



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wooley Grade
Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,655,585.12	\$105,038.28	\$1,760,623.40
		Project Work:	(\$227,930.00)
		Advertised Value:	\$1,532,693.40



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wooley Grade
Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Timber Description

Location: Sections 11, 12 of T3N R9W, W.M., Tillamook County, Oregon.

Stand Stocking: 100%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	25	0	95
Western Hemlock / Fir	18	0	95
Alder (Red)	19	0	90

Volume by Grade	2S	3S & 4S 6"-11"	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	4,459	666	0	0	0	0	5,125
Western Hemlock / Fir	561	158	0	0	0	0	719
Alder (Red)	0	0	74	107	345	40	566
Total	5,020	824	74	107	345	40	6,410

Comments: Pond Values Used: September 2019
Region: Astoria, Forest Grove, and Tillamook

Western Red Cedar and Other Cedars Stumpage Price = Pond Value – Logging Cost
 $\$926/\text{MBF} - \$381.19/\text{MBF} = \$544.81/\text{MBF}$

Sitka Spruce = Pond Value – Logging Cost
 $\$509/\text{MBF} - \$381.19/\text{MBF} = \$127.81/\text{MBF}$

Pulp (Conifer and Hardwood) Price = \$ 2.50/ Ton

BRAND AND PAINT ALLOWANCE = \$2.00/ MBF

FUEL COST ALLOWANCE = \$3.00/ Gallon

HAULING COST ALLOWANCE

Hauling cost equivalent to \$950 daily truck cost

Other Costs with Profit and Risk to be added:

TOTAL Other Costs with profit and Risk to be added = \$0

Other Costs with No Profit and Risk Added:

Machine Cleaning: \$1,000/machine x 2 machines x 1 seasons = \$2,000

Slash piling and sorting (Cable Ground): \$5/ac x 97ac. = \$485

Heliport Construction: \$500

Ditch Cleaning and Bank Sluff Removal :

Mobilization: three times – dump truck w/ tilt bed & small excavator: $\$890 \times 3 = \$2,670$

Small excavator (Cat 312 or equivalent): 20 hours @ \$135/ hour = \$2,700

Dump truck: 20 hours @ \$90/ hour = \$1,800

TOTAL Other Costs no Profit and Risk added = \$10,155

ROAD MAINTENANCE:

Spot Rocking: $20\text{cy}/\text{MMBF}/\text{mile} \times 6.410 \text{ MMBF} \times \$23/\text{cy} \times 6.3 \text{ miles} / 6,410 \text{ MBF} = \$2.90/\text{MBF}$

Interim Grading: $\$1,150/\text{mile} \times 6.3 \text{ miles} \times 1 \text{ times} / 6,410 \text{ MBF} = \$1.13/\text{MBF}$

Final Maintenance Grading: $\$1,500 \times 6.3 \text{ miles} / 6,410 \text{ MBF} = \$1.47/\text{MBF}$

Final Maintenance Compaction: $\$950/\text{mile} \times 2.3 \text{ miles} / 6410 \text{ MBF} = \$0.34/\text{MBF}$



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wooley Grade
Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Logging Conditions

Combination#: 1	Douglas - Fir	100.00%
	Western Hemlock / Fir	100.00%
	Alder (Red)	100.00%
Logging System:	Cable: Large Tower >=70	Process: Harvester Head Delimbing
yarding distance:	Long (1,500 ft)	downhill yarding: No
tree size:	Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF	
loads / day:	7.5	bd. ft / load: 4500
cost / mbf:	\$236.46	
machines:	Log Loader (A)	
	Forwarder	
	Harvester	
	Tower Yarder (Large)	



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Wooley Grade Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Logging Costs

Operating Seasons: 2.00	Profit Risk: 10%
Project Costs: \$227,930.00	Other Costs (P/R): \$0.00
Slash Disposal: \$0.00	Other Costs: \$10,155.00

Miles of Road

Road Maintenance: \$5.84

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$95.00	3.0	4.5
Western Hemlock / Fir	\$95.00	2.0	4.2
Alder (Red)	\$95.00	1.0	3.0



Timber Sale Appraisal
Wooley Grade
Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Brand & Paint	Other	Total
Douglas - Fir									
\$236.46	\$6.13	\$1.37	\$99.75	\$0.00	\$34.37	\$0.00	\$2.00	\$1.58	\$381.66
Western Hemlock / Fir									
\$236.46	\$6.13	\$1.37	\$99.75	\$0.00	\$34.37	\$0.00	\$2.00	\$1.58	\$381.66
Alder (Red)									
\$236.46	\$6.42	\$1.37	\$104.50	\$0.00	\$34.88	\$0.00	\$2.00	\$1.58	\$387.21

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$681.31	\$299.65	\$0.00
Western Hemlock / Fir	\$0.00	\$548.39	\$166.73	\$0.00
Alder (Red)	\$0.00	\$572.79	\$185.58	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wooley Grade
Sale TL-341-2020-WOO315-01

District: Tillamook

Date: July 30, 2019

Summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00
Western Hemlock / Fir	0	\$0.00	\$0.00
Alder (Red)	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,125	\$299.65	\$1,535,706.25
Western Hemlock / Fir	719	\$166.73	\$119,878.87
Alder (Red)	566	\$185.58	\$105,038.28

Gross Timber Sale Value

Recovery: \$1,760,623.40

Prepared By: Haakon Smith

Phone: 503-815-7045



PROJECT SUMMARY SHEET

Sale: Wooley Grade

IMPROVEMENT

Point	A to B	345+00	stations =	\$137,122.64
Point	C to D	26+80	stations =	\$39,271.81
Point	E to F	19+80	stations =	\$12,181.98
SUBTOTAL IMPROVEMENT				\$188,576.43

