Timber Sale Appraisal
Cole Soap
Sale AT-341-2018-41-

District: Astoria

Date: February 05, 2018

Cost Summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$2,369,185.56	$149,555.99	$2,518,741.55
		Project Work:	($177,891.00)
		Advertised Value:	$2,340,850.55

Timber Sale Appraisal
Cole Soap
Sale AT-341-2018-41-

District: Astoria **Date: February 05, 2018**

Timber Description

Location: Portions of Sections 12, 13, and 14 T4N, R9W, W.M., Clatsop County, Oregon.

Stand Stocking: 80%

Specie Name	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	23	0	97
Western Hemlock / Fir	24	0	97
Sitka Spruce	22	0	94
Alder (Red)	19	0	96

Volume by Grade	2S	3S	4S	8" - 9"	10" - 11"	12"+	6" - 7"	Total
Douglas - Fir	2,785	641	84	0	0	0	0	3,510
Western Hemlock / Fir	613	166	17	0	0	0	0	796
Sitka Spruce	248	44	7	0	0	0	0	299
Alder (Red)	0	0	0	63	56	148	26	293
Total	3,646	851	108	63	56	148	26	4,898

Comments: Pond Values Used: Local Pond Values, December 2017.

Expected Log Markets: Mist, Willamina, Banks, Clatskanie, Tillamook, Forest Grove, Warrenton, Elma, WA, Longview, WA, Vancouver, WA and Chehalis, WA.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$1,291.88/MBF = $1,540.00/MBF -$248.12/MBF

SCALING COST ALLOWANCE = $5.00/MBF

BRANDING AND PAINTING COST ALLOWANCE = $2.00/MBF

FUEL COST ALLOWANCE = $3.00/GALLON

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

Other Costs (with Profit & Risk to be added):
Slash and Landing Piling (Includes move-in and pile materials) = $14,518
End Hauling Slash in Area 1:
Dump Truck: 8 hours @ $79/hr = $632
Log Loader: 8 hours @ $129/hr = $1,008
Machine Washing for Invasive Weed Compliance = $2,000
Ditch Filters:
20 bales of straw @ $10.00/bale = $200
8 hours of labor @ $40/hr = $320
TOTAL Other Costs (with Profit & Risk to be added): $18,678

Other Costs (No Profit & Risk added):
None.

ROAD MAINTENANCE
(See attached Road Maintenance Cost Summary Sheet)
TOTAL Road Maintenance: $17,216/4,898 MBF = $3.51/MBF

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Logging Conditions

Combination#: 1

Douglas - Fir	52.00%
Western Hemlock / Fir	52.00%
Sitka Spruce	52.00%
Alder (Red)	52.00%

Logging System: Cable: Large Tower >=70 **Process:** Manual Falling/Delimbing

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 10 **bd. ft / load:** 4600

cost / mbf: $147.83

machines: Log Loader (A)
Tower Yarder (Large)

Combination#: 2

Douglas - Fir	48.00%
Western Hemlock / Fir	48.00%
Sitka Spruce	48.00%
Alder (Red)	48.00%

Logging System: Shovel **Process:** Manual Falling/Delimbing

yarding distance: Medium (800 ft) **downhill yarding:** No

tree size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

loads / day: 12 **bd. ft / load:** 4600

cost / mbf: $71.33

machines: Shovel Logger

Timber Sale Appraisal
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District: Astoria **Date: February 05, 2018**

Logging Costs

Operating Seasons:	3.00	**Profit Risk:**	10%
Project Costs:	$177,891.00	**Other Costs (P/R):**	$18,678.00
Slash Disposal:	$0.00	**Other Costs:**	$0.00

Miles of Road

Road Maintenance: $3.51

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	4.1
Western Hemlock / Fir	$0.00	2.0	4.0
Sitka Spruce	$0.00	2.0	4.0
Alder (Red)	$0.00	2.0	3.0

Timber Sale Appraisal
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District: Astoria **Date: February 05, 2018**

Logging Costs Breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling / Brand & Paint	Other	Total
Douglas - Fir									
$111.11	$3.62	$2.69	$97.97	$3.81	$21.92	$0.00	$7.00	$0.00	$248.12
Western Hemlock / Fir									
$111.11	$3.62	$2.69	$100.42	$3.81	$22.16	$0.00	$7.00	$0.00	$250.81
Sitka Spruce									
$111.11	$3.72	$2.69	$103.35	$3.81	$22.47	$0.00	$7.00	$0.00	$254.15
Alder (Red)									
$111.11	$3.65	$2.69	$135.20	$3.81	$25.65	$0.00	$7.00	$0.00	$289.11

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$805.96	$557.84	$0.00
Western Hemlock / Fir	$0.00	$688.62	$437.81	$0.00
Sitka Spruce	$0.00	$463.75	$209.60	$0.00
Alder (Red)	$0.00	$799.54	$510.43	$0.00

Timber Sale Appraisal
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Sale AT-341-2018-41-

District: Astoria **Date: February 05, 2018**

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	3,510	$557.84	$1,958,018.40
Western Hemlock / Fir	796	$437.81	$348,496.76
Sitka Spruce	299	$209.60	$62,670.40
Alder (Red)	293	$510.43	$149,555.99

Gross Timber Sale Value

Recovery: $2,518,741.55

Prepared By: Cody Valencia **Phone:** 503-325-5451

Site Prep Appraisal

Sale Number: 341-18-41
Sale Name: Cole Soap
Date: 12/20/2017

Vegetation Type/Zone	Vegetation Type/Zone Code	Production Rate (hr/ac)	Estimated Piles/Acre
Doug-fir	A	0.5	2.0
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	0.25	0.5

Sale Area	Harvest Type	Veg Type/Zone	Ground Based Yarding Acres	Estimated Piling Hours/Area	Cost/Hour C325	Total Cost/Area	
1	MC	B	26	39	$129.00	$5,031.00	
2	MC	B	22	33	$129.00	$4,257.00	
					In-unit Piling	**Sub Total =**	$9,288.00

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	117	$5.00	$585.00	
2	7	$220.00	$1,540.00	99	$5.00	$495.00	
					Materials	**Sub Total =**	$1,080.00
					Landing Piling	**Sub Total =**	$2,860.00

