



The Best Place on Earth

Ministry of Forests,  
Mines and Lands

Pricing Branch

MEMORANDUM

File: 195-30/RWMM  
126209

November 15, 2010

**BY EMAIL**

To: Regional Executive Directors

From: Murray Stech  
Director  
Pricing Branch

**Re: Amendment No. 17 to the *Provincial Logging Residue and Waste Measurement Procedures Manual***

I hereby approve Amendment No. 17 to the *Provincial Logging Residue and Waste Measurement Procedures Manual*, and attach a copy for your use.



The purpose of this amendment is to clarify the procedures for processing requests for relief from waste billing pursuant to the new Waste Relief section of the Waste Assessment Policy introduced in Amendment No. 16.

Amendment 17 comes into force on November 15, 2010.

Murray Stech  
Director  
Pricing Branch

Attachment

pc: Timber Sale Managers





Ministry of  
Forests and Range



## MANUAL REVISION TRANSMITTAL

<p>FOR FURTHER INFORMATION OR IF YOU HAVE A CHANGE OF ADDRESS, PLEASE CONTACT:</p> <p>John Wai Residue Forester and Log Salvage Policy Forester Revenue Branch Ministry of Forests and Range 1 Floor, 1520 Blanshard Street Victoria, BC V8W 3K1 Phone: 250-356-7671 Email: John.Wai@gov.bc.ca FAX: 250-387-5670</p>	<b>MANUAL TITLE</b>	
	Prov. Logging Residue & Waste Measurement Procedures Manual	
	<b>AMENDMENT</b>	<b>ISSUE DATE</b>
	Amendment No. 17	November 15, 2010
<b>MANUAL CO-ORDINATOR</b>		
Judy Laton Publications/Administrative Co-ordinator		
<b>AUTHORIZATION (Name, Title)</b>		
Murray Stech Director, Revenue Branch		

Please make the following changes to your copy of the above Ministry manual.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT	PAGE(S)	COMMENTS
	TABLE OF CONTENTS		
REMOVE	Table of Contents	i - vi	After Table of Contents Tab
INSERT		i - vi	
REMOVE	Chapter 1	19 - 20	After Chapter 1 Tab
INSERT		19 - 22	
INSERT	Letter from Murray Stech, Director Transmittal Sheet		After Amendments Tab



# Table of Contents

## Introduction

To Obtain a Provincial Logging Residue and Waste Measurement Procedures Manual.....	ii
Comments and Suggestions .....	iii
Manual Amendments .....	iv
Software Support .....	v

## 1 Policy and Administration

1.1 Waste Assessment Policy .....	1-2
1.2 Purpose and Rationale .....	1-8
1.2.1 Purpose.....	1-8
1.2.2 Rationale .....	1-11
1.2.3 Definitions .....	1-11
1.2.4 Monetary Billings .....	1-12
1.2.4.1 Coast .....	1-12
1.2.4.2 Interior .....	1-12
1.2.5 Deciduous .....	1-12
1.2.6 Amount Payable.....	1-12
1.3 Authority .....	1-14
1.4 Background.....	1-15
1.5 Responsibility .....	1-17
1.5.1 Revenue Branch.....	1-17
1.5.1.1 Director, Revenue Branch.....	1-17
1.5.1.2 Waste Assessment Policy Forester, Revenue Branch.....	1-17
1.5.2 Regional Manager.....	1-17
1.5.3 District Manager .....	1-18
1.5.4 Timber Sales Manager .....	1-18
1.5.5 Licensees.....	1-19
1.6 Waste Relief Procedures .....	1-20
1.6.1 Initiating Applications .....	1-20
1.6.2 Content and Processing of Applications .....	1-20
1.6.3 Waste Relief Determination.....	1-21

## **2 General Assessment Requirements and Reporting Units**

2.1 Field Assessments and Reporting Time Frames .....	2-2
2.2 Continuing Liability .....	2-3
2.3 Overdue Waste Assessments and Reports .....	2-4
2.4 Reporting Unit Options .....	2-5
2.4.1 Cutblock Option .....	2-5
2.4.2 Aggregate Option .....	2-5
2.4.3 Ocular Estimate Option .....	2-6

## **3 Alternative Methods**

3.1 The RSI Method .....	3-2
3.1.1 RSI Method Procedures .....	3-2
3.2 Parent Block (PB) Method .....	3-4
3.2.1 Parent Block Method Conditions .....	3-4
3.3 Ocular Estimate (OE) Method .....	3-5
3.4 The OE Method and Standing Timber .....	3-7