RECONSTRUCTION

Point	C to D	13+50	stations =	\$20,776.09
SUBTOTAL RECONSTRUCTION				\$20,776.09

SPECIAL PROJECTS

Brush	12.0	miles of road	\$12,600.00
SUBTOTAL SPECIAL PROJECTS			\$12,600.00

MOVE IN **\$5,977.48**

GRAND TOTAL **\$227,930.00**

Sale:		Wooley Grade		Road:		A to B																																																																																																																																																															
Construction -	0+00 0.00	stations miles	Improvement -	345+00 6.53	stations miles	Reconstruction -	0+00 0.00	stations miles																																																																																																																																																													
<p>IMPROVEMENT: CLEARING AND GRUBBING -</p> <p>Scattering 0.160 acres @ \$1,275.00 per acre = \$204.00</p> <p>TOTAL CLEARING AND GRUBBING \$204.00</p> <p>IMPROVEMENT: EXCAVATION -</p> <p>Remove piled waste 50 cy. @ \$2.00 per c.y. = \$100.00</p> <p>TOTAL EXCAVATION \$100.00</p> <p>IMPROVEMENT: ENDHAUL -</p> <p>Remove piled waste 50 cy. @ \$3.35 per c.y. = \$167.50</p> <p>Spread & compact 50 cy. @ \$0.50 per c.y. = \$25.00</p> <p>TOTAL ENDHAUL \$192.50</p> <p>CULVERTS - MATERIALS & INSTALLATION</p> <table border="0"> <tr> <td><u>Culverts</u></td> <td>275</td> <td>LF of 18"</td> <td>\$5,500.00</td> <td>70</td> <td>LF of 24"</td> <td>\$2,170.00</td> </tr> <tr> <td><u>Culvert Stakes & Markers</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>25</td> <td>markers</td> <td>\$200.00</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="6"></td> <td>TOTAL CULVERTS</td> <td>\$7,870.00</td> </tr> </table> <p>ROCK</p> <table border="0"> <tr> <td>0+00 to 81+80</td> <td>1,840</td> <td>cy. of</td> <td>Crushed</td> <td>@</td> <td>\$22.06</td> <td>per c.y. =</td> <td>\$40,590.40</td> </tr> <tr> <td>81+80 to 134+60</td> <td>1,870</td> <td>cy. of</td> <td>Crushed</td> <td>@</td> <td>\$22.80</td> <td>per c.y. =</td> <td>\$42,636.00</td> </tr> <tr> <td>286+40 to 345+00</td> <td>690</td> <td>cy. of</td> <td>Crushed</td> <td>@</td> <td>\$25.83</td> <td>per c.y. =</td> <td>\$17,822.70</td> </tr> <tr> <td>Shoulder Fill 83+30</td> <td>20</td> <td>cy. of</td> <td>Pit-Run</td> <td>@</td> <td>\$20.11</td> <td>per c.y. =</td> <td>\$402.20</td> </tr> <tr> <td>Spot Rock 134+60-286+40</td> <td>350</td> <td>cy. of</td> <td>Crushed</td> <td>@</td> <td>\$24.22</td> <td>per c.y. =</td> <td>\$8,477.00</td> </tr> <tr> <td>Energy Dissipator All New Pipes</td> <td>50</td> <td>cy. of</td> <td>Pit-Run</td> <td>@</td> <td>\$20.03</td> <td>per c.y. =</td> <td>\$1,001.50</td> </tr> <tr> <td>Rock Ditch Filters 9+60</td> <td>10</td> <td>cy. of</td> <td>Drain Rock</td> <td>@</td> <td>\$29.80</td> <td>per c.y. =</td> <td>\$298.00</td> </tr> <tr> <td>Culvert Bedding / Backfill All New Pipes</td> <td>100</td> <td>cy. of</td> <td>Crushed</td> <td>@</td> <td>\$21.07</td> <td>per c.y. =</td> <td>\$2,107.00</td> </tr> <tr> <td colspan="6"></td> <td>TOTAL ROCK</td> <td>\$113,334.80</td> </tr> </table> <p>SPECIAL PROJECTS</p> <table border="0"> <tr> <td>Construct sediment catch basin at 9+30 -</td> <td>1.00</td> <td>@</td> <td>\$60.00</td> <td></td> <td>\$60.00</td> </tr> <tr> <td>Grade and shape road -</td> <td>345.00</td> <td>stations @</td> <td>\$22.00</td> <td>per station</td> <td>\$7,590.00</td> </tr> <tr> <td>Grade berm off of shoulder -</td> <td>50.00</td> <td>stations @</td> <td>\$11.00</td> <td>per station</td> <td>\$550.00</td> </tr> <tr> <td>Roll subgrade w/ vibratory roller prior to rocking -</td> <td>345.00</td> <td>stations @</td> <td>\$17.50</td> <td>per station</td> <td>\$6,037.50</td> </tr> <tr> <td>Remove culverts from state lands</td> <td>6.00</td> <td>@</td> <td>\$847.00</td> <td>total</td> <td>\$847.00</td> </tr> <tr> <td>Grass seed and fertilize -</td> <td>0.54</td> <td>acres @</td> <td>\$280.00</td> <td>per acre</td> <td>\$151.20</td> </tr> <tr> <td>Mulching -</td> <td>0.238</td> <td>acres @</td> <td>\$780.00</td> <td>per acre</td> <td>\$185.64</td> </tr> <tr> <td colspan="5"></td> <td>TOTAL SPECIAL PROJECTS</td> <td>\$15,421.34</td> </tr> <tr> <td colspan="5"></td> <td>GRAND TOTAL</td> <td>\$137,122.64</td> </tr> </table>									<u>Culverts</u>	275	LF of 18"	\$5,500.00	70	LF of 24"	\$2,170.00	<u>Culvert Stakes & Markers</u>								25	markers	\$200.00										TOTAL CULVERTS	\$7,870.00	0+00 to 81+80	1,840	cy. of	Crushed	@	\$22.06	per c.y. =	\$40,590.40	81+80 to 134+60	1,870	cy. of	Crushed	@	\$22.80	per c.y. =	\$42,636.00	286+40 to 345+00	690	cy. of	Crushed	@	\$25.83	per c.y. =	\$17,822.70	Shoulder Fill 83+30	20	cy. of	Pit-Run	@	\$20.11	per c.y. =	\$402.20	Spot Rock 134+60-286+40	350	cy. of	Crushed	@	\$24.22	per c.y. =	\$8,477.00	Energy Dissipator All New Pipes	50	cy. of	Pit-Run	@	\$20.03	per c.y. =	\$1,001.50	Rock Ditch Filters 9+60	10	cy. of	Drain Rock	@	\$29.80	per c.y. =	\$298.00	Culvert Bedding / Backfill All New Pipes	100	cy. of	Crushed	@	\$21.07	per c.y. =	\$2,107.00							TOTAL ROCK	\$113,334.80	Construct sediment catch basin at 9+30 -	1.00	@	\$60.00		\$60.00	Grade and shape road -	345.00	stations @	\$22.00	per station	\$7,590.00	Grade berm off of shoulder -	50.00	stations @	\$11.00	per station	\$550.00	Roll subgrade w/ vibratory roller prior to rocking -	345.00	stations @	\$17.50	per station	\$6,037.50	Remove culverts from state lands	6.00	@	\$847.00	total	\$847.00	Grass seed and fertilize -	0.54	acres @	\$280.00	per acre	\$151.20	Mulching -	0.238	acres @	\$780.00	per acre	\$185.64						TOTAL SPECIAL PROJECTS	\$15,421.34						GRAND TOTAL	\$137,122.64
<u>Culverts</u>	275	LF of 18"	\$5,500.00	70	LF of 24"	\$2,170.00																																																																																																																																																															
<u>Culvert Stakes & Markers</u>																																																																																																																																																																					
	25	markers	\$200.00																																																																																																																																																																		
						TOTAL CULVERTS	\$7,870.00																																																																																																																																																														
0+00 to 81+80	1,840	cy. of	Crushed	@	\$22.06	per c.y. =	\$40,590.40																																																																																																																																																														
81+80 to 134+60	1,870	cy. of	Crushed	@	\$22.80	per c.y. =	\$42,636.00																																																																																																																																																														
286+40 to 345+00	690	cy. of	Crushed	@	\$25.83	per c.y. =	\$17,822.70																																																																																																																																																														
Shoulder Fill 83+30	20	cy. of	Pit-Run	@	\$20.11	per c.y. =	\$402.20																																																																																																																																																														
Spot Rock 134+60-286+40	350	cy. of	Crushed	@	\$24.22	per c.y. =	\$8,477.00																																																																																																																																																														
Energy Dissipator All New Pipes	50	cy. of	Pit-Run	@	\$20.03	per c.y. =	\$1,001.50																																																																																																																																																														
Rock Ditch Filters 9+60	10	cy. of	Drain Rock	@	\$29.80	per c.y. =	\$298.00																																																																																																																																																														
Culvert Bedding / Backfill All New Pipes	100	cy. of	Crushed	@	\$21.07	per c.y. =	\$2,107.00																																																																																																																																																														
						TOTAL ROCK	\$113,334.80																																																																																																																																																														
Construct sediment catch basin at 9+30 -	1.00	@	\$60.00		\$60.00																																																																																																																																																																
Grade and shape road -	345.00	stations @	\$22.00	per station	\$7,590.00																																																																																																																																																																
Grade berm off of shoulder -	50.00	stations @	\$11.00	per station	\$550.00																																																																																																																																																																
Roll subgrade w/ vibratory roller prior to rocking -	345.00	stations @	\$17.50	per station	\$6,037.50																																																																																																																																																																
Remove culverts from state lands	6.00	@	\$847.00	total	\$847.00																																																																																																																																																																
Grass seed and fertilize -	0.54	acres @	\$280.00	per acre	\$151.20																																																																																																																																																																
Mulching -	0.238	acres @	\$780.00	per acre	\$185.64																																																																																																																																																																
					TOTAL SPECIAL PROJECTS	\$15,421.34																																																																																																																																																															
					GRAND TOTAL	\$137,122.64																																																																																																																																																															

