentative.

The timeline for the RI/FS Management Plan development and the field activities has been established on the basis of the agency and public review intervals as required by MTCA, and on the constraints on sampling that arise from the need to collect biota which may only be accessible on the site during certain seasons. Regarding the subsequent milestones, there will be a public comment period of a minimum of 30 days associated with the draft RI/FS report, as required under MTCA. Although the draft cleanup action plan is outside of the scope of the RI/FS Management Plans, there will also be a public comment period of a minimum of 30 days associated with that document.

Responses to Comments provided by Dr. Peter L. deFur on behalf of Olympic Environmental Council

Comments received by e-mail and letter dated May 7, 2003.

Comment #94:

The work plan is well organized, clearly written and does a good job of presenting and portraying the status of the Rayonier site and the plans for proceeding with the investigation. We complement the authors and people who worked on this work plan.

Response #94:

Comment noted.

Comment #95:

The work plan calls for treating this site as an industrial site now and for the purposes of cleanup. The underlying assumption is that the site will remain industrial and not residential. The difference between the two classifications for this site is whether restricted (industrial) or unrestricted (residential) cleanup standards are applied to the remediation and cleanup. The citizens and Department of Natural Resources have each expressed their desire to have the site cleaned up under the unrestricted standards. Two compelling reasons make this standard the only choice:

- 1) The site has a hiking path through it now, and the path will remain in place and in use, as long as the City of Port Angeles permits the path. With citizens having

- unrestricted access to the site on the hiking path, the site must be cleaned up to protect the health of children, pregnant women and others who may have less than perfect health, recalling that industrial or restricted standards are meant to protect healthy workers for the work day, and not the young, infirm or aging.
- 2) The site must be cleaned up to levels that protect marine animals in the shore zone, animals living in the interstitial and soils in the marine areas, and the wooded area must be treated as parkland and protected at a similar level. The levels of protection for wildlife must be the most stringent ones in order to protect native flora and fauna and endangered species. These animals include marine mammals and listed fish species that use Ennis Creek for migration and spawning. The unrestricted standards are the ones that are most protective of human health and the environment.

Response #95:

Please refer to “Response to Common Concerns – Land Use.”

- 1) People using the hiking trail do not have unrestricted access to the site because a chain-link fence restricts them to using the path itself. Potential exposure of people using the trail to soil-borne chemicals on the mill site is expected to be of limited duration and frequency. Most of the trail running through the mill site is paved with asphalt or covered with gravel, which prohibits or limits their direct exposure to soil. Fugitive dust from the mill site is minimal because much of the site is paved and because the wet weather typical of the region limits the generation of fugitive dust. In the event that site activities are undertaken that have the potential to generate dust, engineering controls (e.g., covering soil piles, periodic sprinkling of work sites) will be instituted to minimize dust generation.
- 2) The ecological risk assessment for both the marine and uplands environments will comply with all requirements of MTCA and applicable local, state, and federal laws. Therefore, these risk assessment will be protective of all applicable elements of these ecosystems.

Comment #96:

There is no clean-up standard for lead in most of the United States, nor does EPA have an RfD for lead, owing to its widespread levels above what is considered safe, according to EPA. The use of IEUBK model, yielding a level of 400 ppm, is not sufficient and we recommend using a clean up level based on background. Instead of using a value based on the IEUBK model that is incomplete and cannot accurately account for all the existing levels in children and the effects at lower levels than 10ug/dL blood lead, we urge using a cleanup based on the background. Natural background can and should be determined for the area and then either 3x background or the 95% confidence limit can be used as the cleanup level. This approach has been used for other naturally occurring metals (e.g. arsenic in Spring Valley, Washington, DC).

Response #96:

While it is the case that EPA does not have a toxicity value in the form of a reference dose (RfD) for lead, EPA has developed an approach for protecting human health that is

dependent upon estimating the concentrations of lead in the blood of children, which are the most sensitive human receptors. The EPA and the Centers for Disease Control and Prevention have determined that childhood lead blood concentrations at or above 10 micrograms of lead per deciliter of blood present risks to children's health. Accordingly, EPA management actions seek to limit the risk that children will have lead concentrations above 10 micrograms of lead per deciliter of blood. The Integrate Exposure Uptake Biokinetic (IEUBK) model calculates the probability that children's blood lead concentrations will exceed 10 micrograms of lead per deciliter of blood (see <http://www.epa.gov/superfund/programs/lead/ieubk.htm> for details). The IEUBK model can be evaluated further to generate a soil lead concentration that will result in children's blood lead concentrations of 10 micrograms of lead per deciliter of blood. EPA Region 9 (see <http://www.epa.gov/region09/waste/sfund/prg/index.htm>) has calculated preliminary remediation goals for lead using the IEUBK model and derived a residential cleanup level of 400 mg/kg for lead, which is the basis for selecting the 400 mg/kg lead soil screening value used in Volume II of the Uplands RI/FS Management Plans. The Puget Sound soil background value for lead of 24 mg/kg (see <http://www.ecy.wa.gov/pubs/94115.pdf> for details) is far lower than levels expected to pose a health concern. Use of the lead soil background level as a cleanup standard is unjustified from a human health perspective.

Comment #97:

The work plan proposes to use method 1613b for measuring dioxins/furans in soils and needs to use method 8290 instead. Method 8290 was developed by the Office of Solid Waste for soils, sediment and tissue. Method 1613b was developed by the Office of Water for liquid samples. Method 8290 the more accurate one for soils and tissue and is the one EPA used for confirmation of dioxin/furan levels in the ESI investigation of this site. According to Triangle Laboratories, a commercial laboratory in Research Triangle park, NC that does EPA dioxin measurements for a number of research and site remediation efforts, Method 8290 is more applicable to soils, and Method 1613b more suited to water samples.

Response #97:

Please refer to “Responses to Common Concerns – Analytical Methods.”

Comment #98:

The other aspect of measuring soil levels of dioxins/furans is that the work plan calls for measuring the top layer of soil; this approach is the best one for this type of contaminant, as per federal guidance. The work plan now calls for measuring the top 3”, but OEC is raising the question of whether the top 2” is best for dioxins and other chemicals that are deposited from atmospheric sources and remain in the soil. We are recommend that the SMT use the top 2” of soil to get the most accurate determination of soil contamination for dioxins.

Response #98:

There is no explicit federal or state definition or criterion to specify what constitutes surface soil. However, use of the 0-3" definition of surface soil is consistent with EPA's Expanded Site Inspection soil sampling.

