



"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
AKA
Sale 341-14-66

District: Klamath/Lake

Date: October 08, 2013

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	\$609,732.13	\$0.00	\$609,732.13
		Project Work:	\$(56,776.50)
		Advertised Value:	\$552,955.63



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timber description

Location: Portions of Sections 3 and 4, T33S, R7E, W.M., Klamath County, Oregon.

Stand Stocking: 40%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
White Fir	15	0	95
Sugar Pine	10	0	95
Ponderosa Pine	14	0	95
Lodgepole Pine	13	0	95

Volume by Grade	Camprun	CR 14" -	CR 22"+	CR 6" - 8	CR 8" - 1	Total
White Fir	0	461	49	428	707	1,645
Sugar Pine	0	0	0	14	0	14
Ponderosa Pine	0	270	44	623	312	1,249
Lodgepole Pine	321	0	0	0	0	321
Total	321	731	93	1,065	1,019	3,229



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comments: Pond Values Used: 3rd Quarter Calendar Year 2013.

Log Markets: Klamath Falls and Medford.

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 and Risk to be added):

Log Branding & Painting: \$2,304

Dust Abatement: \$18,650

TOTAL Other Costs (with Profit & Risk to be added) = \$20,954

Other Costs (No Profit & Risk added):

None.



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logging conditions

combination#: 1

White Fir	45.00%
Sugar Pine	100.00%
Ponderosa Pine	60.00%
Lodgepole Pine	100.00%

yarding distance: Medium (800 ft) **downhill yarding:** Yes
logging system: Wheel Skidder **Process:** Feller Buncher
tree size: Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF
loads / day: 12.0 **bd. ft / load:** 4,200
cost / mbf: \$65.89

machines: Log Loader (B)
Stroke Delimber (B)
Feller Buncher w/ Delimber
Tire Skidder

combination#: 2

White Fir	55.00%
Ponderosa Pine	40.00%

yarding distance: Medium (800 ft) **downhill yarding:** Yes
logging system: Track Skidder **Process:** Manual Falling/Delimbing
tree size: Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF
loads / day: 10.0 **bd. ft / load:** 4,400
cost / mbf: \$77.41

machines: Log Loader (B)
Track Skidder



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logging costs

Operating Seasons:	1.00	Profit Risk:	12.00%
Project Costs:	\$56,776.50	Other Costs (P/R):	\$20,954.00
Slash Disposal:	\$0.00	Other Costs:	\$0.00

Miles of Road

Road Maintenance: \$0.78

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

Hauling Costs

Species	\$ / MBF	Trips/Day	MBF / Load
White Fir	\$0.00	3.0	4.3
Sugar Pine	\$0.00	3.0	4.5
Ponderosa Pine	\$0.00	3.0	4.2
Lodgepole Pine	\$0.00	3.0	4.0



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Local Pond Values

Date	Specie	Grade	Value
10/8/13	White Fir	CR 6" - 8"	\$350.00
10/8/13	White Fir	CR 8" - 14"	\$385.00
10/8/13	White Fir	CR 14" - 22"	\$395.00
10/8/13	White Fir	CR 22"+	\$400.00
10/8/13	Sugar Pine	CR 6" - 8"	\$265.00
10/8/13	Ponderosa Pine	CR 6" - 8"	\$275.00
10/8/13	Ponderosa Pine	CR 8" - 14"	\$325.00
10/8/13	Ponderosa Pine	CR 14" - 22"	\$380.00
10/8/13	Ponderosa Pine	CR 22"+	\$450.00
10/8/13	Lodgepole Pine	Camprun	\$310.00



"STEWARDSHIP IN FORESTRY"

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logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
White Fir									
\$72.23	\$0.82	\$1.36	\$56.69	\$6.49	\$16.51	\$0.00	\$5.00	\$0.00	\$159.10
Sugar Pine									
\$65.89	\$0.82	\$1.36	\$54.17	\$6.49	\$15.45	\$0.00	\$5.00	\$0.00	\$149.18
Ponderosa Pine									
\$70.50	\$0.82	\$1.36	\$58.03	\$6.49	\$16.46	\$0.00	\$5.00	\$0.00	\$158.66
Lodgepole Pine									
\$65.89	\$0.82	\$1.36	\$60.94	\$6.49	\$16.26	\$0.00	\$5.00	\$0.00	\$156.76

