

Please see
Summary of Comments

CD 6-11-2020

STATE FOREST LAND
SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov/sepa>. These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **SOLLEKS BOTTOM**
Agreement # **30-099242**

2. Name of applicant: **Washington Department of Natural Resources**

3. Address and phone number of applicant and contact person:

Mike Potter
Department of Natural Resources
411 Tillicum Lane
Forks, WA 98331
(360) 374-2800

4. Date checklist prepared: **03/17/2020**

5. Agency requesting checklist: **Washington Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

a. Auction Date:
10/28/2020

b. Planned contract end date (but may be extended):
10/31/2022

c. Phasing:
None

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No, go to question 8. *Yes, identify any plans under A-7-a through A-7-d:*

a. Site Preparation: **Assessment for treatment will occur after completion of harvest. Site preparation including a chemical herbicide application, may be used to ensure that planting is successful at acceptable levels to meet or exceed Forest Practice standards.**

b. Regeneration Method: **Harvest area will be hand planted with native species seedlings following harvest.**

c. Vegetation Management: **A continual assessment of units to determine future vegetation management will be required. Treatments will be based on vegetation competition and will ensure a free-to-grow status that complies with Forest Practice standards.**

d. Other:

Road maintenance assessments will be conducted and may include periodic ditch and culvert cleanout, and grading as necessary.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. *Note: All documents are available upon request at the DNR Region Office.*

- 303 (d) – listed water body in WAU:
 - temp
 - sediment
 - completed TMDL (total maximum daily load)

Please see
Summary of Comments
CD 6-11-2020

- Landscape plan: OESF Forest Land Plan (2016)**
- Watershed analysis:
- Interdisciplinary team (ID Team) report:
- Road design plan: Dated 2-12-2020**
- Wildlife report:
- Geotechnical report: Engineering Geologic Risk Assessment Solleks Bottom Timber Sale April 3, 2020**
- Slope Stability additional information form:
- Other specialist report(s):
- Memorandum of understanding (sportsmen’s groups, neighborhood associations, tribes, etc.):
- Rock pit plan: Copper Pit Plan Dated 2-12-2020**
- Other:**

NSO Best-70 Map and Evaluation of relevant adjacent WOGHI moderate points.

Referenced documents may be obtained at the Olympic Region office during the SEPA review period.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

- FPA # _____
- FPHP
- Board of Natural Resources Approval _____
- Burning permit
- Shoreline permit
- Existing HPA _____
- Other:

Please see
Summary of Comments
CD 6-11-2020

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Please see
Summary of Comments
CD 6-11-2020

Complete proposal description: The Solleks Bottom timber sale is a 6 unit Variable Retention Harvest (VRH) sale, encompassing approximately 712 gross acres. Of this 712 acres there are 314 acres of VRH, 6 acres of ROW harvest, 357 acres of Riparian Management Zones (RMZ), Wetland Management Zones (WMZ) and unstable slope protection, 14 acres of leave tree areas (LTA) and 21 acres of existing road. The sale volume is 8,767mbf and it is located within the Upper Clearwater administrative unit. Both ground-based and cable logging methods will be used to harvest this sale.

Approximately 1,430 feet of new road construction, 1,852 feet of existing road reconstruction and 23,895 feet of pre-haul maintenance is planned for this proposal. Of the planned road work approximately 980 feet of road will be decommissioned after harvest is complete.

a.

Unit	Proposal Acres (gross)	RMZ/WMZ/Unstable Slope Acres	Existing Road Acres (within unit)	Leave Tree Clump Acres	Net Harvest Acres
1	94	55	3	2	34
2	71	30	3	2	36
3	27	20	1	1	5
4	228	126	6	5	91
5	189	102	3	2	82
6	103	24	5	2	72
Totals	712	357	21	14	320

b. Describe the stand of timber pre-harvest (include major timber species and origin date), type of harvest and overall unit objectives.

Pre-harvest Stand Description:

Unit	Origin Date	Major Timber Species	MBF/acre	Slope (%)	Elevation Range (ft)
1	1972	DF,WH	27.3	10-90	440-800
2	1938	DF,WH	32.9	10-85	640-1020
3	1983	DF,WH	39.6	10-60	620-660
4	1973	DF,WH	29.4	10-95	670-1500
5	1973/1978	DF,WH	26.0	10-110	740-1660
6	1980/1988	DF,WH	22.9	20-100	1050-1320

Type of Harvest:

Unit	Harvest Type (VDT/VRH/etc)	Volume to be Harvested (mbf)	Volume to be Harvested (%)	Total Leave Trees
1	VRH	927	95	290
2	VRH	1185	95	310
3	VRH	198	95	96
4	VRH	2677	95	735
5	VRH	2129	95	762
6	VRH	1651	95	590

Overall Unit Objectives:

The overall objectives for this sale includes the production of saw logs and pulp material, which will create revenue for the trusts while expediting the development of a more diverse multi-storied canopy layer in the future stand. This will be accomplished through the retention of wildlife trees, legacy trees and riparian management zones. Approximately 371 acres (approximately 50 percent of the proposal) have been set aside for unstable slope protection, RMZs, WMZ's and leave tree areas. In addition, these stands will be managed to protect site productivity and maintain the integrity and water quality of adjacent streams.

Ecological- The VRH will promote diverse forest structure across the landscape while preserving ecological integrity and function.

Economic- Generate revenue for Common Schools (03) Trust.

Statute- Comply with the Washington State Habitat Conservation Plan, OESF Forest Land Plan, Forest Practice rules, and implement the Policy for Sustainable Forests.

Social- Accommodate dispersed informal recreational activities on DNR managed lands. Specific objectives are to provide riparian protection, protection of unstable slopes, protection of soils and habitat conservation for threatened and endangered species. Riparian protection measures were designed for all waters in and adjacent to this proposal in accordance with DNR's OESF Riparian strategy.

c. Describe planned road activity. Include information on any rock pits that will be used in this proposal. See associated forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		1,430	.5	0
Reconstruction		1,852		0
Maintenance		23,895		0
Abandonment		0	0	0
Bridge Install/Replace				0
Stream Culvert Install/Replace (fish)	0			0
Stream Culvert Install/Replace (no fish)	4			
Cross-Drain Install/Replace	37			

Rock Pits: Rock for this sale proposal will be obtained from Copper Pit.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist (See "WAU Map(s)" and "Timber Harvest Unit Adjacency Map(s)" as referenced on the DNR website: <http://www.dnr.wa.gov/sepa>. Click on the DNR region of this proposal under the Topic "Current SEPA Project Actions - Timber Sales." Proposal documents also available for review at the DNR Region Office.)

a. Legal description: T25-0N R11-0W S11, T25-0N R11-0W S10, T25-0N R11-0W S13, T25-0N R11-0W S12, T25-0N R11-0W S15, T25-0N R11-0W S14, T25-0N R10-0W S18, T25-0N R10-0W S07

T 25N R12W Sec 13 Copper Pit

Please see
Summary of Comments
CD 6-11-2020

b. Distance and direction from nearest town: This proposal is located approximately 34 miles south of Forks, WA off the C-3000 and C-3100 road systems.

13. Cumulative Effects

a. Briefly describe any known environmental concerns that exist regarding elements of the environment in the associated WAU(s). (See WAC 197-11-444 for what is considered an element of the environment).

