



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wiggle Worm
Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,594,200.12	\$0.00	\$1,594,200.12
		Project Work:	\$(127,510.00)
		Advertised Value:	\$1,466,690.12



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wiggle Worm
Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

timber description

Location: Portions of Sections 13 and 14, T1N, R6W, W.M., Tillamook County, Oregon.

Stand Stocking: 20%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	17	0	98

Volume by Grade	2S	3S	4S	Total
Douglas - Fir	2,154	1,229	230	3,613
Total	2,154	1,229	230	3,613



Timber Sale Appraisal Wiggle Worm Sale 341-13-42

"STEWARDSHIP IN FORESTRY"

District: Forest Grove

Date: April 11, 2013

comments: Pond Values Used: 1st Quarter Calendar Year 2013.

Western Hemlock and Other Conifers Stumpage Price = Pond Value
minus Logging Cost:
 $\$305.69/\text{MBF} = \$480/\text{MBF} - \$174.31/\text{MBF}$

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost:
 $\$825.69/\text{MBF} = \$1,000/\text{MBF} - \$174.31/\text{MBF}$

Red Alder and Other Hardwoods Stumpage Price = Pond Value minus
Logging Cost:
 $\$380.69/\text{MBF} = \$555/\text{MBF} - \$174.31/\text{MBF}$

SCALING COST ALLOWANCE = \$5.00/MBF

FUEL COST ALLOWANCE = \$4.00/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to \$780 daily truck cost.

Other Costs (with Profit & Risk to be added):
Brand and Paint: 3,613 MBF @ \$1/MBF = \$3,613
TOTAL Other Costs (with Profit & Risk to be added) = \$3,613

Other Costs (No Profit & Risk added):
Block/Waterbar Skid Roads: 15 hours @ \$110/hour = \$1,650
Pile Landing Slash and Sort Firewood: 10 hours @ \$110/hour =
\$1,100
Slash Treatment: Move-in & 40 acres @ \$200/acre = \$8,000
Equipment Cleaning: 4 machines @ \$1,000/machine = \$4,000
TOTAL Other Costs (No Profit & Risk added) = \$14,750

ROAD MAINTENANCE
Move-in: \$2,000
General Road Maintenance: 6.5 miles x \$1,000/mile = \$6,500
TOTAL: \$8,500 / 3,613 MBF = \$2.35/MBF



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wiggle Worm
Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

logging conditions

combination#:	1	Douglas - Fir	100.00%
yarding distance:	Medium (800 ft)	downhill yarding:	No
logging system:	Shovel	Process:	Stroke Delimber
tree size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
loads / day:	7.0	bd. ft / load:	4,000
cost / mbf:	\$51.37		
machines:	Stroke Delimber (B)		



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Wiggle Worm Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

logging costs

Operating Seasons:	2.00	Profit Risk:	15.00%
Project Costs:	\$127,510.00	Other Costs (P/R):	\$3,613.00
Slash Disposal:	\$0.00	Other Costs:	\$14,750.00

Miles of Road

Road Maintenance: \$2.35

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	\$0.00	2.0	4.0



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wiggle Worm
Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$51.37	\$2.40	\$2.43	\$86.48	\$1.00	\$21.55	\$0.00	\$5.00	\$4.08	\$174.31

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$615.55	\$441.24	\$0.00



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Wiggle Worm
Sale 341-13-42

District: Forest Grove

Date: April 11, 2013

summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,613	\$441.24	\$1,594,200.12

Gross Timber Sale Value

Recovery: \$1,594,200.12

Prepared by: Eric Foucht

Phone: 503-359-7473

TIMBER SALE SUMMARY

Wiggle Worm

341-13-42

1. **Location:** Portions of Sections 13 & 14, T1N, R6W, W.M., Tillamook County, Oregon.
2. **Type of Sale:** Modified clear cut, recovery, sealed bid auction.
3. **Revenue Distribution:** 100% BOF, Tillamook County, Tax Code 9-2.
4. **Sale Acreage:** Approximately 97 acres of modified clearcut. Acres were determined using ESRI Arcmap GIS software.
5. **Cruise:** The Timber Sale was cruised by ODF cruisers using variable radius plots. Volume estimates and plot data statistics were computed using SuperACE timber cruise software. For more information see the Cruise Report.
6. **Timber Description:** The Sale Area is an approximately 55 year old stand of Douglas-fir with minor amounts of, western hemlock and noble fir. The Douglas-fir DBH is about 17 inches. The average net volume per acre is around 38 MBF.

7. Volume Summary

SPECIES		GRADES			TOTAL
		2 SAW	3 SAW	4 SAW	
Douglas-fir	Cruise Volume (mbf)	2,198	1,254	235	3,687
	Hidden D&B (2%)	(44)	(25)	(5)	(74)
	NET TOTAL	2,154	1,229	230	3,613
	% of Total	60	34	6	

8. **Topography and Logging Method:** This sale area is 100% ground based yarding. The maximum yarding distance is approximately 400 feet horizontal distance. Slopes range from 10% to 35%.

