

**STATE FOREST LAND  
ENVIRONMENTAL CHECKLIST**

**Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

**Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *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> under "SEPA Center." 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.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

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.

**Use of checklist for nonproject proposals:**

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

*Timber Sale Name: Green Thomas*

*Agreement #: 30-086037*

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

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

**Pacific Cascade Region  
601 Bond Road  
PO Box 280  
Castle Rock, Washington 98611-0280  
Marcus Johns: Phone (360) 577-2025**

4. Date checklist prepared: **04/23/2010**

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

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

*a. Auction Date: 6/16/2011*

*b. Planned contract end date (but may be extended): 10/31/2013*

*c. Phasing: Not Applicable*

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

**Yes. See below.**

*Timber Sale*

*a. Site preparation: Slash piling/burning and/or aerial herbicide application may be necessary in order to reduce logging slash and competing vegetation to ensure that planting can be achieved at acceptable stocking levels to meet or exceed Forest Practice standards following harvest.*

*b. Regeneration Method: The harvest units will be hand planted with conifer species following harvest to promote the continuation of a healthy conifer forest with diversity of tree species.*

*c. Vegetation Management: Site will be assessed for hand slashing or herbicide treatment in the next 2-4 years after harvest.*

- d. *Thinning:* Pre-commercial and commercial thinning potential will be assessed for the regeneration units in 10 to 15 years and 25 to 35 years, respectively. Thinning will be done as needed to meet desired density, stocking, species diversity, and growth.

*Roads:* Road maintenance assessments will be conducted annually and may include periodic ditch and culvert cleanout, and road grading as necessary to minimize erosion and failures. Construction, reconstruction, and abandonment are associated with forest management activities.

*Rock Pits and/or Sale:* The Gung Ho rock pit will be used in association with this sale.

*Other:* Direct sale of firewood from the sale area may occur following harvest completion. Firewood salvage of logging residue may occur following harvest.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

303 (d) – listed water body in WAU:  temp  sediment  completed TMDL (total maximum daily load): Mill Creek  
The most current information can be found on the Department of Ecology website, at <http://apps.ecy.wa.gov/wqawa2008/view.htm>

Landscape plan:

Watershed analysis:

Interdisciplinary team (ID Team) report:

Road design plan: Available at Pacific Cascade Region Office

Wildlife report:

Geotechnical report:

Other specialist report(s):

Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

Rock pit plan:

Other: Spotted Owl Habitat Mapping, Forest Practices board manual, Forest Practices Activity Maps, WAU Map for Rain-On-Snow areas, Policy for Sustainable Forests (PSF 2006); State Soil Survey; Habitat Conservation Plan (HCP 1997); HCP Checklist; Northern Spotted Owl Settlement Agreement (2006); Planning and Tracking Reports and associated maps; Road Maintenance and Abandonment Plan (RMAP): #2900196. The following documents are all generated by DNR GIS Layers: Weighted Old Growth Habitat Index (WOGHI); Marbled Murrelet Habitat Layer; and USGS and GLO maps.

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. No.

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

HPA  Burning permit  Shoreline permit  Incidental take permit 1168 & PRT 812521  FPA # 2922016  
 Other: 5 Year blanket HPA (#120945-2)

11. Give brief, complete description of our 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 specific information on project description.)

- a. *Complete proposal description:* Green Thomas timber sale (TBS) is a two unit variable retention harvest located in the DNR Elochoman Management Block. Rock will be obtained from the Gung Ho rock pit. Timber will be harvested using an estimated 95% ground based equipment and 5% cable harvest systems. There will be an estimated 5.3 mmbf total timber removed with this proposal. The elevation of this sale ranges from 850 to 1,050 feet.