Comment #99:

The work plan calls for a two-tier/phase approach to determining soil contamination from Rayonier air emissions in residential areas of Port Angeles. The first phase will involve computer modeling to estimate the areas where the Rayonier plume was likely to have deposited contaminants, and seemingly areas that are less contaminated or not under the plume of the Rayonier mill emissions. The second phase will involve soil sampling and measuring dioxins and furans in soil. Several aspects of this sampling strategy bear comment:

- 1) The modeling is not an activity that is deemed necessary by the citizens; soil sampling is necessary. Modeling in this case is subject to the usual limitations of any computer modeling effort; knowledge of the inputs and variables, assumptions, relationships among inputs and variables, quantitative uncertainties around the parameters in the model, etc. are all sources of uncertainty and error. The model can only rely on the quantitative atmospheric information and not the information from "on-the-ground" reports. The comments below indicate the types of information that are available and the Ecology needs to use in determining the location of sampling efforts. This locating can be accomplished via a GIS display and without using computer modeling.
- 2) The effort to identify off-site soil sampling area needs to use a comprehensive set of information as input and must be complemented by other data on air pollution and emissions patterns. This comprehensive set of information must have meteorological and wind rose data from the airport, the National Park, the hospital, Air hotline reports, and other data from Department of Health or Air Division of Department of Ecology that apply. These data are not all now included in the work plan as data sources that will be used.

Other data can be used to identify off-site soil sampling locations. These data include:

- Aerial photographs;
 - Reports from the air pollution hotline;
 - Incidents of damage from air emissions in residential areas;
 - Calls and complaints from citizens, notably in Gale's Edition residential area to the east of the mill site;
 - Reports and information from the Department of Ecology, air division
 - Reports and information on air pollution from Olympia National Park.
- 3) This April 2003 version of the work plan does not call for collecting reference samples for the upland soil investigation. Presumably the cleanup effort will either rely on the Washington state inventory of dioxin levels in soil and fertilizer, or will use some regulatory-based level for a dioxin level for clean up decisions. Ecology must not use the old, and quite out-dated soil standard for dioxin of 1 ppb

that is attributed to ATSDR. This number is not based on current information and ignores vaporization of dioxin, known to occur in the case of sludge spreading. This number also does not account for non-cancer effects, for greater toxicity and for the newest information on tissue distributions.

- 4) Add indoor sampling in homes that are closest to the mill site, under the former Rayonier plume and most likely to have been contaminated by the emissions. These indoor sampling sites can be identified without the use of any modeling, but by using the photographs of the plume overlaid on a map and selecting 12-15 homes and residences. The hospital vent and air handling system must be sampled in addition to indoor home or business locations

Response #99:

- 1) Please refer to “Responses to Common Concerns – Off-site Soils”.
- 2) As noted in comment #11, many of the materials described in the comment have been provided to Ecology by OEC. Ecology expects that they will supplement the model and other information contributing to the evaluation of the off-site soils.
- 3) Cleanup levels under MTCA are set at concentrations in soil, water, or air that result in acceptable levels of risk established for the expected use of the site, rather than at background levels. The default cleanup levels for dioxin are 6.7 parts per trillion (ppt) for unrestricted use of the site, and 875 ppt for industrial use.
- 4) Please refer to the third paragraph of the response to comment #12. In the event that sampling of indoor dust is performed during the second phase of the off-site soil evaluation, the history of the hospital and the operation and maintenance of its heating, ventilating, and air conditioning system will be reviewed and evaluated in determining where samples should be collected.

Comment # 100:

Assessing site soils for contamination needs to be based on more than the tissue levels of earthworms in those areas where the earthworms. Alternative methods are to take tissues of whatever animals do live in the soils on site, and to take soil samples into the laboratory for toxicity testing on the soils. Procedures for these are in EPA guidance and in “Handbook of Soil Invertebrate Toxicity Tests” by Hans Lokke and Cornelis A.M. van Gestel, Wiley Pub 280 pp.

Also, we note that the data on worm presence from the A-2, when summarized and sorted by soil type indicate that most of the soils do not have earthworms and will not be assessed [see table]

Summary from Uplands Environment Work Plan: Table A-2		
Area	Substrate Characteristics	Earthworm Presence
2b	Sandy Gravel, low OM, compacted	Absent
2c	Sandy Gravel, low OM, compacted	Absent
3	Sandy gravel, low OM, compacted; small drainage in southern portion with moderate texture and OM	Absent
6	Sandy gravel, low OM, compacted, old road bed	absent

4a	Recently Excavated, standing water, currently pumped (area backfilled with crushed concrete following 2002 interim action)	Absent; few in drainage
1	Sandy Gravel, low OM, compacted	Few
2d	Sandy Gravel, Moderate OM, not compacted	Few
10	elevated areas along margins are sandy gravel with wood chips, high OM, not compacted; lower area inundated and anoxic	few
14b	Sandy to sandy gravel, low to moderate OM, compacted	few
17	Sand and pea gravel, moderate OM, not compacted	few
19b	Sandy gravel, low OM(some wood chips), compacted	few
19c	Sandy gravel, low OM, not compacted	few
20	S area sandy gravel, moderate OM, not compacted; N area sandy gravel, low OM, compacted	few, none in N portion
2a	Moderately fine-grained, moderate OM, not compacted	Many
5	Sandy gravel, low OM, compacted	none
7	Sandy gravel, low OM, compacted	none
8	Sandy gravel, low OM, compacted; E&W portions have less compacted with higher OM	none
9	Sandy Gravel, Moderate OM, not compacted	none
11	Sand and Wood chips	none
12	Sand and Wood chips	none
13	Low wet area, sandy gravel, moderate OM, not compacted	none
14a	Sandy Gravel, Moderate OM, not compacted	none
16	Sand and pea gravel, moderate OM, not compacted	none
19a	Sandy gravel, low OM, compacted, W border along Ennis Creek has moderate OM and not compacted	none
21	Sandy gravel, low OM, compacted	none
23	Sandy gravel, low OM, compacted(area backfilled with crushed concrete following 2002 interim action)	none
24	Areas of wood pulp intermixed with sandy gravel, not compacted	none
25	Sandy gravel, low OM, not compacted(low area inundated anoxic conditions present)	none
15	lower areas are sandy gravel, high OM, not compacted, poorly drained and anoxic; localized slightly elevated areas have improved drainage/aeration	none in low areas, few in elevated areas
22	lower areas are sandy gravel, high OM, not compacted, poorly drained and anoxic; localized slightly elevated areas have improved drainage/aeration	none in low areas, few in elevated areas
18	sandy gravel, low OM, compacted; ditch along E border has moderate OM and not compacted	none, few along ditch
4b	Sandy grave, low OM, compacted	Standing water precluded earthworm presence

Response #100:

Please refer to the third paragraph of the response to comment #47.

Comment #101:

Please add information on the facility to the background information in Section 1, Volume I.

