	SOUTHERN INTERIOR FOREST REGION **Standard Operating Procedures** ATTENTION: REGIONAL EXECUTIVE DIRECTOR, REGIONAL STAFF MANAGERS, DISTRICT MANAGERS & SECTION HEADS		**SUBJECT: SCALING AND BILLING OF MATERIAL MANUFACTURED INTO HOG FUEL OR CHIPS ON THE HARVEST AREA**	
NO. REV 039	MANUAL: SCALING	CHAPTER REF: 12 FOREST ACT SECTIONS 84 & 94 TM&T REG	SECTION: 4.6	FILE: FOR-21550-02

Introduction:

There is growing interest in utilizing the material that is left over from harvesting operations for hog fuel to support the Bio-energy industry, and chips for pulp, pellet plants, and other industries that are able to make use of this low value material. The challenge for the Scaling Program is how to fairly and equitably quantify the timber by species and grade to an appropriate level of accuracy. The level of accuracy that is required for the various situations is directly related to the stumpage rate times the volume which equals the revenue risk.

This Standard Operating Procedure for the Southern Interior Forest Region (SIR) provides a methodology for scaling post harvest material. Please refer to the chart at the end of this document for clarification.

Requirements:

1. A valid timber mark must exist for the cutting authority.
2. If the hog fuel or chip processing is being done by the original licensee, the primary harvesting on the landings or roadside areas holding the post harvest material must, be completed.
3. A waste assessment must be completed for the original cutting authority, if a secondary cutting authority is going to be issued for the area.
4. If a secondary cutting authority has been issued for the area, a waste assessment is not required to be completed by the licence holder of that secondary cutting authority.
5. In accordance with Section 84(5) of the *Forest Act* an exemption from timber marking Section 84(1) and (3) must be issued. A condition of the Section 84 exemption will be that the person who transports the hog fuel or chips must have in his or her possession a written record of the material being transported (Load Description Slip). Information required on the written description will be the same as Section 10(2) of the *Timber Marking and Transportation Regulation.* (see Appendix IV)
6. In accordance with Section 94(5) of the *Forest Act* an exemption from scaling section 94(1) must be issued. Conditions of this exemption will outline the standards and methods to be used for estimating volumes and grades representing the post harvest material. (see Appendix IV)

Procedure for Volume and Grade Calculation:

1. District scaling staff will determine species and grade percentages by a method that takes into consideration the stumpage rate and revenue risk. Industry will provide data to the district, from a licenced scaler, for this purpose. District will then inform region of that percentage, the timber marks pertaining to the timber and the conditions of timber being processed.
2. Regional scaling staff will establish a stratum in the Harvest Billing System (HBS) for billing purposes, using a regional population with an appropriate weight to volume ratio using data available (e.g. see Appendix II) and the grade percentage information from the district. Region will then pass the stratum information on to the district.

NOTE: If table 6-4 (see Appendix III) from the Appraisal Manual is used to determine the stumpage rate the rate will apply to **all** material ground or chipped and therefore the weight/volume ratio will be established with this considered.

3. District scaling staff will ensure that the population and strata are set up at the weight scale site and that there is means of submitting the data to HBS.
4. Loads of processed hog fuel or chips will be weighed at a certified scale using procedures approved by the district scaling supervisor.
5. Industry will enter the weigh slips into the HBS, electronically or manually to enable invoicing.

Decked logs on site:

(Please refer to the SIR Standard Operating Procedures titled DELAY IN SCALING/FIELD SCALE):

1. If decked timber is being processed into hog fuel or chips on site then those decks must be scaled by a licenced scaler using a method determined by the district scaling supervisor. The method of scale will be appropriate for the level of revenue risk calculated for the timber.
2. If the original cutting authority is still active, and decks of timber remain on the harvest area after primary harvesting is completed, the district manager will determine if the decked timber is being scaled as soon as possible as required by Section 2 of the *Scaling Regulation*.

3. If a determination is made that the decked timber is not being scaled as soon as possible, a field scale may be ordered. If the decks are removed they will be scaled at their destination.
4. Unscaled timber must be clearly identified and separated from scaled timber.

