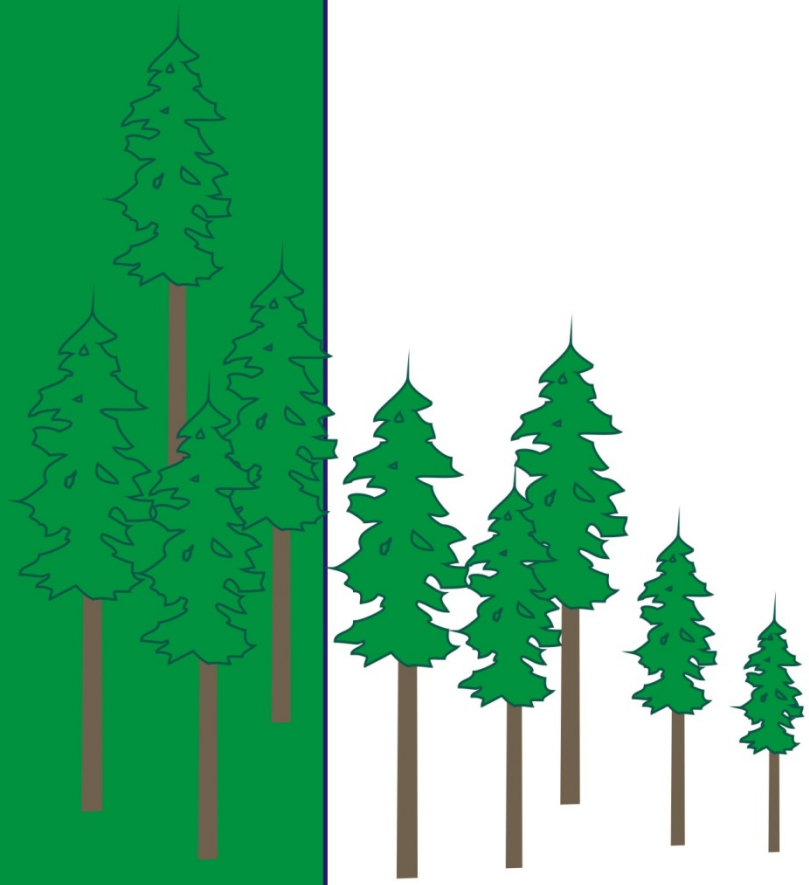
# Interior

# MARKET PRICING SYSTEM

**Update – 2014**



**July 1, 2014**

Timber Pricing
Branch

## Table of Contents

1. Introduction ..... 1
2. Auction Dataset ..... 1
3. Equations ..... 1
4. Specified Operations ..... 6
5. Tenure Obligation Adjustments ..... 7
6. Summary ..... 7
Appendix 1 ..... 8
Final Estimated Winning Bid ..... 9
Final Number of Bidders ..... 10
Variables and Definitions for Equations ..... 11
Appendix 2 ..... 14
Description of Specified Operations ..... 15

# Interior Market Pricing System: Update – 2014

## 1. INTRODUCTION

The purpose of this paper is to provide an overview of the July 1, 2014, update to the Interior Market Pricing System (MPS). [1]

## 2. AUCTION DATASET

The new auction dataset used in the update contains winning bids and data from 1235 sales over the 5-year period January 1, 2009, through December 31, 2013.

## 3. EQUATIONS

The 2014 MPS equations were re-estimated with the new dataset to establish the benchmark equations, shown below. No other changes were made.

[1] This paper is not intended to provide the basis for calculating stumpage rates nor should it be used as guidance for interpreting the legal policies and procedures for calculating stumpage rates, which are contained in the *Interior Appraisal Manual*. The *Interior Appraisal Manual* contains the policies and procedures referred to in Section 105 of the *Forest Act*.