## **4 Block Planning and Plot Layout**

4.1 The Plot Sampling Process .....	4-2
4.2 Sampling Design .....	4-3
4.2.1 Population .....	4-3
4.2.2 Sub-Populations .....	4-3
4.2.3 Stratification .....	4-3
4.2.4 Block Survey Plan .....	4-4
4.2.5 Sampling Objective .....	4-4
4.3 Sampling Method .....	4-5
4.3.1 Number of Plots (Sample Size) .....	4-5
4.3.2 Procedure to Determine the Number of Plots .....	4-6
4.3.3 Grid Spacing .....	4-6
4.4 Plot Layout .....	4-8
4.4.1 Dispersed .....	4-8
4.4.2 Roadside Accumulations .....	4-10
4.4.3 Spot Accumulations .....	4-11
4.5 Stratification Procedures for Roadside Accumulations .....	4-12
4.5.1 Roadside Consisting of Strip Accumulations .....	4-12
4.5.2 Spot Accumulations Resulting From Piling Roadside Slash .....	4-12
4.5.3 Accumulations Within Dispersed Sub-population .....	4-12
4.5.4 Debuilt Road .....	4-12
4.6 Road Rights-of-Way .....	4-18
4.6.1 Reporting .....	4-18
4.6.2 Procedures .....	4-18

4.7 Partial Cutting (Variable Retention) Cutblocks.....	4-19
---	------

## 5 Field Procedures

5.1 General Requirements.....	5-2
5.1.1 Material to be Measured.....	5-2
5.1.1.1 Road Deactivation Material.....	5-2
5.1.1.2 Decked Timber.....	5-2
5.1.2 Recording Standards.....	5-2
5.1.3 Waste Class.....	5-3
5.1.3.1 Some Unavoidable Examples.....	5-4
5.1.4 Piece Numbers.....	5-4
5.1.5 Grading Pieces.....	5-5
5.1.6 Visual Estimates.....	5-5
5.1.7 Measure Factor.....	5-5
5.1.8 Deductions for Rot.....	5-6
5.1.9 Waste Survey Safety Procedures.....	5-6
5.2 Plot Establishment.....	5-8
5.2.1 Locating Landing Plots.....	5-10
5.2.2 Locating Dispersed Plots.....	5-10
5.2.3 Moving Dispersed Plots.....	5-10
5.2.3.1 Using Border Plots.....	5-10
5.2.3.2 Using Compass.....	5-11
5.2.4 Plot Sizes.....	5-12
5.3 Kind of Material.....	5-14
5.3.1 Logs.....	5-14
5.3.2 Trees.....	5-15
5.3.2.1 Clearcut.....	5-15
5.3.2.2 Partial Cut.....	5-16
5.3.2.3 Unharvested Cutblocks.....	5-16
5.3.2.4 Tabular Stumpage Rates.....	5-17
5.3.3 Slabs.....	5-17
5.3.4 Stumps.....	5-18
5.3.4.1 Measuring and Recording Stumps.....	5-19
5.3.4.2 Waste in Stumps.....	5-20
5.3.4.3 Recording Stumps in Segments.....	5-21
5.3.4.4 High Stumps - Snowpack.....	5-21
5.3.4.5 Blowdown Stumps.....	5-22
5.3.4.6 Borderline Stumps.....	5-23
5.3.5 Bucking Waste.....	5-23
5.3.5.1 Avoidable/Unavoidable.....	5-24
5.3.6 Breakage.....	5-25
5.3.6.1 Recording Breakage.....	5-26
5.3.7 Forks.....	5-26
5.3.8 Long Butts.....	5-27
5.3.9 Coarse Woody Debris.....	5-27