This proposal is located within the Upper Clearwater WAU. Ownership across the WAU is predominately DNR managed trust lands with the DNR owning 98% of the lands within the WAU. Other landowners include large industrial forests, private land owners and Federal ownership. Forested stands within the WAU appear to be primarily second growth with pockets of old growth stands scattered throughout the WAU.

- b. Briefly describe existing plans and programs (i.e. the HCP, DNR landscape plans, retention tree plans) and current forest practice rules that provide/require mitigation to protect against potential impacts to environmental concerns listed in question A-13-a.*

This proposal and all future management activities on DNR lands will be conducted in accordance with the DNR's Habitat Conservation Plan (HCP, 1997), the Policy for Sustainable Forests (2006), the OESF Forest Land Plan and Forest Practice Rules. The HCP is an agreement with the federal government that requires the DNR to manage the landscapes with the intent to preserve and enhance habitat. In accordance with its terms, the following applicable strategies are found to provide a conservation benefit for multiple species:

- **Deferring harvest from unstable slopes with a medium or high risk of failure**
- **Retaining Riparian Management Zones (RMZ's) on typed waters. This includes a variable width interior core buffer on type 1, 3, 4, and unstable type 5 streams. Equipment limitation zones are required on all streams**
- **Retaining a minimum of 8 leave tree per acre dispersed and clumped throughout VRH units**
- **Designing, constructing, and maintaining a road system to minimize potential adverse effects on the environment**
- **Implementing procedures pertaining to threatened and endangered species**

In concert, the HCP strategies for Northern Spotted Owl, Marbled Murrelet, and riparian conservation will contribute to the retention and development of older forests, while the leave tree procedure will enhance the structural diversity of forests across the landscape. In addition, road construction and maintenance standards will improve the quality of the existing road network and reduce impacts on the environment.

- c. Briefly describe any specific mitigation measures proposed, in addition to the mitigation provided by plans and programs listed under question A-13-b.*

All mitigation measures are clearly outlined in the HCP. No additional mitigation measures have been developed for this proposal.

- d. Based on the answers in questions A-13-a through A-13-c, is it likely potential impacts from this proposal could contribute to any environmental concerns listed in question A-13-a?*

It is not likely potential impacts from this proposal will contribute to the environmental concerns listed in question A-13-a. DNR's HCP, the Policy for Sustainable Forests, and the Forest Practice rules substantially helps the Department to mitigate for cumulative effects related to management activities. These strategies have been incorporated in this proposal.

e. Complete the table below with the reasonably foreseeable future activities within the associated WAU(s) (add more lines as needed). Future is generally defined as occurring within the next 7 years. This data was obtained from DNR's Land Resource Manager System on the date of processing this checklist and may be subject to change.

WAU Name	Total WAU Acres	DNR-managed WAU Acres	Acres of DNR proposed even-aged harvest in the future	Acres of DNR proposed uneven-aged harvest in the future	Acres of proposed harvest on non-DNR-managed lands currently under active FP permits
UPPER CLEARWATER	58139	57225	3206	239	540

Other management activities, such as stand and road maintenance, will likely occur within the associated WAU.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

Flat, Rolling, Hilly, Steep Slopes, Mountainous, Other:

1. General description of the associated WAU(s) or sub-basin(s) within the proposal (landforms, climate, elevations, and forest vegetation zone).

WAU:	UPPER CLEARWATER
WAU Acres:	58139
Elevation Range:	252 - 3823 ft.
Mean Elevation:	1443 ft.
Average Precipitation:	133 in./ year
Primary Forest Vegetation Zone:	Pacific Silver Fir

2. Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

This proposal is a representative example of the WAUs at the same elevation and aspect.

b. What is the steepest slope on the site (approximate percent slope)?
110%

[Please see](#)
[*Summary of Comments*](#)
[CD 6-11-2020](#)

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any

agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Note: The following table is created from state soil survey data. It is an overview of general soils information for the soils found in the sale area. The actual soil conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors.

State Soil Survey #	Soil Texture
5225	SILT LOAM
5224	SILT LOAM
7643	V.GRAVELLY LOAM
3972	V.GRAVELLY LOAM
7647	V.GRAVELLY LOAM

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

_____ Please see

_____ *Summary of Comments*

_____ CD 6-11-2020

No, go to question B-1-e.

Yes, briefly describe potentially unstable slopes or landforms in or around the area of the proposal site. For further information, see question A-8 for related slope stability documents and question A-10 for the FPA number(s) associated with this proposal.

This proposal is located on a range of steep slopes and is on and adjacent to numerous unstable slope features. Geologists identified numerous inner gorges and bedrock hollows, which have been bound out of the harvest area. In addition to these 30 shallow landslides and 15 deep seated landslides were identified in and around the sale area. These landslides and activities associated with them are addressed in the Geologic Risk Assessment prepared for this proposal.

- 1) Does the proposal include any management activities proposed on potentially unstable slopes or landforms?

No Yes, describe the proposed activities: **Timber harvest will occur on unstable features. These are described in detail in the Geologic Risk Assessment prepared for this proposal.**

- 2) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

The primary mitigation measures for this proposal are avoidance with most areas of slope instability being bound out of the harvest area. The Geologic Risk Assessment identifies additional mitigation measures incorporated into this proposal. Areas with medium or high risk of slope failure have been removed from the sale area.

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Approx. acreage new roads: .5
Approx. acreage new landings: 3
Fill Source: Copper Pit

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Yes. Some erosion could occur as a result of building new roads, installing culverts, and hauling timber.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*
Less than 1% of the site will remain as gravel roads.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)
Harvesting and road construction will be restricted during periods of heavy rainfall when rutting and surface erosion may occur. Roads will be constructed with properly located ditches, ditch-outs, and cross-drains to divert water onto stable forest floors and/or into stable natural drainages. Best management practices will be utilized as necessary in proximity to live waters. Ground based operations will be suspended during periods of wet weather or wet soil conditions when rutting of skid or shovel roads begins.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
Minor amounts of engine exhaust from logging and road construction equipment and dust from vehicle traffic on roads will be emitted during proposed activities. If landing debris is burned after harvest is completed, smoke will be generated. There will be no emissions once the proposal is complete.
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
None known.
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
If landing debris is burned, it will be in accordance with Washington State's Smoke Management Plan. A burn permit will be obtained before burning occurs.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See "WAU Map(s)" and "Timber Harvest Unit Adjacency Map(s)" as referenced on the DNR website: <http://www.dnr.wa.gov/sepa>. Click on the DNR region of this proposal under the Topic "Current SEPA Project Actions - Timber Sales." Proposal documents also available for review at the DNR Region Office.)

No Yes, describe in 3-a-1-a through 3-a-1-c below Please see
Summary of Comments
CD 6-11-2020

a. a. Downstream water bodies: **Unnamed perineal streams, Clearwater River, Stequaleho Creek, Solleks River, Queets River and Pacific Ocean**

b. Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in feet (per side for streams)
Stream	1	3	Variable width interior core buffer of 270'-600
Stream	3	3	Variable width interior core buffer of 100'-320'.
Stream	4	43	Variable width interior core buffer of 100'-320'.
Stream	5	69	Variable width interior core buffer around unstable slopes of 30'-260' and a 30' equipment limitation zone on all others
Wetland	Forested	2	Protected with a 2/3 SI buffer of 128'

c. List any additional RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures and wind buffers.

