



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Cole Turkey
Sale 341-13-51

District: Astoria

Date: February 04, 2013

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$1,752,653.24	\$103,579.58	\$1,856,232.82
		Project Work:	\$(449,110.00)
		Advertised Value:	\$1,407,122.82



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timber description

Location: Portions of Sections 7 and 18, T4N, R8W, and portions of Sections 13 and 14, T4N, R9W, W.M., Clatsop County, Oregon.

Stand Stocking: 60%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	21	0	96
Western Hemlock / Fir	19	0	94
Sitka Spruce	20	0	95
Alder (Red)	14	0	96

Volume by Grade	2S	3S	4S	Camprun	Total
Douglas - Fir	3,123	559	166	0	3,848
Western Hemlock / Fir	515	229	23	0	767
Sitka Spruce	347	189	23	0	559
Alder (Red)	0	0	0	299	299
Total	3,985	977	212	299	5,473



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comments: Pond Values Used: 4th Quarter Calendar Year 2012.

Expected Log Markets: Warrenton, OR; Tillamook, OR.; Garibaldi, OR; Claskanine, OR; Mist, OR; Longview, WA.

Western redcedar and Other Cedars Stumpage Price = Pond Value
minus Logging Cost:
 $\$797.14/\text{MBF} = \$985/\text{MBF} - \$187.86/\text{MBF}$

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):

ADDITIONAL LOGGING COSTS:

Branding and Painting: $\$1/\text{MBF} \times 5,473 \text{ MBF} = \$5,473$

Line Pull in Area 1: $\$15/\text{MBF} \times 1.3 \text{ acres} \times 40.54 \text{ MBF/acre} = \791

In Area slash piling (see attached appraisal spreadsheet) =

\$14,702.25

TOTAL Other Costs (with Profit & Risk to be added) = \$20,966.25

Other Costs (No Profit & Risk added):

Closure of Dirt Spur in Area 1: Hours with Cat 315 size excavator
@ \$101/hr. x 3 hours = \$303

Machine Washing Invasive Species: Shovel, Skidder, Excavator (3 x
\$1,000) = \$3,000

TOTAL Other Costs (No Profit & Risk added) = \$3,303



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logging conditions

combination#: 1

Douglas - Fir	64.00%
Western Hemlock / Fir	64.00%
Sitka Spruce	64.00%
Alder (Red)	64.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Shovel **Process:** Manual Delimbing
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 12.0 **bd. ft / load:** 3,500
cost / mbf: \$59.63
machines: Shovel Logger

combination#: 2

Douglas - Fir	36.00%
Western Hemlock / Fir	36.00%
Sitka Spruce	36.00%
Alder (Red)	36.00%

yarding distance: Medium (800 ft) **downhill yarding:** No
logging system: Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 11.0 **bd. ft / load:** 3,500
cost / mbf: \$86.86
machines: Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Medium)



"STEWARDSHIP IN FORESTRY"

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logging costs

Operating Seasons:	3.00	Profit Risk:	10.00%
Project Costs:	\$449,110.00	Other Costs (P/R):	\$20,966.25
Slash Disposal:	\$0.00	Other Costs:	\$3,303.00

Miles of Road

Road Maintenance: \$7.75

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	3.0	3.2
Western Hemlock / Fir	\$0.00	3.0	4.0
Sitka Spruce	\$0.00	2.0	3.1
Alder (Red)	\$0.00	2.0	3.5



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal Cole Turkey Sale 341-13-51

District: Astoria

Date: February 04, 2013

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
\$69.43	\$8.06	\$2.40	\$76.81	\$3.83	\$16.05	\$0.00	\$5.00	\$0.60	\$182.18
Western Hemlock / Fir									
\$69.43	\$8.22	\$2.40	\$62.64	\$3.83	\$14.65	\$0.00	\$5.00	\$0.60	\$166.77
Sitka Spruce									
\$69.43	\$8.14	\$2.40	\$120.09	\$3.83	\$20.39	\$0.00	\$5.00	\$0.60	\$229.88
Alder (Red)									
\$69.43	\$8.06	\$2.40	\$105.35	\$3.83	\$18.91	\$0.00	\$5.00	\$0.60	\$213.58

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	\$0.00	\$552.76	\$370.58	\$0.00
Western Hemlock / Fir	\$0.00	\$441.56	\$274.79	\$0.00
Sitka Spruce	\$0.00	\$437.21	\$207.33	\$0.00
Alder (Red)	\$0.00	\$560.00	\$346.42	\$0.00



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District: Astoria

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summary

Amortized

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

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	3,848	\$370.58	\$1,425,991.84
Western Hemlock / Fir	767	\$274.79	\$210,763.93
Sitka Spruce	559	\$207.33	\$115,897.47
Alder (Red)	299	\$346.42	\$103,579.58

Gross Timber Sale Value

Recovery: \$1,856,232.82

Prepared by: Edward Holloran

Phone: 503-325-5451

Site Prep Appraisal

Sale Number: 341-13-51
 Sale Name: Cole Turkey
 Date: 10/31/2012

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	1.0	3.0
Hemlock/Fir	B	1.5	4.5
Hemlock/Spruce	C	2.0	6.0
Hemlock	D	2.0	6.0
Conifer/Hardwood	E	1.5	4.5
Whole Tree Yarding	F	0.5	0.5

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour	Total Cost/Area
1	MC	F	29.1	15	\$110.00	\$1,600.50
2	MC	B	15.6	23	\$110.00	\$2,574.00
3	MC	A	40.2	40	\$110.00	\$4,422.00
					In-unit Piling	Sub Total = \$8,596.50
Sale Area	Number of Landings to be Piled	Cost/Landing Pile	Total Cost/Area	Number of In- Unit Piles	Material Cost/Pile	Total Cost/Area
1	6	\$220.00	\$1,320.00	14.55	\$5.00	\$72.75
2	4	\$220.00	\$880.00	70.2	\$5.00	\$351.00
3	8	\$220.00	\$1,760.00	120.6	\$5.00	\$603.00
*Cost includes separating firewood					Materials	Sub Total = \$1,026.75
					Landing Piling	Sub Total = \$3,960.00
Move-In Allowance	Number of Move-In's	Total Move-In Allowance				
\$1,119.00	1	\$1,119.00	Move-In Sub Total = \$1,119.00			
Grand Total =						\$14,702.25

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale: Cole Turkey
Date: November 30, 2012
By: Ed Holloran

MBF: 5,473
\$/MBF: \$7.75

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Interim Operations Entries - 2	Grader 14G	\$778	2	48	\$100	\$6,356
	Dump Truck 12CY	\$163	2	16	\$79	\$1,590
	FE Loader C966	\$778	2	16	\$83	\$2,884
Final Road Maintenance	Grader 14G	\$778	1	98	\$100	\$10,578
	Dump Truck 12CY	\$163	2	48	\$79	\$4,118
	FE Loader C966	\$778	1	24	\$83	\$2,770
	Vibratory Roller	\$778	1	72	\$108	\$8,554
	Water Truck 2,500 gallon	\$190	1	36	\$89	\$3,394
	Backhoe-small	\$321	1	16	\$77	\$1,553
	Labor			16	\$40	\$640
Total						\$42,437

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.5	17.0	4.9	49

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Process - Grader	1.5	14.6	9.7	97
Vibratory Roller	2.0	14.6	7.3	73

Process and Compact: Cole Mountain Road (via Loop - 4.0 miles); Cole Mtn Ridge Rd. (1.5 miles)

Spurs within sale areas (3.5 miles) and Seuss Alley (1.5 miles)

TOTAL MILES = 14.6

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Cole Turkey

PROJECT NO 1: ROAD CONSTRUCTION:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
Surfaced	A to B, C to D	25.10	\$40,043
Unsurfaced	1A-1B	12.50	\$3,690
	TOTALS	37.60	\$43,733
	0.71 miles		

PROJECT NO. 2: ROAD IMPROVEMENT:

	<u>Road segment</u>	<u>Length/Sta</u>	<u>Cost</u>
	I1-I2, I3-I4, I5-I6, I7-I8, I9-I10,	368.2	\$121,560
	I11-I12, I13-I14, I15-I16, I17-I18		
	I19-I20, I21-I22		
	TOTALS	368.2	\$121,560
	6.97 miles		

SPECIAL PROJECTS:

<u>Description</u>	<u>Cost</u>
PROJECT NO. 3: Soapstone Quarry (Development and Crushing)	\$245,667
Stockpile Development (Crusher Site)	\$12,632.00
PROJECT NO. 4: Road Vacating	\$2,214.00
PROJECT ROAD MAINTENANCE	\$14,736.00
TOTAL	\$275,249

MOVE IN:

<u>Equipment</u>	<u>Cost</u>
Dozer (D8)	\$778.00
Dump Trucks (12 cy x 6)	\$1,956.00
Dump Trucks (20 cy x 2)	\$382.00
F E Loader (C966)	\$778.00
Grader (14G)	\$778.00
Rubber Tire Skidder (C518)	\$717.00
Vibratory Roller	\$778.00
Water Truck (2,500 gallon)	\$190.00
Excavator (C315)	\$805.00
Excavator (C330)	\$1,406.00
TOTAL	\$8,568.00