Move-In Allowance	Number of Move-In's	Total Move-In Allowance					
$1,290.00	1	$1,290.00			Move-In	**Sub Total =**	$1,290.00
						Grand Total =	**$14,518.00**

Road Maintenance Cost Summary (Interim and Post Harvest)

Sale:	**Cole Soap**	**MBF:**	4,898
Date:	December 20, 2017	**$$/MBF:**	$3.51
By:	Cody Valencia		

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	
Interim Operations	Grader 14G	$778	1	12	$100	$1,978	
	Dump Truck 12CY	$163	1	4	$79	$479	
	FE Loader C966	$778	1	2	$83	$944	
Final Road Maintenance	Grader 14G	$778	1	44	$100	$5,178	
	Dump Truck 12CY	$163	1	16	$79	$1,427	
	FE Loader C966	$778	1	4	$83	$1,110	
	Vibratory Roller	$778	1	44	$77	$4,166	
	Water Truck 2,500 gallon	$190	1	16	$89	$1,614	
	Labor			8	$40	$320	
Total							**$17,216**

Interim Operations Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	3.0	4.50	1.5	12

Final Road Maintenance

Production Rates	Miles/day	Distance (miles)	Days	Hours
Grader	1.5	8.3	5.5	44
Vibratory Roller	1.5	8.3	5.5	44

Process and compact: All crushed rock roads
Cole Mountain Ridge Road 4.09 miles
Seuss Alley Road 1.47 miles
Spur 13 1.24 miles
Unamed spurs 1.47 miles

Grade & Process Total = 8.3

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Cole Soap

ROAD IMPROVEMENT:

	Road segment		Length/Sta	Cost	
Project No. 1					
	I1-I2, I3-I4, I5-I6, I7-I8, I9-I10, I11-I12		401.35	$36,810	
	TOTALS	Stations	401.35 stations		$36,810
		Miles	7.6		

SPECIAL PROJECTS:

	Description	Cost
Project No. 2	Soapstone Quarry crushing	$132,390
Project No. 3	Road vacating	$1,411
	Project Road Maintenance	$3,136
	TOTAL	$136,937

MOVE IN:

Equipment	Cost
Excavator (C315)	$805.00
Dump Trucks (12cy x 5)	$815.00
Front End Loader (C966)	$778.00
Grader (14G)	$778.00
Vibratory Roller	$778.00
Water Truck (2,500 gallon)	$190.00
TOTAL	$4,144.00

GRAND TOTAL **$177,891**

Compiled By: cody valencia Date: 12/20/2017

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Cole Soap — **NEW CONSTRUCTION:** _____ STATIONS _____ MILES
ROAD: I1-I2(271.30), I3-I4(68.00) I5-I6(4.80), I7-I8(28.00), I9-I10(20. — **IMPROVEMENT:** 401.35 STATIONS 7.60 MILES
POINTS: I11-I12(8.75)

CLEARING & GRUBBING

	Method		Acres/amount	x	Rate	=	Cost
I5 to I6	Sod removal with 14G	$/hr	3	x	$100.00	=	$300.00
I7 to I8	Sod removal with 14G	$/hr	6	x	$100.00	=	$600.00
I9 to I10	Sod removal with 14G	$/hr	2	x	$100.00	=	$200.00
I11 to I12	Remove alder and with D6	$/hr	3.00	x	$113.00	=	$339.00
I11 to I12	Place slash outside road w c315	$/hr	3.00	x	$101.00	=	$303.00

SUB TOTAL FOR CLEARING & GRUBBING $1,439

EXCAVATION

	Material		Cy/amount	x	Rate	=	Cost
I1 to I2							
10+00	clean outlet/ re-establish ditch out C3	$/hr	1.0	x	$101.00	=	$101.00
19+00-21+00	ditch re-esablish C315	$/hr	3.0	x	$101.00	=	$303.00
19+00-21+00	Cut slope rounding	$/ sta	2.0	x	$43.00	=	$86.00
20+50	clean inlet catch basin C315	$/hr	0.5	x	$101.00	=	$50.50
63+30	re-establish ditch out C315	$/hr	1.0	x	$101.00	=	$101.00
105+25	clean outlet/ re-establish ditch out C3	$/hr	1.0	x	$101.00	=	$101.00
134+00	Construct Landing	$/Landing	1.00	x	$389.00	=	$389.00
159+30	clean inlet catch basin C315	$/hr	0.50	x	$101.00	=	$50.50
	Dump truck to end-haul waste materi	$/hr	8.00	x	$79.00	=	$632.00
I3 to I4							
16+50, 44+50, 50+00	Construct Landing	$/Landing	3.00	x	$389.00	=	$1,167.00
I5 to I6							
1+00-3+00	ditch re-esablish C315	$/hr	3.00	x	$101.00	=	$303.00
1+30	Construct Landing	$/Landing	1.00	x	$389.00	=	$389.00
I7 to I8							
27+25	Construct Landing	$/Landing	1.00	x	$389.00	=	$389.00

SUB TOTAL FOR EXCAVATION $4,062

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I1 to I2									
224+10	18" cpp	35	$19.53	$683.55					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	6' X 2 1/2" white fiberglass posts	3	$20.00	$60.00
	At station 2+30, 114+30, and 224+10 on I1-I2			

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $744

Subtotal of Clearing, Exc., Culv. ***$6,245***

SURFACING

Subgrade prep: Description	Stations/ amount	x	Rate/ sta/amt	Cost
I1 to I2 (76.00), I5 to I6(4.80) Subgrade Prep	80.80	x	$45.02	$3,637.62
I3 to I4(5.00), I7 to I8(13.00), I9 to I10(5.00)	23.00	x	$45.02	$1,035.46