In accordance with the Habitat Conservation Plan, on typed waters, all floodplains and unstable slopes are protected with variable width interior core buffers based on site specific conditions. Type 1 waters have been protected with variable width inner core buffers of 270' – 600'. All type 3 and type 4 streams have been protected with variable width inner core buffers of 100'-320'. All floodplains and unstable slopes

have been excluded from harvest. Type 5 streams are protected with variable width inner core buffers of (30'-260'). No harvest will occur within any riparian buffers. All typed waters have a 30' equipment limitation zone.

Two wetlands are located around this proposal, both of which are forested wetlands. Both are under 5 acres in size and have been protected with 2/3 100 year site index buffers of 128'.

Wind-throw probability modeling and field assessments were done on the sale area and determined low risk of severe endemic wind-throw for the interior core buffers, so no external wind buffers were applied.

The work detailed in the road plan has been designed to improve surfacing on the haul roads, and provide for better drainage by installing additional, and replacing inadequate culverts that will divert storm water onto stable forest floor. These actions will minimize the potential for delivery of sediment to streams.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Please see
Summary of Comments
CD 6-11-2020

No

Yes (See RMZ/WMZ table above and timber sale maps which are available on the DNR website: <http://www.dnr.wa.gov/sepa>. Timber sale maps are also available at the DNR region office.)

Description (include culverts):

Timber felling, bucking, yarding and road maintenance and construction will occur within 200 feet of some of the described waters above (see RMZ table). All activities will be done in accordance with the DNR's HCP and Forest Practice rules. Timber harvest will occur within 200' of typed waters, but no closer than described above in questions B.3.a.1.b and B.3.a.1.c. Culvert work listed in A.11.C will occur within 200 feet of the described waters above.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected.

Indicate the source of fill material.

None.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)

No

Yes, description:

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No

Yes, describe activity and location:

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
It is not likely that any waste materials will be discharged into the surface water(s). However, minor amounts of oil, fuel, and other lubricants may inadvertently be discharged to the adjacent surface water(s) as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site.
- 7) *Is there a potential for eroded material to enter surface water as a result of the proposal considering the protection measures incorporated into the proposal's design?*
- No *Yes, describe:*
Soils and terrain susceptible to surface erosion are generally located on slopes steeper than 70%. The potential for eroded material to enter surface water is minimized due to the erosion control measures and operational procedures outlined in B-1-h.
- 8) *What are the approximate road miles per square mile in the associated WAU(s)?*
- UPPER CLEARWATER = 3.8 (mi./sq. mi.)**
- 9) *Are there forest roads or ditches within the associated WAU(s) that deliver surface water to streams, rather than back to the forest floor?*
- No *Yes, describe:*
It is likely some roads or road ditches within the WAU intercept sub-surface flow and deliver surface water to streams, however current road construction, reconstruction, and/or maintenance standards will be applied that address this issue by installing cross-drains to deliver ditch water to stable forest floors.
- 10) *Is there evidence of changes to channels associated with peak flows in the proposal area (accelerated aggradations, surface erosion, mass wasting, decrease in large organic debris (LOD), change in channel dimensions)?*
- No *Yes, describe observations:*
There is evidence of changes to channels across the WAU(s). These changes are a result of natural events such as spring runoff from snowmelt and significant storm events. Channel migration, scouring, and deposition of material can be seen in channels across the WAU(s); this indicates those channels historically experience higher water levels and peak flows
- 11) *Describe any anticipated contributions to peak flows resulting from this proposal's activities which could impact areas downstream or downslope of the proposal area.*
It is not likely the proposed activity will change the timing, duration, or volume of water during a peak flow event. This proposal limits harvest unit size and proximity to other recent harvests, minimizes the extent of the road network, incorporates road drainage disconnected from stream networks, and implements wide riparian

buffers which all have mitigating effects on the potential for this proposal to increase peak flows that could impact areas downstream or downslope of the proposal area.

12) *Is there a water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity?*

No Yes, describe the water resource(s):

a. Is it likely a water resource or an area of slope instability listed in B-3-12 (above) will be affected by changes in amounts, quality or movements of surface water as a result of this proposal?

No Yes, describe possible impacts:

13) *Describe any protection measures, in addition to those required by other existing plans and programs (i.e. the HCP, DNR landscape plans) and current forest practice rules included in this proposal that mitigate potential negative effects on water quality and peak flow impacts.*

Restricting timber harvest and road maintenance activities during peak rain events will allow for increased resource protection. Road development and maintenance standards will minimize impacts by using cross-drains and ditch-outs to release ditch water onto stable forest floors where flow energy can dissipate prior to reach stream channels. Maintaining RMZ's on streams will aid bank stability, hydrologic functions, and provide recruitment of LWD. See B.1.d.2, B.1.h, and B.3.a.1 for additional details on protections measures within this proposal.

b. Ground Water:

2) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No water will be withdrawn or discharged.

3) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Minor amounts of oil, fuel, and other lubricants may inadvertently be discharged to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site. All spills are required to be contained and cleaned-up. This proposal is expected to have no impact on ground water.

4) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity?*

No Yes, describe:

a. Is it likely a water resource or an area of slope instability listed in B-3-b-3 (above) could be affected by changes in amounts, timing, or movements of groundwater as a result this proposal?

No Yes, describe possible impacts:

Note protection measures, if any:

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Water runoff, including storm water, from road surfaces will be collected by roadside ditches and diverted onto the forest floor via ditch-outs and cross drain culverts.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No Yes, describe:

Waste materials, such as sediment or slash, may enter surface water.

Note protection measures, if any:

No additional protection measures will be necessary to protect these resources beyond those described in B-1-d-2, B-1-h, B-3-a-2, and B-3-a-13.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No changes to drainage patterns are expected.

- d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-13, B-3-b-3, and B-3-c-2.

4. Plants

- a. Check the types of vegetation found on the site:

Deciduous tree:

Alder Aspen Birch Cottonwood Maple Western Larch

Other:

Evergreen tree:

Douglas-Fir Engelmann Spruce Grand Fir Lodgepole Pine

- Mountain Hemlock Noble Fir Pacific Silver Fir Ponderosa Pine
 Sitka Spruce Western Hemlock Western Redcedar Yellow Cedar
 Other:
- Shrubs:
 Huckleberry Rhododendron Salmonberry Salal
 Other:
- Ferns
 Grass
 Pasture
 Crop or Grain
 Orchards Vineyard Other Permanent Crops
- Wet Soil Plants:
 Bullrush Buttercup Cattail Devil's Club Skunk Cabbage
 Other: _____
- Water plants: _____
 Eelgrass Milfoil Water Lily
 Other: _____
- Other types of vegetation:
 Plant communities of concern:

What kind and amount of vegetation will be removed or altered? (Also see answers to questions A-11-a, A-11-b and B-3-a-2).

Approximately 8,767 MBF of 32 - 82 year-old timber will be harvested with this proposal.

Please see
 Summary of Comments
 CD 6-11-2020

b.

- 1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See "WAU Map(s)" and "Timber Harvest Unit Adjacency Map(s)" on the DNR website: <http://www.dnr.virginia.gov/sepa>. Click on the DNR region of this proposal under the Topic "Current SEPA Project Actions - Timber Sales." Proposal documents also available for review at the DNR Region Office.)

Unit 1 is bordered by DNR on all sides with stands ranging from 7 – 48 years of age.