## Estimated Winning Bid Equation

| [2]Variable | 2013 Equation | | [1]Benchmark Equation | |
|---|---|---|---|---|
| | Co-efficient | t – Statistic | Co-efficient | t – Statistic |
| LN (Number of Bidders) | 3.189247 | 16.28758 | 3.447589 | 15.69642 |
| Constant | 6.017931 | 1.616668 | 7.030811 | 1.881434 |
| Real Stand Selling Price | 0.168880 | 8.491173 | 0.162879 | 7.434102 |
| Cedar Fraction * (1 - Cedar Decay Fraction) * (1 – Zone 6) | 20.40898 | 7.215382 | 18.32325 | 3.794038 |
| HemBal Fraction | -8.417271 | -8.003148 | -7.024136 | -5.636231 |
| Larch Fraction + Yellow Pine Fraction | -8.154536 | -3.251986 | -8.332926 | -2.973973 |
| (Fir Fraction + Yellow Pine Fraction) * Dry Belt | -5.019723 | -2.813009 | -2.634561 | -1.087621 |
| Cable Yard Fraction | -7.795386 | -8.239212 | -8.720059 | -6.734278 |
| LN(Volume/1000) | 0.894897 | 5.038229 | 0.901570 | 4.686070 |
| Decay Fraction | -11.20834 | -2.933332 | -20.09187 | -4.790664 |
| Fire Damaged Fraction | -11.12619 | -4.355080 | -10.25986 | -3.614571 |
| LN (Volume per Tree) | 4.182745 | 9.254218 | 4.427414 | 9.696060 |
| LN (Volume per Hectare) | 1.139364 | 1.979178 | 0.895733 | 1.543133 |
| Cycle Time | -1.020745 | -10.05443 | -0.982025 | -9.643740 |
| Zone 9 | -2.958362 | -4.151176 | -3.289226 | -5.960930 |
| Deciduous Fraction | -6.177155 | -2.454664 | -6.730394 | -3.239872 |
| Attack * (1- Cruise Based) | -1.206970 | -1.446242 | -0.104694 | -0.117718 |
| (Red + Grey Attack Fraction) * (2008 Auctions) * (1 – Cruise Based) | -1.821319 | -1.666593 | n/a | n/a |
| Cruise Based * (1 – RG35) | -4.453539 | -7.850520 | -4.190735 | -6.669962 |
| Cruise Based * (RG35) | -6.571226 | -13.44562 | -6.109329 | -12.10086 |
| 2009 Auctions | -0.768470 | -1.490970 | n/a | n/a |
| 2010 Auctions | -0.682086 | -1.327132 | 0.200082 | 0.516900 |
| 2011 Auctions | 0.874078 | 1.673291 | 1.741871 | 4.188977 |
| 2012 Auctions | 2.324275 | 4.502148 | 3.301622 | 6.453695 |
| 2013 Auctions | n/a | n/a | 4.804824 | 7.807444 |
| Adjusted $R^2$ | 0.686335 | | 0.707461 | |

**[1]2013 Equation using Updated Auction Set**

**[2]LN means the natural logarithm**

## Number of Bidders Equation

| Variable | 2013 Equation | | [1]Benchmark Equation | |
|---|---|---|---|---|
| | Co-efficient | t - Statistic | Co-efficient | t - Statistic |
| Forecast Real Winning Bid | 0.068500 | 22.09335 | 0.073052 | 22.44710 |
| Constant | -0.853916 | -10.94391 | -0.879846 | -12.53871 |
| 2009 Auctions | -0.108060 | -2.400450 | n/a | n/a |
| 2010 Auctions | -0.099833 | -2.036028 | -0.012834 | -0.281770 |
| 2011 Auctions | -0.101144 | -1.935510 | -0.035029 | -0.776596 |
| 2012 Auctions | -0.294235 | -5.625442 | -0.236525 | -5.092243 |
| 2013 Auctions | n/a | n/a | -0.493199 | -9.728967 |
| Cruise Based * (1 – (RG35)) | 0.318020 | 4.908335 | 0.393210 | 6.597918 |
| Cruise Based * (RG35) | 0.470764 | 9.974600 | 0.541778 | 13.67665 |
| District Average Number of Bidders | 0.262359 | 14.95623 | 0.204018 | 12.35386 |
| Partial Cut Fraction | -0.898853 | -2.516599 | -1.090450 | -3.462311 |
| Slope | -0.009457 | -6.413497 | -0.008646 | -6.039889 |
| First and Second Quarter Auctions | 0.101332 | 3.443459 | 0.126628 | 4.757342 |
| Highway Haul | 0.103257 | 2.551908 | 0.100925 | 2.880681 |
| Adjusted $R^2$ | 0.451514 | | 0.503765 | |

[1]**2013 Equation using Updated Auction Set**

New variables were tested to see if they would improve the statistics, compared to the benchmark equations. Likewise, variables that were no longer significant were removed. The final data set contains 1235 auction sales.