Specie	Amortization	Pond Value	Stumpage	Amortized
White Fir	\$0.00	\$379.14	\$220.04	\$0.00
Sugar Pine	\$0.00	\$265.00	\$115.82	\$0.00
Ponderosa Pine	\$0.00	\$316.35	\$157.69	\$0.00
Lodgepole Pine	\$0.00	\$310.00	\$153.24	\$0.00



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summary

Amortized

Specie	MBF	Value	Total
White Fir	0	\$0.00	\$0.00
Sugar Pine	0	\$0.00	\$0.00
Ponderosa Pine	0	\$0.00	\$0.00
Lodgepole Pine	0	\$0.00	\$0.00

Unamortized

Specie	MBF	Value	Total
White Fir	1,645	\$220.04	\$361,965.80
Sugar Pine	14	\$115.82	\$1,621.48
Ponderosa Pine	1,249	\$157.69	\$196,954.81
Lodgepole Pine	321	\$153.24	\$49,190.04

Gross Timber Sale Value

Recovery: \$609,732.13

Prepared by: Chris Weekly

Phone: 541-883-5681

AKA
341-14-66
Additional Costs



Road Maintenance	
Move-in cost (grader):	\$400.00
Number of Miles to be Bladed:	5.0
Number of Bladings:	2
Miles / Hour for equipment:	0.5
Cost / Hour (grader with operator):	\$105.50
Total Grading Hours:	20
Grading Cost:	\$2,110.00
Total Cost:	\$2,510.00
Cost / MBF:	\$0.78

Brand & Paint (Profit and Risk to be added in Appraisal)	
64 Hauling Days	
1.5 Hours/Day	
\$24.00 Cost/Hour	
\$2,304.00 Total Cost	
\$0.71 Cost/MBF	

Dust Abatement (Profit & Risk to be added in Appraisal)						
PP	1,249 MBF	39%	Average Load	4.2 MBF	No. of Loads	297
WF	1,645 MBF	51%	Average Load	4.3 MBF	No. of Loads	383
LP	321 MBF	10%	Average Load	4.0 MBF	No. of Loads	80
SP	14 MBF	0%	Average Load	4.5 MBF	No. of Loads	3
Total:	3,229 MBF				Total Loads	763

Assume:	4 Trucks/Day	
	3 Trips/Day	42 Days of Dust Abatement
	12 Loads per Day	5 Hours/Day
	64 Hauling Days	\$88.00 Cost/Hour
		210 Total Hours
		\$170.00 Move in for Water Truck
		\$18,650.00 Dust Abatement Cost
		\$18,650.00 Total Cost
		\$5.78 Cost/MBF

Other Costs Summary	
Log Branding and Painting:	\$2,304.00
Dust Abatement	\$18,650.00
Total Cost:	\$20,954.00

Project #1 Road Improvement						
Move in Cost Dozer:		\$400.00				
Improvement	Points	Distance (ft)	Feet/Hour	Hours	Cost/Hour	Cost
Open/Clear/Shape	E to F	3,603	1000	3.6	\$132.50	\$477.00
Open/Clear/Shape	A to C	4,502	1000	4.5	\$132.50	\$596.25
Open/Clear/Shape	B to D	1,178	1000	1.2	\$132.50	\$159.00
Open/Clear/Shape	G to H	426	1000	0.4	\$132.50	\$53.00
Open/Clear/Shape	I to K	677	1000	0.7	\$132.50	\$92.75
Open/Clear/Shape	I to J	1,823	1000	1.8	\$132.50	\$238.50
Total		13,014			Total	\$1,616.50
						\$2,016.50

Project #1 Summary	
Equipment Costs	\$400.00
Open/Clear Shape	\$1,616.50
Project #2 Total	\$2,016.50
per MBF	\$0.62