Unit	Proposal	RMZ/WMZ	Unstable Slope	Existing Road	Sale	Leave Tree	Harvest
	Acres	Acres	Acres	Acres	Acres	Clump Acres	Acres
	gross			within unit			
Unit 1	34	12	0.250	0	22	0	22
Unit 2	103	26	0	1	76	3	73
<b>Totals</b>	<b>137</b>	<b>38</b>	<b>0</b>	<b>1</b>	<b>98</b>	<b>3</b>	<b>95</b>

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

Unit	Age	Species Composition
1	Origin: 1927 83 years Old	<b>Overstory:</b> Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple. <b>Understory:</b> sword fern, salal, vine maple, oxalis
2	Origin: 1923 87 years Old	<b>Overstory:</b> Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple. <b>Understory:</b> sword fern, salal, vine maple, oxalis

*Pre Harvest Condition:*

Unit 1- This unit has one canopy layer of approximately 80% Douglas-fir, 18% western hemlock and 2% western red cedar. Except along RMZ's where some hemlock, western redcedar, bigleaf maple and red alder can be found. Understory species composition is 80% Sword fern, 10% Salal, 5% Vine Maple, and 5% Oxalis.

Unit 2- This unit has a multi-layer canopy, approximately 60% Douglas-fir, 35% western hemlock, and 5% western redcedar as the dominant species, some pockets of suppressed mid story western redcedar can be found in the northern portion of Unit 2. There is a thick under/mid story canopy of natural western hemlock throughout the middle 1/3 of the FMU due to the widely spaced distribution of trees in this area. Understory species composition is 80% Sword fern, 10% Salal, 5% Vine Maple, and 5% Oxalis.

*Type of Harvest:* This proposal is a variable retention harvest of 95 net harvest acres.

Overall unit objectives:

- 1) Produce revenue for the State Forest Board Trust (01) and Common School Trust (03) through the production of saw logs and pulp material.
- 2) Provide for wildlife and riparian habitat by developing vertical stand structure and age class distribution in the future stand.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		872	.5	
Reconstruction				
Abandonment				
Bridge Install/Replace				
Culvert Install/Replace (fish)				
Culvert Install/Replace (no fish)				

12. Location of 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 timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description:

A portion of Unit 1 is located in Section 31 of Township 9 North, Range 04 West, W.M.

A portion of Units 1 and 2 are located in Section 36 of Township 9 North, Range 05 West, W.M

A portion of Unit 2 is located in Section 25 of Township 9 North, Range 05 West, W.M.

The Gung Ho Rock Pit is located in Section 36 of Township 9 North, Range 05 West, W.M.

b. Distance and direction from nearest town (include road names):

Proposal is located approximately 14 miles west of Longview, via State Route 4, to Mill Creek Road to E-1000 road. Continue on E-1000 road approximately 1 mile turn left on the E-2000, continue on the E-2000 road until the intersection of the E-2900. Proceed on the E-2900 for approximately 1 mile Unit 1 is on the right. To reach Unit 2 continue .25 miles, turn right on the E-2920, unit two is adjacent to the road after .5 mile.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
ABERNATHY	39,560	137
Sub-basin #	Sub-basin Acres	Proposal Acres
21	1,630	78
19	1,530	59

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under "SEPA Center" for a broader landscape perspective.)

The following tables are an estimated summary of past and future activities on Department of Natural Resources managed land and privately managed land in the Abernathy WAU (information is based on Forest Practices applications that have been approved in the last seven years as of February 16, 2009 compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source for this information only provided the acreage at the WAU level. Approximately 54.8 percent of the land managed by the Department in the Abernathy WAU is covered with vegetation greater than 25 years old.

Abernathy WAU	Acres within WAU	Acres of Even Aged Harvest within the last 7 years	Acres of Uneven Aged Harvest within the last 7 years	Acres of Salvage Harvest within the last 7 years	Proposed Even-Aged Harvest in the Future	Proposed Uneven-Aged Harvest in the Future
DNR Managed Land	21,348	629	78	0	200	400
Private Managed Land	18,057	1,266	213	4	Unknown	Unknown
Other	155	155	0	0	Unknown	Unknown
Total	39,560	2,050	291	4	200	400

Within the WAU, approximately 60-75 percent of DNR managed land will be managed for timber production while the remaining will be managed as riparian zones, leave tree clumps, unstable slope areas, or special habitats. These practices will

ensure that this landscape will contain more diversity and structure than current forest stands, and that there will be sufficient habitat to support wildlife species.