ROAD SEGMENT	I1 to I2			POINT TO POINT		Sta. to Sta.					
				I1 to I2		0+00 to 271+30		TOTAL	Rate/	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)	Sta./ amt.		
Subgrade reinforecement	4"-0" Crushed	61+00-65+00	6	station	39	stations	4	156	$4.35	$679	
Junction rock	4"-0" Crushed	271+30	N/A	junction	77	junctions	1	77	$4.35	$335	
Culvert bedding and backfill	1½"-0" Crushed	224+10	N/A	culvert	33	culverts	1	33	$4.35	$144	
Subgrade Leveling	1½"-0" Crushed	N/A	N/A	load	11	loads	40	440	$4.35	$1,914	
Surface Rock	1½"-0" Crushed	0+00 to 76+00	4	station	26	stations	76.00	1,976	$4.35	$8,596	
Junctions	1½"-0" Crushed	N/A	N/A	junction	22	junctions	6	132	$4.35	$574	
Turnouts	1½"-0" Crushed	N/A	N/A	TO	22	TO's	11	242	$4.35	$1,053	
Landing Rock	6"-0" Pit-Run	134+00	N/A	landing	88	landings	1	88	$5.74	$505	
Total Rock for Road Segment:			I1 to I2					3,144			$13,799
ROAD SEGMENT	**I3 to I4**			**POINT TO POINT**		**Sta. to Sta.**					
				I3 to I4		0+00 to 68+00		TOTAL	Rate/	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)	Sta./ amt.		
Subgrade Leveling	1½"-0" Crushed	N/A	N/A	load	11	loads	5	55	$4.35	$239	
Landing Rock	6"-0" Pit-Run	16+50, 44+50, 50+00	N/A	landing	88	landings	3	264	$5.74	$1,515	
Total Rock for Road Segment:			I3 to I4					319			$1,755
ROAD SEGMENT	**I5 to I6**			**POINT TO POINT**		**Sta. to Sta.**					
				I5 to I6		0+00 to 4+80		TOTAL	Rate/	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)	Sta./ amt.		
Junctions	1½"-0" Crushed	0+00	N/A	junction	33	junctions	1	33	$4.35	$144	
Surface Rock	4"-0" Crushed	0+00-4+80	6	station	39	stations	4.8	187	$4.35	$814	
Landing Rock	6"-0" Pit-Run	1+30,4+80	N/A	landing	88	landings	2	176	$5.74	$1,010	
Total Rock for Road Segment:			I5 to I6					396			$1,968
ROAD SEGMENT	**I7 to I8**			**POINT TO POINT**		**Sta. to Sta.**					
				I7 to I8		0+00 to 28+00		TOTAL	Rate/	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)	Sta./ amt.		
Subgrade Leveling	1½"-0" Crushed	N/A	N/A	load	11	loads	5	55	$4.35	$239	
Landing Rock	6"-0" Pit-Run	27+25	N/A	landing	88	landings	1	88	$5.74	$505	
Total Rock for Road Segment:			I7 to I8					143			$744
ROAD SEGMENT	**I9 to I10**			**POINT TO POINT**		**Sta. to Sta.**					
				I9 to I10		0+00 to 20+50		TOTAL	Rate/	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		VOLUME (CY)	Sta./ amt.		
Subgrade Leveling	1½"-0" Crushed	N/A	N/A	load	11	loads	5	55	$4.35	$239	
Total Rock for Road Segment:			I9 to I10					55			$239

Processing:

Description	No.sta	Rate/sta	Cost
Water, Process & Compact: I1-I2 0+00-76+00, I5-I6 0+00-4+80	80.80	$56.48	$4,564
50 stations on I1-I2, I3-I4, I7-I8, I9-I10	50.00	$56.48	$2,824

	24"-6" rr	6"-0"pr	4"-0"	1 1/2"-0"		Total			
SUB TOTAL FOR SURFACING		616	420	3,021		4,057	4,057		**$30,566**

SPECIAL PROJECTS

Description	Cy/Amount	Rate	Cost

SUB TOTAL FOR SPECIAL PROJECTS $0

Subtotal of Surfacing & Spec. Proj. *$30,566*
Subtotal of Clearing, Exc.,Culv. *$6,245*

GRAND TOTAL **$36,810**

Compiled By: Cody Valencia Date: 12/20/2017

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. Cole Soap **Timber Sale Name: 341-18-41**

Quarry: Soapstone Quarry Swell:

Location: NW 1/4, NW 1/4, See. 22, T4N, R9W Shrink: 16%

County: Clatsop

By: Cullen Bangs Loading Hopper: Yes

Date: 12/18/2017

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"	15%	CR	3,000	3,021	6,501
4"-0"		CR		420	420
6"-0"		PR		616	616
24"-6"		RR			
36"		RR			
TOTAL CUBIC YARDS OF ROCK:			3,000	4,057	**7,537**

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
3 Stage Crusher	1	$2,891	$2,891	Off Highway Dump Truck	2	$553	$1,105
D6 Cat	1	$778	$778	Screening Plant	1	$553	$553
Drill & Compressor	1	$1,406	$1,406	Loading Hopper	1	$553	$553
Powder	1	$351	$351	Loader	1	$805	$805
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
Clear & Grub Waste Areas	24.0	hr	$155	$3,720
and Access Roads (Exc)				
Pile & Burn Slash and Stumps(1 exc)	16.0	hr	$155	$2,480
Move-in Fire Truck for the burning of	1.0	ea	$190	$190
the Clearing Debris				

TOTAL CLEARING & GRUBBING COSTS $6,390

3) EXCAVATION

MATERIAL DESCRIPTION		QUANTITY	UNIT	RATE	COST
Overburden Removal (excavate, load	Exc(Hrs.)	60	hrs	$155.00	$9,300
haul, spread at crusher site)	Exc(Hrs.)	30	hrs	$155.00	$4,650
	OR(Hrs.)	60	hrs	$125.00	$7,500
	Dozer(Hrs.)	20	hrs	$158.00	$3,160

TOTAL EXCAVATION COSTS $24,610

4) DEVELOP ROCK

ROCK SUMMARY

Type	Cu. yd. Vol.	Weight
crushed	6,921	92%
pit run	616	5%
rip rap	0	0
Total	7,537	
reject	975	12.9%

METHOD	%	QUANTITY	RATE	COST
Ripping	20%	1,507	$2.60	$3,919
Drill & shoot	80%	6,810	$2.70	$18,386
Oversize red	5%	377	$5.80	$2,186
Other				