Project #2 Felling, Yard, and Piling of Submerchantable Trees	
Total Sub-Sawlog Volume:	786 MBF
Fell and Skid and sort/MBF:	\$60.00
Total:	\$47,160.00
per MBF	\$14.61

Project #3 Slash Piling	
Move in Cost for Excavator:	\$400

Treatment Acres	Cost/Acre	Total Cost
60	\$120.00	\$7,200.00

Project #3 Summary	
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Slash Piling Total	<u>\$7,600.00</u>
per MBF	\$2.35

<i>Cost Summary All Projects</i>	
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\$2,016.50	Project #1
\$47,160.00	Project #2
\$7,600.00	Project #3
<u>\$56,776.50</u>	Total
\$17.58	per MBF

Summary of Project Work

AKA
341-14-66



Project # 1: Road Improvement	\$2,016.50
Project # 2: Fell, Yard, and Pile Submerchantable Trees	\$47,160
Project # 3: Slash Piling	\$7,600
Total: \$56,776.50	

AKA
341-14-66
Cruise Report



SALE NAME: AKA

LEGAL DESCRIPTION:

T33S, R7E, Portions of Sections 3 and 4, W.M., Klamath County, Oregon.

BOUNDARY LINES:

Unit boundaries are posted with “Timber Sale Boundary” signs, marked with fluorescent orange paint and fluorescent orange flagging.

FUND:

100% BOF

ACREAGE:

The timber sale is 479 acres and was cruised as a single tract. See attached map for the boundary of the cruise type.

Net Sale Acreage: 479 Acres

Mapping was accomplished using a handheld GPS and the data was compiled using ArcMap 10.

TREATMENT:

The entire sale area is a single tree selection cut. Leave trees are marked with orange paint for trees 5.0 inches dbh and larger. All trees less than 5.0 inches dbh are reserved from cutting in the timber sale area.

CRUISE METHOD:

Merchantable volume was sampled using a variable plot cruise with odd numbered plots being measure plots, and even numbered plots being count plots. Fixed plot cruise for all submerchantable material (5.0”to 9.0” dbh).

SAMPLING INTENSITY:

Area	BAF	Type Acreage
AKA	10 BAF	479 acres

FIXED PLOT:

Area	Radius	Type Acreage
AKA	16.6 (1/50 th)	479 acres

PLOT DESIGNATION:

Plot centers were established at every plot. Blue wire flags with the corresponding plot number were placed for plot center and pink flagging with the plot number was also attached to the nearest available tree branch.

SAMPLE SIZE CALCULATIONS:

AREA	CV%	DESIRED SE%	ACRES
AKA	52	13	479

$$\text{Variable Number of Plots} = \frac{T^2 C^2}{A^2}$$

C = Coefficient of Variation in Percent (Taken from inventory data)

T = Number of Standard Errors

A = Desired Sampling Error for a sale of this size and value

$$\text{AKA} \quad N = \frac{(1)^2(66)^2}{(13)^2} = \quad \text{Took 30 plots}$$

Measurements and Grading:

- DBH and Height were measured on all “in” trees for measure plots.
- Ratio of 1 count plot for every 1 measure plot.
- Pulp volume and sawlog volume cruised.
- See attached species and grade tables for minimum requirements.
- All trees were graded using the segment system.
- Separate fixed plot cruise for all submerchantable material (5” to 9” dbh).

TREE HEIGHT:

All trees were measured to a fixed diameter outside bark. This height is taken as high up the bole as possible, where the cruiser can clearly see the bole, and the taper remains constant (usually 6 or 8 inches). The log segments are broken out and graded accordingly.

MINIMUM D.B.H:

9.0” dbh for sawlog volume./5.0” dbh for submerchantable material.

DIAMETER STANDARDS:

1” diameter class

BTR:

Standard ratios were used. See attached species tables.

FORM FACTOR:

Form factor was measured or estimated at 16’ for each tree. Each tree was assigned its own FF (Form Factor).