The final equations, compared to the Benchmark Equations, are shown below.

## Estimated Winning Bid Equation

| [2]Variable | [1]Benchmark Equation | | 2014 Final Equation | |
|---|---|---|---|---|
| | Co-efficient | t – Statistic | Co-efficient | t – Statistic |
| LN (Number of Bidders) | 3.447589 | 15.69642 | 3.274986 | 15.26961 |
| Constant | 7.030811 | 1.881434 | 7.237511 | 2.009679 |
| Real Stand Selling Price | 0.162879 | 7.434102 | 0.166190 | 7.487572 |
| Cedar Fraction * (1 - Cedar Decay Fraction) * (1 – Zone 6) | 18.32325 | 3.794038 | 18.30951 | 3.814480 |
| HemBal Fraction | -7.024136 | -5.636231 | -8.193420 | -7.009397 |
| Larch Fraction + Yellow Pine Fraction | -8.332926 | -2.973973 | -8.176076 | -3.096321 |
| (Fir Fraction + Yellow Pine Fraction) * Dry Belt | -2.634561 | -1.087621 | -2.852114 | -1.303679 |
| Cable Yard Fraction | -8.720059 | -6.734278 | n/a | n/a |
| Cable Yarding (2009 or 2010) | n/a | n/a | -3.563543 | -2.416469 |
| Cable Yarding (2011 or later) | n/a | n/a | -12.42911 | -9.117514 |
| LN(Volume/1000) | 0.901570 | 4.686070 | 1.016810 | 5.412050 |
| Decay Fraction | -20.09187 | -4.790664 | -15.19305 | -3.709597 |
| Fire Damaged Fraction | -10.25986 | -3.614571 | -9.325636 | -3.061021 |
| LN (Volume per Tree) | 4.427414 | 9.696060 | 4.225069 | 9.489971 |
| LN (Volume per Hectare) | 0.895733 | 1.543133 | 0.674758 | 1.238620 |
| Cycle Time | -0.982025 | -9.643740 | n/a | n/a |
| Cycle + 0.5 * Cycle_INC6 | n/a | n/a | -0.976571 | -10.60741 |
| Zone 9 | -3.289226 | -5.960930 | -4.051397 | -7.351561 |
| Deciduous Fraction | -6.730394 | -3.239872 | -6.631968 | -3.169185 |
| Attack * (1- Cruise Based) | -0.104694 | -0.117718 | n/a | n/a |
| Cruise Based * (1 – RG35) | -4.190735 | -6.669962 | -4.721216 | -8.286026 |
| Cruise Based * (RG35) | -6.109329 | -12.10086 | -5.282856 | -14.13340 |
| 2010 Auctions | 0.200082 | 0.516900 | -0.051269 | -0.130129 |
| 2011 Auctions | 1.741871 | 4.188977 | 2.299693 | 5.300991 |
| 2012 Auctions | 3.301622 | 6.453695 | 3.950930 | 6.899441 |
| 2013 Auctions | 4.804824 | 7.807444 | 5.519684 | 7.079731 |
| Lagged Grey Fraction | n/a | n/a | -0.971210 | -5.268556 |
| Adjusted $R^2$ | 0.707461 | | 0.720734 | |