9. **Access:** Roads to the Timber Sale Area are open all-weather roads. From the Forest Grove District Office, travel north 8.5 miles on Highway 8 to its junction with Highway 6 and turn left. Continue west on Highway 6 for 9.4 miles to its summit and turn left on the Beaverdam Road. Proceed south on the Beaverdam Road 6.5 miles to the west portion of the sale area.

10. **Projects:**

Project No. 1: Construct .15 miles and improve 7.25 miles of road	\$80,698.47
Project No. 2: 2.0 miles of road surfacing	\$35,427.12
Project No. 3: Grass Seeding and Fertilizing	\$549.41
Move in and equipment cleaning	\$8444.05
Total Credit for all Projects (rounded)	\$127,510

11. Other Costs:

Other Costs (with Profit and Risk)

Brand and Paint: 3,613 MBF @ \$1.00/MBF	\$3,613.00
---	------------

Total Other Costs with Profit and Risk	\$3,613.00
--	------------

Other Costs without Profit and Risk

Blocking/Waterbarring skid roads: 15 Hours @ \$110.00/hour	\$1,650.00
--	------------

Piling Landing Slash and firewood sort: 10hours @ \$110.00/hour	\$1,100.00
---	------------

Slash Treatment: Move in plus 40 acres @ \$200.00/ acre	\$8,000.00
---	------------

Equipment Cleaning: 4 machines @ \$1000/machine	\$4,000.00
---	------------

Total Other Costs (No P/R)	\$14,750.00
----------------------------	-------------

Total Other Costs	\$18,363.00
-------------------	-------------

PROJECT COST SUMMARY SHEET

Timber Sale: Wiggle Worm

Sale Number: 341-13-42

PROJECT NO. 1: ROAD CONSTRUCTION AND IMPROVEMENT

CONSTRUCTION

Road Segment	Length	Cost
<u>A to B</u>	<u>8+00</u>	<u>\$2,049.51</u>
	8+00 stations	
	0.15 miles	

SUBTOTAL CONSTRUCTION \$2,049.51

IMPROVEMENTS

Road Segment	Length	Cost
C to D	343+20	\$36,929.16
E to A	39+50	\$1,220.00
Point F	-	\$761.60
Point G	-	\$19,676.20
Point H	-	\$20,062.00
	382+70 stations	
	7.25 miles	

SUBTOTAL IMPROVEMENTS \$78,648.96

TOTAL PROJECT NO. 1 COST = \$80,698.47

PROJECT NO. 2: SURFACING

Road Segment	Amount	Type	Cost
C to D	3,502 cy	1 1/2" - 0	\$30,397.36
	48 cy	24" - 12"	\$416.64
E to A	224 cy	1 1/2" - 0	\$1,742.72
Point G	160 cy	1 1/2" - 0	\$936.00
	40 cy	3" - 0	\$234.00
	6 cy	6" - 0	\$35.10
	24 cy	24" - 12"	\$140.40
Point H	116 cy	1 1/2" - 0	\$769.08
	80 cy	3" - 0	\$530.40
	28 cy	6" - 0	\$185.64
	6 cy	24" - 12"	\$39.78
Total	4,002 cy	1 1/2" - 0	
	120 cy	3" - 0	
	34 cy	6" - 0	
	78 cy	24" - 12"	

TOTAL PROJECT NO. 2 COST = \$35,427.12

PROJECT NO. 3: GRASS SEED, FERTILIZE, & MULCH

Grass seed and fertilize areas of disturbed soil.	\$549.41
---	----------

TOTAL PROJECT NO. 3 COST = \$549.41

PROJECT NO. 4: BLOCK AND VACATE ROADS

Block, vacate and seed road.	\$2,385.82
------------------------------	------------

TOTAL PROJECT NO. 4 COST = \$2,385.82

MOVE IN & EQUIPMENT CLEANING \$8,444.05

TOTAL ALL PROJECTS \$127,504.86
TOTAL CREDITS \$127,510.00

SUMMARY OF CONSTRUCTION COST

Timber Sale:	Wiggle Worm	Timber Sale No.:	341-13-42
Road Segment:	A to B	Construction:	8+00 stations
			0.15 miles

PROJECT NO. 1

EXCAVATION

Clearing and Grubbing (Scatter)	0.92	acres @	\$980.00	per acre =	\$899.91
Balanced Road Construction	8.00	sta @	\$90.00	per sta =	\$720.00
Landing	1	ea @	\$200.00	per ea =	\$200.00
Grade, Ditch, and Roll	8.00	sta @	\$28.70	per sta =	\$229.60