Unit 2 is bordered on all sides by DNR ownership with stands ranging from 7-82 years of age.

Unit 3 is bordered on all sides by DNR ownership with stands that are 37 years old.

Unit 4 is bordered on all sides by DNR ownership with stands ranging from 37-44 years of age.

Unit 5 is bordered on all sides by DNR ownership with stands ranging from 44-47 years of age.

Unit 6 is bordered on all sides by DNR ownership with stands ranging from 37-45 years of age.

- b. List threatened and endangered *plant* species known to be on or near the site.

Please see
Summary of Comments
CD 6-11-2020

None found in corporate database

Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Retaining existing stands within bounded out areas throughout the proposal, leave tree areas within harvest units, and replanting with native conifer species in the VRH units following harvest. Other native conifer and deciduous species may regenerate naturally onsite.

- c. List all noxious weeds and invasive species known to be on or near the site.

Himalayan Blackberry, Scotch Broom

5. Animals

- a. List any birds and other animals or unique habitats which have been observed on or near the site or are known to be on or near the site. Examples include:

birds:

eagle hawk heron owls songbirds

other:

mammals:

bear beaver coyote cougar deer elk

other:

fish:

bass herring salmon shellfish trout

other:

amphibians/reptiles:

frog lizard salamander snake turtle

other:

unique habitats:

balds caves cliffs mineral springs oak woodlands talus slopes

other: **Eagles were observed in flight, but no known nests are located within 660' of proposal.**

- b. List any threatened and endangered species known to be on or near the site (include federal- and state-listed species).

Please see
Summary of Comments
CD 6-11-2020

TSU Number	Common Name	Federal Listing Status	State Listing Status
SOLLECKS BOTTOM U5 ROW	Northern Spotted Owl	Threatened	Endangered
SOLLECKS BOTTOM U5	Marbled murrelet	Threatened	Endangered

c. Is the site part of a migration route? If so, explain.

Pacific flyway Other migration route:

Explain:

This site is part of the Pacific flyway but is not used extensively for resting or feeding by waterfowl.

Please see
Summary of Comments
CD 6-11-2020

d. Proposed measures to preserve or enhance wildlife, if any:

Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species/Habitat: Spotted Owl – The DNR mitigates for the potential of significant adverse environmental impacts to northern spotted owls in the OESF by implementing the HCP strategy. This strategy established threshold percentages for spotted owl habitat on DNR-managed lands for Landscape Planning Units (LPU). Each LPU is managed to achieve and maintain at least 20% Old Forest Habitat and at least 40% of Old and Young Forest (or Structural) Habitat types taken together according to a schedule of habitat enhancement and harvest activities developed within the Forest Land Plan (FLP). This proposal is located within the Upper Clearwater SOMU. The Upper Clearwater SOMU will be at 55.4% following the planned harvest of 90 acres of Young Forest Habitat in the Bull Mill timber sale. This current proposal will be harvesting 132 acres of Young Forest Habitat leaving the SOMU at 55.2% habitat. The Upper Clearwater SOMU meets the criteria to be in the Maintenance and Enhancement Phase and is currently 26.3% Old Forest, meeting that threshold as well. The harvest of NSO Young Forest Habitat in this SOMU complies with the DNR State Trust Lands HCP Implementation Agreement for the Northern Spotted Owl dated in 2017, as over 40% of the landscape will remain as Young Forest Habitat and better. No harvest of Old Forest Habitat will occur in this SOMU.

Species/Habitat: Marbled Murrelet - The entire proposal area was evaluated for habitat protection or other marbled murrelet conservation opportunities. Reconstruction and pre-haul maintenance on the existing C-3130 in Unit 5 will occur within occupied murrelet habitat and its associated buffer. All work will take place within the limited operating period, which runs from two hours after sunrise to two hours before sunset, if taking place during the murrelet nesting season (April 1- September 23).

Species /Habitat: Riparian and Wetland – Interior core buffers have been applied to Type 1, 3, 4, and unstable 5 waters. In addition two forested wetlands were identified and protected with 2/3 site index buffers. Equipment limitation zones have been applied on all typed streams, as described in B.3.a.1)b). Riparian buffers are designed to protect the unstable portions of the stream banks, and help to protect waters from siltation and increased temperature by providing shade and cover. Buffers also allow the natural occurrence of woody debris that provides pools and eddies for fish habitat along stream banks. Furthermore, these buffers will develop old-forest characteristics that, in combination with the owl and

murrelet strategies, will help support old-forest dependent wildlife.

Species /Habitat: Upland – Diverse habitat for upland wildlife will be provided by the following measures: All areas of potential slope instability associated with this proposal with medium or high potential have been appropriately buffered and deferred from harvest. These in concert with riparian buffers provide for mature forest areas. Windfirm, dominant, and structurally unique trees were targeted for retention. A minimum of eight trees per acre were retained individually and in clumps to provide habitat and structures for wildlife species. Timber removal will temporarily create open environments that provide valuable foraging and potential habitat for a variety of wildlife species associated with early-staged forest environments.

- e. List any invasive animal species known to be on or near the site. **None**

6. Energy and natural resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.
Petroleum fuel (diesel or gasoline) will be used for heavy equipment during active road building, timber harvest operations, and for transportation. No energy sources will be needed following project completion.
- b. Would your project affect the potential use of solar energy by adjacent properties?
If so, generally describe.
No.
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
None.

7. Environmental health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.
- 1) Describe any known or possible contamination at the site from present or past uses.
None known.
 - 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
None known.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.
Petroleum-based fuel and lubricants may be used and stored on site during the operating life of this project.
- 4) Describe special emergency services that might be required.
The Department of Natural Resources, private, and fire protection district suppression crews may be needed in case of wildfire. In the event of personal injuries, emergency medical services may be required. Hazardous material spills may require Department of Ecology and/or county assistance.
- 5) Proposed measures to reduce or control environmental health hazards, if any:
No petroleum-based products will be disposed of on site. If a spill occurs, containment and cleanup will be required. Spill kits are required to be onsite during all heavy equipment operations. The cessation of operations may occur during periods of increased fire risk. Fire tools and equipment, including pump trucks and/or pump trailers, will be required on site during fire season.

NOTE: If contamination of the environment is suspected, the proponent must contact the Department of Ecology.

*Please see
Summary of Comments
CD 6-11-2020*

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
None.
- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
There will be short term, low level and high level noise created by the use of harvesting equipment and hauling operations within the proposal area. This type of noise has been historically present in this geographical area.
- 3) Proposed measures to reduce or control noise impacts, if any:
None.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. (*Site includes the complete proposal, e.g. rock pits and access roads.*)
Commercial Forest Land.