**[1]2013 Equation using Updated Auction Set**

**[2]LN means the natural logarithm**

## Number of Bidders Equation

| Variable | [1]Benchmark Equation | | 2014 Final Equation | |
|---|---|---|---|---|
| | Co-efficient | t - Statistic | Co-efficient | t - Statistic |
| Forecast Real Winning Bid | 0.073052 | 22.44710 | 0.069830 | 21.43159 |
| Constant | -0.879846 | -12.53871 | -0.815361 | -11.56033 |
| 2010 Auctions | -0.012834 | -0.281770 | -0.000865 | -0.018732 |
| 2011 Auctions | -0.035029 | -0.776596 | -0.016713 | -0.363231 |
| 2012 Auctions | -0.236525 | -5.092243 | -0.216965 | -4.582057 |
| 2013 Auctions | -0.493199 | -9.728967 | -0.462285 | -8.952072 |
| | | | | |
| Cruise Based * (1 – (RG35)) | 0.393210 | 6.597918 | 0.366326 | 6.076211 |
| Cruise Based * (RG35) | 0.541778 | 13.67665 | 0.513568 | 12.57798 |
| District Average Number of Bidders | 0.204018 | 12.35386 | 0.202823 | 11.80530 |
| Partial Cut Fraction | -1.090450 | -3.462311 | -1.124057 | -3.425801 |
| Slope | -0.008646 | -6.039889 | -0.008599 | -6.006887 |
| First and Second Quarter Auctions | 0.126628 | 4.757342 | 0.105665 | 3.876285 |
| Highway Haul | 0.100925 | 2.880681 | 0.094700 | 2.636562 |
| Adjusted $R^2$ | 0.503765 | | 0.483971 | |

**[1]2013 Equation using Updated Auction Set**

To implement the new equation in the *Interior Appraisal Manual*, the two equations are reduced to one MPS equation. This is done by substituting the Number of Bidders equation into the Estimated Winning Bid Equation (and thereby eliminating the variable: LN (Number of Bidders)). The two equations together result in greater statistical accuracy and reliability compared to the 2013 benchmark equations. See Appendix 1 for detailed statistics on the estimated winning bid and number of bidders equations and variable definitions.

## 4. SPECIFIED OPERATIONS

The auction dataset used to develop the MPS equation is comprised of 1235 auctions. There are some harvesting situations that are not accounted for in the data and equation, and therefore a specified operation cost estimate may be used for these situations in the calculation of stumpage rates.

The specified operations are shown below and described in Appendix 2.

| Specified Operations | Current Adjustment | Update July 1, 2014 |
|---|---|---|
| 1. Rail Haul | Appraisal Manual | Appraisal Manual |
| 2. Barge/Ferry | Appraisal Manual | Appraisal Manual |
| 3. Dump, Boom, Tow, Dewater and Reload | Appraisal Manual | Appraisal Manual |
| 4. Camp Costs | $1.25/$m^3$<br><br>$2.36$m^3$ if rail | Remote camps: $1.93/$m^3$<br><br>All other camps: $1.11/$m^3$<br><br>$2.62/$m^3$ if rail |
| 5. Skyline Yarding | $3.40/$m^3$ | $5.92/$m^3$ |
| 6. Horse Logging | $8.67/$m^3$ | $8.67/$m^3$ |
| 7. Market Logger Specified Operations Cost | $0.06/$m^3$ | $0.06/$m^3$ |
| 8. Helicopter | $76.99/$m^3$ | $78.08/$m^3$ |

## 5. TENURE OBLIGATION ADJUSTMENTS

As outlined in the Interior Tenure Obligations Adjustment paper (dated June 5, 2006), the adjustments are based on licensee data submitted in the Interior Log Cost Report.

The tenure obligation adjustments are shown below.

| Tenure Obligation | Current Adjustment | Update July 1, 2014 |
|---|---|---|
| Total Administration Cost | 2010/11 Cost Base | 2011/12 Cost Base |
| Development Cost | 2010/11 Cost Base | 2011/12 Cost Base |
| Total Road Management Cost | 2010/11 Cost Base | 2011/12 Cost Base |
| Market Logger Road Cost | $\$1.20/m^3$ | $\$1.17/m^3$ |
| Total Silviculture Cost | 2010/11 Cost Base | 2011/12 Cost Base |
| Return to Forest Management | 1.027 | 1.022 |
| Low Grade Percent Adjustment | Mark Specific 1/(1-%low grade/100) | Mark Specific 1/(1-%low grade/100) |

## 6. SUMMARY

The new final equation, specified operations and tenure obligation adjustments will be used in the MPS for the Interior, starting July 1, 2014.