TOTAL ROCK DEVELOPMENT COSTS $24,491

5) CALIBRATION & TESTING

DESCRIPTION	NO.	$/TEST	COST
Calibrate	1	$507.00	$507
Calibrate			
Test	4	$57.30	$229
Test			

TOTAL CALIBRATION & TESTING COSTS $736

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY		COST CU. YD.		TOTAL COST
Dig & Feed Rock	7,896		$0.87		$6,836
Haul Rock (2OR hrs.)	112		$125.00		$14,000
Excavator (shot rock handling)	60		$155.00		$9,300

TOTAL FEEDING & LOADING COSTS $30,136

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	6,501	3 stage w/s	125	$3.11	$20,231
4"-0"	crushed	420	2 stage w/s	140	$2.48	$1,041

TOTAL ROCK CRUSHING COSTS $21,272

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer	4	$120.00	$480.00
Compactor		$72.00	
Grader		$90.00	
Excavator		$138.00	

$480.00

SUB TOTAL $480

Rock for Floor (CY)	$/CY Haul	Total

HAUL & STOCKPILE STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1.					
2. Sweethome	1-1/2"-0"	2	3,480	$1.64	$5,721
3.					
4.					
5.					
6.					

SUB TOTAL $5,721

TOTAL STOCKPILING COSTS $6,201

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	$1,658
$1.70 /CY 975 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Seed and Mulch	$2,480
Block Quarry Access	

TOTAL MISCELLANEOUS COSTS $4,138

10) GRAND TOTAL: **$132,390**

$/Cubic Yard $19.13

Footnotes:

Cole Soap

Project No.3 Road Vacating

Location/Description	C315 Excavator	Total
I11 to I12 0+00-8+75		
Remove culvert	1 hrs	
Waterbar (3)	2 hrs	
Block road with stumps	1 hrs	
V1		
Remove culvert	1 hrs	
Block road with stumps	1 hrs	
Total	6 hrs	
Rate	$101 /hr	
Cost	$606	**$606**
Move in cost	$805	**$1,411**

Prepared by: **Cody Valencia**

CRUSHED ROCK COST

SALE NAME: Cole Soap
PROJECT: No. 1 Road Improvement
QUARRY: Soapstone Quarry

MATERIAL: Crushed 1 1/2"-0", 4"-0"

DATE: 12/20/2017
BY: Cody Valencia

Road Segment	Stations	Cubic Yards	50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
			ONE WAY HAUL IN MILES							
I1-I2	271.30	3,056				2.55			0.10	2.65
I3-I4	68.00	55				3.10		0.64	0.10	3.84
I5-I6	4.80	220				3.10		0.50	0.10	3.70
I7-I8	28.00	55				3.35		0.24	0.10	3.69
I9-I10	20.50	55				3.55		0.65	0.10	4.30
TOTAL	392.60 STA./NO.	3,441 CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL						**2.62**		**0.06**	**0.10**	**2.78**
						Average Round Trip Distance (miles)			5.56	

ROCK HAUL:

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

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

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

Ave haul:	$3.09	/cy
Load:	$0.48	/cy
Spread:	$0.78	/cy

Production: cy/day = 1,023

CRUSHED ROCK HAUL COSTS 3,441 cy @ **$4.35 /cy**

PIT RUN ROCK COST

SALE NAME: Cole Soap
PROJECT: No. 1 Road Improvement
QUARRY: Soapstone Quarry
MATERIAL: 6"-0" Pit Run
DATE: 12/20/2017
BY: Cody Valencia

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
I1-I2	271.30	88				2.55			0.10	2.65
I3-I4	68.00	264				3.10		0.64	0.10	3.84
I5-I6	4.80	176				3.10		0.50	0.10	3.70
I7-I8	28.00	88				3.35		0.45	0.05	3.85
TOTAL	372.10	616								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						**3.1**		**0.5**	**0.1**	**3.63**
						Average Round Trip Distance (miles)			7.26	

ROCK HAUL:

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

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

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

Ave haul: $4.06 /cy
Load: $0.60 /cy
Spread: $1.08 /cy

Production: cy/day = 778

PIT RUN ROCK HAUL COSTS 616 cy @ **$5.74 /cy**

Projects Road Maintenance Cost Summary

Sale: **Cole Soap**
Date: December 20, 2017
By: Cody Valencia

Type	Equipment/Rationale			Hours	Rate	Cost	
	Grader 14G			13	$100	$1,300	
Final Project	Dump Truck 12CY			4	$79	$316	
Haul Road	FE Loader C966			1	$83	$83	
Maintenance	Vibratory Roller			13	$77	$1,001	
	Water Truck 2,500 gallon			4	$89	$356	
	Labor			2	$40	$80	
Total							$3,136

Production Rates	Miles/day	Distance(miles)	Days	Hours
Grader	1.5	2.50	1.7	13
Vibratory Roller	1.5	2.50	1.7	13

Soapstore Quarry road 0.2 miles

Cole Mountain Ridge Road 0.3 miles (Sues Alley Road to Cole Mountain Road)

Cole Mountain Road 2 miles

Total Miles = 2.5 Miles

X:\DOCUMENT\STATE_FOREST\UNIT_SUNSET

Cole Soap
FY 2018
TIMBER CRUISE REPORT

1. **Sale Area Location:** Areas 1 and 2 are located in portions of Sections 12, 13, and 14 T4N, R9W, W.M., Clatsop County, Oregon

2. **Fund Distribution: Fund:** BOF 36% CSL 64%
   The percent break down for the BOF is:
   Tax Code: 10-04 100%

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Stream Buffer Acres	Existing RW Acres	Net Acreage	Survey Method
1	Modified Clearcut	43	2	1	40	GIS
2	Modified Clearcut	67	4	2	61	GIS
TOTALS		**110**	**6**	**3**	**101**	

4. **Cruisers and Cruise Dates:** Areas 1 and 2 were cruised by Bryce Rodgers, John Choate, Cody Valencia, and Ella Salkeld on November 17th, 2017.

5. **Cruise Method and Computation:** Areas 1 and 2 are modified clearcut units. A variable plot cruise with a 54.45 BAF for conifer and 40 BAF for hardwoods was used for these areas. The plots were located on a 4 chain by 8 chain grid, with a count/grade plot ratio of 2:1. A total of 37 plots were sampled.

