

ROCKY MOUNTAIN REGION (2)
SAN ISABEL NATIONAL FOREST (12)
SAN CARLOS RANGER DISTRICT (03)

TIMBER SALE REPORT
AND
APPRAISAL SUMMARY

HAWKSWING SALVAGE TIMBER SALE

Prepared by: Patrick Craig
Patrick Craig
Forester

Date: 3/14/16

Reviewed by: Lisa Corbin
Lisa Corbin
Timber Program Lead

Date: 03/14/16

Certification

I hereby certify that the requirements of the Secretary's Regulation 36 CFR 223.30 have been met by this timber sale.

I certify that the timber for this sale has been designated and cruised by the procedures and standards in the Timber Cruising Handbook (FSH 2409.12). Records of the cruise and checks are on file at the Salida Ranger District Office in Salida, Colorado.

Approved by: Paul Crespin
Paul Crespin
District Ranger

Date: 3/17/16

Hawkswing Salvage Timber Sale Timber Sale Report

I. SUMMARY OF RECCOMENDATIONS

The following lists the recommendations and results of the appraisal.

Net Volumes (Appraised and found in A2 of the contract) :

<u>Species</u>	<u>Volume</u>
<u>Contract Volume</u>	
Sawtimber	
Engelmann Spruce & other species (Live & Dead)	ES & O <u>2805 CCF</u>
	Total 2805 CCF

Non-sawtimber

Engelmann Spruce & other Species (Live & Dead)
Undetermined volume subject to agreement.

Advertised Rates --- Sawtimber ES & O = \$5.00/CCF

Subject to Agreement Non-sawtimber ES & O = \$1.00/CCF

Required Slash Deposit is \$0.00/CCF

Road Maintenance Deposit is \$0.00/CCF

Surface Rock Replacement Deposit is \$1.85/CCF

Road Maintenance Purchaser Responsibility \$3.50/CCF

Temporary Road Cost is \$3.09/CCF

KV Collection is \$5628.00

Salvage Sale Fund Collection is \$7695.00

Specified Road Construction is 0.0 Miles

Specified Road Reconstruction is 0.0 Miles

Termination Date is October 15, 2019.

Normal Operating Season is: July 1 – October 15

II. SALE AREA DESCRIPTION

1. Location: San Isabel National Forest, San Carlos Ranger District

Legal Description: T24S, R69W, Sections 5, 6, 7, 8, 17, and 18 6th PM Custer and Huerfano Counties, Colorado

2. STARS#: 16301
SALE #: 001
3. Gross Sale Area: 786 acres
4. Net Harvest Area: 220 acres
5. Location and description of private lands, claims, patents, reservations, or special uses within the sale area and measures to protect them. Private lands are adjacent to the sale boundaries, however, no easements are needed to access timber for this sale.

III. SALE OBJECTIVE CODE

Purpose	Activity	Percentage
FS – Forest Health	10	100%

IV. MANAGEMENT REQUIREMENTS AND CONSTRAINTS

NEPA Decision Document: Decision Notice, “Greenhorn Blowdown, Spruce Beetle and Forest Management Project”

Date of Project Approval: July 25, 2011

Approved By: Paul Crespin

1. Snow plowing to facilitate logging operations will not be permitted between November 20th and April 30th annually. Plowing of these road segments would prevent snowmobile travel between the Ophir Creek snowmobile trailhead and the primary snowmobile trail system located on top of Greenhorn Mountain.

Response: No snow plowing to facilitate logging operations will occur between November 20th and April 30th. C6.312# will be used to apply this sale operations restriction.

2. Prohibit road maintenance and hauling operations on three-day holiday weekends such as Memorial Day, Labor Day, or July 4th, if it falls on or near a weekday.

Response: No road maintenance or hauling will be conducted on three day weekends. C6.312#

will be used to account for this sale operations restriction.