Other Considerations:

1. This procedure does not preclude the Ministry of Forests Range district staff from exercising their authorities under the acts and regulations to complete a volume estimate for the scale minor volumes of chip or hog fuel, to allow minor volumes of chips or hog fuel to be manufactured and transported (e.g. single loads of hog fuel to greenhouses).

Approved

Initial		Date
	RSM	
	RED	

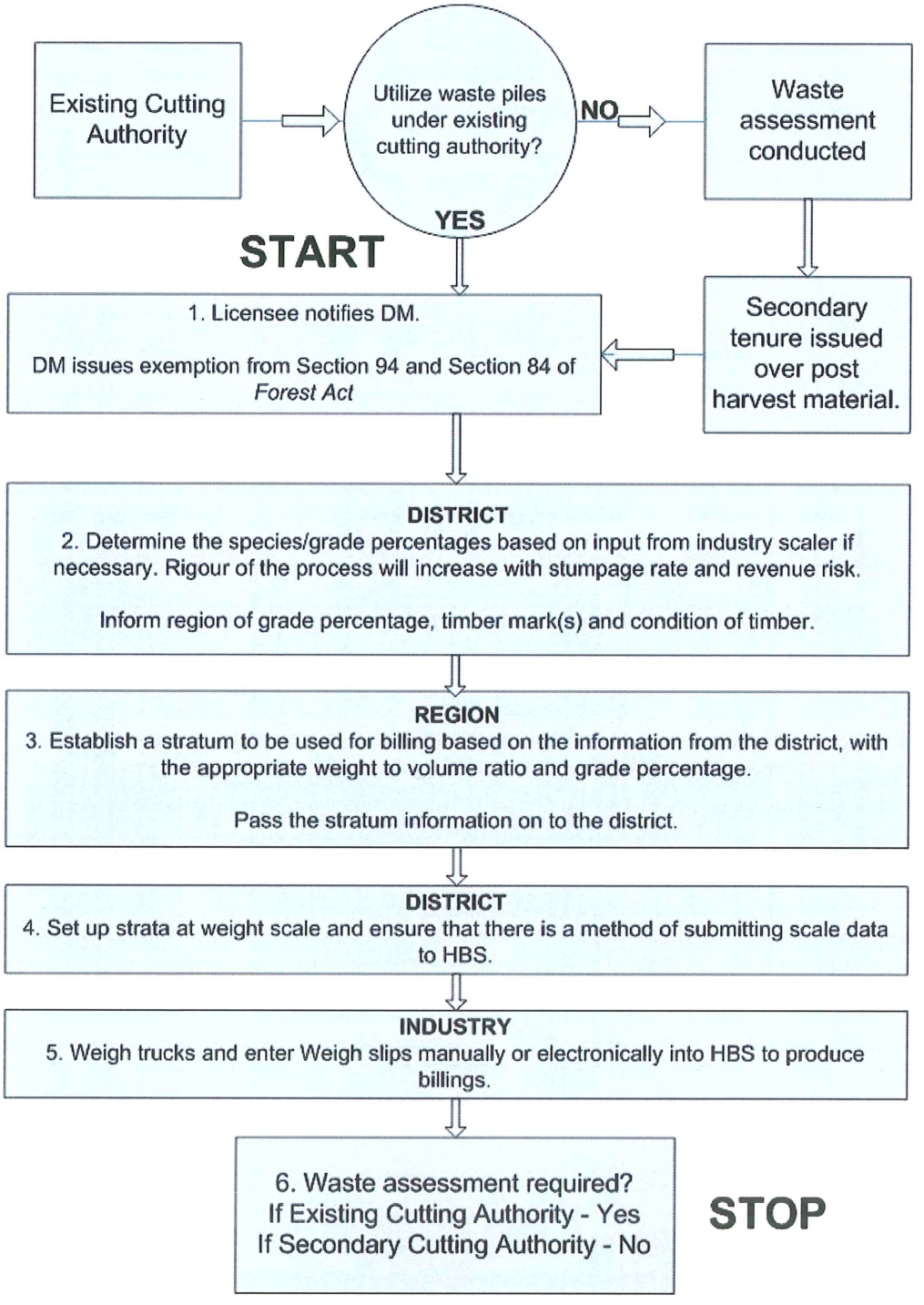
APPROVED:

Larry A. Peitzsche, R.P.F.
A/Regional Executive Director
Southern Interior Forest Region

Attachments:
Appendix I: Processing Post Harvest Material into Hog Fuel or Chips - Flowchart
Appendix II: Tables Predicting Gross Total Stem Volumes
Appendix III: BC Ministry of Forest and Range Appraisal Manual – Table 6-4
Appendix IV: Processing Approval & Timber Marking/Scaling Exemption Letter Example

Appendix I

Processing Post Harvest Material into Hog Fuel or Chips Flowchart



Appendix II

Douglas-fir

DBH in	RADS	HT ft	Stem Vol cu ft	Stem Wt BD lbs	Stem Wt %	Crown/Tip Wt BD lbs	Total Weight	BDT
2	2	10	0.1	2.5	100%	0	2.5	0
4	5	30	1	25	38%	40	65	0.03
6	8	50	4	100	61%	64	164	0.08
8	10	70	10	250	72%	97	347	0.17
10	13	90	20	500	78%	137	637	0.32
12	15	110	35	875	83%	184	1,059	0.53
16	20	120	64	1,600	84%	301	1,901	0.95
20	25	120	95	2,375	83%	482	2,857	1.43
24	30	120	130	3,250	82%	725	3,975	1.99
28	36	130	190	4,750	82%	1,030	5,780	2.8

Ponderosa Pine

DBH in	RADS	HT ft	Stem Vol cu ft	Stem Wt BD lbs	Stem Wt %	Crown/Tip Wt BD lbs	Total Weight	BDT
2	2	10	0.1	2.5	100%		2.5	0
4	5	30	1	25	42%	35	60	0.03
6	8	50	3.7	92.5	58%	66	158.5	0.08
8	10	70	9	225	67%	113	338	0.17
10	13	90	17.9	447.5	72%	177	624.5	0.31
12	15	110	31.1	777.5	75%	259	1,036.50	0.52
16	20	120	58.3	1,457.50	75%	478	1,935.50	0.97
20	25	120	88	2,200	74%	774	2,974	1.49
24	30	120	123.1	3,077.50	73%	1150	4,227.50	2.11
28	36	130	178.7	4,467.50	73%	1620	6,087.50	3

White Fir

DBH in	RADS	HT ft	Stem Vol cu ft	Stem Wt BD lbs	Stem Wt %	Crown/Tip Wt BD lbs	Total Weight	BDT
2	2	10	0.1	2.50	100%		2.50	0
4	5	30	1.2	30.00	40%	45	75.00	0.04
6	8	50	4.5	112.50	59%	77	189.50	0.09
8	10	70	11.1	277.50	70%	120	397.50	0.2
10	13	90	22.3	557.50	76%	175	732.50	0.37
12	15	110	39.2	980.00	80%	242	1,222.00	0.61
16	20	120	71.2	1,780.00	81%	422	2,202.00	1.1
20	25	120	103.7	2,592.50	80%	637	3,229.50	1.61
24	30	120	141	3,525.00	81%	852	4,377.00	2.19
28	36	130	202.4	5,060.00	82%	1090	6,150.00	3.08

References:

Walters, David K.; Hann, D. W.; and Clyde, M. A. 1985. Equations and tables predicting gross total stem volumes in cubic feet for six major conifers of southwest Oregon. Research Bulletin 50. Corvallis, OR: Forest Research Laboratory, Oregon State University. 37 p. Snell, J.A. Kendall, and Brown, J. K. 1980. Handbook for predicting residue weights of Pacific NW Conifers. Gen. Tech. Rep. PNW-103. USDA Forest Service, PNW Forest and Range Experiment Station. 44 p. Hartman, David A.; Atkinson, W. A.; Bryant, B. S.; Woodfin, R. O., Jr. 1976. Conversion factors for the Pacific NW Forest Industry.