SUMMARY OF CONSTRUCTION COST

Sale:			Wooley Grade			Road:			C to D		
<u>Construction -</u>		<u>0+00</u>	stations	<u>Improvement -</u>		<u>26+80</u>	stations	<u>Reconstruction -</u>		<u>13+50</u>	stations
		0.00	miles			0.51	miles			0.26	miles

IMPROVEMENT: CLEARING AND GRUBBING -										
Scattering	0.180	acres	@	\$1,275.00	per acre =		\$229.50			
TOTAL CLEARING AND GRUBBING										\$229.50
RECONSTRUCTION: CLEARING AND GRUBBING -										
Scattering	0.870	acres	@	\$1,275.00	per acre =		\$1,109.25			
TOTAL CLEARING AND GRUBBING										\$1,109.25

ROCK										
0+00 to	40+30	2,160	cy. of	Crushed	@	\$24.99	per c.y.=	\$53,978.40		
Landing Rock	40+30	80	cy. of	Crushed	@	\$25.33	per c.y.=	\$2,026.40		
Junction Rock	0+00	20	cy. of	Crushed	@	\$24.65	per c.y.=	\$493.00		
								TOTAL ROCK		\$56,497.80

SPECIAL PROJECTS										
ReConstruct turnaround before landing -	1.00	@		\$75.00				\$75.00		
ReConstruct landing at Point D -	1.00	@		\$250.00				\$250.00		
Grade and shape road -	40.30	stations @		\$25.00	per station			\$1,007.50		
Roll subgrade w/ vibratory roller prior to rocking -	40.30	stations @		\$17.50	per station			\$705.25		
Grass seed and fertilize -	0.62	acres @		\$280.00	per acre			\$173.60		
				TOTAL SPECIAL PROJECTS						\$2,211.35
				GRAND TOTAL						\$60,047.90

SUMMARY OF CONSTRUCTION COST

Sale:

Wooley Grade

Road:

E to F

Construction -	0+00	stations	Improvement -	19+80	stations	Reconstruction -	0+00	stations
	0.00	miles		0.38	miles		0.00	miles

IMPROVEMENT: CLEARING AND GRUBBING -

Scattering	0.140	acres @	\$1,275.00	per acre =	\$178.50	
TOTAL CLEARING AND GRUBBING						\$178.50