3. Level 1 logging roads and existing decommissioned roads reopened for project purposes will be closed through scarification and seeding with a Forest Service approved seed mix, and then signed to inform the public that vegetative restoration is in progress. Road closures would occur within one year after completion of all project activities associated with each temporary or decommissioned road.

Response: Level 1 logging roads and reopened decommissioned roads will be closed and seeded within one year after use. B6.63 and C5.35# will be used to accomplish effective closure methods and C6.601# will be used to designate the type, amount and time of seeding to be used. District resources will install signs to inform the public that vegetative restoration is in progress.

4. NF system trails will be protected from damage by logging operations.

Response: NF system trails will be protected as protection of improvements under B6.22 and will be identified on the Sale Area Map.

5. All green spruce slash larger than 6 inches in diameter will be yarded to a log landing and treated to prevent spruce beetle colonization or emergence within one year of yarding.

Response: All treated material 6 inches in diameter and greater will be yarded to the landing location and treated under C6.42# and C6.411#.

6. Logging equipment is not permitted within 100 feet of wetlands, riparian areas or springs except on designated roads. Logs may be harvested from these buffer areas, but they must be winched-out by equipment located outside of the buffer. Trees that directly shade streams will not be cut or removed (with exceptions for operator and/or public safety and disease management).

Response: Skidding operations will not be permitted within 100 feet of these areas as identified in C6.6#. A 100' buffer was provided for during layout and marking of all units.

7. Landings will be scarified and seeded after use. Where feasible, log landings will be located at least 100 feet away from the Greenhorn Road (FR 369) or the Ophir Road (FR 360) to reduce their visual impact and to minimize their potential for future use as camping or parking areas. Where feasible, log landings should be located on north or east facing slopes to facilitate their re-vegetation.

Response: C6.601# will accomplish scarification and seeding of landings. Where feasible spur temp roads will be used to locate the landings at least 100 ft. off FR 369.

8. Existing structural range improvements will be protected during timber sale activities.

Response: Range improvements will be protected during sale operations by the use of B6.22 and will be identified on the Sale Area Map

9. Prior to entering the National Forest all off-road logging equipment, machinery, and vehicles

will be cleaned to remove any plant material that may have become attached to the vehicles. These vehicles will be inspected by a Forest Service administrator to assure that any weed material has been removed from the equipment.

Response: Noxious weeds will be treated using B6.35. Prior to moving Off-Road Equipment onto the Sale Area, Purchaser shall identify the location of the equipment's most recent operation. Purchaser shall not move any Off-Road Equipment that last operated in an area infested with one or more invasive species of concern onto Sale Area without having cleaned such equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds, and having notified Forest Service. If the location of prior operation cannot be identified, then Purchaser shall assume that the location is infested with invasive species of concern.

10. Within treatment areas, retain a minimum (preferably more) of 8 snags or live recruitment snags per acre (averaged over a 10 acre area). When selecting snags or live recruitment snags for retention, the following characteristics – large diameter, rot, cavities, forked tops, broken tops, dead tops, “wolfy” appearance, cankers, knarls, heartrot or crooks - are preferred. Clumping (versus even distribution) of snags is preferable if trees with the desired snag characteristics are available for the snag retention clump.

Response: All units were cut tree marked so the snag retention guides were accomplished to the level that was present within the unit by not marking trees as cut trees.

V. AREA DESCRIPTION SUMMARY

Unit Number	Harvest Acres	Mgt. Area	TLSC	Harvest Method	Logging Method
1	43	9B	600	4151/4231	420
2	13	7A	500	4231	420
3	39	7A	500	4152/4231	420
4	2	7A	500	4231	420
5	4	7A/9B	500/600	4152	420
6	2	7A	500	4231	420
7	32	7A/9B	500/600	4231	420
8	11	7A	500	4131	420
9	7	7A	500	4151/4231	420
10	4	7A	500	4231	420

11	18	7A	500	4231	420
12	11	7A	500	4151/4231	420
13	17	9B	600	4151/4231	420
14	17	7A	500	4231	420

Applicable Coding Structure For Area Description
(Timber Land Suitability Class (TLSC, TMIS Handbook))