   Cruisers used Allegro 2 data collectors that 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.

AREA	PROJECT	TRACT	CRUISE TYPE
1and 2	ColeSoap	A12	00MC, TK

   Timber Description: **Areas 1 and 2** is an approximately 65 year old stand of Douglas-fir, with some western hemlock, Sitka Spruce, and red alder. The average take Douglas-fir tree size is approximately 23 inches DBH, with an average merchantable tree height of 87 feet. The average hemlock take tree size is approximately 24 inches in DBH, with an average merchantable tree height of 71 feet. The average Sitka Spruce take tree size is approximately 22 inches in DBH, with an average merchantable tree height of 71 feet. The average red alder take tree size for harvest is approximately 19 inches DBH, with an average merchantable tree height of 60 feet. The average volume per acre to be harvested (net) is approximately 48 MBF. All trees were cruised to a merchantable top of 6 inch DIB or 40% fp.

   Cedar is a reserved species.

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

Area	Target CV	Target SE%	Actual CV	Actual SE%
1	45	9	47.8	7.8

   The statistics are for all areas and Take and Leave trees combined based on Net BF/Acre.

7. **Take Volumes by Species and Log Grades for All Sale Areas by MBF:** (See "Species, Sort Grade-Board Feet Volumes (Project)", "Statistics (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.

Conifer

Species	DBH	Net Vol. MBF	2 Saw	3Saw	4 Saw	% D & B	% Sale
Douglas-fir	23	3,510	2,785	641	84	0.8	72
Western Hemlock	24	796	613	166	17	1.2	16
Sitka Spruce	22	299	248	44	7	-	6

Hardwoods

Species	DBH	Net Vol. MBF	12"+	10-12"	8-10"	6-8"	% D & B	% Sale
Red Alder	19	293	148	56	63	26	0.4	6

TOTAL NET VOLUME	4,898 MBF

8. **Prepared by:** Cody Valencia **Date:** 11/21/2017

10. **Approved by:** _____ **Date:** 12/28/2017

11. **Attachments:**
Cruise Plans & Maps (2 pages)
Species, Sort, Grade Report (1 page)
Statistics Reports (2 pages)
Stand Table Report (1 page)
Log Stock Table Report MBF (1 page)

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: Cole Soap **Area(s)** 1 and 2

Harvest Type: Modified Clearcut

Approx. Cruise Acres: 101 **Estimated CV%** 45 Net BF **SE% Objective** 9 Net BF

Planned Sale Volume: 4,109 MBF **Estimated Sale Area Value/Acre:** $18,741

A. **Cruise Goals:** (a) Grade minimum 75 conifer and 15 hardwood trees: (b) Sample 37 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;)

B. **Cruise Design:**
   1. **Plot Cruises:** BAF B1 54.45 Conifers and B2 40 Hardwoods
      Cruise Line Direction(s) 172/352 for lines 1-6 138/318 for lines 7-10
      Cruise Line Spacing 4 chains
      Cruise Plot Spacing 8 chains
      Grade/Count Ratio 1:1 (17 grade:20 count)
   2. **ITS (Sample Tree) Cruises:** Measure-grade ratios: D-fir _____ Hemlock _____ Spruce _____ True Fir _____ Cedar _____ Hardwood _____

All cedar will be reserved. Record all snags as SN
Grade all hardwoods on grade plots. (not camp run)
Make sure to put a B2 of 0 trees if no hardwood is in plot.

C. **Tree Measurements:**
   1. **Diameter:** Minimum DBH to cruise is 8 " for conifers and 8 " for hardwoods. Record dbh to nearest ½" 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 " 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. log 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: #1 Sawmill = 12"+ scaling diameter; #2 Sawmill = 10" and 11"; #3 Sawmill = 8" and 9"; #4 Sawmill = 6" and 7"

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 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.

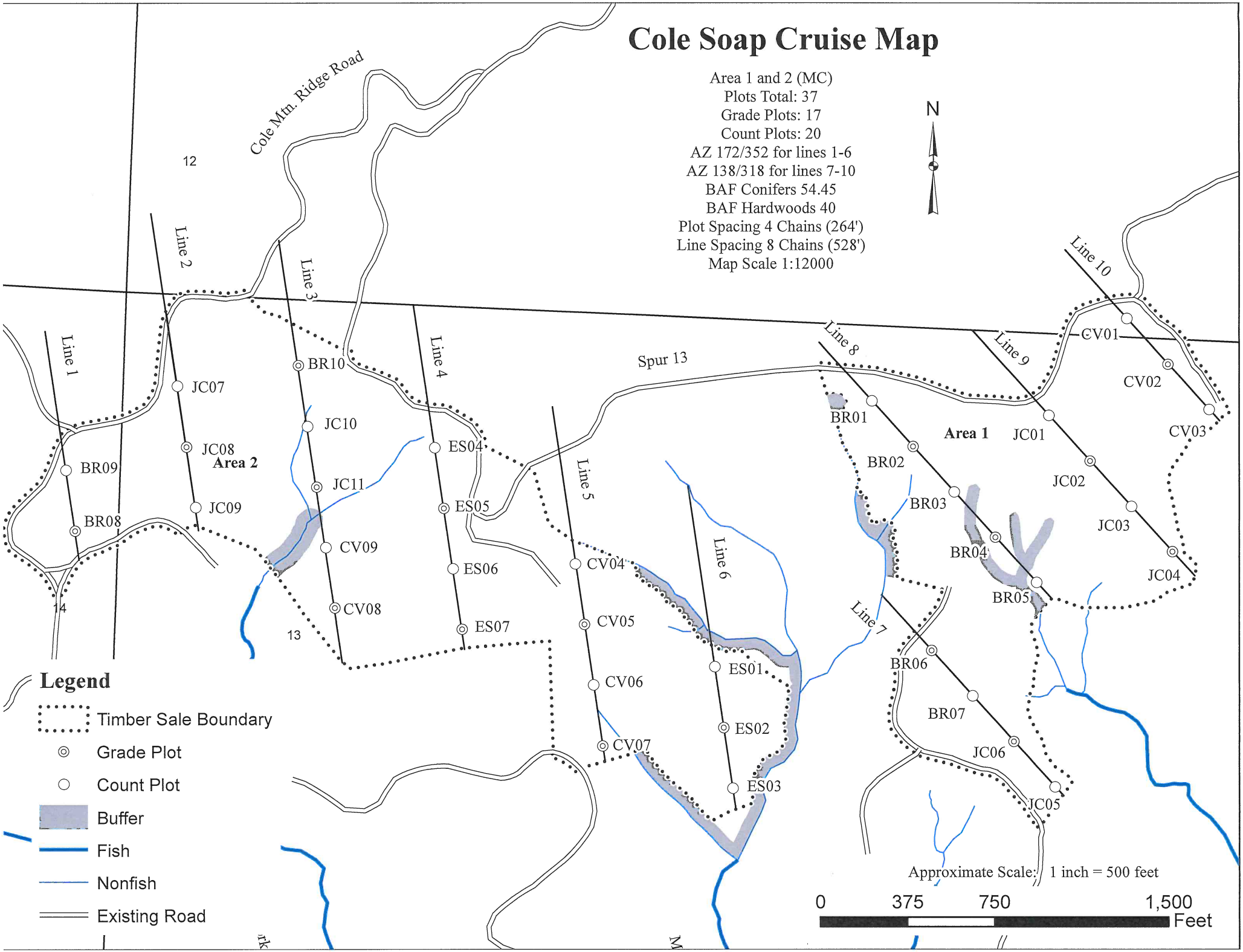
9. **Cruising Equipment:** Relaskop, Rangefinder or Lazer, Logger's Tape (with dbh on back), Biltmore Stick, Compass, Cruise Cards or Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