PROJECT NO. 1 TOTAL COST = \$2,049.51

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.46	acres @	\$220.00	per acre =	\$101.01
---	------	---------	----------	------------	----------

PROJECT NO. 3 TOTAL COST = \$101.01

PROJECT NO. 4:

Grass seed and fertilize areas of disturbed soil.	8.00	sta @	\$7.04	per sta =	\$56.32
Construct Tank Traps	3.00	ea @	\$50.00	per ea =	\$150.00
Rip Road Surface	8.00	sta @	\$25.00	per sta =	\$200.00
Move in Excavator	1.00	ea @	\$3,958.99	per ea =	\$1,979.50

PROJECT NO. 4 TOTAL COST = \$2,385.82

TOTAL COST = \$4,536.33

SUMMARY OF CONSTRUCTION COST

Timber Sale: Wiggle Worm
Road Segment: C to D

Timber Sale No.: 341-13-42
Improvement: 343+20 stations
6.50 miles

PROJECT NO. 1

EXCAVATION

Clean or Establish Ditch and Endhaul Waste Materi	26.40	sta @	\$100.00	per sta =	\$2,640.00
Excavation & disposal of existing culvert at 77+40	1	hr @	\$125.00	per hr =	\$62.50
Haul fill material	12	cy @	\$4.88	per cy =	\$58.56
Compact fill with plate compactor	1	hr @	\$36.62	per hr =	\$36.62
Grade & Shape, Crowned W/ Ditch	343.20	sta @	\$15.50	per sta =	\$5,319.60
TOTAL EXCAVATION COSTS=					\$8,117.28

CULVERTS - MATERIALS & INSTALLATION

Culverts					
760 LF of 18"	\$15,200.00	360 LF of 24"	\$10,440.00		
Half Rounds					
30 LF of 21"	\$609.00				
Culvert Markers					
43 markers	\$430.00				
Additional Culvert Installation Cost					
Endhaul unsuitable material from fills			\$819.84		
Haul, load and place and compact suitable material for fills			\$1,013.04		
Culvert removed at 157+00 and reinstalled at 157+75 per ea =			\$300.00		
			\$2,132.88		
TOTAL CULVERT COSTS =					\$28,811.88

PROJECT NO. 1 TOTAL COST = \$36,929.16

PROJECT NO. 2:

SURFACING

	3	" deep =	20 cy/sta		
C to D	2,156	cy of	1 1/2" - 0	@	\$8.68 per cy = \$18,714.08
Culvert Surfacing (18)	864	cy of	1 1/2" - 0	@	\$8.68 per cy = \$7,499.52
Culvert Surfacing (15)	360	cy of	1 1/2" - 0	@	\$8.68 per cy = \$3,124.80
Culvert Bedding	122	cy of	1 1/2" - 0	@	\$8.68 per cy = \$1,058.96
Energy Dissipator	48	cy of	24" - 12"	@	\$8.68 per cy = \$416.64
Total =	3550				
	3502	cy of	1 1/2" - 0		\$8.68 per cy = \$30,397.36
	48	cy of	24" - 12"		\$8.68 per cy = \$416.64

PROJECT NO. 2 TOTAL COST = \$30,814.00

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.25 acres @	\$220.00	per acre =	\$55.00
Mulch	20.00 bales @	\$4.50	per bale =	\$90.00
Bio-Bags	40.00 bags @	\$5.00	per bag =	\$200.00

PROJECT NO. 3 TOTAL COST = \$345.00

TOTAL COST = \$68,088.16

SUMMARY OF CONSTRUCTION COST

Timber Sale: Wiggle Worm Timber Sale No.: 341-13-42
 Road Segment: E to A Improvement: 39+50 stations
0.75 miles

PROJECT NO. 1

CULVERTS - MATERIALS & INSTALLATION

Culverts
 60 LF of 18" \$1,200.00

Culvert Markers
 2 markers \$20.00

TOTAL CULVERT COSTS = \$1,220.00

PROJECT NO. 1 TOTAL COST = \$1,220.00

PROJECT NO. 2:

SURFACING 3 " deep = 20 cy/sta

Spot Rock 200 cy of 1 1/2" - 0 @ \$7.78 per cy = \$1,556.00

Culvert Surfacing 24 cy of 1 1/2" - 0 @ \$7.78 per cy = \$186.72

Total =
 224 cy of 1 1/2" - 0

PROJECT NO. 2 TOTAL COST = \$1,742.72

PROJECT NO. 3:

Mulch 4.00 bales @ \$4.50 per bale = \$18.00

PROJECT NO. 3 TOTAL COST = \$18.00

TOTAL COST = \$2,980.72

SUMMARY OF CONSTRUCTION COST

Timber Sale: Wiggle Worm
Point F

Timber Sale No. : 341-13-42

PROJECT NO. 1

CULVERTS - MATERIALS & INSTALLATION

Culverts
 30 LF of 18" \$600.00
 Culvert Markers
 1 markers \$10.00

TOTAL CULVERT COSTS = \$610.00

PROJECT NO. 1 TOTAL COST = \$610.00

PROJECT NO. 2:

SURFACING 8 " deep = 20 cy/sta

Culvert Surfacing 20 cy of 1 1/2" - 0 @ \$7.58 per cy = \$151.60

Total = 20 cy of 1 1/2" - 0

PROJECT NO. 2 TOTAL COST = \$761.60

PROJECT NO. 3:

Mulch 2.00 bales @ \$4.50 per bale = \$9.00

PROJECT NO. 3 TOTAL COST = \$9.00

TOTAL COST = \$770.60

SUMMARY OF CONSTRUCTION COST

Timber Sale: Wiggle Worm

Timber Sale No. : 341-13-42

Point G

Culvert No. 15

PROJECT NO. 1

CULVERTS - MATERIALS & INSTALLATION

Culvert					
62.00	LF of 137"x87" @	\$174.00	per ft=	\$10,788.00	
Band					
2	of 137" x 87" @	\$348.00	per ea =	\$696.00	
Additional Culvert Installation Cost					
Equipment, pump and labor			=	\$7,250.00	
Endhaul unsuitable material			=	\$397.20	
2	Lifting Lugs @	\$35.00	per ea =	\$70.00	
1	Freight @	\$475.00	per ea =	\$475.00	

PROJECT NO. 1 TOTAL COST = \$19,676.20

PROJECT NO. 2:

SURFACING	6	" deep =	40 cy/sta		
Base Rock	40	cy of	3" - 0	@	\$5.85 per cy = \$234.00
Surfacing Rock	40	cy of	1 1/2" - 0	@	\$5.85 per cy = \$234.00
Culvert Bedding	120	cy of	1 1/2" - 0	@	\$5.85 per cy = \$702.00
Plunge Pool Fill	6	cy of	6" - 0	@	\$5.85 per cy = \$35.10
Fill Armor	12	cy of	24" - 12"	@	\$5.85 per cy = \$70.20
Energy Dissipator	12	cy of	24" - 12"	@	\$5.85 per cy = \$70.20
Total =	230				
	160	cy of	1 1/2" - 0		\$5.85 per cy = \$936.00
	40	cy of	3" - 0		\$5.85 per cy = \$234.00
	6	cy of	6" - 0		\$5.85 per cy = \$35.10
	24	cy of	24" - 12"		\$5.85 per cy = \$140.40

PROJECT NO. 2 TOTAL COST = \$1,345.50

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.01 acres @	\$220.00 per acre =	\$2.20
Mulch	10.00 bales @	\$4.50 per bale =	\$45.00

PROJECT NO. 3 TOTAL COST = \$47.20

TOTAL COST = \$21,068.90

SUMMARY OF CONSTRUCTION COST

Timber Sale: Wiggle Worm

Timber Sale No.: 341-13-42

Point H

Culvert No. 30

PROJECT NO. 1

CULVERTS - MATERIALS & INSTALLATION

Culvert					
69	LF of 73"x55" @	\$101.00	per ft=	\$6,969.00	
Band					
2	of 73" x 55" @	\$202.00	per ea =	\$404.00	
Additional Culvert Installation Cost					
Equipment, pump and labor				=	\$10,800.00
Endhaul unsuitable material				=	\$1,324.00
2	Lifting Lugs @	\$35.00	per ea =	\$70.00	
1	Freight @	\$495.00	per ea =	\$495.00	

PROJECT NO. 1 TOTAL COST = \$20,062.00

PROJECT NO. 2:

SURFACING	3	" deep =	20 cy/sta			
Base Rock	80	cy of	3" - 0	@	\$6.63 per cy =	\$530.40
Surfaceing Rock	80	cy of	1 1/2" - 0	@	\$6.63 per cy =	\$530.40
Culvert Bedding	36	cy of	1 1/2" - 0	@	\$6.63 per cy =	\$238.68
Plunge Pool Fill	10	cy of	6" - 0"	@	\$6.63 per cy =	\$66.30
Culvert Seeding	18	cy of	6" - 0"	@	\$6.63 per cy =	\$119.34
Fill Armor	6	cy of	24" - 12"	@	\$6.63 per cy =	\$39.78
Total =	230					
	116	cy of	1 1/2" - 0		\$6.63 per cy =	\$769.08
	80	cy of	3" - 0		\$6.63 per cy =	\$530.40
	28	cy of	6" - 0		\$6.63 per cy =	\$185.64
	6	cy of	24" - 12"		\$6.63 per cy =	\$39.78