GRAND TOTAL **\$449,110.00**

Compiled By: Kraig Kirkpatrick

Date: 10/17/2012

SURFACING		Stations/ amount	x	Rate/ sta/amt	Cost
Subgrade prep: Description					
Grade, Shape and Ditch 16'		25.10	x	\$24.83	\$623.23
Subgrade Compaction		25.10	x	\$20.19	\$506.77
1A-1B Grade, Shape 14' outslope		12.50	x	\$18.35	\$229.38

ROAD SEGMENT A to B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	A to B Volume (CY) per	Sta. to Sta. Number of	0+00 to 14+75			
Subgrade Reinforcement	6"-0" Pit-run			station	stations	275	\$4.23	\$1,163	
Base Rock	4"-0" Crushed	0+00-14+75	8	station	stations	14.75	\$3.80	\$2,803	
Junctions	4"-0" Crushed	0+00, 14+75	8	junction	junctions	2	\$3.80	\$167	
Turnouts	4"-0" Crushed	5+25, 7+50, 12+05	8	TO	TO's	3	\$3.80	\$251	
Fill Armor	24"-6" Riprap	1+20-2+25, 8+00- 9+00, 12+90-13+90	N/A	fill	fill	N/A	\$7.44	\$4,256	
Surface Rock	3/4"-0" Crushed	0+00-14+75	4	station	stations	14.75	\$5.53	\$2,068	
Turnouts	3/4"-0" Crushed	5+25, 7+50, 12+05	4	TO	TO's	3	\$5.53	\$365	
Junctions	3/4"-0" Crushed	0+00, 14+75	4	junction	junctions	2	\$5.53	\$243	

Total Rock for Road Segment:

A to B

2,179

\$11,316

ROAD SEGMENT C to D			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	C to D Volume (CY) per	Sta. to Sta. Number of	0+00 to 10+35			
Subgrade Reinforcement	6"-0" Pit-run			station	stations	209	\$4.23	\$884	
French Drain Rock Jct	24"-6" Riprap	0+00				66	\$7.44	\$491	
Base Rock	4"-0" Crushed	0+00-10+35	8	station	stations	10.35	\$3.81	\$1,972	
Turnouts	4"-0" Crushed		8	TO	TO's	1	\$3.81	\$84	
Junctions	4"-0" Crushed	0+00	8	junction	junctions	1	\$3.81	\$251	
Culvert Bedding/Backfill	3/4"-0" Crushed	0+00	N/A	culvert	culverts	1.00	\$5.23	\$173	
Junctions	3/4"-0" Crushed	0+00	4	junction	junctions	1	\$5.53	\$182	

Total Rock for Road Segment:

C to D

947

\$4,037

ROAD SEGMENT 1A to 1B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	1A to 1B Volume (CY) per	Sta. to Sta. Number of	1A to 1B			
Junctions	4"-0" Crushed	0+00	8	junction	junctions	1.00	\$3.81	\$210	

Total Rock for Road Segment:

1A to 1B

55

\$210

Processing:

Description		No. sta	Rate/sta	Cost
Water, Process & Compact:		25.10	\$24.28	\$609
24"-6"	6"-0" pr	4"-0"	1.1/2"-0"	3"-4"-0"
638	484	1,508	550	3,180

SUB TOTAL FOR SURFACING

3,180

\$17,531

SPECIAL PROJECTS

Description	Cost
Pit run development \$/CY (484CY X \$2.60)	\$ 1,258
French Drain Construction w/330 \$/hr	\$620.00

SUB TOTAL FOR SPECIAL PROJECTS

\$1,878

Subtotal of Surfacing & Spec. Proj.

\$19,409

Subtotal of Clearing, Exc., Culv.

\$24,324

GRAND TOTAL

\$43,733

Compiled By: Kraig Kirkpatrick

Date: 10/03/2012

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Cole Turkey
 ROAD: I1-12 (214.55), I3-14 (33.95), I5-16 (11.1), I7-18 (1.0), I9-110 (8.8), I11-112 (37.0), I13-114 (2.85), I15-116 (43.0), I17-118 (8.35), I19-120 (3.75), I21-122 (3.85)

NEW CONSTRUCTION: _____ STATIONS _____ MILES

IMPROVEMENT: 368.20 STATIONS 6.97 MILES

POINTS:

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING

EXCAVATION

	Material	Cy/amount	x	Rate	=	Cost
I1-12	Scatter ditch waste material (\$/sta.)	63.65	x	\$12.41	=	\$789.90
	Excavate, load, and haul ditch waste material (\$/sta.)	63.65	x	\$22.92	=	\$1,458.86
	End-haul excavation - road widening & realignment segments (\$/sta.)	600.00	x	\$4.00	=	\$2,400.00
	Waste material compaction (\$/sta.)	600	x	\$0.40	=	\$240.00
I5-16	Dissipator placement w/315 excavator (\$/hr)	4	x	\$101.00	=	\$404.00
	Additional grader time to brush segment (\$/hr)	4.00	x	\$100.00	=	\$400.00
I7-18	Additional excavator (315) time to brush segment (\$/hr)	4.00	x	\$101.00	=	\$404.00
	Additional grader time to brush segment (\$/hr)	4.00	x	\$100.00	=	\$400.00
I9-110	Additional excavator (315) time to brush segment (\$/hr)	4.00	x	\$101.00	=	\$404.00
	Additional grader time to brush segment (\$/hr)	4.00	x	\$100.00	=	\$400.00
I11 - I12	Establish turnout/turnaround w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00
	Establish turnout w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00
I15 - I16	Clear/grub landing w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00
	Establish turnout w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00
I19-120	Clear/grub landing w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00
	Additional grader time to brush segment (\$/hr)	4.00	x	\$100.00	=	\$400.00
I21-122	Additional excavator (315) time to brush segment (\$/hr)	4.00	x	\$101.00	=	\$404.00
	Clear/grub landing w/315 excavator (\$/hr)	1.00	x	\$101.00	=	\$101.00

SUB TOTAL FOR EXCAVATION

\$10,020

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I1-12					I3-14				
51+30	18" CPP	35	\$19.53	\$683.55	10+90	18" CPP	30	\$19.53	\$585.90
56+50	18" CPP	35	\$19.53	\$683.55	18+65	18" CPP	35	\$19.53	\$683.55
57+45	18" CPP	35	\$19.53	\$683.55	I9-110				
57+60	18" CPP	40	\$19.53	\$781.20	5+50	18" CPP	30	\$19.53	\$585.90
61+60	18" CPP	40	\$19.53	\$781.20	I11-112				
65+45	18" CPP	35	\$19.53	\$683.55	4+35	18" CPP	30	\$19.53	\$585.90
68+10	18" CPP	35	\$19.53	\$683.55	34+80	18" CPP	35	\$19.53	\$683.55
70+55	18" CPP	40	\$19.53	\$781.20	I15-116				
76+30	24" CPP	45	\$27.04	\$1,216.80	0+00	18" CPP	40	\$19.53	\$781.20
111+60	18" CPP	30	\$19.53	\$585.90	5+85	18" CPP	35	\$19.53	\$683.55
113+40	18" CPP	30	\$19.53	\$585.90	14+00	18" CPP	35	\$19.53	\$683.55
117+30	18" CPP	30	\$19.53	\$585.90					
124+95	18" CPP	30	\$19.53	\$585.90					
168+70	18" CPP	45	\$19.53	\$878.85					
185+30	18" CPP	30	\$19.53	\$585.90					
193+15	18" CPP	40	\$19.53	\$781.20					
197+65	18" CPP	35	\$19.53	\$683.55					

Other/miscellaneous:	Description	Quantity	Rate	Cost
Culvert stakes & markers:	Install @ new culverts	24	\$20.00	\$480.00
	Install @ existing culverts	16	\$20.00	\$320.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$18,324

Subtotal of Clearing, Exc., Culv.

\$28,344

SURFACING		Stations/amount	x	Rate/sta/amt	Cost
Subgrade prep:					
Description					
Grade, Shape and Ditch 16'		368.20	x	\$24.83	\$9,142
Subgrade Compaction		368.20	x	\$20.19	\$7,434

ROAD SEGMENT I1 to I2				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2 Volume (CY) per		0+00 to 214+55 Number of				
Base Rock Replacement	4"-0" crushed	40+10-41+60, 53+10-54+85, 144+90-148+15	8	station	50	stations	6.50	325	\$3.81	\$1,238
Subgrade Leveling/Reinforcement	4"-0" Crushed	56+50-58+40	12	station	75	stations	1.90	143	\$3.81	\$543
Curve Widening Base	4"-0" Crushed	56+50-58+40	12	curve	n/a	curves	1	44	\$3.81	\$168
Junctions	4"-0" Crushed	57+45	12	junction		junctions		55	\$3.81	\$210
Culvert Bedding/Backfill	3/4"-0" Crushed		N/A	culvert		culverts	17.00	649	\$5.54	\$3,595
Subgrade Leveling	3/4"-0" Crushed		N/A					613	\$5.54	\$3,396
Surfacing Rock	3/4"-0" Crushed	0+00-214+55	4	station	25	stations	215	5,364	\$5.54	\$29,715
Curve Widening Surfacing	3/4"-0" Crushed		4	station	n/a	stations	n/a	209	\$5.54	\$1,158
		15+40, 21+10, 25+80, 50+35, 59+90, 63+85, 70+55, 79+85, 83+50, 92+50, 96+10, 101+35, 104+00, 109+95, 120+60, 126+10, 131+75, 140+50, 154+85, 166+25, 180+20, 191+30, 194+80, 200+20, 204+20, 208+70, 211+80								
Turnouts	3/4"-0" Crushed	211+80	4	TO	11	TO's	27	297	\$5.54	\$1,645
Junctions	3/4"-0" Crushed		N/A	junction	11	junctions	15	165	\$5.54	\$914
Dissipator	24"-6" Rip Rap	102+90, 111+60, 113+40, 124+95		dissipator	11	dissipator	4	44	\$10.27	\$452