500 - Suitable, Timber
600 - Suitable, Other Emphasis
630 - Recreation Emphasis

640 - Visual Emphasis
650 - Wildlife Emphasis
660 - Water Emphasis

Harvest Method

4111 - Patch Clearcut
4112 - Strip Clearcut
4113 - Stand Clearcut
4121 - Shelterwood Prep Cut
4131 - Shelterwood Seed Cut
4141 - Shelterwood Removal Cut

4143 - Overstory Removal
4151 - Individual Tree Selection
4152 - Group Selection
4154 - Single Tree Selection (NRN)
4231 - Salvage Intermediate Treatment
4270 - Permanent Clearing

Logging Method

410 - Animal (Horse)
421 - Rubber Tired Skidder
496 - Feller Buncher

420 - Tractor
454 - Other
498 - Low Ground Pressure

VI. TIMBER VOLUME DETERMINATION

Volume Determination

Scaled timber sales with an estimated value of greater than \$15,000 and less than or equal to \$35,000 are required to meet a sampling error of 30% or less at a 95% confidence interval (FSH 2409.12, Chapter 41.1). This volume was obtained from Hawkswing Salvage T.S. Cruise which was a 1 in 120 Sample Tree measurement cruise. Total Sale error = 12.75%. The final sale error of 12.75% meets the requirements for scaled sales with a value greater than \$15,000 and less than or equal to \$35,000 (FSH 2409.12 Chapter 41.1) thus is acceptable.

Area Determination Method

The acreage of each cutting unit was determined by the Global Positioning System (GPS) method on all cutting units following direction set forth in FSH 2409.12.52.12. Maps of each cutting unit are filed in the *Presale Folder 2430* for this sale.

VII. TRACT DATA

	Units	Sale Total or Average	Species Group ES & O (Live & Dead)
Contract Volume	CCF	2805	2805
% By Species/Group	%	100%	100%
Ave. Net Volume/Tree	CF	23.4	23.4
Ave. Net Volume/Acre	CCF	12.8	12.8
BF/CF Ratio	n/a	4.890	4.890
Quad Mean DBH/Species	Inch	14.8	14.8
Total Number of Trees	Trees	11,980	11,980

VIII. UNIT SUMMARY

Cutting Unit	CCF ES & O from Cruise
1	458
2	225
3	621
4	42
5	42
6	22
7	325
8	107
9	72
10	90
11	174
12	147
13	322
14	158
Total-->	2805

IX. TRANSPORTATION SYSTEM

Cost estimates for road construction, road reconstruction, and road maintenance are provided in the Transaction Evidence Appraisal Report (TEA), Section V.

ROAD MAINTENANCE:

JFSR 402

Pre/During/Post Haul

MILES

0.1

NFSR 350	Pre/During/Post Haul	0.1
NFSR 426	Pre/During/Post Haul	1.2
NFSR 369	Pre/During/Post Haul	6.9
NFSR 360	Pre/During/Post Haul	<u>8.1</u>

16.4

SURFACE ROCK REPLACEMENT: MILES

NFSR 360	During/Post Haul	<u>8.1</u>
		8.1

SPECIFIED ROAD CONSTRUCTION:

MILES:

There is no specified road construction for this sale.

0.0

SPECIFIED ROAD RECONSTRUCTION:

MILES:

There is no specified road reconstruction for this sale.

0.0

X. AGREEMENTS, EASEMENTS, AND PERMITS

There are no agreements, easements, and/or permits with other agencies or members of the public required to gain access to the sale area or portions thereof.

XI. APPROVALS/AUTHORIZATIONS

The following are Forest Service Manual and Handbook references for Authorization and Policy regarding this timber sale:

FSM 2400 - Timber Management

FSH 2409.18 Timber Sale Preparation Handbook, Chapter 50, Section 53 – Final Package Preparation

FSH 2409.19 Renewable Resources Handbook

**Hawkswing Salvage Timber Sale
Transaction Evidence Appraisal Report**

I. TRANSACTIONAL APPRAISAL SUMMARY

- o Adjustments for Dead Timber and Quality Unusual Adjustment.
- o Sale appraised to Montrose, CO and Gypsum, CO.