Although the associated sub-basin drainages in this proposal are dominated by forestland, private residences frequent the valley bottoms a few miles north of the Columbia River. Several private residences occur adjacent to the main watercourses along the lower portions of the associated Abernathy WAU, specifically along Mill Creek. This proposal will maintain the site in productive forestland, as well as protecting existing forest structure within riparian zones and leave tree clumps.

The Department of Natural Resources has a multi-species Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service concerning threatened and endangered species and their habitats. The HCP requires the Department to manage landscapes to provide and sustain long-term habitat in exchange for an Incidental Take Permit. This agreement identifies specific strategies the department implements to mitigate for potential, landscape cumulative effects related to individual management activities. The applicable HCP strategies and mitigation measures incorporated into this proposal are as follows:

- Retaining Riparian Management Zones (RMZs) averaging 180 feet wide along three type 3 streams and a minimum 100 feet wide along the six type 4 streams, measured from the outer edge of 100 year floodplains. RMZs will be retained to protect water quality, stream bank integrity, stream temperatures, and provide down woody debris. RMZs will be managed to develop older forest characteristics that, in combination with other strategies, will help support older forest dependant wildlife populations.
- Evaluating the proposal for potential slope instability, and excluding harvest activities from approximately 0.25 acres that exhibited indicators of potentially unstable slopes. This reduces the risk of mass wasting, which also contributes to protecting water quality.
- Retaining a minimum of 8 trees per acre (greater than 10 inches Diameter at Breast Height) clumped and scattered throughout the units to provide legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, protection of sensitive areas, and large diameter trees. In combination, these features will provide elements of older forest habitat characteristics within the new plantation.
- Analyzing, designing, and constructing roads to minimize affects on the environment. Well designed roads reduce slope failures, erosion, and improve water quality. Regular maintenance schedules will ensure sediment is minimized, and water drainage is maintained within the WAU.
- An Equipment Limitation Zone (ELZ), a 30 foot wide strip from the ordinary high water mark, on all type 5 streams located within and adjacent to the proposed units will minimize the possibility sediment delivery and loss of stream function.
- Protection of all known occupied Marbled Murrelet habitat and all modeled habitat on a landscape level within coastal ownership blocks. This proposal is not located in occupied or modeled habitat. Modeled habitat will not be harvested, which will provide an increase in older forest condition as these stands continue to develop. Many of the above strategies also contribute to an increase in future older forest condition which is needed by Marbled Murrelets for their habitat.

After harvest, tree seedlings will be planted to reforest the site, some natural regeneration is also expected to occur. Understory vegetation will be disturbed and/or reduced within the proposed harvest area as a result of timber felling, bucking, yarding and site preparation activities as needed. Site preparation following harvest for the proposal area may result in reduction of growth and/or discoloration of understory vegetation for a year or two, following treatment. Most of the vegetation will re-establish within 2 – 3 years.

To the Southeast the Abernathy WAU 303(d) waters were identified from data taken in 1998. The map, dated 2008, provided by DOE, at their web site (<http://apps.ecy.wa.gov/wqawa2008/viewer.htm>), provides a listing of streams within this WAU that meet 303 (d) listing. The 303 (d) stream that is in the Abernathy WAU is still listed as a TMDL water, however due to distance from the proposal area (approximately 1.5 miles Southwest) and mitigation measures in this proposal, there should be no impact to listed water.

## B. ENVIRONMENTAL ELEMENTS

### 1. Earth

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

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

Unit 1 slopes can be defined by approximately 40% that are steep and 60% that are rolling.

Unit 2 slopes can be defined by approximately 5% that are steep, 55% that are hilly and 40% that are rolling.

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

The Abernathy WAU contains a variety of landforms ranging from the Columbia River bottom lands at sea level to ridge tops reaching approximately 2,600 feet in elevation. Abernathy Creek is the main drainage in this WAU and is located approximately 40 miles inland from the ocean. Slopes range from 0% to 90% with the flatter slopes generally being in the bottoms, somewhat moderate slopes in the middle elevations of the drainage, and turning to very steep slopes in the upper reaches of the drainage. Rainfall averages 70 to 90 inches per year. The Forest Vegetation Zone is western hemlock with the major timber types being Douglas-fir, western hemlock and red alder, all of various age classes, although the majority of stands are less than 80-years-old. Sub-basins 21 and 29 are in the western half of the Abernathy WAU and drain into Mill Creek. Elevation range is 500 to 1,000 feet.