\$43,034

ROAD SEGMENT I3 to I4				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I3 to I4 Volume (CY) per		0+00 to 33+95 Number of				
Subgrade Leveling/Reinforcement	4" 0" Crushed		N/A					99	\$3.81	\$377
Subgrade Leveling	1 1/2"-0" Crushed		N/A					99	\$5.54	\$548
Culvert Bedding/Backfill	3/4"-0" Crushed	10+90, 18+65	N/A	culvert		culverts	2.00	55	\$5.54	\$305
Total Rock for Road Segment:				I3 to I4				253		

\$1,230

ROAD SEGMENT				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I5 to I6 Volume (CY) per	0+00 to 11+10 Number of					
Subgrade Leveling/Reinforcement	4"-0" Crushed		N/A				55	\$3.81	\$210	
Total Rock for Road Segment:				I5 to I6			55			

\$210

ROAD SEGMENT I9 to I10				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I9 to I10		0+00 to 8+80				
				Volume (CY) per		Number of				
Subgrade Leveling/Reinforcement	4"-0" Crushed	0+00-8+80	6	station	38	stations	8.80	334	\$3.81	\$1,274
Turnouts	4"-0" Crushed	5+50	6	TO	22	TO's	1	22	\$3.81	\$84
Turnaround	4"-0" Crushed	5+50	6	TA	11	TA's	1.00	11	\$3.81	\$42
Culvert Bedding/Backfill	3/4"-0" Crushed	5+50	N/A	culvert		culverts	1.00	22	\$5.54	\$122
Landing Rock	6"-0" Pit-run	8+80	N/A	landing	66	landing	1.00	66	\$4.21	\$278
Total Rock for Road Segment:				I9 to I10				455		

\$1,800

ROAD SEGMENT				I11 to I12		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta/ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I11 to I12 Volume (CY) per.		0+00 to 37+00 Number of						
Subgrade Leveling	1 1/2"-0" Crushed		N/A						222	\$5.54	\$1,230	
Turnouts	4"-0" Crushed	14+35, 24+85, 26+75, 33+15	6	TO	22	TO's	4	88	\$3.81	\$335		
Turnaround	4"-0" Crushed	33+15	6	TA	11	TA's	1.00	11	\$3.81	\$42		
Culvert Bedding/Backfill	3/4"-0" Crushed	4+35, 34+80	N/A	culvert		culverts	2.00	55	\$5.54	\$305		
Landing Rock	6"-0" Pit-run	37+00	N/A	landing	55	landing	1.00	55	\$4.21	\$232		
Total Rock for Road Segment:				I11 to I12					431			

\$2,143

ROAD SEGMENT I13 to I14				POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I13 to I14		0+00 to 2+85				
				Volume (CY) per		Number of				
Subgrade Leveling/Reinforcement	4"-0" Crushed	0+00-2+85	6	station	38	stations	2.85	108	\$3.81	\$413
Landing Rock	6"-0" Pit-run	2+85	N/A	landing	55	landing	1.00	55	\$4.21	\$232
Total Rock for Road Segment:				I13 to I14				163		

\$644

ROAD SEGMENT				I15 to I16		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I15 to I16 Volume (CY) per		0+00 to 43+00 Number of						
Subgrade Leveling	1 1/2"-0" Crushed	27+80-28+80, 37+15-43+00	N/A	station	38	stations	6.85	297	\$5.54	\$1,645		
Subgrade Leveling/Reinforcement	4"-0" Crushed	4+65, 8+25, 10+25, 21+25, 28+30,	6	TO	22	TO's	5	260	\$3.81	\$992		
Turnouts	4"-0" Crushed	0+00, 5+85, 14+00,	N/A	culvert	55	culverts	3.00	110	\$3.81	\$419		
Culvert Bedding/Backfill	3/4"-0" Crushed	37+00	N/A	landing	55	landings	1.00	110	\$5.54	\$609		
Landing Rock	6"-0" Pit-run		N/A					55	\$4.21	\$232		

\$3,897

Total Rock for Road Segment:				I15 to I16				832			
ROAD SEGMENT		I17 to I18		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
				I17 to I18		0+00 to 8+35					
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per	Number of						
Subgrade Leveling	1 1/2"-0" Crushed		N/A					110	\$5.54	\$609	
Total Rock for Road Segment:				I17 to I18				110			

\$609

ROAD SEGMENT			I19 to I20		POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I19 to I20 Volume (CY) per	0+00 to 3+75 Number of						
Subgrade Leveling/Reinforcement	4"-0" Crushed		6	station 22	stations 3.75	152	\$3.81	\$579			
Landing Rock	6"-0" Pit-run	3+75	N/A	landing 55	landing 1.00	55	\$4.21	\$232			
Total Rock for Road Segment:			I19 to I20				207				

\$579

Total Rock for Road Segment.				115 to 120	207		
ROAD SEGMENT	I21 to I22	POINT TO POINT	Sta. to Sta.				

Application	Rock Size and Type	Location	Depth of Rock (inches)	I21 to I22		0+00 to 3+85		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
				Volume (CY) per		Number of				
Subgrade Leveling/Reinforcement	4"-0" Crushed		6	station	38	stations	3.85	152	\$3.81	\$579
Landing Rock	6"-0" Pit-run	3+85	N/A	landing	55	landing	1.00	55	\$4.21	\$232
Total Rock for Road Segment:			I21 to I22					207		
Processing:										
				Description				No.sta	Rate/sta	Cost
				Water, Process & Compact:				368.20	\$56.48	\$20,796
								</		

SALE NAME: Cole Turkey
ROAD: Soapstone Stockpile Site
POINTS:

NEW CONSTRUCTION: _____ STATIONS _____ MILES
IMPROVEMENT: _____ STATIONS _____ MILES

Method	Acres/amount	x	Rate	=	Cost
Scatter outside of Site perimeter	1337	x	1	=	\$1,337.00
		x		=	
		x		=	
		x		=	

[illegible][illegible]

Cost

<i>Subtotal of Clearing, Exc., Culv.</i>	\$8,009
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Date: 10/15/2012

CRUSHED ROCK COST

SALE NAME:	Cole Turkey
PROJECT:	1 and 2
QUARRY:	Cole Mountain Quarry 4"-0"

MATERIAL: Crushed

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks: 2
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$3.03	/cy
Load:	\$0.30	/cy
Spread:	\$0.48	/cy

Truck type:	<u>D12</u>	No. trucks:	<u>6</u>
Delay min.:	<u>6</u>	Efficiency:	<u>85%</u>

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,781

CRUSHED ROCK HAUL COSTS 2,608 cy @ \$3.81 /cy

PIT RUN ROCK COST

SALE NAME:	Cole Turkey
PROJECT:	1 and 2
QUARRY:	Cole Mountain Quarry

MATERIAL: Pit Run

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$2.95	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type: D12 No. trucks: 6
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,284

PIT RUN ROCK HAUL COSTS

550 cy @ \$4.21 /cy

RIP RAP ROCK COST

SALE NAME: Cole Turkey
PROJECT: 1 and 2
QUARRY: Cole Mountain Quarry

MATERIAL: Rip Rap

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type:	D12	No. trucks:	2
Delay min.:	6	Efficiency:	85%
Truck type:	D10	No. trucks:	
Delay min.:	5	Efficiency:	85%

Ave haul:	\$4.17	/cy
Load:	\$1.80	/cy
Develop:	<u>\$4.30</u>	/cy

Production: cy/day = 303

RIP RAP ROCK HAUL COSTS

44 cy @ \$10.27 /cy

CRUSHED ROCK COST

SALE NAME:	Cole Turkey
PROJECT:	1
QUARRY:	Fall Creek Quarry & Stockpile

MATERIAL: Crushed 4"-0"

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$2.54	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type: D12 No. trucks: 5
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,242

CRUSHED ROCK HAUL COSTS 848 cy @ \$3.80 /cy

PIT RUN ROCK COST

SALE NAME: Cole Turkey
PROJECT: 1
QUARRY: Fall Creek Quarry & Stockpile

MATERIAL: Pit Run

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type: D20 No. trucks:
 Delay min.: 8 Efficiency: 85%

Ave haul:	\$2.54	/cy
Load:	\$0.60	/cy
Spread:	\$1.08	/cy

Truck type: D12 No. trucks: 3
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 745

PIT RUN ROCK HAUL COSTS

275 cy @ \$4.23 /cy

RIP RAP ROCK COST

SALE NAME:	Cole Turkey
PROJECT:	1
QUARRY:	Fall Creek Quarry & Stockpile

MATERIAL: Rip Rap

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type:	D12	No. trucks:	4
Delay min.:	6	Efficiency:	85%
Truck type:	D10	No. trucks:	
Delay min.:	5	Efficiency:	85%

Ave haul:	\$2.54	/cy
Load:	\$0.60	/cy
Develop:	\$4.30	/cy

Production: cy/day = 994

RIP RAP ROCK HAUL COSTS 572 cy @ \$7.44 /cy

CRUSHED ROCK COST

SALE NAME: Cole Turkey
PROJECT: 1 and 2
QUARRY: Hamlet Stockpile 3/4"-0 and 1 1/2"-0