This proposal will not change the use of or affect the current/long term land use of areas associated with this sale.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?
This proposal site has been used as working forest lands. This proposal will retain the site in working forest lands.
- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:
No.
- c. Describe any structures on the site.
None.
- d. Will any structures be demolished? If so, what?
No.
- e. What is the current zoning classification of the site? **Commercial Forest Land.**
- f. What is the current comprehensive plan designation of the site? **Commercial Forest Use.**
- g. If applicable, what is the current shoreline master program designation of the site?
Not applicable.
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
No.
- i. Approximately how many people would reside or work in the completed project?
None.
- j. Approximately how many people would the completed project displace?
None.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
Does not apply.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
This project is consistent with current comprehensive plans and zoning classifications.
- m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
None.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Does not apply.
- c. Proposed measures to reduce or control housing impacts, if any:
None.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
Does not apply.
- b. What views in the immediate vicinity would be altered or obstructed?
None
- c.
 - 1) *Is this proposal visible from a residential area, town, city, recreation site, major transportation route or designated scenic corridor (e.g., county road, state or interstate highway, US route, river or Columbia Gorge SMA)?*

 No *Yes, name of the location, transportation route or scenic corridor:*
 - 2) *How will this proposal affect any views described above?* **N/A**
- d. Proposed measures to reduce or control aesthetic impacts, if any: **None.**

11. Light and glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
None.
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.
- c. What existing off-site sources of light or glare may affect your proposal?
None.
- d. Proposed measures to reduce or control light and glare impacts, if any:
None.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
Informal uses from campers, hunters and fishermen.
- b. Would the proposed project displace any existing recreational uses? If so, describe.
There may be some disruptions to recreational use during periods of harvesting and hauling.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
No *Please see
Summary of Comments
CD 6-11-2020*
- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
No
- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.
A check of the Department of Archaeology and Historic Preservation (DAHP) database and Land Resource Manager (LRM) Special Concerns Report shows no known cultural resources on or near the site. A check of the cultural resources layer on the State Upland viewing tool shows no cultural resources on or near the site. During timber sale preparation, trained foresters found nothing on or near the site to indicate any potential cultural resource
- d.
- e. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
If a presently unknown cultural resource is discovered during project operations, DNR will comply with the March 2010 Cultural Resources Inadvertent Discovery Guidance.

*Please see
Summary of Comments
CD 6-11-2020*

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.
This area is accessed by the Hoh/Clearwater Mainline and secondary forest roads.
- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?
No. Nearest transit spot is over 25 miles away.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

None.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Yes, see A-11-c.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area and any existing safety problem(s), if at all?*

This project will have minimal to no additional impacts on the overall transportation system in the area.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

Approximately 10 to 15 truck trips per day while the operation is active. Peak volumes would occur during the yarding and loading activities between 4:00 a.m. and 4:00 p.m. of the operating period. The completed project will generate less than one vehicular trip per day. Estimates are based on the observed harvest traffic of past projects.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

- h. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

- a. Check utilities currently available at the site:

electricity natural gas water refuse service telephone sanitary sewer
 septic system other:

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Michael Potter MH

Name of signee Michael Potter

Position and Agency/Organization NES3/Olympic

Date Submitted: 5-8-2020



Summary of Comments

I have reviewed this SEPA Checklist and have the following comments:

CD

A. Background

8. The Engineering Geologic Risk Assessment Sollecks Bottom Timber Sale and Slope Stability Informational Form are available on FPARS with FPA/N 2616535.
10. FPA/N 2616535 and the associated Engineering Geologic Risk Assessment Sollecks Bottom Timber Sale are available for viewing in FPARS.
11. FPA/N 2616535 indicates road construction totaling approximately 3282 ft and spoils deposits of approximately 23,400 cy are included in this proposal. Two Ns and three Np crossings are planned (per Question 14 of FPA/N 2616535).
12. The location of this proposal is confirmed as Section 7, 18 Township 25 Range 10 West; Sections 10, 11, 12, 13, 14, 15 Township 25 Range 11 West; and Section 13 Township 25 Range 12 West (Cooper Pit) in Jefferson County (per Question 7 of FPA/N 2616535).

B. Environmental Elements

Earth

- 1.b. The steepest slope is confirmed via FPA/N 2616535 question 19.
- 1.d. The FPA/N, Slope Stability Informational Form, Engineering Geologic Risk Assessment Sollecks Bottom Timber Sale indicates that inner gorges, bedrock hollows, convergent headwalls, groundwater recharge areas for glacial deep-seated landslides, toe of deep-seated landslides with slopes greater than or equal to 65%, outer edges of meander bends, shallow-rapid landslides, active and dormant bedrock deep-seated landslides are found in and around the harvest and road construction. Mitigation measures implemented are outlined in question 28 of the FPA/N.

Water

- 3.a.1. FPA/N 2616535 indicates many typed streams and two forested wetlands that will be harvested per HCP.
- 3.a.2. FPA/N 2616535 indicates work within 200ft of typed waters per HCP (question 25 of the FPA/N).

Plants

- 4.b. FPA/N 2616535 will remove approximately 8,787 MBF of timber.
- 4.c. FPRAM check indicates no potential conflicts with T&E plant species.

Animals

- 5.b. FPRAM check indicates the harvest area is within SOSEA, but it is not NSO habitat. Additionally, FPRAM check indicated the proposal is within MM detection areas and the 1.5 mile occupied buffer.
- 5.c. Washington State is considered part of the Pacific Flyway; however no impacts are anticipated as a result of this proposal.



Environmental Health

- 7.a.5. If contamination is suspected, the proponent must contact the Department of Ecology.

Historic and cultural preservation

- 13.a. FPRAM check confirms no conflict with cultural historical sites or resources.
13.b. FPRAM check confirms no conflict with archaeological or cultural sites or resources.
13.d. In the event that any unknown historical/archaeological resources are encountered, ground disturbing activities must be halted and DAHP and local tribes contacted.