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

This proposal varies slightly from the general description in B.1.a.1 because the flatter slopes are not generally in the bottoms, many of the flat areas occur in the upland. Otherwise this proposal conforms to the general descriptions for the sub-basins.

c. What is the steepest slope on the site (approximate percent slope)?

- d. *Thinning:* Pre-commercial and commercial thinning potential will be assessed for the regeneration units in 10 to 15 years and 25 to 35 years, respectively. Thinning will be done as needed to meet desired density, stocking, species diversity, and growth.

*Roads:* Road maintenance assessments will be conducted annually and may include periodic ditch and culvert cleanout, and road grading as necessary to minimize erosion and failures. Construction, reconstruction, and abandonment are associated with forest management activities.

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Landscape plan:

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Wildlife report:

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Other specialist report(s):

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Rock pit plan:

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

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Unit	Proposal	RMZ/WMZ	Unstable Slope	Existing Road	Sale	Leave Tree	Harvest
	Acres	Acres	Acres	Acres	Acres	Clump Acres	Acres
	<i>gross</i>			<i>within unit</i>			
Unit 1	34	12	0.250	0	22	0	22
Unit 2	103	26	0	1	76	3	73
<b>Totals</b>	<b>137</b>	<b>38</b>	<b>0</b>	<b>1</b>	<b>98</b>	<b>3</b>	<b>95</b>

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

Unit	Age	Species Composition
1	Orgin: 1927 83 years Old	<b>Overstory:</b> Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple. <b>Understory:</b> sword fern, salal, vine maple, oxalis
2	Orgin: 1923 87 years Old	<b>Overstory:</b> Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple. <b>Understory:</b> sword fern, salal, vine maple, oxalis

*Pre Harvest Condition:*

Unit 1- This unit has one canopy layer of approximately 80% Douglas-fir, 18% western hemlock and 2% western red cedar. Except along RMZ's where some hemlock, western redcedar, bigleaf maple and red alder can be found. Understory species composition is 80% Sword fern, 10% Salal, 5% Vine Maple, and 5% Oxalis.

Unit 2- This unit has a multi-layer canopy, approximately 60% Douglas-fir, 35% western hemlock, and 5% western redcedar as the dominant species, some pockets of suppressed mid-story western redcedar can be found in the northern portion of Unit 2. There is a thick under/mid-story canopy of natural western hemlock throughout the middle 1/3 of the FMU due to the widely spaced distribution of trees in this area. Understory species composition is 80% Sword fern, 10% Salal, 5% Vine Maple, and 5% Oxalis.

*Type of Harvest:* This proposal is a variable retention harvest of 95 net harvest acres.

c. What is the steepest slope on the site (approximate percent slope)?

Approximately 65%

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 prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres
2439	SILT LOAM	8-30	26
6638	SILT LOAM	5-30	26
2438	SILT LOAM	1-8	24
2440	SILT LOAM	30-65	12
6639	SILT LOAM	30-65	10
		<b>Total</b>	<b>98</b>

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

1) *Surface indications:*

A DNR geologist remotely reviewed the site and found portions of Unit 1 were part of an ancient deep-seated landslide. These portions were not located on the toe of the landslide, nor were they located on areas with signs of instability. A geologist visited the site to identify any potentially unstable areas. No areas were found to be Forest Practice rule defined features or have potential hazard for public safety or resource damage. Within the proposal the RMZ also captures areas showing evidence of past shallow landslides as mentioned above. To identify these we have used the best resources, tools, and readily available science to remove known “areas of geologic concern within the harvest unit.”