MATERIAL: Crushed

DATE: 10/08/2012
BY: Kirkpatrick

[illegible]

ROCK HAUL:

Truck type:	<u>D20</u>	No. trucks:	<u>2</u>
Delay min.:	<u>8</u>	Efficiency:	<u>85%</u>

Ave haul:	\$4.28	/cy
Load:	\$0.48	/cy
Spread:	\$0.78	/cy

Truck type: D12 No. trucks:
 Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks: 6
 Delay min.: 5 Efficiency: 85%

Production: cy/day = 1,260

CRUSHED ROCK HAUL COSTS 8,817 cy @ \$5.54 /cy

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. <u>Cole Turkey</u>	Timber Sale Name: <u>341-13-51</u>
Quarry: <u>Soapstone Quarry</u>	Swell: _____
Location: <u>NW 1/4, NW 1/4, Sec. 22, T4N, R9W</u>	Shrink: <u>16%</u>
County: <u>Clatsop</u>	
By: <u>Kraig Kirkpatrick</u>	Loading Hopper: <u>Yes</u>
Date: <u>10/12/2012</u>	

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"	10%	CR	12,000	1,000	14,920
4"-0"		CR			
6"-0"		PR	1,045		1,212
24"-6"		RR			
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			13,045	1,000	16,132

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
				Off Highway Dump Truck	2	\$553	\$1,105
				Screening Plant	1	\$553	\$553
				Loading Hopper	1	\$553	\$553
D6 Cat	1	\$778	\$778	Loader	1	\$805	\$805
Drill & Compressor	1	\$1,406	\$1,406				
Powder	1	\$351	\$351	3 Stage Crusher	1	\$2,891	\$2,891
Excavator	1	\$1,406	\$1,406				
SUB TOTAL FOR MOBILIZATION				\$9,848			

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	\$3,439	\$3,439
Screening Plants	1	\$293	\$293
Loading Hopper	1	\$293	\$293
Original Calibration	1	\$544	\$544

SUB TOTAL FOR SET UP COSTS \$4,569

TOTAL MOBILIZATION & SET UP COSTS \$14,417

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
		hr		
Pile & Burn Slash and Stumps(1 exc)	2.1	acre	\$2,702	\$5,674
Move-in Fire Truck for the burning of the Clearing Debris	1.0	ea	\$83	\$83

TOTAL CLEARING & GRUBBING COSTS \$5,757

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load haul, spread at crusher site)	5,000	bcy	\$2.60	\$13,000

TOTAL EXCAVATION COSTS

\$13,000

4) DEVELOP ROCK

ROCK SUMMARY			METHOD	%	QUANTITY	RATE	COST
Type	Cu. yd. Vol.	Weight	Ripping			\$2.20	
crushed	14,920	93%	Drill & shoot	93%	16,235	\$2.70	\$43,835
pit run	1,045	5%	Oversize red	7%	1,118	\$5.80	\$6,482
rip rap	0	0	Other				
Total	15,965						
reject	1,492	9.3%					

TOTAL ROCK DEVELOPMENT COSTS

\$50,316

5) CALIBRATION & TESTING

DESCRIPTION	NO.	\$/TEST	COST
Calibrate	1	\$507.00	\$507
Calibrate			
Test	6	\$57.30	\$344
Test			

TOTAL CALIBRATION & TESTING COSTS

\$851

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	16,412	\$0.87	\$14,311

TOTAL FEEDING & LOADING COSTS

\$14,311

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed		3 stage w/s			
1-1/2"-0"	crushed	14,920	3 stage w/s	125	\$3.11	\$46,431
4"-0"	crushed		2 stage w/s			

TOTAL ROCK CRUSHING COSTS

\$46,431

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer		\$120.00	
Compactor		\$72.00	
Grader		\$90.00	
Excavator		\$138.00	

Rock for Floor (CY)	\$/CY Haul	Total

SUB TOTAL

HAUL & STOCKPILE		# of			
STOCKPILE LOCATION	SIZE	TRUCKS	CU. YDS.	RATE	COST
1. _____					
2. Sweethome	1-1/2"-0"	6	13,920	\$6.74	\$93,851
3. _____					
4. Soapstone	6"-0"	2	1,212	\$2.44	\$2,956
5. _____					
6. _____					

SUB TOTAL	\$96,807
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TOTAL STOCKPILING COSTS	\$96,807
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9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	\$2,536
\$1.70 /CY 1,492 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access	\$1,240

TOTAL MISCELLANEOUS COSTS	\$3,776
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10) GRAND TOTAL:	\$245,667
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\$/Cubic Yard	\$16.47
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Footnotes:

HAUL and STOCKPILE COST

SALE NAME: 341-13-51

QUARRY: Soapstone

ROCK TYPE: Crushed

Location 1.	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
							0.10
Truck type: <u>D12</u> Delay min.: <u>15</u> No. trucks: _____ Efficiency: <u>75%</u> Ave haul: <u>#DIV/0!</u> /cy Load: <u>\$0.00</u> /cy Stockpile: <u>#N/A</u> /cy Truck type: <u>D12</u> Delay min.: <u>12</u> No. trucks: _____ Efficiency: <u>75%</u> Truck type: _____ Delay min.: <u>10</u> No. trucks: _____ Efficiency: <u>75%</u> Production: cy/day = <u>0</u>							
Location 1. 0		Haul and Stockpile Cost				#DIV/0! /cy	

Location 2. Sweethome 1-1/2"-0"	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
		0.50	1.50	1.00	1.00	1.00	0.40
Truck type: <u>D20</u> Delay min.: <u>8</u> No. trucks: <u>3</u> Efficiency: <u>85%</u> Ave haul: <u>\$5.59</u> /cy Load: <u>\$0.00</u> /cy Stockpile: <u>\$1.15</u> /cy Truck type: <u>D12</u> Delay min.: <u>6</u> No. trucks: <u>3</u> Efficiency: <u>85%</u> Truck type: <u>D10</u> Delay min.: <u>10</u> No. trucks: _____ Efficiency: <u>75%</u> Production: cy/day = <u>768</u>							
Location 2. Sweethome		Haul and Stockpile Cost				\$6.74 /cy	

Location 3. Soapstone	ONE WAY HAUL IN MILES						
	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
Truck type: <u>D20</u> Delay min.: <u>15</u> No. trucks: _____ Efficiency: <u>75%</u> Ave haul: <u>#DIV/0!</u> /cy Load: <u>\$0.00</u> /cy Stockpile: <u>#N/A</u> /cy Truck type: <u>D12</u> Delay min.: <u>12</u> No. trucks: _____ Efficiency: <u>75%</u> Truck type: <u>D10</u> Delay min.: <u>10</u> No. trucks: _____ Efficiency: <u>75%</u> Production: cy/day = <u>0</u>							
Location 3. 0		Haul and Stockpile Cost				#DIV/0! /cy	

HAUL and STOCKPILE COST

Location 4. Soapstone		ONE WAY HAUL IN MILES						
		50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
								0.10
Truck type:	OHT	No. trucks:	2					
Delay min.:	15	Efficiency:	75%		Ave haul: \$1.61 /cy			
					Load: \$0.00 /cy			
Truck type:	D12	No. trucks:			Stockpile: \$0.83 /cy			
Delay min.:	12	Efficiency:	75%					
Truck type:	D10	No. trucks:			Production: cy/day = 1,265			
Delay min.:	10	Efficiency:	75%					
Location 4. Soapstone		Haul & Stockpile Cost					\$2.44 /cy	

Location 5. 0		ONE WAY HAUL IN MILES						
		50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
Truck type:	D20	No. trucks:						
Delay min.:	15	Efficiency:	75%		Ave haul: #DIV/0! /cy			
					Load: \$0.00 /cy			
Truck type:	D12	No. trucks:			Stockpile: #N/A /cy			
Delay min.:	12	Efficiency:	75%					
Truck type:	D10	No. trucks:			Production: cy/day = 0			
Delay min.:	10	Efficiency:	75%					
Location 5. 0		Haul & Stockpile Cost					#DIV/0! /cy	

Location 6. 0		ONE WAY HAUL IN MILES						
		50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH
					1.00	1.00		
Truck type:	D20	No. trucks:						
Delay min.:	15	Efficiency:	75%		Ave haul: #DIV/0! /cy			
					Load: \$0.00 /cy			
Truck type:	D12	No. trucks:			Stockpile: #N/A /cy			
Delay min.:	12	Efficiency:	75%					
Truck type:	D10	No. trucks:			Production: cy/day = 0			
Delay min.:	10	Efficiency:	75%					
Location 6. 0		Haul & Stockpile Cost					#DIV/0! /cy	

Cole Turkey

Project No. 4 Road Vacating

Location/Description	C330 Excavator	C330 Excavator	C330 Excavator	Truck	Labor	Seeding	Straw Mulch	Total
V1 Fill Removal Sidecast Pullback Waterbar	10 hrs	1 sta.						
Total	10 hrs	1 sta.	0	0 hr	0.1 ac	20 lb	20 Bales	
Rate	\$155 /hr	\$362 /hr	ea	/hr	\$628 /ac	\$1.60 /lb	\$10.37 /Bale	
Cost	\$1,550	\$362	\$0	\$0	\$63	\$32	\$207.40	\$2,214

Prepared by: Kraig Kirkpatrick Date: 10/17/2012

Road Maintenance after completion of Projects

Sale: Cole Turkey
Date: 17-Oct-12
By: Kraig Kirkpatrick

Type	Equipment/Rationale	Hours	Rate	Cost
Final Haul Road Maintenance Haul Route	Grader 14G Dump Truck 12CY x 2 FE Loader C966 Vibratory Roller Water Truck 2,500 gallon	60 12 6 60 30	\$100 \$79 \$83 \$77 \$89	\$6,000 \$948 \$498 \$4,620 \$2,670
Total				\$14,736

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	9.5	6.3
Vibratory Roller	1.5	9.5	6.3

*Project work road maintenance
 Cole Mnt Quarry to Pt. I2
 Cole Mnt Quarry to Pt. I15
 Hamlet Stockpile Rd
 Hill Rd (1.5 mile to Pt. A)
 Fall Crk Quarry to Pt.B
 Northfork Rd to Sweethome Stockpile

Cole Turkey
FY 2013
TIMBER CRUISE REPORT

1. **Sale Area Location:** Areas 1, 2, and 3 are located in portions of Sections 7, 18, T4N, R8W, and portions of Sections 13, and 14, T4N, R9W, W.M., Clatsop County, Oregon.