IMPROVEMENT: EXCAVATION -

Clean out pump chance -	150	cy. @	\$2.00	per c.y. =	\$300.00	
TOTAL EXCAVATION						\$300.00

IMPROVEMENT: ENDHAUL -

Clean out pump chance -	10+50	150	cy. @	\$3.07	per c.y. =	\$460.50
Spread & compact		150	cy. @	\$0.50	per c.y. =	\$75.00
TOTAL ENDHAUL						\$535.50

CULVERTS - MATERIALS & INSTALLATION

Culverts

50	LF of 30"	\$2,050.00
<u>Culvert Stakes & Markers</u>		
2	markers	\$16.00

40 LF of 24" \$1,240.00

TOTAL CULVERTS \$3,306.00

ROCK

0+00 to 1+00	50	cy. of	Crushed	@	\$25.58	per c.y. =	\$1,279.00
10+00 to 11+00	60	cy. of	Crushed	@	\$25.75	per c.y. =	\$1,545.00
13+80 to 14+80	60	cy. of	Crushed	@	\$25.82	per c.y. =	\$1,549.20
Culvert Bedding / Backfill 10+50, 14+30	20	cy. of	Crushed	@	\$26.25	per c.y. =	\$525.00
Energy Dissipator 10+50, 14+30	20	cy. of	Pit-Run	@	\$23.61	per c.y. =	\$472.20
Fill Armor 10+50	10	cy. of	Pit-Run	@	\$23.57	per c.y. =	\$235.70
Junction Rock 0+00	20	cy. of	Crushed	@	\$25.58	per c.y. =	\$511.60
TOTAL ROCK							\$6,117.70

SPECIAL PROJECTS

Construct waste area -	1.00	hour @	\$180.00	per hour	\$180.00
Construct sediment catch basins at 10+00 & 11+00 -	2.00	@	\$60.00	each	\$120.00
Grade and shape road -	19.80	stations @	\$22.00	per station	\$435.60
Roll subgrade w/ vibratory roller prior to rocking -	19.80	stations @	\$17.50	per station	\$346.50
Remove culverts from state lands -	1.00	@	\$518.40	total	\$518.40
Grass seed and fertilize -	0.26	acres @	\$280.00	per acre	\$72.80
Mulching -	0.091	acres @	\$780.00	per acre	\$70.98
TOTAL SPECIAL PROJECTS					\$1,744.28

GRAND TOTAL \$12,181.98

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	1.5" Purchased	Location:	Commercial Source
Sale:	Wooley Grade	Road:	4870 c.y.
Swell:	N/A	Stockpile:	c.y.
Shrinkage	N/A	Total Truck Loads:	4870 c.y.
Drill Pct.:	0%	In Place Total:	N/A

Purchase Price: \$13.00 /cu.yd. x 4870 cu.yds. = \$63,310.00

Subtotal \$63,310.00

Move in Roller and Compactor (Split Between 1.5" & 3")	0.5	@	\$844.70	=	\$422.35
Move in Grader (Split Between 1.5" & 3")	0.5	@	\$1,246.67	=	\$623.34
Move in Trucks	2	@	\$320.65	=	\$641.30

Subtotal \$1,686.99

Base Cost= \$13.35 Per Cu.Yd.

TOTAL PRODUCTION COSTS	\$64,996.99
-------------------------------	--------------------

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
A to B 0 8180 (Crushed)	5.51	3.20	13.35	22.06	1840	\$40,590.40
A to B 8180 13460 (Crushed)	6.25	3.20	13.35	22.80	1870	\$42,636.00
A to B 28640 34500 (Crushed)	9.28	3.20	13.35	25.83	690	\$17,822.70
A to B Spot Rock (Crushed)	7.67	3.20	13.35	24.22	350	\$8,477.00
A to B Culvert Bedding / Backfill (Crushed)	5.72	2.00	13.35	21.07	100	\$2,107.00
E to F Culvert Bedding / Backfill (Crushed)	10.90	2.00	13.35	26.25	20	\$525.00
				Total C.Y.	4870	Sub Total
						\$112,158.10

TOTAL ROCKING COSTS	\$112,158.10
----------------------------	---------------------

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit:	3" Purchased	Location:	Commercial Source
Sale:	Wooley Grade	Road:	2450 c.y.
Swell:	N/A	Stockpile:	c.y.
Shrinkage	N/A	Total Truck Loads:	2450 c.y.
Drill Pct.:	0%	In Place Total:	N/A

Purchase Price: \$11.00 /cu.yd. x 2450 cu.yds. = \$26,950.00

Subtotal \$26,950.00

Move in Roller and Compactor (Split Between 1.5" & 3")	0.5	@	\$844.70	=	\$422.35
Move in Grader (Split Between 1.5" & 3")	0.5	@	\$1,246.67	=	\$623.34
Move in Trucks	2	@	\$320.65	=	\$641.30

Subtotal \$1,686.99

Base Cost= \$11.69 Per Cu.Yd.

TOTAL PRODUCTION COSTS	\$28,636.99
------------------------	-------------

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
C to D 0 4030 (Crushed)	10.10	3.20	11.69	24.99	2160	\$53,978.40
C to D Landing Rock (Crushed)	10.44	3.20	11.69	25.33	80	\$2,026.40
C to D Junction Rock (Crushed)	9.76	3.20	11.69	24.65	20	\$493.00
E to F 0 100 (Crushed)	10.69	3.20	11.69	25.58	50	\$1,279.00
E to F 1000 1100 (Crushed)	10.86	3.20	11.69	25.75	60	\$1,545.00
E to F 1380 1480 (Crushed)	10.93	3.20	11.69	25.82	60	\$1,549.20
E to F Junction Rock (Crushed)	10.69	3.20	11.69	25.58	20	\$511.60
				Total C.Y.	2450	Sub Total \$61,382.60

TOTAL ROCKING COSTS	\$61,382.60
---------------------	-------------

Pit:	Pit-Run Purchased	Location:	Commercial Source
Sale:	Wooley Grade	Road:	100 c.y.
Swell:	N/A	Stockpile:	c.y.
Shrinkage	N/A	Total Truck Loads:	100 c.y.
Drill Pct.:	0%	In Place Total:	N/A