II. ACCESS AND RELATION TO MARKETS

Product	Contract Species	Appraisal Group	Appraisal Point(s)	One Way Haul Miles
Sawtimber	Engelmann Spruce & other species (Live & Dead)	ES	Montrose, CO	222
Non-sawtimber	Engelmann Spruce & other species (Live & Dead)	ES	Gypsum, CO	230

All sawtimber material will be appraised to Montrose, Colorado and all non-sawtimber material will be appraised to Gypsum, Colorado. These mill locations are the closest manufacturing and marketing points for a sale of this quantity of sawtimber and non-sawtimber products to be processed.

III. SALE APPRAISAL VOLUMES

Product	Contract Species	Appraisal Group	Volume	Unit of Measure
Sawtimber - 01	Engelmann Spruce & other species (Live & Dead)	ES - 093	2805	CCF - 03
Non-sawtimber - 03	Engelmann Spruce & other species (Live & Dead)	ES - 093		CCF - 09
TOTAL			2805	CCF - 03

IV. CURRENT APPRAISAL DATA

BULLETIN NO. BU231015 effective February 12, 2016 until superseded
BASE DATA PERIOD: 1st QTR CY15 - 4th QTR CY15
APPRAISAL BASE PERIOD: 6-15
BASE INDEX: September, 2015 (2012-2013 basis): 328.87
BASE INDEX Adjusted to CCF: WWPA(B): 156.21

INDEX OPERATIONS	Sawtimber	Non-sawtimber
SPECIES: ES		
Adjusted Base Period Price	14.87	1.00
Base Skid-Yard Cost	104.30	N/A
Base Haul	78.97	N/A
Base Road Maintenance	6.21	6.00
Base Slash	1.29	1.26
Base Temp Roads	2.18	2.32

V. TRANSPORTATION COSTS

A. Road Maintenance

	Total Cost	Volume	Cost/CCF
Purchaser Required Performance	\$7,475.33	2805	\$2.66
Timber Purchaser Overhead (TPOH) @ 31.54% = \$7,475.33 * .3154	\$2,357.72	2805	\$0.84
	\$9,833.05	\$/CCF	\$ 3.50

	Total Cost	Volume	Cost/CCF
Surface Rock Replacement	\$5,175.73	2805	\$1.85
	\$5,175.73	\$/CCF	\$ 1.85

Total Road Maintenance Costs = \$15,008.78/2805 CCF = \$5.35/CCF

B. Sale Temporary Roads

1. Temporary Road Costs

Temporary road construction is allowed when skidding distance exceeds 1,000 feet. It is estimated that 0.24 miles of temporary roads will need to be constructed and 1.2 miles of existing temporary road will need to be reopened to complete the required harvest in this sale.

See Hawkswing Salvage Temporary Road Costs Estimate document.

Costs to construct new temporary road =	\$753.20
Costs to reopen existing temporary roadbeds =	\$2364.80
Costs to close new temporary roads =	\$506.05
Costs to close existing temporary roadbeds =	<u>\$2440.48</u>
Total Temporary Road Costs =	\$6064.53

Total Temporary Road Costs = Temporary Road Costs x Mobilization

Total Temporary Road Costs = \$6064.53 x 1.09 = \$6610.34

\$6610.34 x 1.3154 (TPOH) = \$8695.24/2805 CCF = \$3.10/CCF

C. Sale Haul Costs

1. Sawtimber – Haul to: Montrose, CO

See attached haul/road maintenance spreadsheet for haul information.