All timber sale areas are posted with ODF "Timber Sale Boundary" signs and pink ribbon. Area 4 R/W is posted with ODF "Right-of-Way Boundary" signs.

2. **Fund Distribution:** Fund: BOF 97% CSL 3%
Tax Code: 10-02 98% 10-04 2%

3. **Sale Acreage by Area:**

Area	Harvest Type	Gross Acres	Stream Buffer Acres	New R/W Acres	Existing R/W Acres	GTR Area	Net Acreage
1	MC	36	1	1		1	33
2	MC	66	13		1		52
3	MC	54	4		1		49
4	RW	1					1
TOTALS		156	18	1	2	1	135

4. **Cruisers and Cruise Dates:** Area 1 was cruised by John Tillotson, and Will Lawrence. Area 2 was cruised by Bryce Rodgers, and Will Lawrence. Area 3 was cruised by Jon Long, and Will Lawrence. The cruise was performed in mid October, 2012

5. **Cruise Method and Computation:** Areas 1, 2, and 3, are modified clearcut units and were variable plot cruised using a 33.61 BAF for hardwoods and a 40 BAF for conifers. These plots were located on a 4 chain by 7 chain grid, with a count/cruise plot ratio of 2 count to 1 grade. A total of 48 plots were sampled, with 21 measured and grade plots and 27 count plots. Cedar was a reserved species in Areas 1, 2, and 3.

Area 4 R/W, was calculated applying road R/W acreage using cruise per acre volumes from Area 1 cruise plots and expanding them as clearcuts for the R/W. There is approximately 1 acre of R/W located in Area 1 of the timber sale.

Cruisers used Corvallis Micro Technology (CMT) data collectors, and were downloaded to the Atterbury Super A.C.E. program at the Astoria District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria District office.

<u>AREAS</u>	<u>PROJECT</u>	<u>TRACT</u>	<u>CRUISE TYPE</u>
1, 2, & 3	COLTUR	123	OOCC, TAKE, STAY
4 R/W	COLTUR	A1	R/W

6. **Timber Description:** Area 1, 2, and 3 are modified clearcut units, approximately 60 to 70 year-old timber, consisting of a Douglas-fir dominant stand, with some western hemlock, red alder, and cedar. The average Douglas-fir tree size to be harvested is approximately 21 inches DBH, with an average height of 70 feet to a merchantable top (6 inch d.i.b./40% fp.). The average hemlock tree size is approximately 19 inches DBH and 71 feet to a merchantable top (6 inch d.i.b./40%fp). The average alder tree size is approximately 14 inches DBH and 41 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 40 MBF.

Area 4 R/W – The R/W is the same type timber as Area 1. The volume to remove from Area 4 R/W is approximately 39 MBF per acre, with an average trees size of approximately 15 inches DBH and a merchantable tree height of approximately 53 feet (6" D.I.B. or 40% of the diameter at 16 feet).

7. Statistical Analysis: (See also "Statistics Reports," attached.)

Area	Target CV	Target SE%	Actual CV	Actual SE%
1, 2, 3	50	9	45.6	6.6

The statistics are for all areas and Take and Leave trees combined.

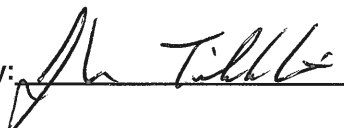
8. Take Volumes by Species and Log Grades for All Sale Areas by MBF: (See "Species, Sort Grade-Board Feet Volumes (Project)" and the "Stand Table Summary" attached). Volumes do not include "in-growth." The majority of defect and breakage was taken out during the cruise.

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	Camp Run	% D & B	% Sale
Douglas-fir	21	3,848	3,123	559	166		5.0	70
Western Hemlock	19	767	515	229	23		8.0	14
Sitka Spruce	20	559	347	189	23		6.0	11
Red Alder & other Hardwoods	14	299				299	4.0	5
TOTAL	19	5,473	3,985	977	212	299	6.0	100

9. Quarry Volume: There will be some miscellaneous volume generated during Project No. 3: Soapstone Quarry Development. This volume is to be removed if there is a full load of logs.

10. Prepared by: Edward M. Holloran

Date: October 18, 2012

10. Approved by: 

Date: 11/30/12

11. Attachments: Cruise Plans & Maps (3 pages)
Species, Sort, Grade Reports (3 pages)
Statistics Reports (3 pages)
Log Stock Table Report (5 pages)

**CRUISE DESIGN
ASTORIA DISTRICT**

Sale Name: Cole Turkey Area(s) 1, 2, and 3

Harvest Type: CC PC CT "Automark Thinning" (circle one)

Approx. Cruise Acres: 156 **Estimated CV%** 50 **SE% Objective** 9
BA/Acre Net BF or Net BF or

Planned Sale Volume: 6,000 **MMBF Estimated Sale Area Value/Acre:** \$11,000

- A. Cruise Goals:** (a) Grade minimum 100 conifer and 50 hardwood trees:
(b) Sample cruise plots; (c) Other goals (Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes; Determine LWD (down wood) cubic feet and decay classes; Determine "diameter limit" harvest parameters;)
Basal Area leave target sq. ft. Cruiser needs to select or leave trees per plot.

B. Cruise Design:

- 1. Plot Cruises:** BAF 40 (Full point) for Conifers
BAF 33.61 (Full point) for Hardwoods
Fixed Plot Size Plot Radius feet
Cruise Line Direction(s) AREA 1 (E↔W), AREA 2 (NE↔SW), AREA 3 (N↔S)
Cruise Line Spacing 7 (chains) (feet)
Cruise Plot Spacing 4 (chains) (feet)
Grade/Count Ratio 1:3
- 2. ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir Hemlock
Spruce True Fir Cedar Hardwood

C. Tree Measurements:

- 1. Diameter:** Minimum DBH to cruise is 8 " for conifers and 8 " for hardwoods.
Record dbh to nearest 1/2" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.
- 2. Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.
- 3. Top Cruise Diameter (TCD):** Minimum top outside bark for conifer is 7 ", 7 " for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.
- 4. Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major

conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:** A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)
B. Sort: Use code "1" (Domestic).
C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camp Run; 0 = Cull ; 9 = Utility
Hardwoods: #2 Sawmill = 12" + scaling diameter; #3 Sawmill = 10 and 11"; #4 Sawmill = 8 and 9"

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at intervisible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.
ITS and 100% Cruises: Mark cruise "strips" with various colored flagging (not pink). Mark trees measured and graded with yellow paint.

9. **Cruising Equipment:** Relaskop Rangefinder Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