It is important to include relevant background information in the work plan; two items should be added. The first is that ITT was the owner of the site as ITT-Rayonier from the 1960's until 1994. The second point is that the facility has a history of environmental and safety violations, fines, and consent decrees that extend back a number of years.

Response #101:

Information on the historical ownership of the mill is provided in Volume I, Section 2.1 of the draft Management Plans. The investigation of the site is driven by the fact that there have been releases of hazardous substances to the environment from the former mill, regardless of the regulatory history of the facility when it was operating.

Comment #102:

Add sulfate as a contaminant of concern in groundwater because it is an indicator compound for sulfurous compounds that were part of the input, process or waste stream from the Rayonier sulfite mill.

Sulfate was found at high levels in groundwater (Table 3-5) and this matter requires further investigation. It is likely that sulfurous mill waste is the source of contamination and this possibility needs further investigation by measuring sulfate, sulfite and total sulfur in groundwater, surface water and soil.

Response #102:

Please refer to the fifth paragraph of the response to comment #47.

Comment #103:

The addition of split samples in the on-site soils samples is a positive feature. The work plan needs to include a provision for split samples on off-site samples. The Department of Health should be the responsible agency for these samples. As with the split sampling in the work plan now, it is better to put this component in now, rather than adding it later.

Response #103:

Please refer to the response to comment #41.

Comment #104:

Volume I: [Executive Summary, page] ES-3 - Sampling in Ennis Creek - the reference or "background" sites need to be located farther upstream than now shown. The reference or upstream samples must be out of the influence of either the mill or anything else, ideally this will be 3-4 miles upstream from the mill site.

Response #104:

Please refer to the response to comment #78.

Comment #105:

[Volume I, Section 2] Pg 2-1 Para 3 - please add that Rayonier is also working with citizens, federal and state agencies.

Response #105:

The agreements for management of the cleanup are among Rayonier, the Lower Elwha Klallam Tribe, and Ecology. Other federal, state, and local agencies are represented on the RTAG, which has a consultative capacity with Ecology. OEC's technical advisor has

also been invited to participate in meetings and discussions between Ecology and the RTAG.

Comment #106:

[Volume I, Section 2.2.2] Pg 2-12, top - We are concern that the “average” or general trend for winds in this area will obscure an underlying variability that sets a much broader geographic distribution of air emissions in the Port Angeles area. Winds are sufficiently variable that east, south and southwest directions have to be part of the sampling program. And the photographs show that emissions plumes reached the Park. The general comments address this issue, and it is here in specific form in the text of the work plan. It also appears in the section on air and modeling. Citizens want to be sure that areas of Port Angeles are not excluded from consideration and if only the east or southeast direction is used, then other areas will be ignored and not considered for soil sampling, and may mistakenly be considered “background” sites.

Response #106:

This section of the Management Plans provides an overview of the climate and weather of Port Angeles and the mill site. The use of the average or general trend in wind direction is appropriate for this purpose. Section 4.2.4.2.4 of Volume I discusses the atmospheric deposition modeling, and indicates that the model will be based on a comprehensive meteorological data set. That data covers many years with readings taken periodically during each day to represent the weather conditions at the mill site. Other sources of data include hourly observations at Fairchild Airport in Port Angeles. These data sets should provide an adequate representation of the variability of winds in the model.

Comment #107:

[Volume I, Section 2.2.6.1] Pg 2-14 - The information obtained and cited as personal communication needs to be in the form of a written communication, a letter or memo from agency staff, rather than pers. comm. This comment also applies to pg 2-27 top para.

Response #107:

Personal verbal communications are an acceptable source of information that can be verified by contacting the individual cited in the communication.

Comment #108:

[Volume I, Section 2.2.6.2] Pg 2-17 - The work plan here needs to say something about the relationship between this effort and the marine RI/FS and cleanup. During consideration of the work plan in the Feb-Mar 2003 period, several RTAG members raised the same point that the two are either redundant or this one is incomplete. In fact, this cleanup address the upland and the only consideration of marine species/endpoints is from groundwater or surface water runoff and erosion of sediments from the site in the future. Thus, the present plan deals with a very restricted aspect of marine biota; the vast majority is addressed in the Marine RI/FS and remediation.

Response #108:

The first paragraph of Section 1.1 of Volume I describes the relationship between the Uplands and Marine RI/FSs. The Marine and Uplands RI/FSs were put on separate tracks to enable the Marine RI/FS field sampling to be conducted during a suitable biological window in 2002. There are many interactions between the upland and marine environments around the mill site, and the complementary investigations are intended to address those interactions in a comprehensive manner in the site cleanup process.

Comment #109:

[Volume I, Section 2.2.6.2] Pg 2-17 - It is not entirely clear that the Shea (1981) is the best/only source of information, particularly for the near shore marine habitat. The multiple sources of information listed in the work plan (p 2-17, section 2.2.6.2) seem to cover the vertebrates. But it is not clear that this RI/FS has sufficient information to say that the invertebrates in the nearshore/intertidal habitats.

Response #109:

The first paragraph of the section cites sixteen sources of information that were reviewed to support the text. These sources included sufficient information to characterize the vertebrate and invertebrate aquatic biota expected to be found on and around the mill site.

Comment #110:

[Volume I, Section 2.2.6.2] Pg 2-18, Table 2-1, Citizens raised the question of another species, Brandt, being added to the list of waterfowl, and some checking is needed on the report that this species is restricted to the other side of the harbor and never occurs in the mill site area.

Response #110:

Brant will be added to the table.

Comment #111:

[Volume I, Section 2.2.26.4] Pg 2-27 - As with the comment made above, the top paragraph references data to a personal communication from state agency staff. This information is best in the form of an official letter from staff. Please ask that state agency staff put his information in writing for the record.

Response #112:

Please refer to the response to comment #107.

Comment #113:

[Volume I, Section 2.2.26.4, page 2-27] - This information also indicates that marine mammals are one of the receptors of concern for ongoing exposure from site-related chemicals and this needs to be included in the risk assessment.

Response #113:

Marine birds and mammals, as well as fish and aquatic invertebrates, have been identified as receptors of concern and are included in the risk assessment for the marine environment as described in the Marine RI Management Plans.

Comment #114:

[Volume I, Section 3.1.1.2] Pg 3-4 - Fuel tank remedial action. What other information is available and what are the standards? How long does Rayonier anticipate this process will take to complete?

Response #114:

The steam injection and groundwater extraction systems were operated from 1994 until the mill was decommissioned in 1997. The remaining contamination was addressed in the 2002 interim action.