# APPENDIX 1

## FINAL ESTIMATED WINNING BID

Dependent Variable: RBID (Winning Bid in 1997 Dollars)
Method: Least Squares
Date: 04/25/14 Time: 08:39
Sample: 1 1743 IF IN_1235=1
Included observations: 1235
White heteroskedasticity-consistent standard errors & covariance

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LN (Number of Bidders) | 3.274986 | 0.214477 | 15.26961 | 0.0000 |
| Constant | 7.237511 | 3.601327 | 2.009679 | 0.0447 |
| Real Stand Selling Price | 0.166190 | 0.022195 | 7.487572 | 0.0000 |
| Cedar Fraction * (1-Cedar Decay Fraction)*(1-Zone 6) | 18.30951 | 4.800001 | 3.814480 | 0.0001 |
| Hembal Fraction | -8.193420 | 1.168919 | -7.009397 | 0.0000 |
| Larch Fraction + Yellow Pine Fraction | -8.176076 | 2.640578 | -3.096321 | 0.0020 |
| (Fir Fraction + Yellow Pine Fraction) * Dry Belt | -2.852114 | 2.187742 | -1.303679 | 0.1926 |
| Cable Yarding (2009 or 2010) | -3.563543 | 1.474690 | -2.416469 | 0.0158 |
| Cable Yarding (2011 or later) | -12.42911 | 1.363213 | -9.117514 | 0.0000 |
| LN (Volume/1000) | 1.016810 | 0.187879 | 5.412050 | 0.0000 |
| Decay Fraction | -15.19305 | 4.095606 | -3.709597 | 0.0002 |
| Fire Damaged Fraction | -9.325636 | 3.046577 | -3.061021 | 0.0023 |
| LN (Volume per Tree) | 4.225069 | 0.445214 | 9.489971 | 0.0000 |
| LN (Volume per Hectare) | 0.674758 | 0.544766 | 1.238620 | 0.2157 |
| Cycle + 0.5 * Cycle_INC6 | -0.976571 | 0.092065 | -10.60741 | 0.0000 |
| Zone 9 | -4.051397 | 0.551093 | -7.351561 | 0.0000 |
| Deciduous Fraction | -6.631968 | 2.092641 | -3.169185 | 0.0016 |
| Cruise Based * (1 - RG35) | -4.721216 | 0.569781 | -8.286026 | 0.0000 |
| Cruise Based * RG35 | -5.282856 | 0.373785 | -14.13340 | 0.0000 |
| 2010 Auctions | -0.051269 | 0.393981 | -0.130129 | 0.8965 |
| 2011 Auctions | 2.299693 | 0.433823 | 5.300991 | 0.0000 |
| 2012 Auctions | 3.950930 | 0.572645 | 6.899441 | 0.0000 |
| 2013 Auctions | 5.519684 | 0.779646 | 7.079731 | 0.0000 |
| Lagged Grey Fraction | -0.971210 | 0.184341 | -5.268556 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.725939 | Mean dependent var | 14.57144 |
| Adjusted R-squared | 0.720734 | S.D. dependent var | 8.438510 |

## FINAL NUMBER OF BIDDERS

Dependent Variable: LN (Number of Bidders)
Method: Least Squares
Date: 04/25/14 Time: 08:49
Sample: 1 1743 IF IN_1235=1
Included observations: 1235
White heteroskedasticity-consistent standard errors & covariance

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| Constant | -0.815361 | 0.070531 | -11.56033 | 0.0000 |
| Forecast Real Winning Bid | 0.069830 | 0.003258 | 21.43159 | 0.0000 |
| 2010 Auctions | -0.000865 | 0.046154 | -0.018732 | 0.9851 |
| 2011 Auctions | -0.016713 | 0.046013 | -0.363231 | 0.7165 |
| 2012 Auctions | -0.216965 | 0.047351 | -4.582057 | 0.0000 |
| 2013 Auctions | -0.462285 | 0.051640 | -8.952072 | 0.0000 |
| Cruise Based * (1 - RG35) | 0.366326 | 0.060289 | 6.076211 | 0.0000 |
| Cruise Based * RG35 | 0.513568 | 0.040831 | 12.57798 | 0.0000 |
| District Average Number of Bidders | 0.202823 | 0.017181 | 11.80530 | 0.0000 |
| Partial Cut Fraction | -1.124057 | 0.328115 | -3.425801 | 0.0006 |
| Slope | -0.008599 | 0.001432 | -6.006887 | 0.0000 |
| First and Second Quarter Auctions | 0.105665 | 0.027259 | 3.876285 | 0.0001 |
| Highway Haul | 0.094700 | 0.035918 | 2.636562 | 0.0085 |