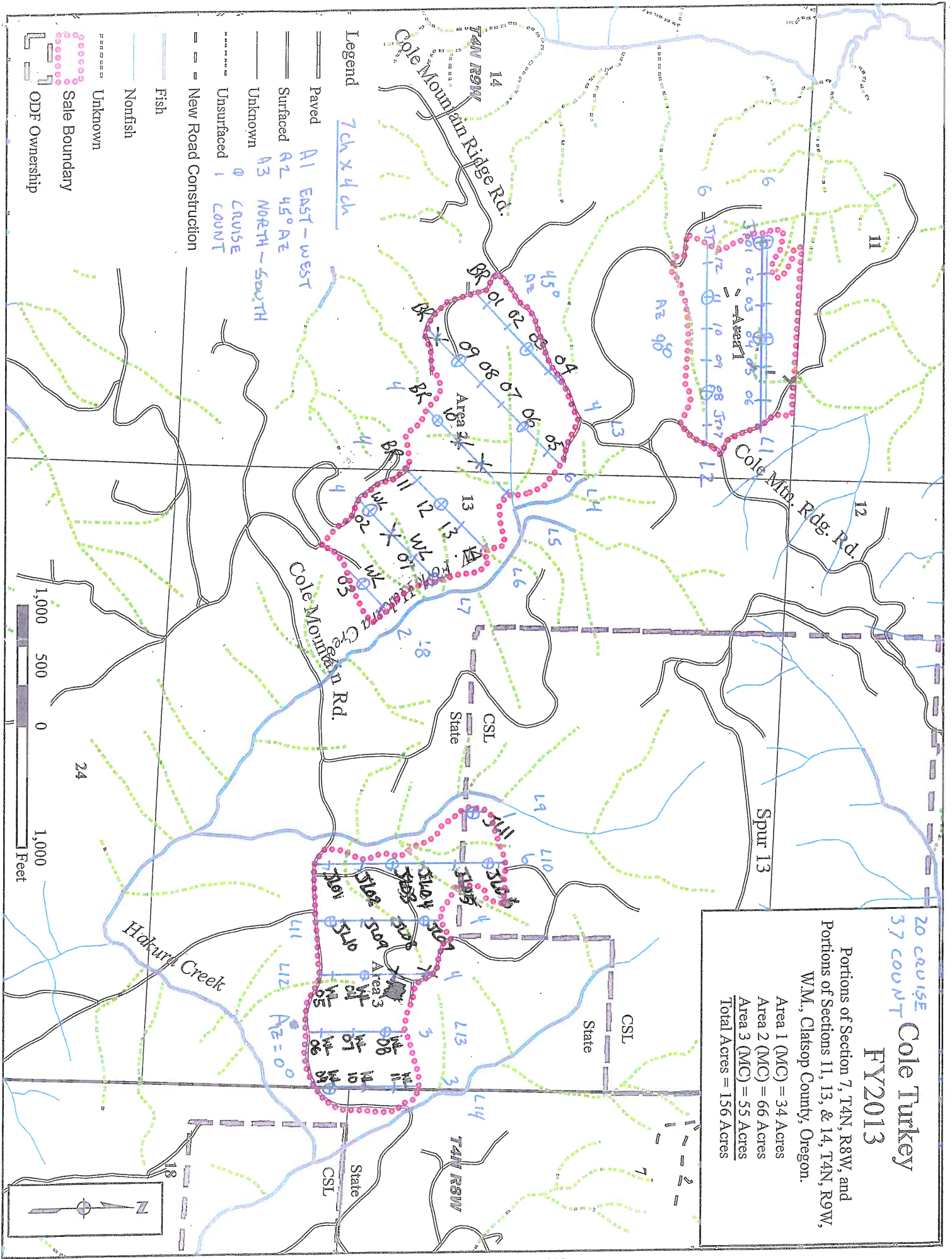
10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: John Tillotson
Approved by: [Signature]
Date: 10/5/12

20 CAUSE
37 COUNT Cole Turkey
FY2013

Portions of Section 7, T4N, R8W, and
Portions of Sections 11, 13, & 14, T4N, R9W,
W.M., Clatsop County, Oregon.

Area 1 (MC) = 34 Acres
Area 2 (MC) = 66 Acres
Area 3 (MC) = 55 Acres
Total Acres = 156 Acres



DRAPPED PLOT DUE TO BUFFER ON ROAD = X

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)														
T04N R09W S14 TyRW1.00 T04N R09W S14 Ty00CC134.00				Project: COLTUR Acres135.00										Page1 Date10/16/2012 Time3:15:48PM				
Spp	So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre Def%GrossNet			Total Net MBF	Percent of Net Board Foot Volume								Average Log			Logs Per /Acre
							Log Scale Dia.				Log Length				Ln Ft	Bd Ft	CF/ Lf	
							4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99				
H	DOCU		100.0	18											2		0.00	.9
H	DO2S	67	1.3	3,866	3,815	515			80	20	6		20	74	34	276	1.88	13.8
H	DO3S	30		1,696	1,696	229		100					32	68	36	97	0.80	17.4
H	DO4S	3		168	168	23		100			69	31			20	22	0.47	7.6
H Totals		14	1.2	5,748	5,679	767		33	54	13	6	1	23	70	32	143	1.17	39.7
A	DOCU		100.0	67											19		0.00	4.8
A	DOCR	100	.4	2,228	2,218	299	3	76	21		14	7	34	45	30	74	0.78	29.9
A Totals		5	3.4	2,295	2,218	299	3	76	21		14	7	34	45	28	64	0.70	34.7
D	DOCU		100.0	526											6		0.00	7.5
D	DO2S	81	1.7	23,535	23,137	3,123			38	62	1	4	10	85	37	401	2.42	57.7
D	DO3S	14	1.1	4,183	4,138	559		91	5	4	7	16	43	34	33	97	0.87	42.8
D	DO4S	5		1,233	1,233	166		100			64	22	15		20	30	0.48	41.6
D Totals		70	3.3	29,477	28,507	3,848		17	32	51	5	7	15	74	30	191	1.54	149.6
S	DOCU		100.0	192											15		0.00	2.3
S	DO2S	61	1.0	2,591	2,566	347			46	54		5	20	75	37	375	2.38	6.8
S	DO3S	34	1.3	1,421	1,402	189		63	37				15	85	38	110	0.97	12.8
S	DO4S	5	6.9	186	173	23		100			38	31	30		24	38	0.61	4.6
S Totals		10	5.7	4,390	4,141	559		26	41	33	2	5	19	75	33	156	1.29	26.5
Totals			3.3	41,910	40,545	5,473	0	24	35	41	5	6	17	72	30	162	1.34	250.5

T		TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page		1			
				Project: COLTUR										Date		10/16/2012			
														Time		3:15:48PM			
T04N R09W S14 TRW										T04N R09W S14 TRW									
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt	
04N		09W		14		A1		RW		1.00		12		31		1		W	
S So Gr T rt ad Spp			% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
								Log Scale Dia.				Log Length				Ln	Bd	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	Ft		
H DO 2S			65	1.5 14,345 14,131			14		77	23			16	84		37	314	1.94	45.0
H DO 3S			31	6,821 6,821			7	100					29	71		37	101	0.82	67.4
H DO 4S			4	704 704			1	100				69	31			20	22	0.47	31.6
H Totals			55	1.0 21,870 21,655			22	35	51	15		2	1	20	77	33	150	1.17	144.0
D DO 2S			21	1,871 1,871			2	100					100			32	231	1.67	8.1
D DO 3S			48	4,110 4,110			4	100					4	38	58	37	88	0.74	46.9
D DO 4S			31	2,574 2,574			3	100				48	21	31		21	28	0.38	91.2
D Totals			22	8,555 8,555			9	78	22			14	8	50	28	27	58	0.62	146.2
S DO CU				100.0 567												7		0.00	5.0
S DO 2S			53	4,636 4,636			5		51	49			24	76		38	412	2.18	11.3
S DO 3S			41	3,548 3,548			4	47	53				5	95		39	138	1.02	25.6
S DO 4S			6	9.0 510 465			0	100					51	49		31	44	0.51	10.5
S Totals			22	6.6 9,261 8,648			9	24	49	26		3	17	80		34	165	1.18	52.4
A DO CR			100	372 372			0	100					100			29	40	0.45	9.3
A Totals			1	372 372			0	100					100			29	40	0.45	9.3
Type Totals				2.1 40,057 39,230			39	43	43	14		4	4	26	66	31	111	0.95	351.9

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)														Page 1						
Project: COLTUR														Date	10/16/2012							
														Time	3:15:48PM							
T04N R09W S14 T00CC										T04N R09W S14 T00CC												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
04N	09W	14	TAKE	00CC	134.00	48	132	1	W													
S So Gr T rt ad Spp			%	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
			Net BdFt					Log Scale Dia.				Log Length				Ln	Bd	CF/ Lf				
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	Ft			
D	DO	CU		100.0	530													6		0.00	7.6	
D	DO	2S	81	1.7	23,697	23,295	3,122					38	62	1	4	9	86	37	401	2.42	58.1	
D	DO	3S	14	1.1	4,184	4,138	555				91	5	4	7	17	43	33	33	97	0.87	42.8	
D	DO	4S	5		1,223	1,223	164				100			64	22	14		20	30	0.48	41.2	
D Totals			71	3.3	29,633	28,656	3,840				17	32	51	5	7	14	74	30	192	1.54	149.6	
H	DO	CU		100.0	18													2		0.00	.9	
H	DO	2S	67	1.3	3,788	3,738	501					80	20	6		20	74	34	275	1.88	13.6	
H	DO	3S	30		1,658	1,658	222				100					32	68	36	97	0.80	17.0	
H	DO	4S	3		164	164	22				100			69	31			20	22	0.47	7.4	
H Totals			14	1.2	5,628	5,560	745				33	54	13	6	1	23	70	32	143	1.17	38.9	
S	DO	CU		100.0	189													15		0.00	2.3	
S	DO	2S	62	1.0	2,576	2,550	342					46	54		5	20	75	37	375	2.39	6.8	
S	DO	3S	33	1.4	1,405	1,386	186				64	36				16	84	38	109	0.97	12.7	
S	DO	4S	5	6.9	183	171	23				100			39	31	30		24	38	0.61	4.5	
S Totals			10	5.7	4,354	4,107	550				26	41	34	2	5	19	75	33	156	1.29	26.3	
A	DO	CU		100.0	68													19		0.00	4.9	
A	DO	CR	100	.4	2,241	2,232	299				3	76	21		14	7	34	45	30	74	0.78	30.0
A Totals			6	3.4	2,309	2,232	299				3	76	21		14	7	34	45	28	64	0.70	34.9
Type Totals				3.3	41,923	40,555	5,434				0	24	35	41	5	6	17	72	30	162	1.34	249.7