Comment #115:

[Volume I, Section 3.1.1.5] Pg 3-7 - on the SSL Lagoon. We continue to have problems with the assessment at this section of the site. The reasons are that there is an interview with a former worker that states there was no clay liner, and that he helped place a synthetic liner onto the bottom of the SSL. In addition, the results of groundwater monitoring in the immediate down-gradient area show the presence of contamination. Furthermore, citizens submitted comments indicating problems with the soil sampling data in terms of adequacy. Considering that the SSL was removed along with the associated berm material and underlying soil, this portion of the site should be free of contamination, but confirmation is needed. The work plan should add samples here for metals, sulfur, sulfate and sulfite and organic chemicals that are site contaminants. This point seems to be covered in 4.2.1 in Table 4-1 and the issue is that surface soils also need investigation.

More soil samples need to be taken northwest of the SSL lagoon and shoreward, in no small part due to concern over spillage and accidental releases near and in the intertidal zone.

Response #115:

Rayonier has substantiated the existence of the clay liner in the SSL Lagoon. Independent observations by Tribal representatives confirmed the existence of a clay liner during removal of the SSL Lagoon in 2001.

Groundwater monitoring well MW 59 is situated between the SSL Lagoon and the shoreline (see Figure 3-1 in Volume II) to assess possible impacts of the lagoon on the shallow groundwater table and results will be presented in the upcoming Uplands RI/FS report.

Samples of the SSL Lagoon liner and underlying material were collected by Rayonier in 1997 and analyzed for the presence of inorganics, semivolatile organic chemicals, and dioxins/furans. Detected concentrations of all chemicals were below the MTCA

industrial cleanup level and all chemicals, except arsenic, were below the unrestricted land use criteria. Since these samples included material from the bottom of the SSL Lagoon where chemicals concentrations would be expected to be the highest, they should represent a worst case scenario. However, a surface and subsurface soil sample will be collected from location SSL22 during the Uplands RI/FS sampling to confirm that the material is not contaminated. Surface soil will be analyzed for dioxins/furans and subsurface soil at the groundwater interface will be analyzed for inorganics and polycyclic aromatic hydrocarbons. This sampling approach is expected to be sufficient to characterize the SSL Lagoon.

Section 2.3.6 of Volume II describes the soil sampling proposed for the SSL Lagoon area. Two soil sample locations (SSL20 and SSL21) are situated west of the SSL Lagoon along the pipeline that transported SSL to the lagoon. Surface subsurface soil samples will be collected from each location; surface soil samples will be analyzed for dioxins/furans and subsurface soil samples will be analyzed for inorganics and polycyclic aromatic hydrocarbons. These samples are situated in locations where possible releases of SSL occurred. In addition, surface and subsurface soil samples will be collected at the former East Roll Storage Building area located just east of Ennis Creek and analyzed for inorganics, semivolatile organic compounds, polychlorinated biphenyls, pesticides and dioxins/furans. No other potential sources areas were identified between the SSL Lagoon and Ennis Creek and therefore no additional sampling was required in this area.

Comment #117:

[Volume I, Section 3.1.1.5, page 3-7, paragraph 2] - The current document seems to refer to a wrong section number in the document on page 3-7, section 3.1.1.5, 3rd paragraph. The correct section number seems to be 2.3.6, not 2.3.7.

Response #117:

The text will be corrected to refer to Section 2.3.6 in Volume II.

Comment #118:

[Volume I, Section 3.1.2.5] Pg 3-17 - Please give the relation of the results to MTCA Method B, as the citizens and DNR both want unrestricted use soil standards in place to protect wildlife and the citizens who are already using the site.

Response #118:

This section of the Management Plans summarizes the results of a groundwater study of the mill site reported in 1997. The original report being summarized used the MTCA Method A values as criteria for comparison. To make comparison against Method B formula values would be exceed the scope of the summary.

Comment #119:

[Volume I, Section 3.1.3,] Pg 3-18 - last para should note that the presence of any CDD/CDF compounds in water- either ground or surface- is not expected because of the low solubility, and the fact that they were found is either an indication of a measurement/sampling error or serious pollution. In either case, the sampling effort for

those samples must be repeated to confirm or refute the finding that there is dioxin in the waters.

Response #119:

The comment appears to refer to the discussion of results for samples EC07 and EC03. That discussion occurs in the first two paragraphs appearing on page 3-21 of the public review draft Management Plan. However, the results being reported in this section are for freshwater sediments, not the co-located water samples which were mentioned in the last paragraph on page 3-18 of the public review draft Management Plan. Consequently, there is no finding that there is dioxin in the waters.

Comment #120:

[Volume I, Section 3.2.1,] Pg 3-23 - As noted above, the proper standard for this site is MTCA Method B because it already has citizens using the site and wildlife protection will require the more stringent standard.

Response #120:

Please refer to “Responses to Common Concerns – Land Use”.

Comment #121:

[Volume I, Section 3.2.1,] Pg 3-26 et seq. - Add two COPC's for groundwater. Two other compounds are found at levels that raise concern. The first is carbon disulfide that should not be present at all in groundwater. Carbon disulfide (CS₂) is a highly toxic air pollutant and volatilizes readily from water. The presence of CS₂ is not readily apparent, but it should be further investigated. It is possible, for example, that contamination from sulfurous compounds in mill waste and subsequent bacterial action has produced the CS₂, making this a mill-derived contaminant that must be addressed more widely on this site. The other substance is sulfate, found at very high levels in groundwater (Table 3-5) indicating the contamination from sulfurous mill waste.

Response #121:

Section 3 of Volume II shows that groundwater samples will be analyzed for broad suite of chemicals including volatile organic compounds, which includes carbon disulfide. With regard to the occurrence of sulfate in groundwater, please see the discussion of the subject in the fifth paragraph of the response to comment #47.

Comment #122:

[Volume I, Section 4.2.1, Table 4-1,] Pg 4-5 to 4-7 - In the table, it is clear that MTCA now indicates that the three wildlife species shown here are the ones mentioned in MTCA, and these might be the best ones here, but are there data to support these species and only these three species as the ones to assess soil conditions?

Response #122:

Please refer to the response to comment #69.

Comment #123:

[Volume I, Section 4.2.2.4,] Pg 4-9 - more groundwater wells are needed, as per the discussion in the conference call RTAG session – at least one more well east of Ennis Creek, two wells would be better.

Response #123:

Please refer to the discussion of the subject in the fourth paragraph of the response to comment #47.

Comment #124:

[Volume I, Section 4.2.3,] Pg 4-10 - As noted above, the background for stream samples needs to be well upstream of the mill site.

Response #124:

Please refer to the response to comment #78.

Comment #125:

[Volume I, Section 4.2.4,] Pg 4-12 - This section needs to be changed to include language indicating augmentation of the existing database with the information types noted above under general comments. The present work plan states that soil samples will be taken “if warranted”, but the soil sampling needs to be a required component of the plan. Public comments at the April 12 forum in Port Angeles clearly reflected public members desire to have soil samples taken and analyzed for contamination.