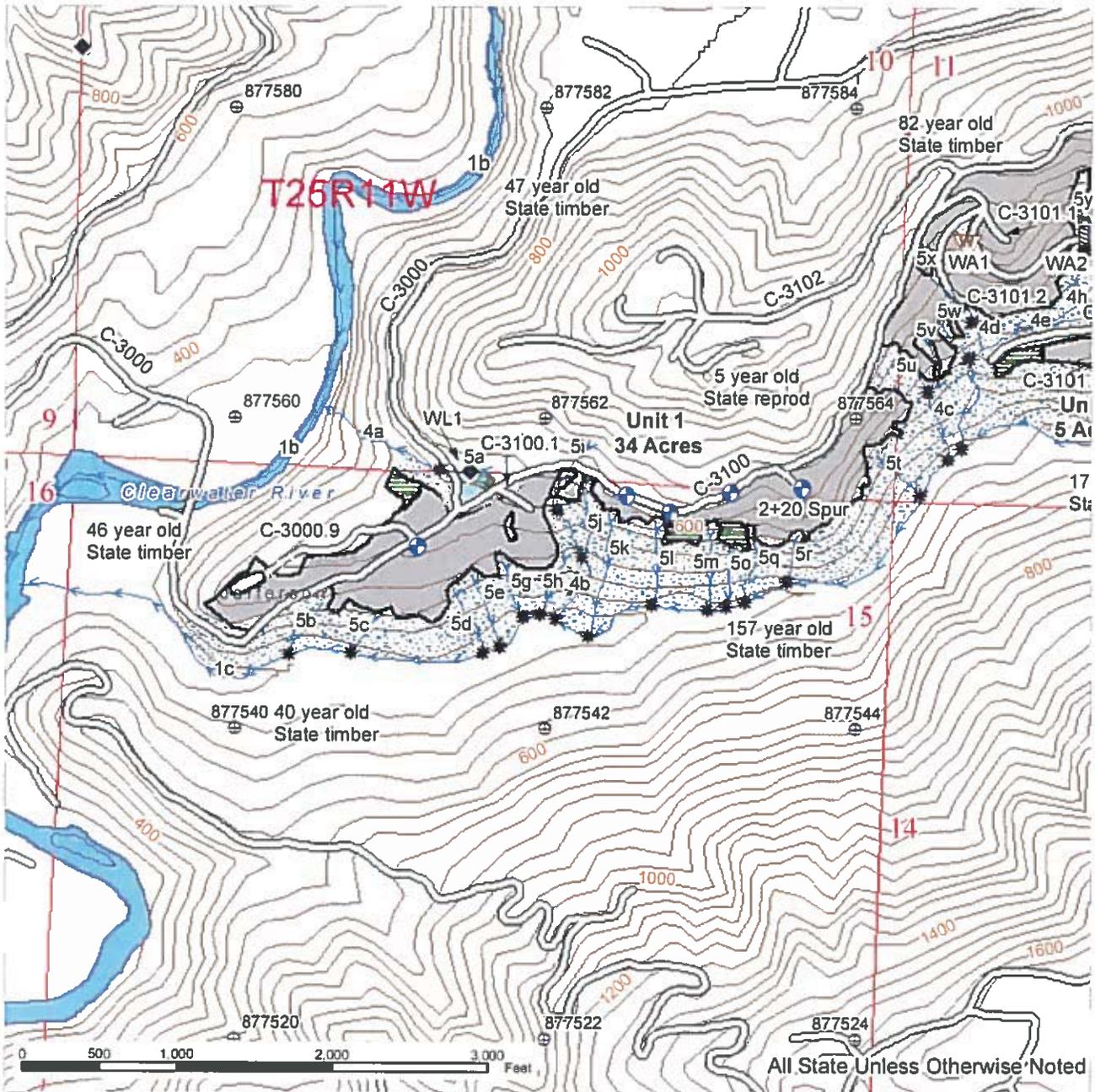
Chelsea Drum 6-11-2020

Chelsea Drum
Department of Natural Resources – Olympic Region
Forest Practices Coordinator

FOREST PRACTICES ACTIVITY MAP

SALE NAME: SOLLEKS BOTTOM
 APPLICATION #: TBD by FP Staff

COUNTY(S): Jefferson
 TOWNSHIP(S): T25N R11W, T25N R10W

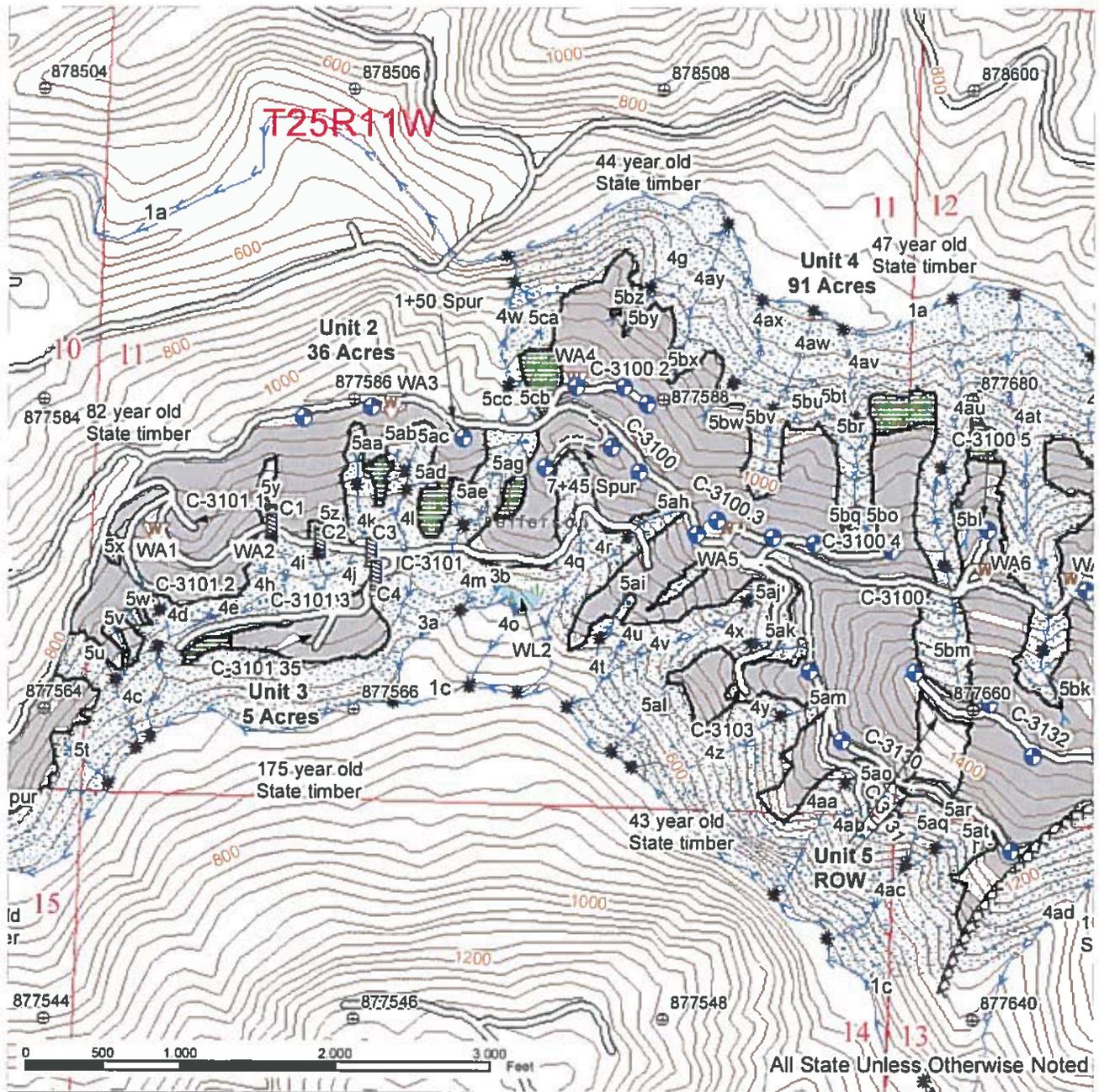


Sale Area	Riparian Mgt Zone	Culvert Install
Streams	Forested Wetland	Landing - Proposed
Stream Type	Wetland Mgt Zone	Waste Area
Stream Type Break	Public Land Survey Sections	Survey Monument
Existing Roads	Public Land Survey Townships	Contours 40-foot
New Construction	DNR Managed Lands	
Leave Tree Area	Tics - 2000' Interval	