One small shallow slope failure in the north central portion of unit 1 has occurred within the proposal area and was visited by the geologist. The landslide is located in the riparian mangment zone and protected by leave trees, this area is not within the harvest unit. The dimensions of this failure are approximately 50 feet long by 25 feet wide. This failure seems to be a recent occurrence; the estimated period in which this occurred would be between 3-8 years previous.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*

No  Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

A large portion of this sub-basin contains an ancient deep-seated landslide. There is one shallow landslide in the sub basin which is described in B-1-d-1

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*

No  Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

*Associated management activity:*

There are no known failures within this sub-basin that have been associated with timber harvest activites or roads.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*

No  Yes, describe similarities between the conditions and activities on these sites:

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

The small shallow slope failure discussed in B-1-d-1 has been protected by leave trees as well as the RMZ encapsulating the remaining portion.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.  
*Approx. acreage new roads: .5 Approx. acreage new landings: 0 Fill source: Native material*

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

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 3% (This includes running surface of roads as well as proposed landings).

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:  
*(Include protection measures for minimizing compaction or rutting.)*

Erosion control and reduction measures are addressed in the sale layout and harvest system design.

- The RMZs will function to protect streams from sediment delivery.
- Harvested areas will be replanted with native tree species to reestablish root bound soils.
- Roads will be constructed with cross-drains and ditchouts to ensure drainage onto stable forest floors.
- New road construction will be rocked if timber will be hauled Sept-May.

- The proposal will be harvested utilizing ground-based harvesting and cable harvesting methods with lead end suspension to reduce soil disturbance.
- Skid trails with defined rutting will be water barred post harvest.
- Shovel logging will be restricted to slopes less than 40%.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Small amounts of engine exhaust from logging and road construction equipment and dust from vehicle traffic on roads will be emitted. 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:

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 timber sale map available at DNR region office, or forest practice application base maps.) **Yes.**

a) Downstream water bodies: **Mill Creek, Columbia River, 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)
Unnamed Stream	3	3	180
Unnamed Stream	4	6	100
Unnamed Stream	5	6	N/A

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

Riparian buffers will remain after harvest to protect water quality and provide thermal cover on type 3 and 4 streams. RMZs will have no harvesting within in the buffers. Leave trees were placed around portions of type 5 streams for protection. Type 5 streams will also be protected by a 30-foot Equipment Limitation Zone.

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

No  Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)

Description (include culverts):

Trees will be felled away from all streams. Trees may be cut in RMZs for safety or operational needs, but will be left in place to provide large woody debris functions in the riparian area.

Tailhold cables may be strung through the type 3 and type 4 RMZs, however, no timber will be yarded through them. Timber harvest may occur as close as 180 feet (required average RMZ width) to the type 3 streams. Timber harvest may occur as close as 100 feet (required minimum RMZ width) to all type 4 streams in the proposal area.

Road maintenance will occur on roads across type 3 streams.

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 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.

No  Yes, type and volume:

This proposal could introduce small amounts of sediment into the streams associated with this proposal during wet weather within or adjacent to the proposal area as a result of road building and harvest

- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Yes. Generally, the high potential areas associated with erosion or mass wasting are located on convergent slopes of 65% or greater and often involve unstable soils and/or steep headwalls. Some past failures have entered streams in small amounts. With the mitigating measures to be implemented, this proposal is not expected to contribute sediment to surface waters. See questions B.1.c, B.1.d, B.1.f, B.1.h, and B.3.9.

- 8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?

No  Yes, describe changes and possible causes:

During the winters of 1996, 2007, and 2009, suspected 100-year precipitation events occurred. The storms set rainfall and flood level records in Southwest Washington and Northwestern Oregon. The events caused some shallow mass-wasting to stream channels. The full extent and long-term impacts across the WAU from these storms is not known due to varying ownerships.

- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?

No  Yes, explain:

This proposal, during wet weather, could introduce small amounts of sediment into the streams adjacent to the proposal area as a result of road building and harvest operation activity. The erosion control measures and operation procedures outlined in B.1.f and B.1.h are expected to minimize any sediment delivery.

- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)? Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?

No  Yes, describe:

The Abernathy WAU averages 2.7 road miles per square mile. Road mileages for the sub-basins are similar to the WAU mileages.

- 11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.

No  Yes, approximate percent of WAU in significant ROS zone.

Approximate percent of sub-basin(s):

- 12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?

No  Yes, describe observations:

Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. However, in the winters of 2007 and 2009, two suspected 100-year precipitation events occurred. The event caused some shallow mass-wasting events. Some stream channels were altered in this event due to extremely high stream flows with accompanying sediment loads and possibly large woody debris delivery. Some changes have been observed within the Abernathy WAU.