Response #125:

Please refer to “Responses to Common Concerns – Off-site Soils”.

Comment #126:

[Volume I, Section 4.2.4.1,] Page 4-13 - paragraph 4 needs to include PCB’s in the dioxin-like compounds because there are several PCB congeners that are dioxin-like and have TEF’s. These congeners can be found on the EPA and WHO web sites.

Response #126:

While there are other compounds that are categorized as dioxin-like, the focus of the evaluation in the Management Plans is on the polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. Consequently, the text’s discussion here is limited to those compounds.

Comment #127:

[Volume I, Section 4.2.4.1,] Pg 4-14, The single report of Bright that this method works to characterize the fingerprints of dioxin/furan source is not sufficient. We are not convinced that the random number generating approach is the best one to use for establishing fingerprints. Other, and specifically EPA approved methods need to be evaluated for this process. The point is not that some method needs to be used to characterize Rayonier emissions from other emissions, but that this randomization of the non-detect data is the best way to accomplish this end.

Response #127:

Two citations are presented at the top of page 4-14 of Volume I (Yamamoto and Fukushima (1993), and Bright et. al. (1999)), and both will be used to address dioxins/furans pattern recognition. Both of these articles are from peer-reviewed academic literature and have received substantial balanced scientific review and scrutiny.

The handling of non-detected results in the analysis of larger data sets often presents difficulties. A common method for some purposes is to substitute one-half of the detection limit. However, in this instance, the proposed analyses will evaluate patterns of dioxin/furan homologues. Because the analysis involves a numeric evaluation, simply substituting one-half of the detection limit would superimpose unrealistic patterns on the detected results, as all nondetected values for a given homologue would have the same artificially-assigned concentration. By randomizing the assignment of the substituted values, the superimposition of such a uniform pattern from nondetected results is eliminated. The randomized data are not used to predict any exposure levels or other regulated risk levels.

The use of randomized methods is appropriate in scientific evaluations and dates back to the 1950's with statistical papers on Monte Carlo analyses and boot strapping techniques, which have recently been embraced by EPA in their guidance on probabilistic risk assessment.

Comment #128:

[Volume 1, Section 4.2.4.2.3,] Pg 4-19 - The air deposition modeling uses particulate matter to predict CDD/CDF deposition because the latter are associated with the former. Would not other emissions also provide evidence of the emissions deposition footprint? These other emissions might be the metals manganese and arsenic, and sulfate or other sulfurous compounds. This option should be investigated.

Response #128:

The use of additional compounds, including arsenic and manganese, as indicators of the emissions deposition footprint is addressed in the second paragraph of the response to comment #47. Sulfur is also found at relatively high natural concentrations in soil and is typically associated with other inorganic chemicals (e.g., iron). Therefore, sulfur would not make a suitable indicator chemical because the low levels expected to be deposited in the soil from stack emissions would also be masked by the background concentrations already present.

Comment #129:

[Volume I, Section 4.2.4.2.4,] Pg 4-20 - See the above comments on air data from other sources, notably meteorological data from the Park Service and phone calls on the Citizen Air Hotline.

Response #129:

As noted in comment #11, many of the materials described in the comment have been provided to Ecology by OEC. Ecology expects that they will supplement the model and other information contributing to the evaluation of the off-site soils.

Comment #130:

[Volume I, Section 5.4.1.2,] Pg 5-8 - The section regarding future site use should be amended to note that the current land use is industrial, but the City of Port Angeles has a pending agenda item to rezone for other use, and that is not likely to have further resolution until after the initial soil results are obtained. Brad Collins informed the RTAG of this issue and should be able to provide something in writing. The site presently has a pedestrian path and citizens are now exposed to air-borne and dust-borne contaminants on site.

Response #130:

The text in Section 5.4.1.2 is accurate as it stands. Please refer to “Responses to Common Concerns – Land Use” for a further discussion.

Comment #131:

[Volume I, Section 5.4.2.1,] Pg 5-13 - last line provides some language for excluding PCP as a COPC for wildlife. The citizens’ position is that this exclusion is premature at this time and recommend retaining PCP as a COPC until other data indicate it is not warranted.

Response #131:

Please refer to the third paragraph of the response to comment #54.

Comment #132:

[Volume I, Section 6.4.1,] Pg 6-4 - Please include comments on the role of public participation and citizen involvement in the process.

Response #132:

Please refer to the response to comment #36.

Comment #133:

[Volume I, Section 7] Pg 7-1. Table 7-1 This table is not complete, and does not seem to be consistent with the one currently being used by the RTAG and SMT, please update.

Response #133:

Please refer to the response to comment #92.

Comment #134:

[Volume I,] Appendix A, Pg A-2 - The point that part of the site is covered with concrete was addressed in RTAG conference calls, yet the citizens are not convinced that this issue is resolved. Site soils that are now covered with concrete slab may be contaminated beneath and later uncovered. In fact, the clean up must operate on the presumption that

the existing concrete will one day be removed. Therefore, some soil samples should be obtained from beneath covered areas.

The general matter of earthworms not occurring in some soil types is an important one. We do not suggest that all soil types must be evaluated for using earthworms as a bio-indicator or test species. But those soil types that will not support earthworms still must undergo an evaluation that will assess the level of contamination and effect on biota. Either select another organism, or use another test procedure.

Response #134:

The Management Plans describe the collection of 100 soil samples (see Table 2-8 on page 2-59 thru 2-61 of Volume II) many of which occur will be collected from beneath concrete slabs and asphalt. Regarding the selection of species and test procedures for use in the terrestrial ecological evaluation, please refer to the third paragraph of the response to comment #47.

Comment #135:

[Volume II, Section 2.1,] Pg 2-2, last para - What are the criteria for determining if additional samples will be needed and taken?

Response #135:

The necessity for collecting additional soil samples during a phase 2 sampling effort will be made following a thorough examination of the existing data and data generated in phase 1, an assessment of the phase 1 data's suitability to address the existing data gaps identified in the Management Plans, and a review to determine if any additional data gaps have been identified in the course of phase 1 of the investigation. A recitation of possible reasons for wanting to collect additional samples is too broad to be readily summarized.

Comment #136:

[Volume II, Section 2.2,] Pg 2-3 - Refer to comments above that CDD/CDF needs to use method 8290

Response #136:

Please refer to "Responses to Common Concerns – Analytical Methods."

Comment #137:

[Volume II, Section 2.3.3,] Pg 2-23, para 3 - indicates soil will be collected 0-6", when elsewhere it refers to 0-3". The latter is correct; the former is too deep. In the present case, we recommend using 0-2" for soil, considering the compaction, land use, site history, etc.