FORM POINT:

All trees were sighted at D.B.H. (Diameter at Breast Height)

VOLUME COMPUTATION:

All cruise data was input and run at the district using SuperAce 2008.

CRUISERS: Todd Clement, Ed Scheick, Chris Weekly, Jon Fitch, Sara Stack.

FINAL CRUISE RESULTS:

AREA	CV%	SE%	ACRES
AKA	68.1	12.5	479

TIMBER DESCRIPTION

SAWLOG VOLUME:

This volume was obtained from the systematic random sampling cruise. All material graded camp run. See grade table for minimum standards.

AKA

SPECIES	AVE. DBH	GROSS VOL (MBF)	NET VOL (MBF)
Ponderosa Pine	13.5	1267	1249
White Fir	14.9	1676	1645
Sugar Pine	10.4	14	14
Lodgepole Pine	13.4	332	321

TOTAL NET SAWLOG VOLUME: 3,229 MBF

GREEN PULP VOLUME:

This volume was obtained from the fixed plot cruise (5.0" – 9.0" DBH).
All material was graded green pulp, see grade table for minimum standards.

AKA

SPECIES	Fixed Plot Volume
Ponderosa Pine	382
White Fir	293
Sugar Pine	16
Lodgepole Pine	96

TOTAL GREEN PULP VOLUME: 786 MBF

TC PSTATS				PROJECT STATISTICS				PAGE	1		
				PROJECT	AKA			DATE	7/16/2013		
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt	
33S	07E	04	VARIABLE	0236	479.00		30	186	1	E	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			30	186	6.2						
CRUISE			16	102	6.4	28,556	.4				
DBH COUNT REFOREST COUNT			14	79	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
PPINE			43	29.2	13.5	42	7.9	28.9	2,645	2,608	593
WHITE F			46	22.4	14.9	44	7.0	26.9	3,498	3,434	745
LP PINE			12	7.5	13.4	46	2.0	7.3	694	671	168
SUG PINE			1	.6	10.4	40	0.1	.3	28	28	7
TOTAL			102	59.6	14.0	44	17.0	63.5	6,866	6,741	1,512
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	
PPINE		152.4	23.2	164		214	263				
WHITE F		100.7	14.8	238		280	321				
LP PINE		61.2	18.4	83		102	120				
SUG PINE											
TOTAL		126.2	12.5	200		229	257	637	159	71	
CL	68.1	COEFF		SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
PPINE		131.0	20.0	35		43	52				
WHITE F		86.1	12.7	50		57	64				
LP PINE		51.6	15.5	21		25	29				
SUG PINE											
TOTAL		107.3	10.6	42		47	52	461	115	51	
CL	68.1	COEFF		TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
PPINE		104.8	19.5	23		29	35				
WHITE F		91.3	17.0	19		22	26				
LP PINE		218.0	40.5	4		8	11				
SUG PINE		547.7	101.8			1	1				
TOTAL		56.3	10.5	53		60	66	131	33	15	
CL	68.1	COEFF		BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
PPINE		98.1	18.2	24		29	34				
WHITE F		90.0	16.7	22		27	31				
LP PINE		214.7	39.9	4		7	10				
SUG PINE		547.7	101.8			0	1				
TOTAL		46.2	8.6	58		63	69	89	22	10	
CL	68.1	COEFF		NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH		5	10	15	
PPINE		104.1	19.3	2,104		2,608	3,112				
WHITE F		93.0	17.3	2,840		3,434	4,028				
LP PINE		227.7	42.3	387		671	955				
SUG PINE		547.7	101.8			28	57				

TC PSTATS			<u>PROJECT STATISTICS</u>					PAGE	2	
			PROJECT		AKA			DATE	7/16/2013	
TWP	RGE	SC	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
33S	07E	04	VARIABLE	0236	479.00		30	186	1	E
CL	68.1		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
TOTAL			51.4	9.5	6,097	6,741	7,385	109	27	12
CL	68.1		COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
PPINE			99.7	18.5	483	593	703			
WHITE F			91.9	17.1	617	745	872			
LP PINE			221.5	41.2	99	168	237			
SUG PINE			547.7	101.8		7	14			
TOTAL			47.5	8.8	1,379	1,512	1,646	93	23	10