Purchase Price: \$7.50 /cu.yd. x 100 cu.yds. = \$750.00

Subtotal	<u>\$750.00</u>
----------	-----------------

Move in Trucks	1	@	\$320.65	=	\$320.65
----------------	---	---	----------	---	----------

Subtotal	\$320.65
----------	----------

Base Cost=	\$10.71	Per Cu.Yd.	TOTAL PRODUCTION COSTS	\$1,070.65
------------	---------	------------	------------------------	------------

Road Segment	Haul Cost \$/cu.yd.	Proc Cost \$/cu.yd.	Base Cost. \$/cu.yd.	Cost \$/cu.yd.	Number Cu. Yds	ROCK COST
A to B Shoulder Fill (Pit-Run)	7.70	1.70	10.71	20.11	20	\$402.20
A to B Energy Dissipator (Pit-Run)	7.32	2.00	10.71	20.03	50	\$1,001.50
E to F Energy Dissipator (Pit-Run)	10.90	2.00	10.71	23.61	20	\$472.20
E to F Fill Armor (Pit-Run)	10.86	2.00	10.71	23.57	10	\$235.70
				Total C.Y.	100	Sub Total \$2,111.60

TOTAL ROCKING COSTS	\$2,111.60
---------------------	------------

Move-In Calculations for Project Work not Involving Rocking/Pit Work

Sale: **Wooley Grade**

LOWBOY HAUL (Round Trip)		
DIST. (mi)	ROADWAY	AVE SPEED (mph)
56.6	Pavement	30
6.4	Main Lines	7
6.8	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Move in Cost	Pilot Cars	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
1	Brush Cutter	\$1,047.20		\$4.00	0.00	0.00	0	\$0.00	\$1,047.20
1	Excavators (Med.)	\$1,295.19		\$35.50	0.00	0.00	0	\$0.00	\$1,295.19
1	Excavators (Large)	\$1,437.14	1	\$44.80	0.00	0.00	0	\$0.00	\$1,437.14
1	Tractors (D7)	\$1,550.34	2	\$11.30	0.00	0.00	0	\$0.00	\$1,550.34
2	Dump Truck (10 cy +)	\$647.61		\$2.85	0.00	0.00	0	\$0.00	\$647.61
					TOTAL MOVE-IN COSTS:				\$5,977.48



OREGON DEPARTMENT OF FORESTRY CRUISE REPORT *Wooley Grade*

1. Type of Sale

Regeneration harvest, Recovery

2. Legal Description

Sections 11, 12 of T3N R9W, W.M., Tillamook County, Oregon.

3. Sale Acreage

Sale acreage was determined by GPS and orthophotographs along with GIS.

	<u>ACRES</u>	
	<u>Gross</u>	<u>Net</u>
Area 1 (Modified Clear cut)	128	97

Gross Acres

Area within the Timber Sale Boundary signs

Net acres

Used for calculating the advertised volume.

Gross acres, less green tree retention, roads, Non-required thinning areas, and riparian areas classified as Special Stewardship in LMCS inside the sale boundary.

4. Cruising Procedures

A. Cruise Method

Area 1 was cruised on a 350' between plots and 700' between lines spacing.

The timber sale area was cruised using variable plot sampling. All conifers 8" DBH and greater and all hardwoods 10" DBH and greater were recorded on all plots. On every plot species, diameter (inch), height, form factor, and sawmill grade were recorded. Merchantable heights were recorded to 6" and 7" outside bark for conifers and hardwoods, respectively.

B. Plot size

Point of observation was 4.0'. Form factor was measured at 16.0'.

Area	BAF
1	46.94

C. Grading System

All trees were graded according to Columbia River Log Scaling and Grading Rules. Log lengths favored 40' lengths.

5. Computation Procedure

Plot data was entered into SuperAce for computation of basal area, advertised volume, volume summary, log stock table, and stand table for each species and type. Plots landing in riparian management areas or areas excluded from the timber sale harvest areas were removed from computation procedures.

Net sale acreage was used for volume calculation.

Cruise Statistics (Board Foot Volumes)			
Area	Number of Plots	SE (%)	CV (%)
1	18	11.2	40.4

6. Hidden Defect and Breakage

A 1% reduction was applied to conifers and a 2% reduction to hardwood volumes for hidden defect and breakage.

7. Timber Description

Area 1 is comprised primarily of Douglas-fir interspersed with Western Hemlock, small pockets of Red Alder exist near the riparian zones and the area also has a component of other conifer. The age of the stand is approximately 79 years old and 30 acres of the upper slope was thinned in the Rector Wrap sale, completed in January of 2000.

The stand is comprised of multiple merchantable species, please see the table below:

Sale Area	Species	DBH	Merchantable Bole Height (feet)	Merchantable top (inches inside bark)
1	Douglas-fir	25.5	105	5
1	Western Hemlock	18.4	72	5
1	Red Alder	19.3	74	6

Above data derived from Statistics (type) report using SuperAce 2008, developed by Atterbury consultants, Inc.

8. Cruiser /Dates

The timber sale area was cruised by the Tillamook District Marketing Unit in 2019.