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: Cody Valencia
Approved by: _____
Date: 12/15/17

Cole Soap Cruise Map

Area 1 and 2 (MC)
Plots Total: 37
Grade Plots: 17
Count Plots: 20
AZ 172/352 for lines 1-6
AZ 138/318 for lines 7-10
BAF Conifers 54.45
BAF Hardwoods 40
Plot Spacing 4 Chains (264')
Line Spacing 8 Chains (528')
Map Scale 1:12000



T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: COLESOAP

Page 1
Date 12/20/2017
Time 2:20:33PM

T04N R09W S13 TTK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
04N	09W	13	A12	TK	101.00	37	76	1	W

T04N R09W S13 TTK

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU														7	26		0.00	1.5
D		DO	2S	79	.6	27,748	27,577	2,785			39	61	2	1	3	94	38	16	438	2.45	62.9
D		DO	3S	18	1.4	6,437	6,345	641		99	1		2	1	28	70	36	9	104	0.85	60.9
D		DO	4S	3		832	832	84		100			72	15		13	19	7	28	0.50	29.2
D	**Totals**			72	.8	35,018	34,755	3,510		20	31	49	4	1	7	88	34	12	225	1.56	154.6
H		DO	CU														19	21		0.00	1.9
H		DO	2S	76	1.5	6,160	6,067	613			26	74	5		19	76	36	19	548	3.21	11.1
H		DO	3S	21		1,645	1,645	166		78	3	18	11		49	40	32	10	120	1.11	13.7
H		DO	4S	3		171	171	17		100			100				18	7	25	0.47	6.8
H	**Totals**			16	1.2	7,976	7,883	796		18	21	61	8		25	67	30	13	236	1.83	33.4
A		DO	1S	50	.8	1,474	1,462	148			67	33	14			86	34	15	303	2.15	4.8
A		DO	2S	19		558	558	56		100			6	42		52	32	11	140	1.26	4.0
A		DO	3S	22		620	620	63		45	55					100	40	11	177	1.25	3.5
A		DO	4S	9		253	253	26		100			55	45			22	6	27	0.55	9.3
A	**Totals**			6	.4	2,904	2,893	293 ~~292~~		38	46	17	13	12		75	29	10	134	1.26	21.6
S		DO	2S	82		2,451	2,451	248			55	45				100	40	14	330	2.00	7.4
S		DO	3S	15		438	438	44		100						100	40	6	65	0.92	6.8
S		DO	4S	3		74	74	7		100			100				16	9	40	0.81	1.9
S	**Totals**			6		2,964	2,964	299		17	45	37	2			98	37	10	184	1.45	16.1
Type Totals					.8	48,862	48,495	4,898		21	31	48	5	2	9	84	33	12	215	1.56	225.6

TC TSTATS

STATISTICS

PAGE 1

PROJECT COLESOAP

DATE 12/20/2017

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	13	A12	TK	101.00	37	188	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	37	188	5.1		
CRUISE	17	76	4.5	9,753	.8
DBH COUNT					
REFOREST					
COUNT	20	112	5.6		
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	55	62.1	22.8	87	37.0	176.6	35,018	34,755	8,064	8,064
WHEMLOCK	10	14.7	23.5	71	9.1	44.1	7,976	7,883	1,826	1,826
R ALDER	8	11.2	19.3	60	5.2	22.7	2,904	2,893	793	793
S SPRUCE	3	8.6	21.6	71	4.7	22.1	2,964	2,964	869	869
TOTAL	*76*	*96.6*	*22.5*	*80*	*56.0*	*265.5*	*48,862*	*48,495*	*11,552*	*11,552*

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	83.7	11.3	771	869	967			
WHEMLOCK	73.4	24.4	681	901	1,121			
R ALDER	105.7	39.9	210	349	488			
S SPRUCE	100.2	69.3	128	417	705			
TOTAL	*86.8*	*9.9*	*721*	*801*	*880*	*301*	*75*	*33*

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	83.9	13.8	54	62	71			
WHEMLOCK	239.7	39.4	9	15	20			
R ALDER	208.8	34.3	7	11	15			
S SPRUCE	228.2	37.5	5	9	12			
TOTAL	*42.9*	*7.0*	*90*	*97*	*103*	*73*	*18*	*8*