TblSortGrade

Sort/Grade Table

Table Name: SUNPASS Date: 07/16/2013

Sort	Grd	Abr	Desc	Fbr	Min Dia	Max Dia	Max B Butt	Min I Len	Max Len	Defect	Min Vol	Vol Type	Min Rings	Knot S Size	Knot Freq	Str	Sap	Min Age	Lbs	Lbs Type	Cords	Cords Type
0	0	CU	CULL	G	1	0	0	1	99	0	0	M	0	0	0			0	0	0		
	1	CR	CAMPRU	G	6	0	0	10	99	0	0	M	0	0	0			0	0	0		
	7	GP	GRNPULP	G	3	0	0	10	99	0	0	M	0	0	0			0	0	0		
	8	DP	DEADPUL	G	3	0	0	10	99	0	0	M	0	0	0			0	0	0		
	9	UT	UTILITY	G	8	0	0	12	99	0	0	M	0	0	0			0	0	0		
		CU	CULL	G	1	0	0	1	99	0	0	M	0	0	0			0	0	0		
	1	CR	CAMPRU	G	1	0	0	1	99	0	0	M	0	0	0			0	0	0		

Species Table Report

TblSpecies

Date: 07/16/2013

Page: 1

Table Name: SUNPASS

Code	Abrv	Description	Bark Ratio	ASub Const	Form Factor	Wood Type	Comp- onent	Yield Table	Min Log Dia	Min Log Len	Max Log Len	Log Trim	Max Tree Dia	Max Tree Hgt.	BdFt Rule	CuFt Rule	Weight
1	PP	PPINE	.87	PP	.85	P	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
2	WF	WHITE F	.94	NF	.87	W	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5000
3	LP	LP PINE	.96	DF	.9	P	C	LP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
4	DF	DOUG-FIR	.92	DF	.87	D	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5700
5	SP	SUG PINE	.87	PP	.84	P	C	PP--EQUA--100	3	9	20	1.0	99	200	E	1	4800
6	IC	INC CED	.90	SS	.80	C	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	4500
7	RF	SH FIR	.924	DF	.89	W	C	DF--EQUA--050	3	9	20	1.0	99	200	E	1	5000

TC		PLOGSTVB		Log Stock Table - MBF																	
T33S R07E S04 Ty0236				479.00		Project:		AKA		Page		1		Date		7/16/2013		Time		10:56:21AM	
Acres		479.00																			
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	6-8	9-10	11-12	13-14	15-16	17-19	20-21	22-29	30-39	40+	
PP		CR	CR	17	81		81	6.5			78		3								
PP		CR	CR	18	3		3	.2			3										
PP		CR	CR	24	17		17	1.3					17								
PP		CR	CR	26	226		226	18.1			226										
PP		CR	CR	32	356		354	28.4				20	70	36	105	80	44				
PP		CR	CR	34	585	2.8	568	45.5			316	135	84		32						
PP		Totals			1,267	1.4	1,249	38.7			623	135	108	70	53	137	80	44			
LP		CR	CR	17	6		6	1.8			6										
LP		CR	CR	26	45		45	14.0			45										
LP		CR	CR	34	281	4.0	270	84.1			177	53	39								
LP		Totals			332	3.4	321	10.0			228	53	39								
WF		CR	CR	17	128	3.6	123	7.5			106	6	11								
WF		CR	CR	26	152		150	9.1			68	48			35						
WF		CR	CR	34	1,397	1.8	1,372	83.4			253	247	122	275	251	140	35	49			
WF		Totals			1,676	1.8	1,645	50.9			426	301	133	275	251	175	35	49			
SP		CR	CR	34	14		14	100.0			14										
SP		Totals			14		14	.4			14										
Total		All Species			3,289	1.8	3,229	100.0			1291	489	280	345	304	312	115	93			