0.00

PROJECT NO. 2 TOTAL COST = \$1,524.90

PROJECT NO. 3:

Grass seed and fertilize areas of disturbed soil.	0.01 acres @	\$220.00 per acre =	\$2.20
Mulch	6.00 bales @	\$4.50 per bale =	\$27.00

PROJECT NO. 3 TOTAL COST = \$29.20

TOTAL COST = \$21,616.10

Move-In & Equipment Cleaning

Timber Sale: Wiggle Worm
Sale Number: 341-13-42

LOWBOY HAUL (One-way)		
DIST. (mi)	ROAD	AVE SPEED (mph)
6.0	Main Lines	7
1.0	Steep Grades	2

No.	EQUIPMENT DESCRIPTION	Equipment Cleaning	Base Cost	Woods Cost	Pilot Cars	Within			Within			Total Cost
						Move	Area	Mileage	Begin Mileage	End Mileage	Total Miles	
1	Graders		\$300.00	\$212.15			\$3.65	0.0	4.0	4.0	\$14.60	\$526.75
1	Loader (Med. & Large)		\$414.39	\$292.02	1		\$9.00	0.0	0.0	0.0	\$0.00	\$706.41
1	Rollers (smooth/grid) & Compactors		\$308.59	\$201.25			\$5.00	0.0	0.0	0.0	\$0.00	\$509.84
2	Excavators (Large)	\$2,000	\$932.27	\$668.32	1		\$44.80	0.0	4.0	4.0	\$358.40	\$3,958.99
1	Tractor (D8)	\$1,000	\$473.80	\$309.19	2		\$15.10	0.0	4.0	4.0	\$60.40	\$1,843.39
4	Dump Truck (10 cy +)		\$466.67	\$280.00			\$2.85	0.0	0.0	0.0	\$0.00	\$746.67
1	Water Truck (1500 Gal)		\$95.00	\$57.00			\$2.85	0.0	0.0	0.0	\$0.00	\$152.00
TOTAL MOVE-IN COSTS:												\$8,444.05

CRUISE REPORT
Wiggle Worm
341-13-42

1. LOCATION Portions of Sections 13 & 14, T1N, R6W, W.M., Tillamook County, Oregon.

2. SAMPLING METHOD:

The Sale Area was/were cruised in February of 2013 with 17 variable radius plots using a 40 BAF prism. Plots were laid out at 5 chain intervals on cruise lines spaced 7.5 chains apart. 99 trees were measured and graded. The sampling intensity was based on an assumption of a 50% Coefficient of Variation and a target 10% Sampling Error.

3. CRUISE RESULTS

The Super Ace-generated cruise statistics report indicates that the Coefficient of Variation was 32% on the Net Board Foot Volume. The cumulative sampling error of the cruise was 8.6% on the basal area and 8% on the Board Foot Volume with 99 trees measured and graded. These statistics meet or exceed the standards for ODF cruises on sales of this type. No additional plots were necessary.

4. TREE MEASUREMENT AND GRADING:

All sample trees were measured and graded following Columbia River Log Scale grade rules and favoring 40 foot segments.

- a) **Height Standards:** Total tree heights were measured to the nearest foot. Bole heights were calculated to a six inch top.
- b) **Diameter Standards:** Diameters were measured outside bark at breast height to the nearest inch.
- c) **Form Factors** were estimated to be 88% for each grade tree using a form point of 16 feet.

5. DATA PROCESSING

- a) **Volumes and Statistics,** Cruise volume estimates and sampling statistics, were derived using Super Ace 2008 cruise software.
- b) **Deductions:** Two percent of the volume was subtracted from the computed volumes to account for hidden defect and breakage.

6. Cruisers: The sale was cruised in 2013 by ODF cruisers Mark Savage and Joe Koch.

Prepared by:

ODF Forester

Date

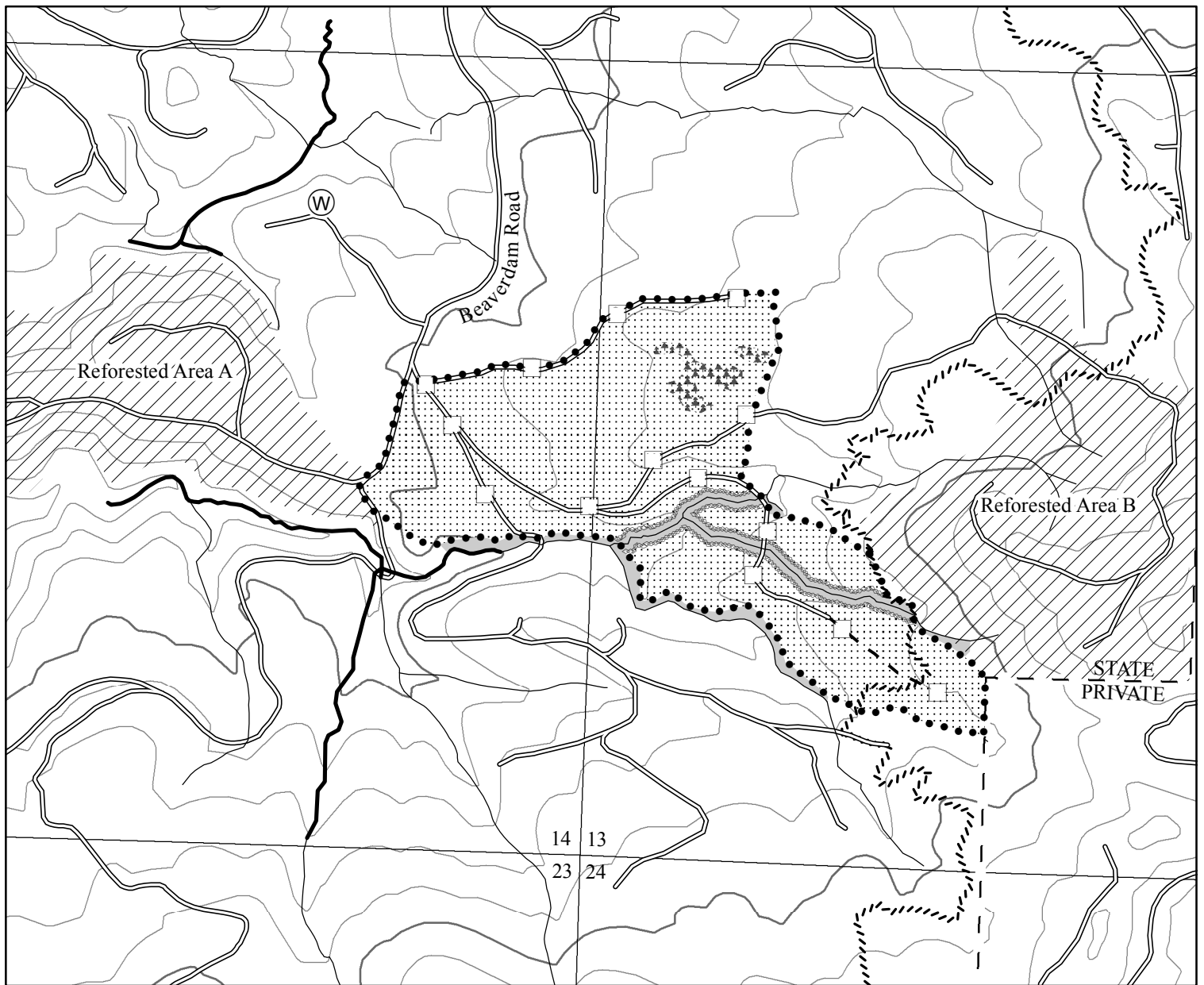
TC		PLOGSTVB		Log Stock Table - MBF															
T01N R06W S13 Ty00A1 97.00				Project:		WIGWORM										Page		1	
																Date		2/8/2013	
				Acres		97.00										Time		4:10:22PM	
Spp	S T	So Gr rt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches											
								2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF	T	2M	16	36		36	1.0								17	19			
DF	T	2M	18	35		35	1.0									35			
DF	T	2M	24	7		7	.2						7						
DF	T	2M	28	9		9	.3						9						
DF	T	2M	32	28		28	.8								28				
DF	T	2M	34	13		13	.4						13						
DF	T	2M	36	21		21	.6						21						
DF	T	2M	40	2,047		2,047	55.5						540	478	722	269	39		
DF	T	3M	12	27		27	.7								27				
DF	T	3M	16	16		16	.4						16						
DF	T	3M	28	7		7	.2				7								
DF	T	3M	30	5		5	.1			5									
DF	T	3M	32	172		172	4.7			66	96	10							
DF	T	3M	34	43		43	1.2			35	8								
DF	T	3M	36	70		70	1.9				52	17							
DF	T	3M	38	18		18	.5			18									
DF	T	3M	40	895		895	24.3			157	285	452							
DF	T	4M	12	13		13	.4			13									
DF	T	4M	14	42		42	1.1			42									
DF	T	4M	16	15		15	.4			15									
DF	T	4M	18	25		25	.7			25									
DF	T	4M	20	10		10	.3			10									
DF	T	4M	22	33		33	.9			33									
DF	T	4M	24	14		14	.4			14									
DF	T	4M	26	24		24	.6			24									
DF	T	4M	28	23		23	.6			23									
DF	T	4M	30	13		13	.3			13									
DF	T	4M	34	2		2	.1			2									
DF	T	4M	36	14		14	.4			14									
DF	T	4M	38	7		7	.2			7									
DF		Totals		3,687		3,687	97.4			516	449	480	607	478	795	323	39		
NF	L	2M	40	59		59	96.2							20		39			
NF	L	3M	40	2		2	3.7			2									
NF		Totals		61		61	1.6			2				20		39			
WH	L	2M	40	30		30	82.9							30					