Appendix III
Appraisal Manual Chapter 6 – Table 6-4

Table 6-4 Miscellaneous Stumpage Rates

All Interior Forest Regions

Species	Code	Product	Reserve Stumpage Rate
All Species	SB	Shake & Shingle Bolts, Blocks and Blanks.	$5.30/m^3
All Species	SK	Shakes	$6.00/m^3
Cedar	PR	Posts & Rails (Split and Round)	$3.00/m^3
All other Species	PR	Posts & Rails (Split and Round)	$1.20/m^3
All Species	MT	Mining Timbers	$3.00/m^3
All Species	FW	Firewood	$0.50/m^3
Yew		All	$0.25/m^3
All Species		All post harvest material where a waste assessment has been made and the material will be chipped or ground at the roadside or the landing	$0.25/m^3
All Species		Grades 4 and 6, except where the upset stumpage rate is determined under section 6.2.1(1)(b),(c) and 7.5.1(7)	$0.25/m^3
Deciduous Species		All, except grades 4 and 6 and except where the upset stumpage rate is calculated under section 6.2.1(1)(b),(c) and 7.5.1(7)	$0.50/m^3
All Species		Stakes & Sticks.	$1.20/m^3
All Species	XM	Christmas Tree: under 3m 3-5 m over 5 m	$0.20/each $1.00/each $1.50/each
All Species		Logs salvaged below the high water levels of Reservoir Lakes and the Slocan, Kootenay, Mineral, Babine and Ootsa Lakes	$0.25/m^3
All Species		Marine Beachcomb	$0.70/m^3
All Species		Trees classified as "Dead Potential" on Cruise-based cutting authorities (except where the MPS upset stumpage rate is calculated under Section 7.5.1(7))	$0.25/m^3
All Coniferous		For logs harvested from the Alex Fraser (UBC), Aleza Lake (UBC and UNBC) and Fort St. James (UNBC) Research Forests	$0.25/m^3
All Species		Firmwood Reject	NIL

Appendix IV
Approval & Exemptions Letter Example

File:

December 24, 2008

NAME OF MARK HOLDER
ADDRESS, BC
V

Dear:

Please accept this letter as authorization to utilize post harvest material from ########## for processing hog fuel or chips on site. Post harvest material may be processed from landing and roadside piles as well as from scattered material that is contained within the boundaries of the aforementioned areas.

Notwithstanding the terms and conditions of this licence the district manager grants the following exemptions:

1) Pursuant to Section 94 (5) of the *Forest Act*, the licensee is exempt from the requirements of scaling timber subject to the following conditions:
   (i) the Interior Log Grade and Species segregations of post harvest material, namely chips or hog fuel, will be determined by the district scaling supervisor; and
   (ii) the volume of the post harvest material, namely chips or hog fuel, will be calculated using a weight to volume ratio determined by the Southern Interior Forest Region Scaling and Billing Manager; and
   (iii) the chips or hog fuel must be delivered to an approved location, namely scale site ### NAME; and
   (iv) loads of processed hog fuel or chips will be weighed at a certified scale using procedures approved by the district scaling supervisor; and
   (v) industry will enter the weigh slips into the Harvest Billing System, electronically or manually to enable invoicing.
2) Pursuant to Section 84 (5) of the *Forest Act*, the licensee is exempt from the requirements of timber marking subject to the following conditions:
   i) The person who transports the hog fuel or chips, must have in his or her possession a written record of the material being transported (Load Description Slip). That written record must include all of the following information:
      a) the licence number or name of the truck in which the timber is being transported; and
      b) a description of the location of origin of the timber; and
      c) the date on and time at which the transport of the hog fuel or chips begins; and
      d) the destination of the hog fuel or chips; and
      e) the timber mark pertaining to the hog fuel or chips being transported; and
      f) the name and signature of the timber transport operator; and
      g) a unique serial number.

ii) When hog fuel or chips are being transported, the holder of the timber mark, the transport operator and the receiver of the timber or the operator of the scale site to which the timber is being transported, must ensure that the written record required is accurately completed, and copies of the written record are retained and remitted as directed by a forest officer.

iii) A person who is required by these conditions to carry or retain a copy of the written record must produce the record for inspection if requested to do so by a forest officer.

iv) Any stored unscaled timber in decks or piles must have the correct timber mark applied to one end of at least 10 percent of the timber pieces in each deck or pile using hammer indentation.

v) The timber mark ##### - Stratum 3999-##-2009 will be used to identify all loads transported.

If you have any questions concerning this letter, please contact NAME, District Scaling Supervisor, at PHONE.

Yours truly,

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District Manager
Forest District