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	COLTUR		DATE	10/16/2012			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
04N	09W	14	123	00CC	135.00	48	331	1	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
					TREES	TREES					
PLOTS		TREES									
TOTAL		48		331		6.9					
CRUISE		21		141		6.7					
DBH COUNT						17,265					
REFOREST						.8					
COUNT		27		179		6.6					
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		84		66.7	21.0	70	160.8	29,633	28,656	6,958	6,865
WHEMLOCK		15		17.9	18.9	71	35.0	5,628	5,560	1,449	1,445
S SPRUCE		18		13.6	19.9	67	29.2	4,354	4,107	1,165	1,123
R ALDER		15		25.1	13.8	41	26.0	2,309	2,232	721	695
SNAG		4		3.4	24.2	58	10.8	441		97	
SPRUCELV		2		.4	43.7	85	4.2	945	945	206	206
DOUGLEAV		2		.4	42.4	115	4.2	1,207	1,148	223	215
HEMLEAV		1		.4	20.0	82	.8	126	103	38	38
TOTAL		141		127.9	19.7	64	271.0	44,643	42,752	10,856	10,587
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		77.5		8.4	692	756	820				
WHEMLOCK		77.4		20.7	324	409	493				
S SPRUCE		79.4		19.3	342	424	505				
R ALDER		74.5		19.9	102	127	153				
SNAG											
SPRUCELV		97.7		91.5	297	3,495	6,693				
DOUGLEAV		53.5		50.1	1,525	3,055	4,585				
HEMLEAV											
TOTAL		117.1		9.9	592	656	721	547	137	61	
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		102.8		14.8	57	67	77				
WHEMLOCK		202.5		29.2	13	18	23				
S SPRUCE		178.8		25.8	10	14	17				
R ALDER		144.5		20.8	20	25	30				
SNAG		221.6		32.0	2	3	4				
SPRUCELV		310.7		44.8	0	0	1				
DOUGLEAV		302.7		43.6	0	0	1				
HEMLEAV		692.8		99.9	0	0	1				
TOTAL		55.5		8.0	118	128	138	123	31	14	
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		79.9		11.5	142	161	179				
WHEMLOCK		196.7		28.4	25	35	45				
S SPRUCE		171.5		24.7	22	29	36				
R ALDER		139.1		20.1	21	26	31				
SNAG		211.9		30.6	8	11	14				
SPRUCELV		296.4		42.7	2	4	6				
DOUGLEAV		296.4		42.7	2	4	6				
HEMLEAV		692.8		99.9	0	1	2				

TC TSTATS				STATISTICS				PAGE	2
				PROJECT		COLTUR		DATE	10/16/2012
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	14	123	00CC	135.00	48	331	1	W
CL: 68.1 %	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH		5	10	15
TOTAL	39.8	5.7	255	271	287		63	16	7
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	78.4	11.3	25,416	28,656	31,897				
WHEMLOCK	200.1	28.9	3,956	5,560	7,164				
S SPRUCE	205.2	29.6	2,892	4,107	5,322				
R ALDER	148.7	21.4	1,753	2,232	2,710				
SNAG									
SPRUCELV	303.3	43.7	532	945	1,359				
DOUGLEAV	296.8	42.8	657	1,148	1,640				
HEMLEAV	692.8	99.9	0	103	206				
TOTAL	45.6	6.6	39,939	42,752	45,565		83	21	9

TC PSTATS				PROJECT STATISTICS					PAGE	1		
				PROJECT	COLTUR				DATE	10/16/2012		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
04N	09	14	A1	RW		135.00	60	390	1	W		
04N	09W	14	TAKE	00CC								
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			60	390	6.5							
CRUISE			23	163	7.1	16,735	1.0					
DBH COUNT												
REFOREST												
COUNT			37	227	6.1							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR			95	67.0	20.9	70		160.4	29,477	28,507	6,925	6,832
WHEMLOCK			28	18.3	18.9	71		35.7	5,748	5,679	1,479	1,476
S SPRUCE			24	13.6	19.9	67		29.3	4,390	4,141	1,172	1,131
R ALDER			16	25.0	13.8	41		25.9	2,295	2,218	716	691
TOTAL			163	124.0	19.3	64		251.2	41,910	40,545	10,293	10,130
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			86.3	8.8	622	682	742					
WHEMLOCK			75.6	14.5	360	421	482					
S SPRUCE			75.1	15.6	375	445	515					
R ALDER			77.3	19.9	98	122	146					
TOTAL			94.5	7.4	507	547	588	356	89	40		
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			122.7	15.8	56	67	78					
WHEMLOCK			224.0	28.9	13	18	24					
S SPRUCE			202.8	26.2	10	14	17					
R ALDER			168.3	21.7	20	25	30					
TOTAL			80.1	10.3	111	124	137	256	64	28		
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			101.5	13.1	139	160	181					
WHEMLOCK			218.0	28.1	26	36	46					
S SPRUCE			195.2	25.2	22	29	37					
R ALDER			162.8	21.0	20	26	31					
TOTAL			69.2	8.9	229	251	274	191	48	21		
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			100.5	13.0	24,811	28,507	32,204					
WHEMLOCK			221.2	28.5	4,059	5,679	7,300					
S SPRUCE			230.2	29.7	2,911	4,141	5,370					
R ALDER			173.1	22.3	1,723	2,218	2,713					
TOTAL			72.9	9.4	36,734	40,545	44,356	212	53	24		

Log Stock Table - MBF

T04N R09W S14 TyRW 1.00
T04N R09W S14 Ty00CC 134.00

Project: COLTUR
Acres 135.00

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Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Sp	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+
H		DO	CU	2	2	100.0														
H		DO	2S	16	9		9	1.2				9								
H		DO	2S	18	21		21	2.8						21						
H		DO	2S	32	102		102	13.3				102								
H		DO	2S	40	389	1.8	382	49.8						204	75	103				
H		DO	3S	32	57		57	7.4			20		37							
H		DO	3S	34	8		8	1.1			8									
H		DO	3S	35	8		8	1.0				8								
H		DO	3S	36	21		21	2.8			21									
H		DO	3S	40	135		135	17.6			18	36	81							
H		DO	4S	12	2		2	.3			2									
H		DO	4S	18	6		6	.8			6									
H		DO	4S	20	7		7	1.0			7									
H		DO	4S	28	7		7	.9			7									
H		Totals			776	1.2	767	14.0			90	44	118	112	204	96	103			
A		DO	CU	4	4	100.0														
A		DO	CU	23	5	100.0														
A		DO	CR	12	14		14	4.8						14						
A		DO	CR	20	27		27	9.1			24	3								
A		DO	CR	28	6	20.0	5	1.7			5									
A		DO	CR	29	17		17	5.7			17									
A		DO	CR	32	73		73	24.4		9		19	45							
A		DO	CR	34	29		29	9.8			29									
A		DO	CR	40	133		133	44.6			10	26	50	23	25					
A		Totals			310	3.4	299	5.5		9	85	49	95	23	40					
D		DO	CU	2	3	100.0														
D		DO	CU	3	1	100.0														
D		DO	CU	6	45	100.0														
D		DO	CU	8	11	100.0														
D		DO	CU	10	11	100.0														
D		DO	2S	16	17	6.3	16	.4						16						
D		DO	2S	18	16	2.1	15	.4					9	7						
D		DO	2S	24	32	8.0	29	.8									29			
D		DO	2S	26	28		28	.7						6	23					
D		DO	2S	28	27	10.7	24	.6						24						

TC PLOGSTVB				Log Stock Table - MBF																
T04N R09W S14 TyRW 1.00 T04N R09W S14 Ty00CC 134.00					Project: COLTUR Acres 135.00										Page 2 Date 10/16/2012 Time 3:15:47PM					
S T	So rt	Gr 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+	
D	DO	2S	30	44		44	1.1							16		28				
D	DO	2S	32	298	2.3	292	7.6						158	31	74	28				
D	DO	2S	34	5		5	.1						5							
D	DO	2S	36	66		66	1.7							28		38				
D	DO	2S	40	2,644	1.5	2,604	67.7						273	427	989	618	253	45		
D	DO	3S	16	3		3	.1			3										
D	DO	3S	18	3		3	.1					3								
D	DO	3S	20	36	1.2	36	.9					11			10	15				
D	DO	3S	21	3		3	.1					3								
D	DO	3S	24	19		19	.5				6	12								
D	DO	3S	26	19		19	.5				15	4								
D	DO	3S	27	4		4	.1					4								
D	DO	3S	28	25		25	.7				16	9								
D	DO	3S	30	22	3.7	22	.6			5		5	11							
D	DO	3S	32	221	1.8	217	5.6				20	181			16					
D	DO	3S	34	21		21	.5			9		12								
D	DO	3S	40	188		187	4.9			87	45	55								
D	DO	4S	12	4		4	.1			4										
D	DO	4S	14	14		14	.4			14										
D	DO	4S	16	42		42	1.1			23	19									
D	DO	4S	18	13		13	.3			10	3									
D	DO	4S	20	34		34	.9			17	17									
D	DO	4S	22	6		6	.1				6									
D	DO	4S	24	3		3	.1				3									
D	DO	4S	25	3		3	.1			3										
D	DO	4S	28	8		8	.2			8										
D	DO	4S	30	16		16	.4			16										
D	DO	4S	32	24		24	.6			24										
D	Totals			3,979	3.3	3,848	70.3			225	148	300	457	507	1157	727	282	45		
S	DO	CU	6	6	100.0															
S	DO	CU	8	15	100.0															
S	DO	CU	27	5	100.0															
S	DO	2S	26	20	6.2	18	3.3					18								
S	DO	2S	32	70	1.1	69	12.3					9		34		25				
S	DO	2S	40	260		259	46.3					16		90	89	64				
S	DO	3S	32	26	7.8	24	4.3			19		5								