9. Revenue Distribution

BOF 100%

Tax Code: 5601 – 100%

Deed Numbers: 70

10. Attachments

Volume Summary

Stand Table

Log Stock Tables

Logging Plan

11. Stand and Log Stock Tables Species Key

WH – Western hemlock take

DF – Douglas-fir take

SS – Sitka Spruce take

RA – Red alder take

BM – Big leaf maple take

OC – Other conifer

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT WOOLEY				DATE	9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
03N	09W	12	SALE	0100	97.00	14	83	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
PLOTS		TREES		TREES		TREES					
TOTAL		14		83		5.9					
CRUISE		13		81		6.2		9,200		.9	
DBH COUNT											
REFOREST											
COUNT		1		2		2.0					
BLANKS											
100 %											
STAND SUMMARY											
SAMPLE		TREES		AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE		DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR		60		58.5	25.5	105	41.1	207.9	53,696	53,370	10,437
R ALDER		11		18.1	19.3	74	8.4	36.9	5,953	5,953	1,396
WHEMLOCK		10		18.2	18.4	72	7.8	33.5	7,622	7,483	1,531
TOTAL		81		94.8	23.2	93	57.8	278.3	67,271	66,807	13,363
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF		SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		57.7		7.4	1,174	1,268	1,363				
R ALDER		53.6		16.9	315	379	443				
WHEMLOCK		96.3		32.0	648	953	1,258				
TOTAL		69.3		7.7	1,023	1,109	1,194		192	48	21
CL:	68.1 %	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		50.0		6.5	224	239	255				
R ALDER		42.0		13.3	75	87	98				
WHEMLOCK		87.8		29.2	128	181	234				
TOTAL		60.6		6.7	197	211	226		147	37	16
CL:	68.1 %	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		52.8		14.6	50	59	67				
R ALDER		204.3		56.6	8	18	28				
WHEMLOCK		279.9		77.5	4	18	32				
TOTAL		61.1		16.9	79	95	111		161	40	18
CL:	68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		53.7		14.9	177	208	239				
R ALDER		188.0		52.1	18	37	56				
WHEMLOCK		208.6		57.8	14	34	53				
TOTAL		30.7		8.5	255	278	302		40	10	4
CL:	68.1 %	COEFF		NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		66.1		18.3	43,602	53,370	63,139				
R ALDER		180.5		50.0	2,977	5,953	8,929				
WHEMLOCK		209.4		58.0	3,142	7,483	11,825				
TOTAL		40.5		11.2	59,314	66,807	74,299		70	18	8
CL:	68.1 %	COEFF		NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5		10	15	
DOUG FIR		60.3		16.7	8,692	10,436	12,181				
R ALDER		184.0		51.0	684	1,396	2,107				
WHEMLOCK		205.1		56.8	661	1,531	2,400				

TC TSTATS				STATISTICS				PAGE	2
				PROJECT WOOLEY				DATE	9/4/2019
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
03N	09W	12	SALE	0100	97.00	14	83	S	W
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	10	15
TOTAL		34.7	9.6	12,079	13,363	14,646	52	13	6

Stand Table Summary																	
Project WOOLEY																	
T03N R09W S12 T0100														T03N R09W S12 T0100			
Twp	Rge	Sec	Tract	Type				Acres		Plots	Sample Trees			Page:	1		
03N	09W	12	SALE	0100				97.00		14	81			Date:	09/04/2015		
Time: 3:01:08PM																	
S Spc	T	Sample		FF	Ht	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s			
		DBH	Trees	16'	Tot				Net Cu.Ft.	Net Bd.Ft.		Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
DF		13	1	85	87	3.759	3.46	7.52	14.7	55.0	3.16	111	413	306	108	40	
DF		15	1	85	87	2.823	3.46	5.65	18.3	70.0	2.94	103	395	285	100	38	
DF		16	1	86	94	2.481	3.46	4.96	23.5	95.0	3.33	117	471	323	113	46	
DF		18	2	86	96	3.921	6.93	7.84	29.0	107.5	6.49	228	843	629	221	82	
DF		19	3	87	100	5.279	10.39	10.56	33.7	135.0	10.14	356	1,425	984	345	138	
DF		20	2	87	100	3.176	6.93	6.35	37.2	135.0	6.73	236	858	653	229	83	
DF		21	1	85	108	1.440	3.46	2.88	42.0	150.0	3.47	121	432	336	117	42	
DF		23	1	88	118	1.201	3.46	2.40	54.4	225.0	3.73	131	540	361	127	52	
DF		24	3	87	137	3.308	10.39	9.93	47.9	214.4	13.54	475	2,128	1,313	461	206	
DF		25	3	89	130	3.049	10.39	9.15	52.6	241.1	13.72	482	2,206	1,331	467	214	
DF		27	3	89	145	2.614	10.39	7.84	72.2	381.1	16.13	566	2,989	1,565	549	290	
DF		28	9	89	154	7.292	31.18	24.31	70.2	369.0	48.66	1,708	8,969	4,720	1,656	870	
DF		29	2	88	151	1.511	6.93	4.53	81.6	421.7	10.54	370	1,911	1,023	359	185	
DF		30	9	90	154	6.352	31.18	21.17	80.7	429.3	48.70	1,709	9,091	4,724	1,658	882	
DF		31	1	90	132	.661	3.46	1.98	82.7	416.7	4.67	164	826	453	159	80	
DF		32	3	90	160	1.861	10.39	6.20	96.7	534.0	17.10	600	3,313	1,659	582	321	
DF		33	4	88	150	2.333	13.86	7.00	101.0	519.2	20.15	707	3,634	1,954	686	353	
DF		34	1	89	178	.550	3.46	2.20	97.9	565.0	6.13	215	1,242	595	209	120	
DF		35	5	89	169	2.593	17.32	9.33	108.8	617.2	28.94	1,016	5,761	2,807	985	559	
DF		36	1	89	160	.490	3.46	1.47	134.9	776.7	5.65	198	1,142	548	192	111	
DF		37	2	90	164	.928	6.93	2.78	141.4	810.0	11.23	394	2,255	1,089	382	219	
DF		38	2	89	181	.880	6.93	3.52	122.6	717.5	12.29	431	2,525	1,192	418	245	
DF		Totals	60	88	129	58.503	207.88	159.58	65.4	334.4	297.44	10,436	53,370	28,852	10,123	5,177	
WH		10	1	84	52	6.147	3.35	6.15	8.4	30.0	1.65	52	184	160	50	18	
WH		14	1	87	84	3.136	3.35	6.27	18.3	70.0	3.67	115	439	356	111	43	
WH		17	1	87	110	2.127	3.35	4.25	33.4	130.0	4.55	142	553	441	138	54	
WH		19	1	92	107	1.703	3.35	3.41	37.5	140.0	4.08	128	477	396	124	46	
WH		21	1	94	132	1.394	3.35	4.18	41.0	203.3	5.49	172	850	532	166	82	
WH		22	1	92	131	1.270	3.35	3.81	41.0	203.3	5.00	156	775	485	152	75	
WH		25	1	93	138	.984	3.35	2.95	61.5	316.7	5.80	181	934	563	176	91	
WH		33	1	94	135	.564	3.35	1.69	114.4	653.3	6.20	194	1,106	601	188	107	
WH		36	1	94	142	.474	3.35	1.42	137.9	766.7	6.28	196	1,091	609	190	106	
WH		37	1	94	149	.449	3.35	1.35	145.3	796.7	6.26	196	1,073	608	190	104	
WH		Totals	10	88	93	18.249	33.53	35.49	43.1	210.9	48.99	1,531	7,483	4,752	1,485	726	
RA		15	1	85	82	2.732	3.35	5.46	19.6	70.0	2.94	107	383	285	104	37	
RA		17	1	90	88	2.127	3.35	4.25	26.1	105.0	3.06	111	447	297	108	43	
RA		18	2	85	79	3.795	6.71	7.59	25.6	85.0	5.35	195	645	519	189	63	
RA		20	4	92	109	6.147	13.41	12.29	46.2	208.8	15.61	568	2,567	1,514	550	249	
RA		21	1	89	108	1.394	3.35	2.79	51.3	215.0	3.93	143	599	381	139	58	
RA		25	1	95	118	.984	3.35	1.97	77.4	390.0	4.19	152	767	406	148	74	
RA		26	1	92	105	.909	3.35	1.82	66.2	300.0	3.31	120	546	321	117	53	
RA		Totals	11	89	96	18.088	36.88	36.18	38.6	164.6	38.38	1,396	5,953	3,723	1,354	577	
Totals		81		88	116	94,840	278.29	231.24	57.8	288.9	384.81	13363	66,807	37,327	12,962	6,480	