FOREST PRACTICES ACTIVITY MAP

SALE NAME: SOLLEKS BOTTOM
APPLICATION #: TBD by FP Staff

COUNTY(S): Jefferson
TOWNSHIP(S): T25N R11W, T25N R10W

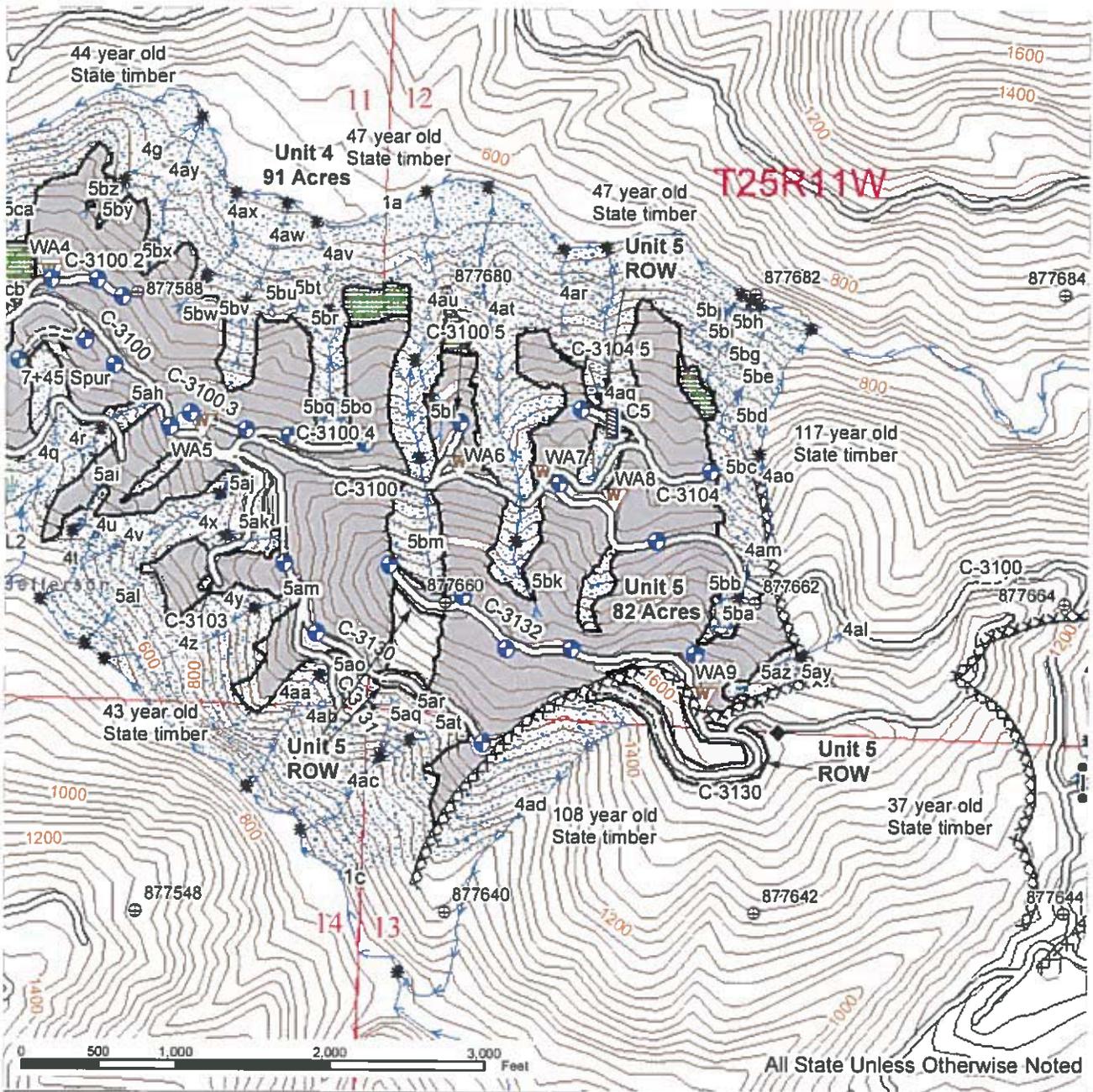


Sale Area	Riparian Mgt Zone	Culvert Install
Streams	Forested Wetland	Landing - Proposed
Stream Type	Wetland Mgt Zone	Waste Area
Stream Type Break	Public Land Survey Sections	MM Timing Restriction
Existing Roads	Public Land Survey Townships	Survey Monument
New Construction	DNR Managed Lands	Contours 40-foot
Leave Tree Area	Tics - 2000' Interval	

FOREST PRACTICES ACTIVITY MAP

SALE NAME: SOLLEKS BOTTOM
APPLICATION #: TBD by FP Staff

COUNTY(S): Jefferson
TOWNSHIP(S): T25N R11W, T25N R10W

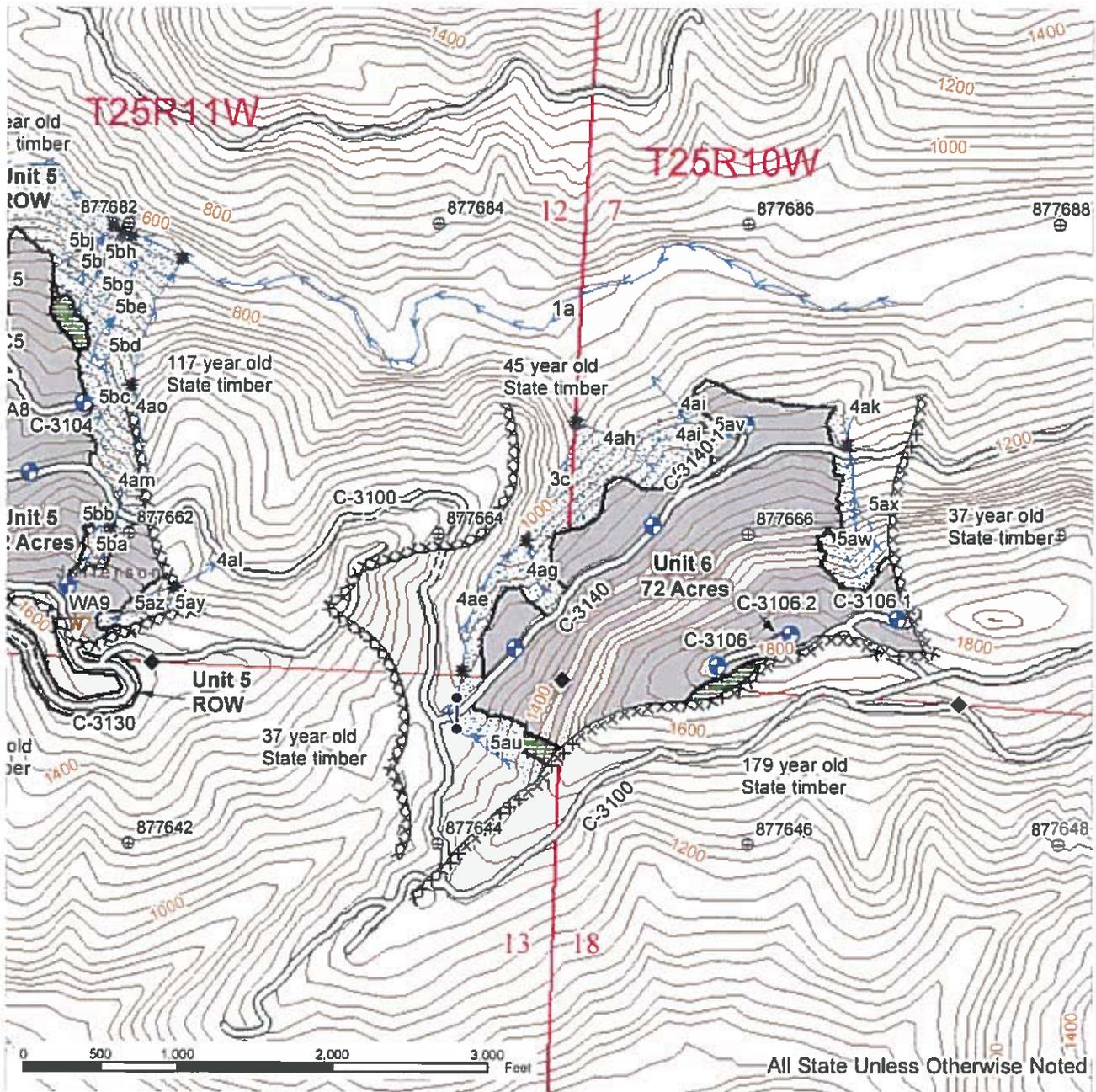


Sale Area	Riparian Mgt Zone	Culvert Install
Streams	Forested Wetland	Gate (AA-1)
Stream Type	Wetland Mgt Zone	Landing - Proposed
Stream Type Break	Public Land Survey Sections	Waste Area
Existing Roads	Public Land Survey Townships	MM Timing Restriction
New Construction	DNR Managed Lands	Survey Monument
Leave Tree Area	Tics - 2000' Interval	Contours 40-foot