TC		PLOGSTVB		Log Stock Table - MBF															
<div>T01N R06W S13 Ty00A197.00</div>				Project:		WIGWORM										Page		2	
				Acres		97.00										Date		2/8/2013	
																Time		4:10:22PM	
Spp	S T	So Gr rt de	Log Len	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+
WH	L	3M	40	6		6	17.1			6									
WH		Totals		37		37	1.0			6			30						
Total		All Species		3,785		3,785	100.0			525	449	480	607	508	815	323	78		

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div>T01N R06W S13 Ty00A197.00</div>				Project: WIGWORM												Page 1					
				Acres 97.00												Date 2/8/2013					
																Time 4:10:22PM					
S So Gr Spp T rt ad			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
			Log Scale Dia.					Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf						
			4-5					6-11	12-16	17+	12-20					21-30	31-35	36-99			
DF	T	CU															14	11		0.00	21.0
DF	T	2M	59		22,659	22,659	2,198			60	40	3	1	2	94		39	15	346	1.89	65.5
DF	T	3M	34		12,929	12,929	1,254		97	2	1	3	1	17	78		37	8	96	0.64	134.1
DF	T	4M	7		2,418	2,418	235		100			45	45	1	9		20	6	24	0.35	99.4
DF Totals			97		38,006	38,006	3,687		39	37	24	6	4	7	83		30	9	119	0.89	320.0
NF	L	2M	96		610	610	59			100					100		40	21	770	3.41	.8
NF	L	3M	4		24	24	2		100						100		40	6	60	0.98	.4
NF Totals			2		634	634	61		4	96					100		40	16	533	2.60	1.2
WH	L	2M	82		313	313	30			100					100		40	14	290	1.52	1.1
WH	L	3M	18		65	65	6		100						100		40	6	60	0.63	1.1
WH Totals			1		377	377	37		17	83					100		40	10	175	1.08	2.2
Totals					39,017	39,017	3,785		38	37	25	6	4	7	84		30	9	121	0.90	323.4

TC PSTATS			PROJECT STATISTICS					PAGE	1		
			PROJECT		WIGWORM			DATE	2/8/2013		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
01N	06	13	001	00A1		97.00	17	99	S	W	
			TREES		ESTIMATED	PERCENT					
			PER PLOT		TOTAL	SAMPLE					
			PLOTS	TREES	TREES	TREES					
TOTAL			17	99	5.8						
CRUISE			17	99	5.8	13,660		.7			
DBH COUNT											
REFOREST											
COUNT											
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-T			97	139.3	17.3	102	54.8	228.2	38,006	38,006	8,610
NOB FIR-L			1	.4	33.0	138	0.4	2.4	634	634	124
WHEMLOCK-L			1	1.1	20.0	99	0.5	2.4	377	377	93
TOTAL			99	140.8	17.4	102	55.8	232.9	39,017	39,017	8,826
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-T			72.8	7.4	429	463	497				
NOB FIR-L											
WHEMLOCK-L											
TOTAL			74.6	7.5	438	473	509	222	56	25	
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-T			69.1	7.0	96	103	111				
NOB FIR-L											
WHEMLOCK-L											
TOTAL			70.0	7.0	98	105	113	196	49	22	
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-T			65.4	16.3	117	139	162				
NOB FIR-L			412.3	103.0		0	1				
WHEMLOCK-L			412.3	103.0		1	2				
TOTAL			64.9	16.2	118	141	164	179	45	20	
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-T			34.9	8.7	208	228	248				
NOB FIR-L			412.3	103.0		2	5				
WHEMLOCK-L			412.3	103.0		2	5				
TOTAL			34.5	8.6	213	233	253	50	13	6	
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-T			31.9	8.0	34,978	38,006	41,034				
NOB FIR-L			412.3	103.0		634	1,287				
WHEMLOCK-L			412.3	103.0		377	766				
TOTAL			32.0	8.0	35,898	39,017	42,137	43	11	5	