5.3.10 Special Cases .....	5-28
5.4 Field Standards .....	5-29
5.4.1 Maps.....	5-29
5.4.2 Field Equipment and Supplies .....	5-29
5.4.3 Traverse Notes .....	5-30
5.5 Measurement Protocol and Standards.....	5-31
5.5.1 Lengths.....	5-31
5.5.1.1 Broken Tops.....	5-31
5.5.1.2 Shattered Ends .....	5-32
5.5.1.3 Stump Heights.....	5-33
5.5.2 Diameters .....	5-33
5.5.2.1 Stump Diameters.....	5-34
5.5.3 Bucking Waste .....	5-34
5.5.4 Deductions .....	5-35
5.6 Data Status and Recording Format .....	5-36
5.7 Completing the FS 444 (Block Summary Card).....	5-37
5.7.1 Header .....	5-37
5.7.2 Area Statement.....	5-42
5.7.2.1 Dispersed and Accumulated Types.....	5-42
5.7.2.2 Standing Trees .....	5-45
5.7.3 Timber Merchantability Specifications .....	5-47
5.8 Completion of the FS 161 (Plot Tally Card).....	5-50
5.8.1 Header .....	5-50
5.8.2 Piece Descriptions.....	5-52
5.8.3 Gross 'In Plot' Dimensions for Pieces.....	5-54
5.8.4 Deduction for Rot or Holes.....	5-56
5.8.5 Outside Plot Measurements .....	5-57

## **6 Check Surveys**

6.1 Check Surveys .....	6-2
6.2 Check Survey Standards .....	6-3
6.2.1 Number of Blocks .....	6-3
6.2.2 Check Requirements .....	6-3
6.3 Maximum Allowable Errors .....	6-5
6.3.1 Net Volume or Value .....	6-5
6.3.2 Individual Parameters .....	6-6
6.4 Acceptability of Block Results .....	6-7
6.5 Non-Compliance With Check Survey Standards.....	6-8
6.5.1 Second Check Survey .....	6-8
6.5.2 Dispute Resolution (BCTS).....	6-9
6.6 Material Disposed of Prior to Waste Assessments .....	6-10



## 7 Reporting

7.1 Data Compilation .....	7-2
7.2 Reporting Requirements .....	7-3
7.3 Review of Reports.....	7-6
7.3.1 Report Checklist .....	7-6
7.4 Processing Waste Volume Estimate (FS 702) .....	7-8
7.4.1 Waste Rate .....	7-8
7.5 Interior Log Grade Changes .....	7-10

## Appendices

Appendix 1 Glossary .....	A-2
Appendix 2 Standing Stem Harvesting.....	A-8
A2.1 Standing Stem Harvesting.....	A-8
A2.2 Waste Accounting Methodology .....	A-8
A2.3 Standing Stem Harvesting Tables .....	A-10
A2.3.1 Species – Douglas Fir .....	A-10
A2.3.2 Species – Western Red Cedar .....	A-11
A2.3.3 Species – Yellow Cedar .....	A-12
Appendix 3 Waste Rate Determination .....	A-13
A3.1 Cutblocks with Harvesting.....	A-13
A3.2 Cutblocks with No Harvesting.....	A-13
A3.3 Deciduous Waste Rate .....	A-14
A3.4 Occupant Licence to Cut.....	A-14
Appendix 4 Riparian Management Zone (RMZ) .....	A-15
A4.1 Assessment Method .....	A-15
A4.2 Stream Clean-out.....	A-15
Appendix 5 Waste Benchmarks.....	A-16
Appendix 6 Coast Grading .....	A-20
A6.1.1 Bucking Waste and Long Butts .....	A-20
A6.1.2 Stumps.....	A-20
A6.1.3 Logs.....	A-20
A6.1.4 Standing Trees .....	A-21
A6.1.5 Breakage.....	A-21

## List of Figures

Figure 1.1 Waste Assessment Policy.....	1-2
Figure 3.1 RW01 Estimate Form - Interior.....	3-8
Figure 3.2 RW01 Estimate Form - Coast.....	3-9
Figure 4.1 Plot Sampling Process.....	4-2
Figure 4.2 Strip and Plots Placement.....	4-9
Figure 5.1 Measure Factor.....	5-6
Figure 5.2 Border Plot.....	5-11
Figure 5.3 Measuring Slabs.....	5-18
Figure 5.4 Avoidable and Unavoidable Waste (High Side).....	5-20
Figure 5.5 Windfall Stump.....	5-22
Figure 5.6 Examples of Bucking Waste.....	5-24
Figure 5.7 Avoidable/unavoidable Bucking Waste.....	5-25
Figure 5.8 Examples of Breakage.....	5-26
Figure 5.9 Forked Log.....	5-27
Figure 5.10 Measuring Broken Tops.....	5-32
Figure 5.11 Measuring Shattered Ends.....	5-32
Figure 5.12 Front of FS 444 (Block Summary Card).....	5-48
Figure 5.13 Back of FS 444 (Block Summary Card).....	5-49
Figure 5.14 Front of the FS 161 (Plot Tally Card).....	5-58
Figure 5.15 Back of the FS 161 (Plot Tally Card).....	5-59
Figure 7.1 FS 702 - Volume Estimate - Waste Form (Page 1).....	7-4
Figure 7.2 Volume Estimate - Waste Form (Page 2).....	7-5
Figure A2.1 Douglas Fir.....	A-10
Figure A2.2 Western Red Cedar.....	A-11
Figure A2.3 Yellow Cedar.....	A-12
Figure A5.1 Sample of Worksheet for Waste Billing Against Benchmarks (Coast).....	A-18
Figure A5.2 Sample of Worksheet for Waste Billing Against Benchmarks for Blocks.....	A-19