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	78.1	12.8	154	177	199			
WHEMLOCK	235.9	38.7	27	44	61			
R ALDER	201.5	33.1	15	23	30			
S SPRUCE	228.6	37.5	14	22	30			
TOTAL	*40.0*	*6.6*	*248*	*266*	*283*	*64*	*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	80.6	13.2	30,154	34,755	39,355			
WHEMLOCK	236.8	38.9	4,817	7,883	10,950			
R ALDER	192.8	31.7	1,977	2,893	3,809			
S SPRUCE	238.7	39.2	1,802	2,964	4,126			
TOTAL	*47.8*	*7.8*	*44,690*	*48,494*	*52,299*	*91*	*23*	*10*

TC TSTATS

STATISTICS

PROJECT COLESOAP

DATE 12/20/2017

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
04N	09W	13	A12	00MC	101.00	37	199	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	37	199	5.4		
CRUISE	17	80	4.7	10,124	.8
DBH COUNT					
REFOREST					
COUNT	20	119	5.9		
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	55	62.1	22.8	87	37.0	176.6	35,018	34,755	8,064	8,064
WHEMLOCK	10	14.7	23.5	71	9.1	44.1	7,976	7,883	1,826	1,826
R ALDER	8	11.2	19.3	60	5.2	22.7	2,904	2,893	793	793
S SPRUCE	3	8.6	21.6	71	4.7	22.1	2,964	2,964	869	869
SNAG	4	3.7	27.1	36	2.8	14.7				
TOTAL	*80*	*100.2*	*22.6*	*78*	*58.9*	*280.2*	*48,862*	*48,495*	*11,552*	*11,552*

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	83.7	11.3	771	869	967			
WHEMLOCK	73.4	24.4	681	901	1,121			
R ALDER	105.7	39.9	210	349	488			
S SPRUCE	100.2	69.3	128	417	705			
SNAG								
TOTAL	*92.0*	*10.3*	*682*	*761*	*839*	*338*	*84*	*38*

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	83.9	13.8	54	62	71			
WHEMLOCK	239.7	39.4	9	15	20			
R ALDER	208.8	34.3	7	11	15			
S SPRUCE	228.2	37.5	5	9	12			
SNAG	220.8	36.3	2	4	5			
TOTAL	*40.1*	*6.6*	*94*	*100*	*107*	*64*	*16*	*7*

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	78.1	12.8	154	177	199			
WHEMLOCK	235.9	38.7	27	44	61			
R ALDER	201.5	33.1	15	23	30			
S SPRUCE	228.6	37.5	14	22	30			
SNAG	224.9	36.9	9	15	20			
TOTAL	*39.1*	*6.4*	*262*	*280*	*298*	*61*	*15*	*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	80.6	13.2	30,154	34,755	39,355			
WHEMLOCK	236.8	38.9	4,817	7,883	10,950			
R ALDER	192.8	31.7	1,977	2,893	3,809			
S SPRUCE	238.7	39.2	1,802	2,964	4,126			
SNAG								
TOTAL	*47.8*	*7.8*	*44,690*	*48,494*	*52,299*	*91*	*23*	*10*

TC TSTNDSUM

Stand Table Summary

Project COLESOAP

T04N R09W S13 TTK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	13	A12	TK	101.00	37	76

T04N R09W S13 TTK

Date: 12/20/20

Time: 2:18:37PM

Spc	S T	DBH	Sample Trees	FF 16'	Av Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log Net Cu.Ft.	Average Log Net Bd.Ft.	Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals Tons	Totals Cunits	Totals MBF
D		14	2	89	76	6.007	6.42	12.01	17.0	55.0		204	661		206	67
D		16	4	86	109	9.198	12.84	18.40	27.5	101.3		506	1,863		511	188
D		17	1	86	42	2.037	3.21	2.04	25.0	100.0		51	204		51	21
D		18	3	86	88	5.451	9.63	10.90	30.8	103.3		336	1,127		339	114
D		19	1	85	92	1.631	3.21	3.26	36.5	125.0		119	408		120	41
D		20	2	90	116	2.943	6.42	8.83	34.0	138.3		300	1,222		303	123
D		21	4	87	118	5.340	12.84	13.35	43.5	166.0		581	2,216		586	224
D		22	5	87	113	6.082	16.05	15.81	44.3	171.5		701	2,712		708	274
D		23	3	89	126	3.339	9.63	10.02	47.4	205.6		475	2,059		480	208
D		24	4	89	130	4.088	12.84	11.24	58.1	250.9		653	2,821		660	285
D		25	1	89	130	.942	3.21	2.83	58.3	256.7		165	725		166	73
D		26	4	87	138	3.483	12.84	10.45	65.4	286.7		684	2,996		690	303
D		27	2	87	122	1.615	6.42	4.85	61.7	261.7		299	1,268		302	128
D		28	2	89	142	1.502	6.42	4.51	77.8	366.7		351	1,652		354	167
D		29	2	87	141	1.400	6.42	4.20	75.7	360.0		318	1,512		321	153
D		30	1	88	125	.654	3.21	1.96	79.7	370.0		156	726		158	73
D		31	3	89	149	1.838	9.63	5.51	99.0	501.1		546	2,763		551	279
D		33	2	88	146	1.081	6.42	3.24	109.5	548.3		355	1,779		359	180
D		35	2	82	121	.961	6.42	2.88	99.8	436.7		288	1,259		291	127
D		36	1	85	126	.454	3.21	1.36	101.7	470.0		139	640		140	65
D		38	2	85	121	.815	6.42	2.04	138.0	674.0		281	1,374		284	139
D		39	1	86	77	.387	3.21	.77	112.5	470.0		87	364		88	37
D		41	1	86	157	.350	3.21	1.05	172.7	866.7		181	911		183	92
D		43	1	89	115	.318	3.21	.96	150.0	786.7		143	751		145	76
D		57	1	85	120	.181	3.21	.54	267.3	1370.0		145	745		147	75
D		Totals	55	87	111	62.098	176.59	153.01	52.7	227.1		8,064	34,755		8,144	3,510
H		15	1	86	73	3.598	4.41	7.20	21.0	75.0		151	540		153	55
H		16	1	85	64	3.162	4.41	6.32	20.5	70.0		130	443		131	45
H		22	2	89	97	3.345	8.83	6.69	56.8	212.5		380	1,422		383	144
H		28	1	85	157	1.032	4.41	2.06	81.0	450.0		167	929		169	94
H		30	2	86	116	1.799	8.83	4.50	81.4	372.0		366	1,673		370	169
H		33	1	86	116	.743	4.41	2.23	96.3	463.3		215	1,033		217	104
H		40	1	82	125	.506	4.41	1.52	150.0	723.3		228	1,098		230	111
H		41	1	85	99	.482	4.41	.96	197.0	775.0		190	746		192	75
H		Totals	10	86	92	14.666	44.15	31.48	58.0	250.4		1,826	7,883		1,844	796
S		19	1	86	99	3.737	7.36	7.47	43.5	150.0		325	1,121		328	113
S		21	1	82	47	3.059	7.36	3.06	52.0	70.0		159	214		161	22
S		27	1	86	121	1.851	7.36	5.55	69.3	293.3		385	1,629		389	164
S		Totals	3	85	85	8.647	22.07	16.09	54.0	184.3		869	2,964		878	299
A		15	1	87	80	2.312	2.84	4.62	22.5	70.0		104	324		105	33
A		17	1	86	61	1.800	2.84	3.60	23.0	75.0		83	270		84	27
A		18	1	87	74	1.606	2.84	3.21	31.5	100.0		101	321		102	32
A		20	2	86	50	2.602	5.68	3.90	35.0	126.7		137	494		138	50
A		21	1	87	84	1.180	2.84	2.36	47.5	170.0		112	401		113	41
A		22	1	87	83	1.075	2.84	2.15	49.5	170.0		106	366		107	37
A		30	1	87	122	.578	2.84	1.73	86.7	413.3		150	717		152	72
A		Totals	8	87	72	11.153	22.70	21.58	36.8	134.0		793	2,893		801	292
Totals			76	87	102	96.564	265.52	222.16	52.0	218.3		11552	48,495		11,668	4,898