- 14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

Peak flow rates may increase slightly due to reduced transpiration and canopy interception rates during the time of low flow. Recovery of peak flow rates will return to present conditions as the reforested units mature. However, the location of the units, the size of the units, and the fact there has been moderate logging in this area over the past ten years, all contribute to reducing peak flow issues.

- 15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?

No  Yes, possible impacts:

- 16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

Policies or procedures in place to minimize possible effects of peak flow event:

- Type 3 and 4 no harvest RMZs to protect stream banks from erosion.
- The proposal's harvest units are less than 100 acres to minimize impacts to watershed hydrology.
- Allowing green-up (regenerated stands that are either 4½ feet tall or 5 years of age) of adjacent stands to minimize impacts to watershed hydrology.
- See B.1.d.5. and B.1.h for further protection measures

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No.

- 2) 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.**

- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*  
 No  Yes, describe:

a) *Note protection measures, if any.*

**No specific protection measures were identified as necessary to protect these resources beyond those described in B.1.d.5. and B.1.h.**

c. Water Runoff (including storm water):

- 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.

**Storm water runoff from roads and intercepted subsurface flow will be collected by roadside ditches and diverted onto the forest floor to allow infiltration. Ditch-outs and cross drain culverts will be placed to disconnect the ditch water to prevent water runoff from entering stream channels.**

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

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

a) *Note protection measures, if any.*

**Harvest units have been designed to minimize harvest activity over or adjacent to type 5 streams. A 30-foot Equipment Limitation Zone will be enforced in accordance with current Forest Practices rules.**

- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:  
*(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)*

**See surface water, ground water, and water runoff sections above, questions B.1.h., B.3.a.1.c, B.3.a.16, and B.3.c.2.a.**

4. Plants

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

deciduous tree: alder, maple, aspen, cottonwood, western larch, birch, other:  
evergreen tree: Douglas fir, grand fir, Pacific silver fir, ponderosa pine, lodgepole pine,  
western hemlock, mountain hemlock, Englemann spruce, Sitka spruce,  
red cedar, yellow cedar, other:  
shrubs: huckleberry, salmonberry, salal, other: Oregon grape, vine maple, oxalis  
grass  
pasture  
crop or grain  
wet soil plants: cattail, buttercup, bullrush, skunk cabbage, devil's club, other:  
water plants: water lily, eelgrass, milfoil, other:  
other types of vegetation: sword fern, lady fern, moss, lichens, miscellaneous forbs  
plant communities of concern:

- b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

**All conifer and hardwood trees will be removed as part of this harvest proposal, except the wildlife leave trees, green recruitment trees and the vegetation within the RMZs. Understory vegetation will be disturbed and/or reduced within the proposed harvest area as a result of timber felling, bucking, yarding and site preparations operations. Most of the vegetation will re-establish within 2 – 3 years after forestry activities are complete.**

- 1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")*

**Unit 1: To the north is an 83-year-old Douglas-fir stand. To the east is 24-year-old Douglas-fir and alder plantation. To the south is a 9-year-old Douglas-fir plantation. To the west is a 12-year-old Douglas-fir plantation and a rock pit.**

**Unit 2: To the north, south and west is an 87-year-old western hemlock and Douglas-fir stand. To the east is a 7-year-old white pine, Douglas-fir, and western hemlock stand.**

- 2) *Retention tree plan:*

**A combination of Douglas-fir, western redcedar, and western hemlock were left for green tree retention and snag recruitment. Reserve tree numbers were based on leaving eight trees per acre. Trees were left individually but mostly in clumps. This type of leave tree pattern is conducive to a safe harvest**

operation and allows for the distribution of wildlife trees throughout the proposal. When selecting wildlife trees, the highest preference was given to trees having form defects that may be desirable for birds, the largest trees, and the most windfirm species. The region biologist consulted, on site, as to the best wildlife trees to be left.

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

None found in database search.