### **1.5.5 Licensees**

Holders of a major licence, community forest agreement, community salvage licence, (full surveys or ocular estimates) on their scale-based cutting authorities.

The licensee's are responsible for:

1. Submitting annual waste assessment plans.
2. Conducting waste assessments in accordance with this manual.
3. Compiling waste field data by using appropriate software.
4. Submitting completed waste assessment reports in the required format to the District Manager within time frame specified in this manual.

Where the above mentioned work is performed by a contractor or a sub-contractor, it is the licensee's responsibility for ensuring that the work is carried out in compliance with Ministry standards and requirements.

## **1.6 Waste Relief Procedures**

Pursuant to the waste relief section of the Waste Assessment Policy, a licensee may apply, in writing, for waste relief with respect to the timber left on a cutting authority provided the government has not issued a waste assessment (invoice) for the timber to the licensee.

### **1.6.1 Initiating Applications**

1. The application for waste relief must include the reasons for seeking relief and data on the timber volume and grades for which relief is being sought (the supporting data).
2. An application must be submitted by:
  - a. BCTS licensees to the Timber Sales Manager with a copy to the District Manager, and,
  - b. All other licensees to the District Manager.
3. The application must be submitted prior to issuance of the waste assessment (invoice).

### **1.6.2 Content and Processing of Applications**

1. The licensee shall submit the supporting data to the Timber Sales Manager or District Manager, as the case may be.
2. The supporting data must provide an accurate estimate of timber volume remaining on each of the cut block(s) in the cutting authority. That timber volume estimate may be determined by, but not necessarily limited to, the following methods:
  - a. A cut/cruise comparison analysis with a map showing the location of the timber included in the waste relief application, and/or,
  - b. An ocular survey conducted in accordance with this manual and a map showing the locations of the timber included in the waste relief application, and/or,
  - c. A full waste survey conducted in accordance with this manual, and/or,
  - d. A timber cruise with a map showing the locations of the timber included in the waste relief application.

Note: The supporting data for the timber for which waste relief is requested must be submitted by the licensee into the Waste System as a separate waste survey, prior to the waste relief application being processed. This waste survey will be kept in the Waste System in 'Submitted' status and must not be processed by District staff until after a determination has been rendered on the application for waste relief.

3. The supporting data will be submitted by the licensee into the Waste System and identified by way of a notation or comment in the waste system that the information pertains to an application for waste relief.
4. Timber Sales Manager or District Manager, as the case may be, upon receipt of the data submitted, will prepare an information package that should include:
  - a. Relevant information on the cutting authority,
  - b. An estimated waste monetary assessment based on the timber grade profile, on a block by block basis, and the applicable waste rates.
  - c. An assessment of the opportunity for resale of the timber included in the waste relief application, including the current market value, and,
  - d. A Briefing Note containing a recommendation on whether or not to grant waste relief.
5. The information package will be forwarded in electronic form to the Assistant Deputy Minister, Tenure and Pricing c/o the Director, Pricing Branch, Ministry of Forests, Mines and Lands, with a copy to the Regional Executive Director.

### **1.6.3 Waste Relief Determination**

The Assistant Deputy Minister, upon reviewing the information provided, and considering the pertinent documentation, will make a determination and notify the licensee, with a copy to the District Manager, the Timber Sales Manager (in the case of BCTS agreements) and the appropriate Regional Executive Director.

If the waste relief application is not approved, the District Manager will process the waste survey and issue an invoice for that timber included in the waste relief application.

If the waste relief application is approved, the District Manager will deactivate the waste survey submitted to the Waste System for that timber included in the waste relief application.

This page is intentionally left blank.