Response #137:

The comment appears to refer to the RTAG review draft of the Management Plans, which at this location in the text incorrectly identified the sampling interval. The correct sampling interval of 0-3 inches was identified in the public review draft. Regarding the selection of the 0-3 inch interval, please refer to the response to comment #98.

Comment #138:

[Volume II, Section 2.3.6,] Pg 2-24 - The data from the SSLL are not sufficient, as noted earlier in these comments. Three points are worth noting. First, the data already indicate levels of chemicals that exceed normal background for the area, and MTCA Method A is not an appropriate point of comparison. Second, the combined health and ecological threats from all of these chemicals has not been addressed. Third, the sampling did not include (or at least did not report) sulfate, sulfite and other sulfurous compounds that would certainly have been in the SSL. A wider range of compounds needs to be measured in the soils associated with the SSLL.

Response #138:

Please refer to the response to comment #115.

Comment #139:

[Volume II] Pg 2-46 et seq. - On Background soil sampling. This effort will be challenging due to the fact that the air deposition modeling is not complete. Samples have to be taken from far west of the mill site, to be sure that the emission plume was not influencing soils considered background. The plume did go east and certainly south to the Park.

Response #139:

The comment refers to a section of text in the RTAG review draft of the Management Plans. After considerable discussion between Ecology, the Lower Elwha Klallam Tribe, and Rayonier regarding the rationale and regulatory basis for the background sampling task which was proposed in this section of the RTAG review draft, the three parties agreed to delete this task from the public review draft. While it was the belief of the three parties that the data that would be generated might be informational in a general sense, it was not clear how the specific sampling protocols proposed in the RTAG review draft could be applied within the framework for the use of background concentrations established in MTCA.

Responses to Comments provided by Viola M. Nixon

Comments received by e-mail dated May 7, 2003.

Comment #140:

I live directly south of the site where the Rayonjier Mill was located. My address is 1115 E. Ninth Street. I taught at the Franklin School which is on Boulevard St., a block south and a half-block west of where I live. There were days when plumes of smoke from the mill were wafted into my yard and also onto the playground of the school. Homes such as mine which are directly in the path of the mill smoke plume ought to have soil samples taken. I also believe the soil at the school ought to be sampled. A block east of my home is the Port Angeles Fine Art Center and Art Park. Three blocks east is the location of Peninsula College. All of these sites, which are widely used by the public, were also affected by the plume from the mill. Soil samples from these sites would be appropriate.

Response #140:

Please refer to “Responses to Common Concerns – Evaluation of Off-site Soils.” As noted in the response to comment #13, if the evaluation indicates a need for additional sampling of off-site soils, a supplemental plan will be developed to direct that sampling. The particular uses of nearby off-site properties may be a consideration in identifying specific locations for sampling.

Comment #141:

Re. soils at the mill site which are sandy and do not support worm life. There will be run-off to the water and therefore will affect marine life adversely if contaminated. I would like to see these soils tested either using other soil animals or testing the soils in the lab for toxicity and chemicals.

Response #141:

Regarding the selection of species and test procedures for use in the terrestrial ecological evaluation, please refer to the third paragraph of the response to comment #47. Affects of historical and current runoff from the mill site into the marine habitat will be considered during the Marine RI. The numerous sediment and biota samples collected from the area around the mill site will be used to document the impact of chemicals released from the mill site on these resources.

Comment #142:

I would like to see a residential standard applied to the cleanup, rather than industrial.

Response #142:

Please refer to “Responses to Common Concerns – Land Use.”

Comment #143:

Please use the Battelle Lab in Sequim for evaluation of heavy metals.

Response #143:

Please refer to the discussion of the selection of an analytical laboratory in the response to comment #12.

Responses to Comments provided by Mr. Brad Collins, Community Development Director, City of Port Angeles

Comments received by e-mail and letter dated May 7, 2003.

Comment #144:

Please accept these comments of the City of Port Angeles on the Management Plans for the Remedial Investigation - Feasibility Study of the Uplands Environment Volumes I, II, and III. As part of the RTAG review group, the City felt technical issues and protocols were well reviewed. The specific change in Volume II Section 2.3 Sampling Locations Subsection 2.3.9 Background Sampling to Ecological Sampling is acceptable to the City. We had concerns about the difficulty in selecting certain public locations for the

background sampling and find the new ecological sampling to be preferable. Thank you for the opportunity to review, understand, and comment on the Remedial Investigation - Feasibility Study.

The City encourages Ecology and Rayonier to move forward with this study to the next phases of the site cleanup.

Response #144:
Comment noted.

Responses to Comments provided by Ms. Robbie Mantooth on behalf of Friends of Ennis Creek

Comments received by e-mail and letter dated May 7, 2003.

Comment #145:

Appreciation:

First, I want to express appreciation to the Department of Ecology, Lower Elwha Klallam Tribe and Rayonier for the impressive work represented by the draft materials and public participation opportunities. I especially appreciate the readability of the materials and extensive references, glossary and appendices that help the layperson be as well informed as possible regarding important decisions that must be made. I also appreciate the patience and civility displayed in the public meeting by all the leaders and the highly informative presentation you gave. It is good to see people who seem to be trying to work together for resolution of some difficult problems.

Response #145:
Comment noted.

Comment #146:

An irreplaceable resource:

As the leader of an organization that is dedicated to the protection and restoration of Ennis Creek, I want to focus my comments on how the proposals in the draft materials seem likely to affect an irreplaceable resource. All habitat areas are important, but Ennis Creek has been singled out for its exceptional qualities by people who are highly knowledgeable and dedicated to maintaining and restoring salmonids.

Several decades ago, an organization of sportsfishing and hunting enthusiasts called Olympic Outdoor Sportsmen focused on Ennis Creek when they took on the responsibility of monitoring the stream both for signs of health and for problems. They counted the redds that might signal the coming of future generations of fish, but they also put in countless hours of backbreaking work to clear the Highway 101 fishway and dismantle an old dam at about River Mile 4.0, so fish could make better use of the nearly 6 miles of outstanding habitat upstream.

More recently, in 1999, biologists, other specialists and concerned citizens of the North Olympic Peninsula gave Ennis Creek a special description in the more than 200-page

report they prepared for the Washington State Conservation Commission. They described Ennis Creek as the “healthiest of the urban streams.”

Most recently, the watershed council that represents Clallam County, the City of Port Angeles, Lower Elwha Klallam Tribe, water purveyors, and citizens from such organizations and interest groups as the Economic Development Council, homebuilders, property owners, environmentalists and educators created a special preamble to distinguish Ennis Creek from other nearby streams. In addition to the “healthiest” term used by the earlier group, they provided these words to denote its exceptional qualities: “largest undisturbed upper watershed, the least development, the greatest diversity of existing native fish stocks, and the highest potential for restoration and salmon recovery.”