| | | | |
|---|---|---|---|
| R-squared | 0.488989 | Mean dependent var | 0.864058 |
| Adjusted R-squared | 0.483971 | S.D. dependent var | 0.660283 |

## VARIABLES AND DEFINITIONS FOR EQUATIONS

| Variable | Definition |
|---|---|
| 2008 Auctions | If the auction sold in 2008, then AUC 2008 =1. |
| 2009 Auctions | If the auction sold in 2009, then AUC 2009 =1. |
| 2010 Auctions | If the auction sold in 2010, then AUC 2010 =1. |
| 2011 Auctions | If the auction sold in 2011, then AUC 2011 =1. |
| 2012 Auctions | If the auction sold in 2012, then AUC 2012 =1. |
| 2013 Auctions | If the auction sold in 2013, then AUC 2013 =1. |
| Attack | Fraction of Total Net Coniferous Volume that is Lodgepole pine green, red and grey attack plus the fraction of Total Net Coniferous volume that is other insect attack. |
| Cable Yard Fraction | Fraction of harvest method volume that is appraised as overhead cable yarding (includes Skyline <600m horizontal). |
| Cable Yarding (2009 or 2010) | Cable Yard Fraction – from 2009 or 2010 auctions |
| Cable Yarding (2011 or later) | Cable Yard Fraction – from 2011, 2012 or 2013 auctions |
| Cedar Decay Fraction | Cedar decay (%) from the appraisal summary report/100 |
| Cedar Fraction | Fraction of total net coniferous volume that is cedar. |
| Constant | Fixed value. |
| Cruise Based | 1 if cruise-based, 0 if scale based |
| CYCLE | Hauling round trip cycle time (Primary CT (hrs) + Secondary CT (hrs)). See sections 3.5.1.1 and 3.5.1.3 of the Appraisal Manual. |
| CYCLE_INC6 | CYCLE – 6.0 hours. If <0, then 0. |
| Decay Fraction | Prorated coniferous species decay % (from appraisal summary report) / 100. |
| Deciduous Fraction | Fraction of the total net cruise volume that is the total net deciduous volume |
| District Average Number of Bidders | Average number of bidders for the district, in which the cutting authority area is located (see Table 3-2, section 3.3 Appraisal Manual). |
| Dry Belt | Fraction of the Net Merchantable Area of the cutting authority that is located in Dry Belt Douglas Fir Zones as per the table in the *Cruising Manual*. If the BEC zone/subzone combination does <u>not</u> appear in that table, then the following logic must apply:<br><br>- If the subzone is very dry (begins with |

| | |
|---|---|
| | x) then the zone/subzone combination is Dry Belt.<br>- If the subzone is dry (begins with d) then the zone/subzone combination is Dry Belt only if the BEC zone is IDF, MS or PP.<br>If the subzone is not very dry or dry (does not begin with x or d) then the zone/subzone combination is not Dry Belt. |
| Fir Fraction + Yellow Pine Fraction | Fraction of total net coniferous volume that is Douglas fir and yellow pine. |
| Fire Damaged Fraction | Fraction of total net coniferous volume that is fire damaged. |
| First and Second Quarter Auctions | If the auction sold in January to June, D_ Q1 + Q2 =1. |
| Forecast Real Winning Bid | Estimated winning bid from the estimated winning bid equation |
| GREY | Fraction of total net coniferous volume that is grey Mountain Pine Beetle attacked lodgepole pine. |
| HemBal Fraction | Fraction of total net coniferous volume that is hemlock and balsam. |
| Highway Haul | 1 if primary haul method is highway, otherwise HWY = 0. |
| LAG | Lag in years. LAG = 0 if Zone 5 or Zone 6 as defined in Section 3.5.2 of the Interior Appraisal Manual or Cariboo Chilcotin District, otherwise LAG = 2. |
| Lagged Grey Fraction | GREY * (5 – LAG) * Cruise Based * RG35 |
| Larch Fraction + Yellow Pine Fraction | Fraction of total net coniferous volume that is larch and yellow pine. |
| Partial Cut Fraction | Fraction of the harvest method volume that is appraised as partial cut. PC = (100-CAPCUT%)/100. See section 4.5 of Appraisal Manual for definition of CAPCUT%. The 80% limit in the definition of CAPCUT in section 4.5 does not apply. |
| RBID | Winning bid in 1997 dollars |
| Real Stand Selling Price | Estimated stand lumber value ($/m3) in 1997 dollars. Weighted average of (LRF * Lumber price by coniferous species). See Appraisal Manual section 3.2. |
| Red + Grey Attack Fraction | Fraction of total net coniferous volume that is |