FOREST PRACTICES ACTIVITY MAP

SALE NAME: SOLLEKS BOTTOM
 APPLICATION #: TBD by FP Staff

COUNTY(S): Jefferson
 TOWNSHIP(S): T25N R11W, T25N R10W



All State Unless Otherwise Noted

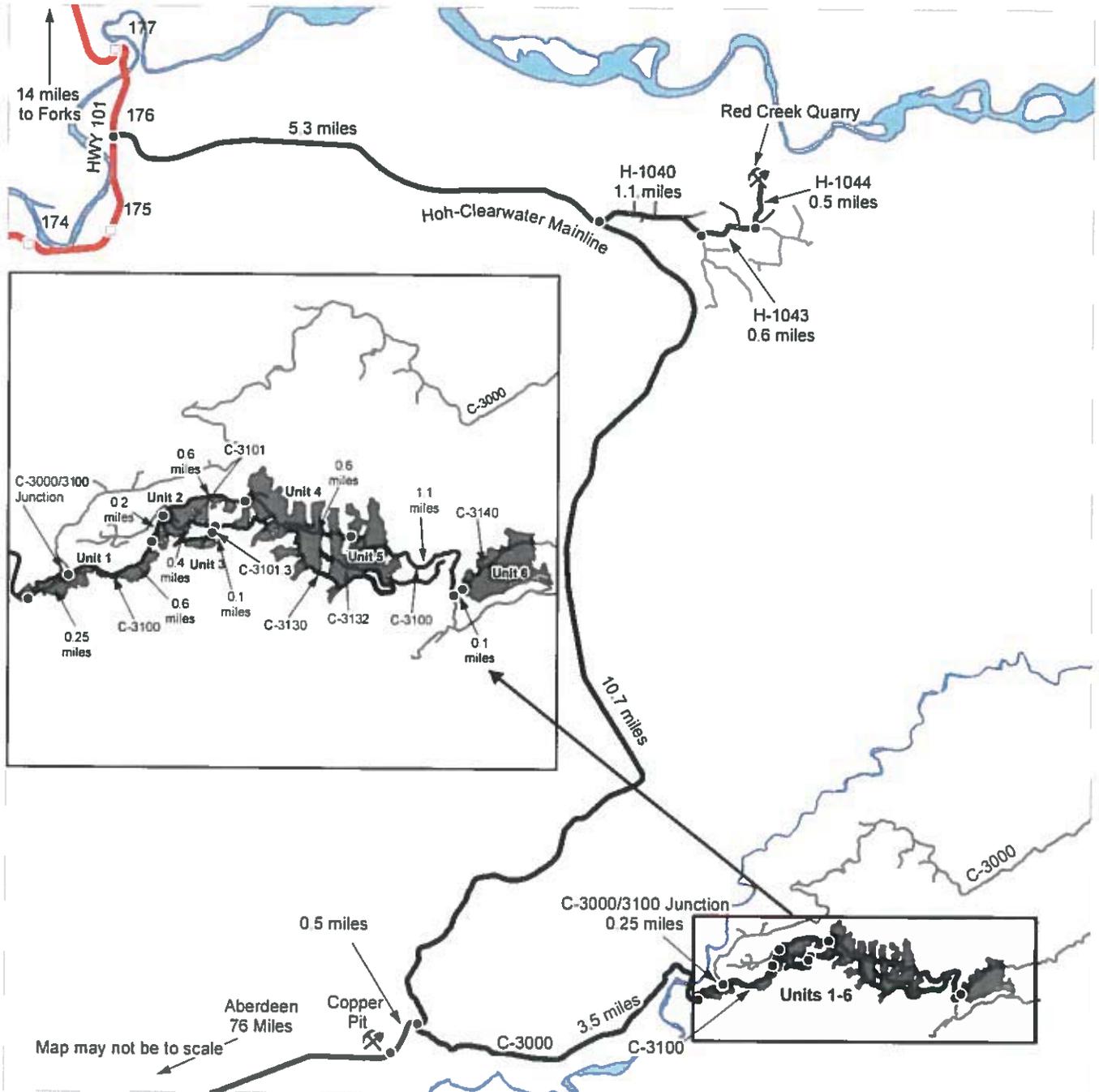
Sale Area	Leave Tree Area	Gate (AA-1)
Streams	Riparian Mgt Zone	Landing - Proposed
Stream Type	Public Land Survey Sections	Waste Area
Stream Type Break	Public Land Survey Townships	MM Timing Restriction
Existing Roads	DNR Managed Lands	Survey Monument
New Construction	Tics - 2000' Interval	Contours 40-foot



DRIVING MAP

SALE NAME: SOLLEKS BOTTOM
AGREEMENT#: 30-099242
TOWNSHIP(S): T25R11W, T25R10W
TRUST(S): Common School and Indemnity (3)

REGION: Olympic Region
COUNTY(S): Jefferson
ELEVATION RGE: 440'-1320'



Map may not be to scale

	Timber Sale Unit
	Highway
	Haul Route
	Other Route
	Milepost Markers
	Distance Indicator
	Rock Pit

Red Creek Quarry: From Forks, drive south on Highway 101 for 14 miles. Turn left on the Hoh-Clearwater mainline and continue for 5.3 miles. Turn left on the H-1040. Continue for 1.1 miles and turn left on the H-1044. Continue for 0.6 miles and turn left on the H-1043. Continue for 0.5 miles to access Red Creek Quarry.

Unit 1: From Hoh-Clearwater Mainline/H-1040 junction, continue on Mainline for 10.7 miles. Turn left on the C-3000 and continue for 3.5 miles to reach the beginning of U1.

Unit 2: Continue 0.25 miles to the C-3000/3100 Junction. Turn right and continue on C-3100 for 0.6 miles to reach the beginning of U2.

Unit 3: Continue 0.2 miles and turn right on the C-3101. Continue for 0.4 miles and turn right on the C-3101.3. Continue for 0.1 miles to reach the beginning of U3.

Unit 4: From the C-3100/3103 Junction, continue straight on the C-3100 for 0.6 miles to reach the beginning of U4.

Unit 5: Continue on the C-3100 for 0.6 miles to reach the beginning of U5.

Unit 6: Continue on the C-3100 for 1.1 miles. Turn left on the C-3140. Continue for 0.1 miles to reach the beginning of U6.

Copper Pit: From Hoh/Clearwater Mainline and C-3000 junction, continue south on Mainline for 0.5 miles. Turn right to access Copper Pit.