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

Retention tree clumps are identified across the harvest area. Some clumps were selected for their species diversity of native flora. These clumps will provide a local seed source for native overstory and understory species. Some natural regeneration of native species will occur on site after harvest. Wildlife trees were left in areas to protect snags, large down logs, advanced regeneration, type 5 streams, and potentially unstable slopes. Trees with defects such as split or broken tops, dominant crowns, large diameters and large limbs were favored as leave trees to enhance wildlife potential.

In addition, the region biologist was consulted on the leave tree selection in these units. She selected some trees with special limb structure along the western edge of unit 2.

5. Animal

- a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, pigeon, other: owls, Marbled Murrelet  
 mammals: deer, bear, elk, beaver, other:  
 fish: bass, salmon, trout, herring, shellfish, other:  
 unique habitats: talus slopes, caves, cliffs, oak woodlands, balds, mineral springs

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

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	75542	SPOTTED OWL: Site:863-CAMERON CREEK	THREATENED	ENDANGERED
2	18260	SPOTTED OWL: Site:880-ELOCHOMAN RIVER	THREATENED	ENDANGERED
2	18260	SPOTTED OWL: Site:863-CAMERON CREEK	THREATENED	ENDANGERED

This proposal is located within Status 3 Spotted Owl Circle Sites 863 and 880, but is entirely in an area designated as "nonhabitat" as per the 2006 Settlement Agreement. The Federal Listing Status on these sites is Threatened and the State Listing Status is Endangered. This proposal is not within owl habitat, the best 70 site center, or NRF and Dispersal habitat thus the HCP northern spotted owl conservation strategy does not identify this area within its recovery strategy and does not apply to this activity.

There is a marbled murrelet occupied stand approximately 2.79 miles to the southwest of the proposal area. There is also a stand of modeled, unoccupied marbled murrelet habitat adjacent to the proposal area. A Department biologist verified that the edge of the proposed harvest units did not overlap the modeled habitat on the ground.

- c. Is the site part of a migration route? If so, explain.  
Pacific flyway Other migration route: Explain if any boxes checked:

This proposal is located in the Columbia River flyway, which is part of the Pacific flyway. While migrating through Pacific Northwest forests, many Neotropical birds are closely associated with riparian areas, cliffs, snags, and structurally unique trees. Riparian areas and special habitats are protected through implementation of the Department's Habitat Conservation Plan. Migratory waterfowl also use the Columbia River flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl.

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

By designing this sale to comply with the department's HCP, both wildlife and wildlife habitat will be preserved and enhanced. The unit design is also conducive to ungulate feeding patterns. Scattered and clumped leave trees allow for feeding, roosting, nesting, and areas for Neotropical migratory birds to use. Well engineered and constructed roads reduce potential water quality impacts for down-stream fish populations. Grass seeding exposed soil aids water quality and provides forage. Large diameter leave trees will enhance the wildlife habitat value of the future stand.

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

Riparian habitat

- No Harvest RMZ buffers on type 3 and 4 streams to provide the following:
  - Maintaining or restoring freshwater habitat for salmonid species
  - Contributing to the conservation of other species that are dependent upon aquatic and riparian areas.
- This is accomplished by identifying riparian and wetland areas and ensuring that management activities within those areas adequately protect riparian function.
- Riparian function can be viewed from both societal and ecological perspectives. From a societal perspective, riparian function includes the production of commodities and other services for human benefit. Salmon, wildlife, and timber are examples of the commodities provided by riparian ecosystems. The delivery of high quality water, flood control, and recreation are examples of services provided by riparian ecosystems. From an ecological perspective, riparian function can be viewed as providing habitat for numerous plant and animal species including clean water, shade,

large woody debris and detrital nutrients for salmon habitat, damp soil and logs for terrestrial amphibian habitat, snags for cavity nesting birds, etc.

**Upland habitat**

- A minimum of 8 leave trees per acre were left clumped and scattered to provide additional structure in the regenerated stand.

**Marbled Murrelets**

- The proposal area was evaluated for habitat protection or other marbled murrelet mitigation opportunities. Leave tree areas were located near the unoccupied modeled habitat adjacent to the proposal in consultation with the Department's biologists. No other specific protection or mitigation was needed due to the location of this sale in relation to areas known to be occupied by marbled murrelets.