TC TLOGSTVB

Log Stock Table - MBF

Project: COLESOAP

T04N R09W S13 TTK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	13	A12	TK	101.00	37	76

T04N R09W S13 TTK

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Spp	S T	So	Grade	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	CU	3																
D		DO	CU	6																
D		DO	CU	10																
D		DO	2S	12	3		3	.1								3				
D		DO	2S	14	3		3	.1						3						
D		DO	2S	16	4		4	.1							4					
D		DO	2S	20	50		50	1.4						21			30			
D		DO	2S	24	34		34	1.0										34		
D		DO	2S	32	77		77	2.2						42		15	20			
D		DO	2S	40	2,632	.7	2,614	74.5						245	546	934	506	280	104	
D		DO	3S	14	5		5	.1					5							
D		DO	3S	16	4		4	.1					4							
D		DO	3S	20	5		5	.1					5							
D		DO	3S	26	5		5	.1				5								
D		DO	3S	32	169		169	4.8			17	61	91							
D		DO	3S	34	7		7	.2				7								
D		DO	3S	38	3		3	.1			3									
D		DO	3S	40	409	1.7	402	11.4			75	80	238	8						
D		DO	3S	41	44	5.3	42	1.2					42							
D		DO	4S	12	2		2	.1						2						
D		DO	4S	14	19		19	.6			17	2								
D		DO	4S	16	16		16	.5			10	6								
D		DO	4S	18	13		13	.4			7	6								
D		DO	4S	20	11		11	.3			4	7								
D		DO	4S	26	5		5	.2			5									
D		DO	4S	28	7		7	.2			7									
D		DO	4S	36	11		11	.3			11									
D		Totals			3,537		3,510	71.7			156	174	386	320	549	952	555	314	104	
H		DO	CU	12																
H		DO	CU	26																
H		DO	2S	18	32		32	4.1									32			
H		DO	2S	32	117	1.8	115	14.4							25	28	62			
H		DO	2S	40	473	1.5	466	58.5						12	122	55	140	138		
H		DO	3S	18	6		6	.7						6						
H		DO	3S	20	12		12	1.6					12							
H		DO	3S	32	82		82	10.3					82							
H		DO	3S	36	10		10	1.3			10									
H		DO	3S	40	56		56	7.0			12		14			31				
H		DO	4S	16	6		6	.8			6									
H		DO	4S	20	11		11	1.4			11									
H		Totals			806	1.2	796	16.3			39		108	17	147	113	233	138		
A		DO	1S	16	21		21	7.2								21				
A		DO	1S	40	128	.9	127	43.4						26	51		49			
A		DO	2S	16	4		4	1.2					4							
A		DO	2S	30	24		24	8.1					24							
A		DO	2S	40	29		29	10.0					29							
A		DO	3S	40	63		63	21.4				28			35					

TC TLOGSTVB

Log Stock Table - MBF

Project: COLESOAP

T04N R09W S13 TTK

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
04N	09W	13	A12	TK	101.00	37	76

T04N R09W S13 TTK

Page 2
Date 12/20/2017
Time 2:17:35PM

Spp	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+
A		DO	4S	18	4		4	1.2			4									
A		DO	4S	20	11		11	3.6			11									
A		DO	4S	28	11		11	3.9			11									
A		Totals			293		292	6.0			26	28	56	26	86	21	49			
S		DO	2S	40	248		248	82.7						135		112				
S		DO	3S	40	44		44	14.8			44									
S		DO	4S	16	7		7	2.5				7								
S		Totals			299		299	6.1			44	7		135		112				
Total All Species					4,935		4,898	100.0			265	210	550	499	782	1198	837	453	104	

LOGGING PLAN

OF TIMBER SALE CONTRACT NO. 341-18-41
COLE SOAP
PORTIONS OF SECTIONS 12, 13, AND 14
OF T4N, R9W, W.M.,
CLATSOP COUNTY, OREGON

Approximate Net Acreage	MC Acres
Area 1 (MC) -	40
Area 2 (MC) -	61
Total Sale Acreage =	101

Logging Breakdown	Tractor	Cable
Area 1 (MC) -	65%, 26 acres	35%, 14 acres
Area 2 (MC)-	36%, 22 acres	64%, 39 acres
Total=	48%, 48 acres	52%, 53 acres