TC TLOGSTVB				Log Stock Table - MBF Project: WOOLEY																	
T03N R09W S12 T0100										T03N R09W S12 T0100											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	1												
03N	09W	12	SALE	0100	97.00	14	81	Date	9/4/2019												
									Time	3:01:07PM											
Spp	T	S	So	Gr	Log	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
										2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		CO	2		32	51	5.3	49	.9									49			
DF		CO	2		34	55		55	1.1									55			
DF		CO	2		40	4,394	.4	4,377	84.5					292	420	936		1751	977		
DF		CO	3		18	9		9	.2					9							
DF		CO	3		20	3		3	.1					3							
DF		CO	3		27	4		4	.1					4							
DF		CO	3		28	4		4	.1			4									
DF		CO	3		29	4		4	.1				4								
DF		CO	3		30	10		10	.2					10							
DF		CO	3		31	5		5	.1			5									
DF		CO	3		32	20		20	.4					20							
DF		CO	3		33	6		6	.1				6								
DF		CO	3		35	5		5	.1			5									
DF		CO	3		37	11		11	.2			6	5								
DF		CO	3		40	529	2.2	518	10.0			54	167	244	16			36			
DF		CO	4		12	1		1	.0				1								
DF		CO	4		13	1		1	.0				1								
DF		CO	4		14	2		2	.0			2									
DF		CO	4		15	2		2	.0				2								
DF		CO	4		16	2		2	.0			2									
DF		CO	4		18	4		4	.1			2	2								
DF		CO	4		19	6		6	.1			6									
DF		CO	4		20	2		2	.0			2									
DF		CO	4		22	5		5	.1		5										
DF		CO	4		23	3		3	.1		3										
DF		CO	4		24	3		3	.1			3									
DF		CO	4		25	6		6	.1				6								
DF		CO	4		26	5		5	.1		5										
DF		CO	4		27	4		4	.1				4								
DF		CO	4		28	11		11	.2		11										
DF		CO	4		29	6		6	.1		6										
DF		CO	4		34	14		14	.3		10		5								
DF		CO	4		38	8		8	.1		8										
DF		CO	4		40	11	4.2	10	.2					10							
DF		Totals				5,208		5,177	79.9		47	91	204	291	303	435	936	1891	977		
RA		H	2		36	48		48	8.2								48				
RA		H	2		40	200		200	34.7					36	107	57					
RA		H	3		40	212		212	36.7					110		102					
RA		H	4		13	4		4	.6			4									
RA		H	4		14	4		4	.6			4									
RA		H	4		18	5		5	.9			5									
RA		H	4		26	6		6	1.1			6									
RA		H	4		34	7		7	1.3			7									
RA		H	4		35	5		5	.9			5									
RA		H	4		40	86		86	14.9			9	77								
RA		Totals				577		577	8.9			41	77	110	36	210	105				
WH		CO	2		40	579	2.3	566	77.9					81	28	193		75	188		
WH		CO	3		37	6		6	.8			6									
WH		CO	3		40	98		98	13.5			37		61							

TC TLOGSTVB				Log Stock Table - MBF Project: WOOLEY																
T03N R09W S12 T0100										T03N R09W S12 T0100										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page	2											
03N	09W	12	SALE	0100	97.00	14	81	Date	9/4/2019											
										Time	3:01:07PM									
S	So	Gr	Log	Gross	%	Net	%	Net Volume by Scaling Diameter in Inches												
Spp	T	rt	de	Len	MBF	Def	MBF	Spc	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
WH	CO	4	22	6			6	.8	6											
WH	CO	4	26	8			8	1.1	8											
WH	CO	4	29	18			18	2.5	18											
WH	CO	4	32	6			6	.8		6										
WH	CO	4	40	19			19	2.6	7	12										
WH Totals				739	1.8		726	11.2	38	18	43	61	81	28	193	75	188			
Total All Species				6,525			6,480	100.0	86	151	323	462	419	673	1234	1966	1166			

Wooley Grade

Area 1

Harvest Acres	Green Trees Needed	TPA (Cruise) trees 11" +		Acres in buffer beyond 100' from Type F	Acres in stream buffers	Acres in GTRA	Non-harvest Acres Other	Total Acres Non-harvest	Total trees Non-harvest			Disbursed Leave Trees and Existing Hard Snags Conifer	Class 1 & 2 Snags	Total reserve (green) trees
		Conifer	Hardwood						conifer	hardwood	total			
97.0	485.0	71	18	0	14.7	0	0	14.7	1044	132	1176		233	1409