**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.

**Not Applicable.**

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

**Not Applicable.**

- 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:

**Not Applicable.**

**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.

**Minimal hazards incidental to operation of heavy machinery such as the risk of fire or small amounts of oil and other lubricants may be accidentally discharged as a result of heavy equipment use.**

- 1) Describe special emergency services that might be required.

**There are not any special emergency services required at this time.**

- 2) Proposed measures to reduce or control environmental health hazards, if any:

**The cessation of operations may occur during periods of time when the risk of fire is increased. Fire tools and equipment will be kept on site during fire season. Pump trucks and/or pump trailers will be required on site during fire season. In the event of a lubricant spill the purchaser will contact the Department of Natural Resources and the Department of Ecology. No oil or lubricants will be disposed of on site. A hazmat spill kit will be required on site during all operations.**

- 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 long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

**Log trucks will use forest roads, county roads, and State Route 4. This is normal activity for this area and is consistent with existing traffic. Noise will be increased during daylight hours generated from the operation of machinery and power tools.**

- 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? (Site includes the complete proposal, e.g. rock pits and access roads.)

**These state lands are managed for timber production by the Department of Natural Resources.**

- b. Has the site been used for agriculture? If so, describe.

**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?  
**Forestry.**
- f. What is the current comprehensive plan designation of the site?  
**Forest Land.**
- 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 an "environmentally sensitive" area? 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:  
**None.**
- l. Proposed measures to ensure the proposal are compatible with existing and projected land uses and plans, if any:  
**This proposal is consistent with current landscape objectives. There is no change to the existing land use, and no impacts from adjacent land uses on this proposal.**

**9. Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.  
**None.**
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.  
**None.**
- 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 principle exterior building material(s) proposed?  
**Not applicable.**
- b. What views in the immediate vicinity would be altered or obstructed?  
**Views in the immediate area will be temporarily altered by the removal of trees. This site is not part of any views from communities or public corridors.**
  - 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*  
 No  Yes, viewing location:
  - 2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*  
 No  Yes, scenic corridor name:
  - 3) *How will this proposal affect any views described in 1) or 2) above?*  
**Not applicable.**
- c. 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?

**Not applicable.**

- 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?

**There is no designated recreation on the proposal area. However, hunting, hiking, horseback riding, mountain biking, mushroom and berry picking, and other informal outdoor recreation activities may occur on the proposal area.**

- b. Would the proposed project displace any existing recreational uses? If so, describe:

**Informal recreational activities will be displaced for the short-term during periods of active logging.**

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

**No proposed measures are necessary because informal recreation will only be displaced for the short-term and then will resume.**

## 13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

**No.**

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

**None.**

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

*(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)*

**This proposal was reviewed for archeological/historic resources using DNR's Planning and Tracking database and USGS and GLO maps. In the event that any unknown archaeological resources are encountered, ground disturbing activities would be halted and a Department of Natural Resources archaeologist will be contacted to survey the site and develop a Site Protection Plan. The Department's Inadvertent Discovery Plan is available at the Region office or at <http://www.dnr.wa.gov/BusinessPermits/Topics/AppraisalPackets/Pages/Home.aspx>.**

## 14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

**SR 4 to Mill Creek to forest roads. For further direction please see vicinity map located at region office.**

- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

**No.**

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

**No, the sale area is approximately 14 miles west from the nearest transit stop in Longview, WA.**

- c. How many parking spaces would the completed project have? How many would the project eliminate?

**None.**

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

**Some new forest roads may be constructed and some existing forest roads will be improved. See A.11.c for details.**

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

**This proposal expands the network of Department of Natural Resources' forest roads in the area.**

- e. Will the project 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? If known, indicate when peak volumes would occur.

During harvest, 25 to 30 vehicle trips per day to the sale area may occur. This will take place in three to four month intervals. Upon completion of harvest activities, traffic levels will revert back to previous levels.

g. 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, 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. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

**None.**

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.

Completed by: <sup>For</sup> Larry Leach Mary Robertson Unit Forester Date: 2/07/2011  
Title

Reviewed by: Marcus A. Johnson PSM Date: 2/8/11  
Title

Comments: \_\_\_\_\_