TC		PSTNDSUM		Stand Table Summary									Page		1	
													Date:		2/8/2013	
T01N R06W S13 Ty00A1 97.00					Project					WIGWORM			Time:		4:10:23PM	
					Acres					97.00			Grown Year:			
S SpC	T	Tot			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	T o t a l s			
		Sample DBH	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
DF T		8	1	86	77	6.741	2.35	6.74	5.1	30.0	.98	34	202	95	33	20
DF T		9	2	87	78	10.652	4.71	10.65	9.0	50.0	2.73	96	533	265	93	52
DF T		10	1	88	85	4.314	2.35	4.31	12.8	60.0	1.57	55	259	152	53	25
DF T		11	4	87	90	14.261	9.41	24.96	10.5	45.7	7.45	261	1,141	722	253	111
DF T		12	2	87	88	5.992	4.71	11.98	11.4	50.0	3.89	137	599	378	133	58
DF T		13	5	85	94	12.763	11.76	17.87	15.2	58.6	7.75	272	1,047	751	264	102
DF T		14	4	89	99	8.804	9.41	19.81	15.9	67.8	8.98	315	1,343	871	306	130
DF T		15	7	88	103	13.421	16.47	26.84	22.2	97.9	16.97	595	2,627	1,646	578	255
DF T		16	2	88	99	3.370	4.71	8.43	18.6	86.0	4.47	157	725	434	152	70
DF T		17	4	87	111	5.971	9.41	14.93	24.4	101.0	10.40	365	1,508	1,009	354	146
DF T		18	4	88	104	5.326	9.41	13.31	26.0	104.0	9.87	346	1,385	957	336	134
DF T		19	9	88	115	10.755	21.18	29.88	28.4	118.0	24.21	850	3,525	2,349	824	342
DF T		20	4	87	116	4.314	9.41	12.94	29.8	125.0	11.00	386	1,618	1,067	374	157
DF T		21	5	88	115	4.891	11.76	13.70	34.4	150.7	13.44	471	2,064	1,303	457	200
DF T		22	6	89	117	5.348	14.12	16.04	36.6	166.7	16.73	587	2,674	1,622	569	259
DF T		23	7	89	123	5.709	16.47	17.13	40.5	181.0	19.75	693	3,099	1,916	672	301
DF T		24	2	85	113	1.498	4.71	4.49	38.7	168.3	4.96	174	756	481	169	73
DF T		25	5	86	119	3.451	11.76	10.35	49.3	218.0	14.54	510	2,257	1,410	495	219
DF T		26	4	89	120	2.553	9.41	7.02	56.5	260.0	11.31	397	1,825	1,097	385	177
DF T		27	4	88	121	2.367	9.41	7.10	56.1	260.0	11.35	398	1,846	1,101	386	179
DF T		28	3	89	125	1.651	7.06	4.95	62.5	295.6	8.82	309	1,464	855	300	142
DF T		29	2	84	115	1.026	4.71	3.08	63.6	263.3	5.58	196	810	542	190	79
DF T		30	2	83	119	.959	4.71	2.88	52.0	256.7	4.26	150	738	414	145	72
DF T		31	1	82	123	.449	2.35	1.35	74.6	323.3	2.87	101	435	278	98	42
DF T		32	2	86	128	.843	4.71	2.53	85.8	405.0	6.18	217	1,024	599	210	99
DF T		33	4	87	127	1.585	9.41	4.75	91.5	433.3	12.40	435	2,060	1,203	422	200
DF T		36	1	80	123	.333	2.35	1.00	102.6	443.3	2.92	102	443	283	99	43
DF T		Totals	97	87	102	139.346	228.24	299.02	28.8	127.1	245.39	8,610	38,006	23,802	8,352	3,687
NFL		33	1	90	138	.396	2.35	1.19	104.0	533.3	2.97	124	634	288	120	61
NFL		Totals	1	90	138	.396	2.35	1.19	104.0	533.3	2.97	124	634	288	120	61
WHL		20	1	93	99	1.079	2.35	2.16	43.0	175.0	2.97	93	377	288	90	37
WHL		Totals	1	93	99	1.079	2.35	2.16	43.0	175.0	2.97	93	377	288	90	37
Totals		99	87	102		140.821	232.94	302.37	29.2	129.0	251.32	8,826	39,017	24,378	8,562	3,785



Legend

- Timber Sale Boundary
- Roads
- - - New Construction
- //// Recreation Trails
- Type F Stream
- Type N Stream
- Stream Buffer
- - - - - Posted Stream Buffer Boundary
- ★ ★ ★ ★ ★ Green Tree Retention Area
- /// Reforested Area
- Tractor Yarding Area
- Landings
- - - - - ODF Ownership Boundary
- Sections
- 400 Foot Contour Band
- 80 Foot Contour Band
- (W) Waste Area

LOGGING PLAN

FOR TIMBER SALE CONTRACT # 341-13-42
WIGGLE WORM
PORTIONS OF SECTIONS 13 & 14, T1N, R6W, W.M.
TILLAMOOK COUNTY, OREGON

Forest Grove District GIS
February, Year 2013

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



APPROXIMATE NET ACRES

TRACTOR CABLE

SALE AREA 97 0

1:12,000

1 inch = 1,000 feet