| | |
|---|---|
| | red and grey mountain pine beetle attack. |
| RG35 | 1 if Total Net Coniferous Volume of timber on the cutting authority area is comprised of 35% or greater red and grey Mountain Pine Beetle attacked Lodgepole pine, otherwise RG35 = 0. |
| Slope | Cutting authority average slope from the appraisal summary report. |
| Volume | The zonal volume from Table 3-3 (See Appraisal Manual section 3.3) for the cutting authority unless:<br>1. The cutting authority is a BCTS cutting authority; if so then use the Total Net Coniferous Volume for the cutting authority.<br>2. The cutting authority is not a BCTS cutting authority and, the sum of all the AAC's for all the licences that the licensee has in the same TSA as the cutting authority being appraised is less than the zonal volume indicated in Table 3-3 for the selling price zone in which the cutting authority is located, if so, then use the greater of:<br>- The Total Net Coniferous Volume, or<br>- The sum of the AAC volumes described above |
| Volume per Hectare | Net coniferous volume per hectare ($m^3$/ha) |
| Volume per Tree | Cutting authority average net volume per tree, from appraisal summary report (m3). |
| Zone 6 | Skeena selling price zone variable. Zone 6 = 1 if cutting authority is appraised with selling price zone 6, otherwise Zone 6 = 0. |
| Zone 9 | Fort Nelson – Peace selling price zone variable. Zone 9 = 1 if cutting authority is appraised with selling price zone 9, otherwise Zone 9 = 0. |

# APPENDIX 2

## DESCRIPTION OF SPECIFIED OPERATIONS

If sufficient auction data is not available for an activity employed by either BCTS or other licenses, the ministry may, for those identified situations, implement a specified operations cost estimate in the calculation of the stumpage rate.

The specified operations will be used to adjust the MPS stumpage rate for the estimated incremental cost of the identified situation. The explicit assumption is that if a bidder was faced with a similar situation he or she would lower the bid by the extra cost incurred because of the identified situation.

The situations that may be eligible for specified operations adjustment will be determined according to the following principles:

- the expectation that a bid would be influenced by this situation;
- representation (number of samples, if any, in the auction data set);
- materiality of estimated cost differential (supported by verifiable financial data); and,
- statistical analysis (including the premise that other represented situations and variables in the MPS database and equations may serve as a proxy for the situation in question).

The ministry, after considering the above and any other relevant technical information, may or may not designate the situation as an identified situation eligible for specified operations and, if eligible, will specify the dollars per cubic metre adjustment.

The ultimate objective is to have a representative auction database and hence, few, if any, specified operations adjustments.

The following are identified as specified operations for the Interior MPS. Cost estimates from the updated *Interior Appraisal Manual* are used for the following:

- Rail Haul
- Rail haul including truck to rail transfer and rail transport.
- Barge/Ferry
- Barge/ferry used to truck haul (private).
- Barge/ferry not used for truck haul (private).
- Dump and boom
- Tow
- Dewater and reload
- Camp costs
- Skyline Yarding
- Horse Logging
- Market Logger Specified Operations Cost
- High Development Cost (BCTS only)
- Helicopter