TC PLOGSTVB		Log Stock Table - MBF																		
T04N R09W S14 TyRW 1.00 T04N R09W S14 Ty00CC 134.00					Project: COLTUR Acres 135.00										Page 3 Date 10/16/2012 Time 3:15:47PM					
S T	Spp	So rt	Gr 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+
S		DO	3S	34	5		5	.9				5								
S		DO	3S	36	5		5	.9				5								
S		DO	3S	40	156		155	27.8			32		54	69						
S		DO	4S	14	2		2	.3			2									
S		DO	4S	16	5	5.9	5	.9				5								
S		DO	4S	18	2		2	.4				2								
S		DO	4S	30	7		7	1.3			7									
S		DO	4S	32	9	16.7	7	1.3			7									
S		Totals			593	5.7	559	10.2			68	17	59	113	90	123	89			
Total		All Species			5,658	3.3	5,474	100.0		9	467	258	571	704	841	1377	919	282	45	

TC		PSTNDSUM		Stand Table Summary										Page		1	
														Date:		10/16/2012	
T04N R09W S14 TyRW1.00 T04N R09W S14 Ty00CC134.00				ProjectCOLTUR										Time:		3:15:49PM	
				Acres135.00										Grown Year:			
S Spec	T	Sample		Tot		Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
D		9	4	90	30	8.898	3.93	8.90	6.0	20.0		53	178		72	24	
D		10	2	85	64	3.604	1.97	3.60	12.0	50.0		43	180		58	24	
D		11	2	90	48	2.978	1.97	2.98	13.0	40.0		39	119		52	16	
D		12	2	89	61	2.503	1.97	2.50	19.0	60.0		48	150		64	20	
D		14	4	88	80	3.677	3.93	7.35	17.0	55.0		125	405		169	55	
D		15	2	87	66	3.097	3.80	4.65	22.0	66.7		102	310		138	42	
D		16	1	86	96	1.361	1.90	2.72	25.5	95.0		69	259		94	35	
D		17	4	88	65	2.494	3.93	3.74	27.3	100.0		102	374		138	51	
D		18	1	85	77	1.075	1.90	2.15	27.0	85.0		58	183		78	25	
D		19	4	86	97	2.929	5.77	5.86	37.3	126.5		218	741		295	100	
D		20	2	85	103	1.742	3.80	4.36	34.2	114.0		149	497		201	67	
D		21	8	86	102	5.558	13.37	12.70	40.5	145.7		514	1,850		693	250	
D		22	4	87	115	2.880	7.60	8.64	37.6	153.3		325	1,325		438	179	
D		23	4	85	114	2.635	7.60	7.90	42.5	170.0		336	1,344		454	181	
D		24	4	87	120	2.420	7.60	7.26	47.6	197.5		345	1,434		466	194	
D		25	4	83	110	2.230	7.60	6.13	47.2	187.3		289	1,148		391	155	
D		26	9	86	129	4.639	17.10	13.92	59.9	251.5		833	3,500	1,125	472		
D		27	5	86	125	2.390	9.50	7.17	62.9	262.0		451	1,878		608	254	
D		28	4	86	136	1.778	7.60	5.33	70.9	308.3		378	1,644		511	222	
D		29	4	86	135	1.657	7.60	4.97	77.5	345.8		385	1,719		520	232	
D		30	3	87	141	1.162	5.70	3.48	86.9	407.8		303	1,421		409	192	
D		31	3	85	136	1.088	5.70	3.26	86.6	401.1		282	1,309		381	177	
D		32	4	82	133	1.361	7.60	4.08	89.1	385.0		364	1,572		491	212	
D		33	2	85	127	.640	3.80	1.92	88.7	421.7		170	810		230	109	
D		35	1	82	137	.284	1.90	.85	108.7	500.0		93	427		125	58	
D		36	5	84	164	1.344	9.50	4.03	120.8	600.7		487	2,422		658	327	
D		38	1	82	89	.241	1.90	.48	133.5	570.0		64	275		87	37	
D		43	1	82	150	.188	1.90	.57	177.7	856.7		100	484		136	65	
D		44	1	92	140	.180	1.90	.54	193.7	1016.7		105	549		141	74	
D		Totals	95	87	91	67.035	160.36	142.06	48.1	200.7		6,832	28,507		9,223	3,848	
H		14	2	88	82	2.236	2.39	4.47	19.0	70.0		85	313		115	42	
H		15	2	92	81	1.948	2.39	3.90	22.5	85.0		88	331		118	45	
H		16	6	91	88	5.135	7.17	10.27	28.0	106.7		288	1,096		388	148	
H		18	1	85	82	1.311	2.32	2.62	31.0	105.0		81	275		110	37	
H		19	4	93	95	2.428	4.78	4.86	44.0	172.5		214	838		288	113	
H		22	3	83	80	1.783	4.71	3.57	42.9	147.8		153	527		207	71	
H		23	6	83	107	2.485	7.17	6.63	49.4	181.2		327	1,201		442	162	
H		28	2	88	145	.559	2.39	1.68	87.0	420.0		146	704		197	95	
H		33	2	86	91	.402	2.39	.80	117.5	490.0		95	394		128	53	
H		Totals	28	88	91	18.287	35.70	38.79	38.0	146.4		1,476	5,679		1,992	767	
S		14	1	82	45	1.505	1.61	1.50	23.0	50.0		35	75		47	10	
S		15	3	84	107	2.665	3.27	5.33	28.0	99.9		149	533		201	72	
S		16	1	89	41	1.152	1.61	1.15	26.0	60.0		30	69		40	9	
S		17	2	88	95	1.054	1.66	2.11	35.5	125.0		75	264		101	36	
S		18	4	84	75	2.761	4.88	3.70	41.5	130.4		154	483		207	65	
S		22	3	84	86	1.239	3.27	2.48	47.3	158.4		117	392		158	53	
S		24	2	89	141	.529	1.66	1.59	59.7	280.0		95	444		128	60	
S		25	1	90	69	.472	1.61	.94	59.0	220.0		56	208		75	28	
S		26	4	86	128	1.323	4.88	3.97	68.6	302.7		272	1,202		368	162	
S		27	1	85	53	.405	1.61	.40	95.0	190.0		38	77		52	10	
S		32	1	82	79	.288	1.61	.58	98.5	385.0		57	222		77	30	
S		36	1	79	74	.228	1.61	.46	117.5	380.0		53	173		72	23	

TC		PSTNDSUM		Stand Table Summary										Page Date:		2 10/16/2012	
T04N R09W S14 TyRW1.00 T04N R09W S14 Ty00CC134.00					ProjectCOLTUR					Time:3:15:49PM							
					Acres135.00					Grown Year:							
S Spec	T	Sample		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			
		DBH	Trees	FF 16'	Av Ht				Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
S		Totals	24	85	85	13.619	29.27	24.21	46.7	171.0		1,131	4,141		1,527	559	
A		9	1	86	26	3.852	1.70										
A		11	2	87	45	3.137	2.07	3.14	13.0	40.0		41	125		55	17	
A		12	3	87	47	6.500	5.10	6.50	16.0	43.3		104	282		140	38	
A		14	2	86	77	3.184	3.40	4.78	23.3	80.0		111	382		150	52	
A		15	2	87	71	2.773	3.40	5.55	20.5	70.0		114	388		153	52	
A		16	1	86	51	1.219	1.70	1.22	30.0	60.0		37	73		49	10	
A		17	1	87	81	1.080	1.70	2.16	30.0	105.0		65	227		87	31	
A		18	2	86	66	1.926	3.40	3.85	25.7	87.5		99	337		134	45	
A		21	1	87	74	.707	1.70	1.41	42.0	135.0		59	191		80	26	
A		22	1	86	77	.645	1.70	1.29	47.5	165.0		61	213		83	29	
A		Totals	16	87	55	25.022	25.89	29.89	23.1	74.2		691	2,218		933	299	
Totals			163	87	83	123.963	251.23	234.95	43.1	172.6		10,130	40,545		13,675	5,474	

TIMBER SALE CONTRACT NO. 341-13-51
COLE TURKEY

PORTIONS OF SECTIONS 7, T4N, R8W, AND
PORTIONS OF SECTIONS 11, 13, & 14, T4N, R9W,
W.M., CLATSOP COUNTY, OREGON

Area 1 (MC) = 33 Acres
Area 2 (MC) = 52 Acres
Area 3 (MC) = 49 Acres
R/W 4 = 1 Acre
Total Net Acres = 135 Acres

Legend

- ◆ Survey Monument
- Existing Landing
- ⊙ Landing to Construct
- ▬ New Construction (Unsurfaced)
- Type F Stream
- Type N Stream
- ... Timber Sale Boundary
- ▨ Green Tree Retention Area
- Line Pull
- ▭ Ownership
- ▬ Paved Road
- ▬ Surfaced Road
- - - New Construction
- ▭ Right-of-Way
- ▭ Section Line
- ▨ Stream Buffer

Logging Breakdown		
Area	Tractor	Cable
Area 1	88%	12%
Area 2	30%	70%
Area 3	82%	18%
R/W -4	100%	0%
TOTAL	64%	36%

Approximate Scale 1 inch = 1,000 feet
1,000 500 0 1,000 Feet