Sawtimber Sale Haul Cost = (Total Round Trip Haul Minutes) x (\$0.1130/CCF/Min.) (per FSH 2409.22, Chap.44.1)

Sawtimber Haul Costs = 966 Min. x \$0.1130/CCF/Min. = \$ 109.16/CCF

2. Non-sawtimber (Timber Subject to Agreement) - Haul to: Gypsum, CO

Non-sawtimber Sale Haul Cost = Subtract average haul miles (52) from the sale haul miles and multiply by the haul cost. Haul cost is \$0.170/CCF/MI.

Non-sawtimber Sale Haul Cost = (230 miles – 52 average haul miles) x \$0.170/CCF/Min. = \$30.26/CCF

D. Sale Transportation – Subtotal

	Sawtimber Cost/CCF	Non-sawtimber Cost/CCF
Sale Haul	\$109.16	\$30.26
Road Maintenance	\$ 5.35	\$ 5.35
Temporary Road	\$ 3.10	\$ 3.10
SAWTIMBER TRANSPORTATION COSTS	\$117.61	\$38.71

VI. LOGGING COSTS

Logging cost adjustment is figured on the TEA234 Appraisal System. It is based on the difference between the appraised sale and Regional average sale diameter and sale volume per acre. (Reference FSH 2409.22, 51.61)

VII. UNUSUAL ADJUSTMENTS

Unusual adjustments are sale adjustments made necessary for cost or value items that are not reflected in the appraisal database. (FSH 2409.22, 51.6)

A. Quality Unusual Species and Form Adjustment

1. Quality Unusual Adjustment

The Appraisal Bulletin suggests a quality unusual adjustment for species when species of poor form is present on a sale and accounts for a significant volume in relation to the whole. This adjustment is available for use on ES, LP, DF, and TF. The maximum amount of the optional Quality Unusual Adjustment for ES = \$-6.05.

Calculation procedures for the Quality Unusual Adjustment are found in FSH 2409.22 51.6 (3).

Quality Unusual Adjustment = BPP x % adjustment x vol. of adjusted species/total species group volume

$$\$14.87 \times 0.16 \times 2805 \text{ CCF} / 2805 \text{ CCF} = \$2.38$$

The amount of Quality Unusual adjustment applied to ES in the appraisal is **-\$2.38/CCF**

B. Deteriorating Live and Dead Timber Adjustment

CRUISED VOLUME (CCF)

ES = 480 CCF Live
ESR = 1551 CCF Recent dead, deteriorating live
ESD = 774 CCF Dead, all brown or no needles

APPRAISAL

Using Bulletin BU230116, effective February 12, 2016
Assume: sale award 07/15/16 and sale termination is 10/15/2019
So, sale contract midpoint is estimated to be 02/15/2018

ASSUMPTIONS

1. Dead Engelmann Spruce Unusual Adjustment

Appraiser estimates that 75% of 1551 CCF of recently infested volume (ESR) will be dead at the midpoint of the contract. In addition to ESR there is 774 CCF of already dead (ESD) associated with the sale.

0.75 X 1551 CCF = 1163 CCF of ESR deteriorating dead at midpoint.
1.0 X 774 CCF = 774 CCF of ESD already dead.

Total dead at midpoint is: 1163 CCF of ESR + 774 CCF of ESD = 1937 CCF total dead at midpoint.

SO

Appraise 480 CCF of ES as live sawtimber.
Appraise 388 CCF of ESR as deteriorating live sawtimber.

Appraise 1937 CCF as ESD dead sawtimber.
 2805 CCF Total Live and Dead ES sawtimber

APPRAISAL ADJUSTMENTS

Appraiser estimates a 20% reduction of lumber selling value based on the Current WWPA Index published in the Bulletin based upon the overall condition of the deteriorating live and dead timber.