This same group designated Ennis among streams of “highest potential” for making sure its conditions provide for habitat needs. Criteria used are:

- “... both snowmelt and rain runoff or lake fed ...”
- “High quality habitat (existing or potential)”
- Number and significance of salmonid stocks

Although I know the number of comments you must cope with and the time available to process them makes brevity important, I believe you must have this background to provide the context I think my remarks about the report deserve.

The point is: We all must realize that there is only one Ennis Creek. The decisions that are made in the coming months may make its recovery possible or they could doom it to lose its remaining fish stocks as well as the elaborate web of life that depends on the environment of this once rich watershed and nearshore. Its degradation is little more than 100 years old, not much time when compared to the millennia over which its species evolved and even the years since the area was a favored tribal village site and then the Puget Sound Cooperative Colony utopian settlement.

Response #146:
Comment noted.

Comment #147:

Dangers for animals, humans:

The report includes references to the organisms and plants that could affect fish and other wildlife. But I am not satisfied that their needs will not be compromised. Species that already are stressed by the toxic habitat, armored stream and filled estuarine area could be tipped over the edge to extirpation or extinction if their well-being is not a priority.

Of course, ensuring their well-being requires actions that go beyond the stream itself.. The health of the stream is interwoven with the health of the watershed, nearshore and marine environments. Stormwater runoff can carry contaminants into groundwater that affects the organisms on which the fish and other wildlife feed as well as the fish themselves.

Fish that make use of this environment already include federally listed species: bull trout, Puget Sound chinook, Hood Canal/Strait of Juan de Fuca summer chum and coho. Snow-fed streams like Ennis maintain the cold water temperatures that can be essential when weather conditions warm other streams.

Human health also will be affected by the level of cleanup. Toxins in the food chain are especially alarming in an area where residents and tourists like to eat seafood and many businesses sell seafood products, for home consumption or for restaurant meals.

Downplaying the dangers to humans because of a presumption that people will not spend much time in cold waters takes attention away from more important issues: the effect of contaminants on the food chain, whether these toxins come from offsite stormwater that has been affected by the Rayonier plume or whether they are from the site itself. The fact that levels of some contaminants exceed those permitted for unrestricted use sends up a red flag that cumulative effects in the food chain could be harmful even if the site is never used for anything but industry.

Among the statements that seem to reinforce this concern are those on 3-38:

“... Such chemicals are likely to be transported to the shallow groundwater at this site. Once in groundwater, the chemicals may be transported to freshwater in Ennis Creek or to saltwater in Port Angeles Harbor. ...”

“... Exposure to the water and sediments by ecological receptors inhabiting the marine environment is a primary concern, both through direct contact with the two environmental matrices and as incidental ingestion. Chemicals that are lipophilic and reside in the sediments may accumulate in the various marine biota inhabiting the harbor. Consumption of these biota by both higher food chain ecological receptors and humans are exposure pathways of primary concern.”

More concern is prompted by this statement on 5-5:

“For carcinogens, EPA generally assumes that effects on a single cell can evoke changes that may lead to the onset of disease: therefore, no dose is considered risk-free. ...”

Statements on 5-13 discuss exposure risks for areas of the site that are undeveloped and include land with a zoning designation of public buildings and parks:

“... The undeveloped areas contain habitat of sufficient quality to provide a significant potential source of exposure of plants, soil biota, and wildlife to soil-borne chemicals. ...”

Response #147:

One of the primary approaches for evaluating human and ecological risks associated with mill site chemicals in the marine environment is the assessment of exposure and risk through the consumption of marine organisms. An assessment of those risks is one of the

primary objectives of the Marine RI. One of the greatest concerns in the marine environment is the effect of bioaccumulative chemicals on organisms at the top of the marine food chain (i.e., humans, marine birds, and marine mammals). In response to that concern, considerable effort has gone into collecting tissue samples from marine biota during the field sampling task of the Marine RI. Tissue samples of clams, fish, shrimp, and crabs were collected from potentially affected marine areas located around the mill site and its deep water outfall. The risk assessment that will be conducted during the Marine RI will use the tissue data to assess risks to humans and marine mammals and birds that consume those organisms, and to determine whether chemicals released from the mill site into the marine environment pose a potential hazard to humans or the environment.

Comment #148:

Restricted cleanup inappropriate:

The report states that some of the site currently is zoned industrial and makes some presumptions that the cleanup standards would not need to go beyond this level. But on page 6-5, it cites the requirement of WAC 173-340-360, subsection 3 that the cleanup action shall: “Use permanent solutions to the maximum extent practicable.” It also says the selected cleanup action shall: “Consider public concerns (per WAC 173-340-600).”

Prospects for another “Rayonier” as well as awareness of health risks have changed: Cleanup to the lower industrial standards cannot be considered permanent. International economic trends have reduced the likelihood that another industry anything like Rayonier will occupy this site in the next few years, and no one would presume that standards used for industry would be appropriate forever.

Even if another industry should occupy the site, increasing awareness of the dangers of cumulative exposure to contaminants makes it unlikely that any employer would knowingly expose people working and visiting to such health hazards. The potential for lawsuits, not to mention high health care insurance, would be too great a risk for any prudent management or investors. For example, presumptions that pregnant and lactating women will not be on the site enough to risk problems for the fetus may have been accurate in the past, but cannot be used in a time when many women want and need to continue working throughout their pregnancies and when they are breastfeeding their babies.

Response #148:

Please refer to “Responses to Common Concerns – Land Use.” The permanence of a cleanup action is a reflection of whether the standards of WAC 173-340-700 through 173-340-760 can be met without further actions such as monitoring or institutional controls being required at the site. The selection of industrial or unrestricted cleanup levels doesn’t fall within this evaluation of permanence under MTCA.

Comment #149:

Need to provide for perpetuity:

Some people find predicting the future so full of variables that they prefer to ignore implications beyond their own generation or at least beyond their grandchildren's lives. But as an active volunteer with North Olympic Land Trust, I am accustomed to dealing with legal agreements that are to last for perpetuity and endowment funds that have been established to make sure those agreements are upheld *forever*.

Each group involved in the cleanup has its own constituencies and obligations to them, and I am sympathetic with the desire to minimize Rayonier's costs. Yet all have a responsibility for making sure the cleanup will protect all the people and animals that can be impacted by the contaminants that are the remnants of Rayonier's own decisions about how to use the land and adjacent water.