*acres x SuperAce data

Gold Rush Green Tree Summary

Area	acres	green req	green have	extra		
1	97.0	485.0	1409	924	5	GT/Ac. Average Required
Total	97.0	485.0	1409	924	15	GT/Ac. Average Have



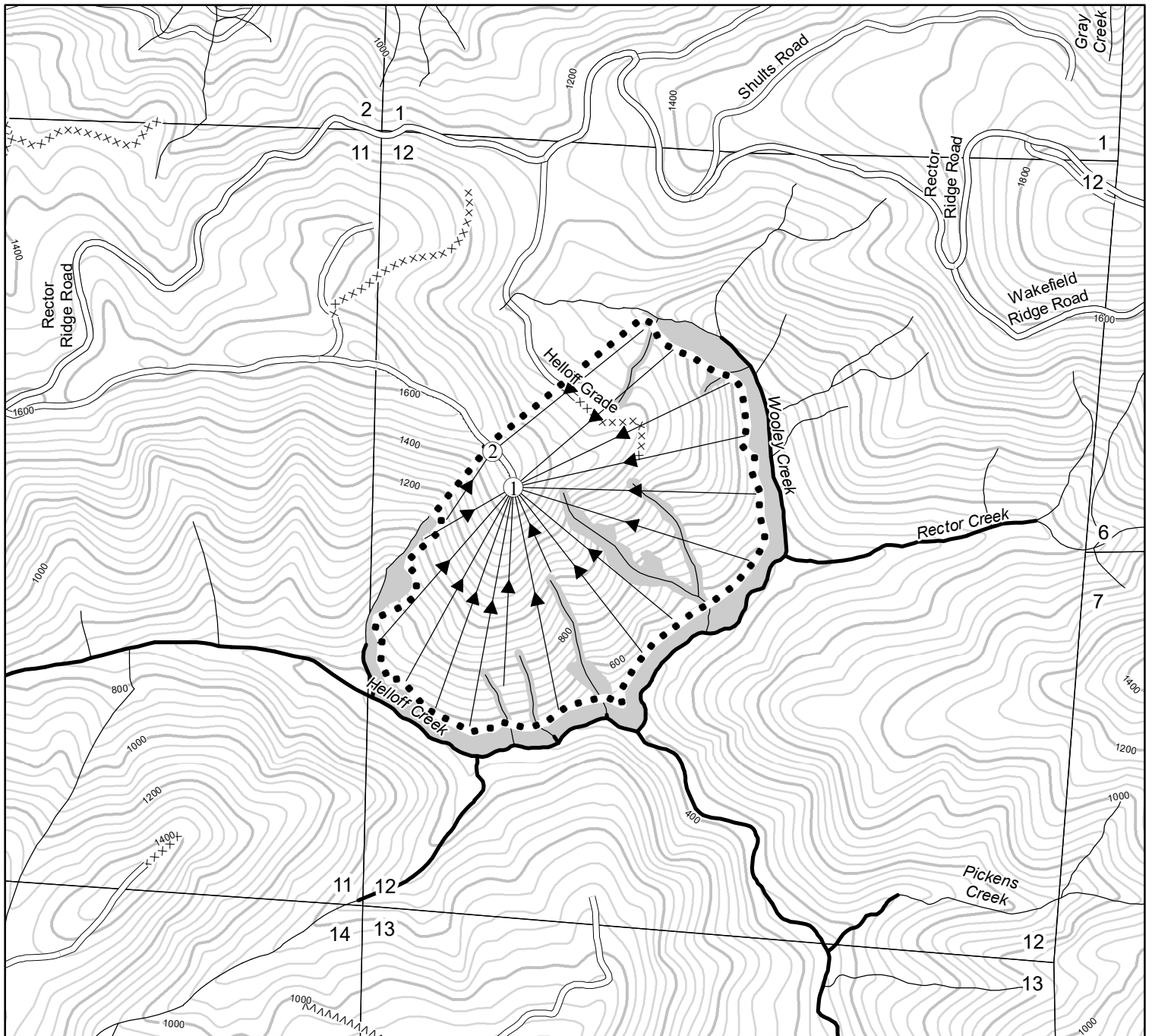
"STEWARDSHIP IN FORESTRY"

Wooley Grade

Volume Summary

Harvest Type				
97 acres				
SPECIES	Cruised Net	Cruised Net	Hidden	Net Sale
	MBF/ Acre	MBF	D&B	MBF
Douglas-fir	53	5177	1%	5125
Western Hemlock	7	726	1%	719
Red Alder	6	577	2%	566
Bigleaf Maple		0	1%	0
Sitka Spruce		0	2%	0
TOTAL	66.81	6480		6410

TOTAL SALE VOLUME			97	acres
SPECIES	Cruised Net (MBF)		Net Sale (MBF)	
Douglas-fir	5177		5125	
Western Hemlock	726		719	
Red Alder	577		566	
Bigleaf Maple	0		0	
Sitka Spruce	0		0	
TOTAL	6480		6410	



..... Timber Sale Boundary

— Surfaced Road

----- Unsurfaced Road

~~~~~ Abandoned road

xxxxxx Blocked road

— Type-F Stream

— Type-N Stream

— Cable Corridor

○ Cable Landing

■ Stream Buffer

□ Sections

Ⓢ Waste Area

— 200 Foot Contour Band

— 40 Foot Contour Band

## LOGGING PLAN

FOR TIMBER SALE CONTRACT #TL-341-2020-W00315-01

WOOLEY GRADE

PORTIONS OF SECTIONS 11 & 12, T3N, R9W, W.M.

TILLAMOOK COUNTY, OREGON

Tillamook District GIS

August, 2019

This product is for informational use and may not be suitable for legal, engineering, or surveying purposes.



APPROXIMATE NET ACRES

|       | TRACTOR | CABLE |
|-------|---------|-------|
| Total | 0       | 97    |

1:12,000

1 inch = 1,000 feet