Formula from FSH 2409.22, 51.6 (2):

Unusual Adjustment =

$$\frac{\text{Current Index} \times \text{Reduction} \times \text{Cubic Conversion} \times \text{Deteriorating and Dead Volume}}{\text{Total Sale Volume}}$$

$$\text{Unusual Adjustment} = (\$366.56 \times 0.20 \times 0.4890 \times 1937 \text{ CCF}) / 2805 \text{ CCF} = -\$24.76$$

The amount of Dead Unusual Adjustment applied to ES in the appraisal is **-\$24.76/CCF**

D. Unusual Adjustments Subtotal

Species:	ES Sawtimber	ES Non- sawtimber
Slash Disposal	N/A	N/A
Quality Unusual Adjustment	-\$2.38	N/A
Dead Unusual Adjustment	-\$24.76	N/A
SUB-TOTAL <i>(slash costs are put into TEA234 separately)</i>	-\$27.14	\$0.00
	-\$0.00	

VIII. PURCHASER OBLIGATION PER OPERATIONS FIRE

(A15) FSH 2409.18, Sec.53.31

Wage rate for AD-2 firefighter = \$17.60 / hour*

Estimate a 4-person woods crew.

4 people x \$17.60 / hour x 12 hours x 3 days = \$2534.40

Round to the nearest hundred ---> **\$2,500.00**

* FSH 5109.34 - Interagency Incident Business Management Handbook

IX. COMPETITION FACTOR

The San Isabel National Forest is currently a competitive forest. The competition factor for the San Isabel will be 10% for this Bulletin period. Figures are taken from BU231015, effective October 30, 2015.

Species/Product	Competition Factor
ES Sawtimber	\$ 1.49
ES Non-sawtimber	\$ 0.10

X. BASE RATES

Minimum Base Rates are set by the Regional Office. (TEA Bulletin No. 230116)

Sale Species/Product	Base Rates per CCF
ES Sawtimber	\$5.00
ES Non-sawtimber	\$1.00

XI. ADJUSTMENT TO BASE RATES

If any of the Indicated Advertised Rates for a species are below Base Rates, the Base Rate will be used as the Advertised Rate for those species and the other species' Advertised Rates will be adjusted downward in proportion to the amount of their positive value. (FSH 2409.18, 45.43)

Sale Species/Product	Adjustments to Base Rates per CCF
ES Sawtimber	\$ 46.47
ES Non-sawtimber	\$29.23

XII. PERFORMANCE BOND

(A18) There are two methods of calculating the performance bond per FSH 2409.18, Sec.54.1. The larger of the two calculations is used for the minimum performance bond.

Bond Based on 10% of Advertised Stumpage Value - Method I

$$\begin{array}{r} \text{Advertised Stumpage Value} = \\ \$ 14025.00 \\ \quad \times \quad .10 \\ \hline \$ 1402.50 \end{array}$$

Round up to next \$1000.00 --->\$2000.00

Bond Based on Penal Sum - Method II, work required for one logging season (without TPOH)

$$\begin{array}{l} \text{Sale Volume} = 2805 \text{ CCF} / 3 \text{ operating seasons} = 935 \text{ CCF} \\ \text{Road Closure Cost for sale} = \$2946.53 \end{array}$$

$$\begin{array}{l} * \text{Lopping (10\% of fall, buck cost): } \$17.00/\text{CCF} \times .10 = \$1.70 / \text{CCF} \\ * \text{Waterbarring (5\% of skid cost): } \$23.45 \times .05 = \$1.17 / \text{CCF} \\ \frac{1}{2} \text{ Temp road closure: } \$2946.53 \times .5 = \$1473.27/2805 = \underline{\$0.53 / \text{CCF}} \end{array}$$

$$\text{Total:} = \$3.40/\text{CCF}$$

$$\$3.40/\text{CCF} \times 935 \text{ CCF} \times 1.16 \text{ FSOH} = \$3687.64$$

Round up to next thousand ---> \$4000.00

The greater of Method I or Method II is: \$4000.00

Used zone average appraisal cost R2 Amendment 2409.22-95-3 Sec.42

XIII. STUMPAGE AVAILABLE FOR KV and SSF

Total Sale Value	= \$ 14,025.00
Less to NFF	= \$ 702.00
Stumpage available for KV and SSF funding	= \$ 13,323.00