Response #149:

Any alternative considered for a cleanup action must meet MTCA's threshold requirements - protecting human health and the environment, complying with cleanup standards, complying with applicable state and federal laws, and providing for compliance monitoring. The selection of a cleanup alternative often involves a balancing among several other evaluation criteria. As was noted in comment #148, one of those criteria is that cleanup actions under MTCA must use permanent solutions to the maximum extent practicable. Cost becomes a consideration in the evaluation of this criterion, as it involves an analysis for disproportionate cost by comparing the costs and benefits of alternatives and selecting the alternative whose incremental costs are not disproportionate to the incremental benefits.

Comment #150:

Public concern for habitat:

I can provide extensive evidence of the public concern for habitat. Not many people show up at every meeting related to the Rayonier cleanup or bother to read reports and respond to them. But, for several years, I have been part of the watershed council I referred to earlier when I cited the "Preamble" they had insisted on adopting for Ennis Creek. Members of this council, which was brought together through state legislative action and decisions by Clallam County, the City of Port Angeles, Lower Elwha Klallam Tribe, and water purveyors and includes representatives of various industries, professions, residential areas and other interests, have put in 3-5 hours per month in meetings, much more time in reviewing documents and providing input. Other groups, including laypersons as well as professionals, have given many more hours as part of the Salmon Recovery process. They have created, reviewed and ranked grant applications and traveled across the state to speak up for projects that would help bring back the fish that once were a bulwark of the economy and way of life in our area, but whose very existence now is threatened.

Public tax dollars being devoted to salmon recovery are another indication of the level of interest.

People are also donating to help protect and restore habitat for salmon and other wildlife. As just one example that I am most familiar with, property owners have given up

development rights on hundreds of acres through conservation easement agreements with North Olympic Land Trust and even have paid such related costs as surveys and the endowment fund needed to enforce the agreements.

Future opportunities depend on cleanup to unrestricted level:

Much more public and private funding should be available for additional enhancements on portions of the Rayonier site. Most important is enough estuarine environment for salmonids to make the transition between salt and freshwater and enough land for essential flood plain functions to be restored. If the stream isn't given enough room for some of its meandering and natural sinuosity, young fish will be likely to continue being swept out into the saltwater before they are well-developed enough to survive there. Landfill covering the estuarine area and armoring that confines the creek to a narrow channel provided space for mill operations, without any significant additional cost for real estate. Returning enough of that land for some of the stream's natural functions seems a reasonable exchange for the years of use. This would not preclude other areas of the property from being used for structures such as offices, residences, public buildings, concert halls or even an industry, should one want to locate there. It should make the land more valuable and desirable for those who would pay extra for the privilege of working, living or enjoying private or public recreational opportunities in the area that takes its name from the Klallam word for good beach, Y'inis. What value might be placed on being able to watch salmon returning from the Strait to spawn in Ennis Creek? Other tourist areas advertise such an opportunity while we seem to have trouble deciding it's worth saving the wild fish that have evolved to be able to demonstrate what seems almost miraculous: the ability to return to the waters where they first experienced life after spending years "abroad" in saltwater sojourns that may have taken many miles away from Ennis Creek.

Friends of Ennis Creek is just one of many groups and individuals who are willing to work toward enabling this exceptional environment to achieve its potential. We have already spent hundreds of hours seeking sources of funding to pay Rayonier for land or at least development rights. But everywhere we turn, we find the same response: First, the site must be cleaned up. It should almost go without saying that any public or private source of funding is not going to be available if cleanup standards are not adequate for the fish and wildlife that such grants are intended to protect.

North Olympic Land Trust has already sponsored a meeting with Rayonier officials to explore possibilities for the Land Trust to ensure adequate land for habitat protection. Land trusts in other parts of the country have been able to attract millions of dollars for similar projects, through grants and fundraising campaigns.

Opportunities for Rayonier, the public and the species that depend on this exceptional property are extensive.

But to take advantage of such opportunities, first the former millsite and other areas it may have affected must be cleaned up, to the highest not the minimal standard.

Response #150:

The comment focuses on the selection of cleanup levels for the mill site and for the surrounding areas, particularly as they relate to the restoration of habitat in the Ennis Creek basin. The regulatory setting in which cleanup levels for the protection of human health will be established for the site is discussed in “Responses to Common Concerns – Land Use.” Ecological risks will be assessed through the terrestrial ecological evaluation procedures provided in MTCA. In those procedures, the site land use may have an influence on the scope of the evaluation. However, there is no distinction between industrial or unrestricted site uses when establishing cleanup levels on the basis of the protection of ecological resources. MTCA also acknowledges that the terrestrial ecological evaluation may result in more stringent soil cleanup levels than are required to protect human health.

Responses to Comments provided by Joanne Snarski, Environmental Specialist, Aquatic Resources Division, Washington Department of Natural Resources

Comments received by e-mail dated May 8, 2003.

Comment #151:

[Volume II, Section 2.3.4,] Page 2-24 - It is unclear why only two samples in the area of the Woodmill Area will be used to characterize the entire area. The use of additional samples or composite samples would provide more evidence (power) as to whether the area was contaminated or not (i.e. rejection of the null hypothesis: the area is not contaminated).

Response #151:

The former Wood Mill was used to convert logs to chips using a mechanical operation. Outside of the chemical deposition from mill stack emissions, the other potential source of contaminants at the former Wood Mill is believed to be petroleum hydrocarbons associated with the use of greases and oils, and PCBs associated with hydraulic equipment (see Section 2.3.8 of Volume II). The intensity of soil sampling at the former Wood Mill was deemed sufficient to support an evaluation of these contaminants. It should also be noted that groundwater monitoring wells MW 54 and MW 55 (see Figure 3-1 on page 3-5 of Volume II) are located on the shoreline adjacent to the former Wood Mill and will provide an integrated picture of the potential for chemicals to migrate from the soil under the warehouse into the marine environment.

Comment #152:

[Volume II, Section 2.3.7,] Page 2-30 - Please include one or more (emphasis on more) samples in the Pulp Storage Warehouse area. Analyses should be completed for Dioxin/Furans and inorganics.

Response #152:

The former Pulp Storage Warehouse was used to store dry, processed rolls of pulp before shipping via ship, barge, rail, or truck. A thick concrete pad covers the entire area. Therefore, there is not a potential source of contamination believed to be associated with the former Pulp Storage Warehouse. However, the Management Plans do call for the

collection of surface and subsurface soil samples at location PW20 located within the former Pulp Storage Warehouse (see Figure 2-12 on page 2-57 of Volume II). It should also be noted that groundwater monitoring well MW 56 (see Figure 3-1 on page 3-5 of Volume II) is located on the shoreline adjacent to the former Pulp Storage Warehouse and will provide an integrated picture of the potential for chemicals to migrate from the soil under the warehouse into the marine environment.