Ministry of Forests, Lands, Natural Resource Operations and Rural Development

EForwasteBC User Manual

Manual developed by:	Timber Pricing Branch
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Version Number	1.2.0

Contents

1. Introduction

This manual describes the process for using the EForwasteBC application for the purpose of collecting waste assessment information in accordance with the requirements of the Provincial Logging Residue and Waste Procedures Manual and provincial waste policy.

The Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRO) receives waste survey information from licensees through the online Waste System. Using the EForwasteBC application, waste surveyors can complete a field waste assessment, generate reports and output files, email a data file to another user and upload the data into the online waste system.

EForwasteBC has been designed to collect waste information on both the coast and the interior. The application includes procedures for collecting waste using traditional simple random sampling (SRS) methods as well as the newly developed ratio sampling techniques. EForwasteBC allows the user to collect waste survey information within a block, stratum and plot. The user can view the preliminary results of the survey on screen as the survey is completed. Reports can be generated to provide preliminary results at the block level.

2. System Requirements and Installing the EForwasteBC Application

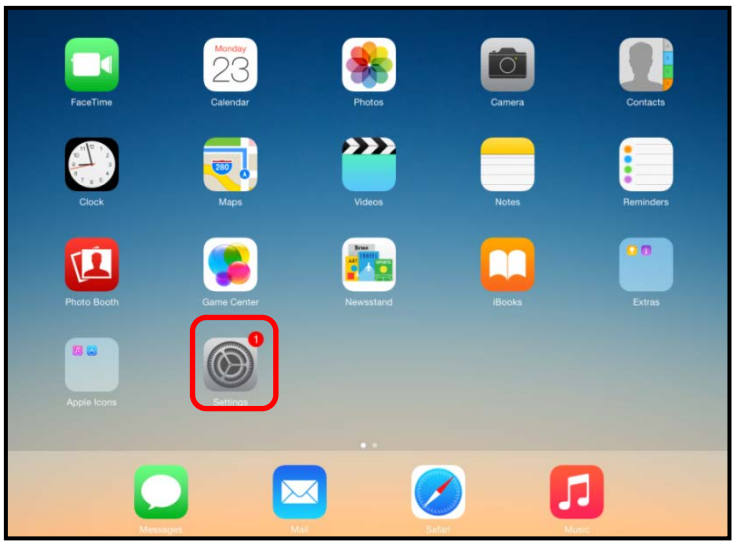
2.1. EForwasteBC System Requirements

EForwasteBC is an application designed specifically for the fourth generation iPad's running iOS version 10.0.0 or newer. IOS (**i**Pad **O**perating **S**ystem) is the operating system used on Apple devices and is the equivalent of the Windows operating system on the PC platform. At this time the EForwasteBC application will not work on IPhone or other (Android) types of devices.

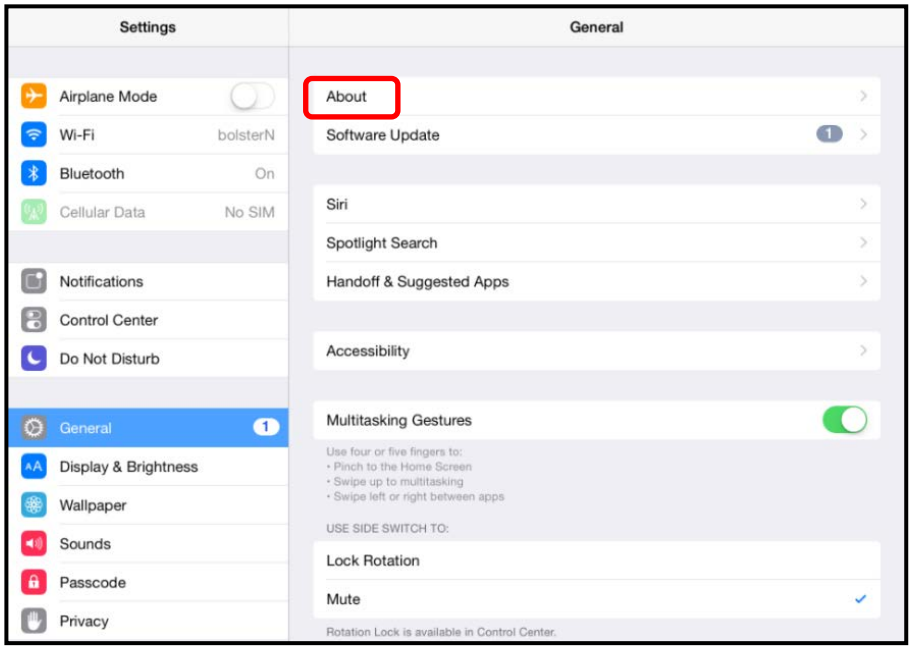
Note: Once installed, iOS updates cannot be easily uninstalled on iPads (Unlike windows PC updates). Do not install any iOS updates to iPads running EForWasteBC until you receive an update from the App store. Use of an incompatible IOS may cause the application to operate incorrectly.

To check the version of your iPad's iOS:

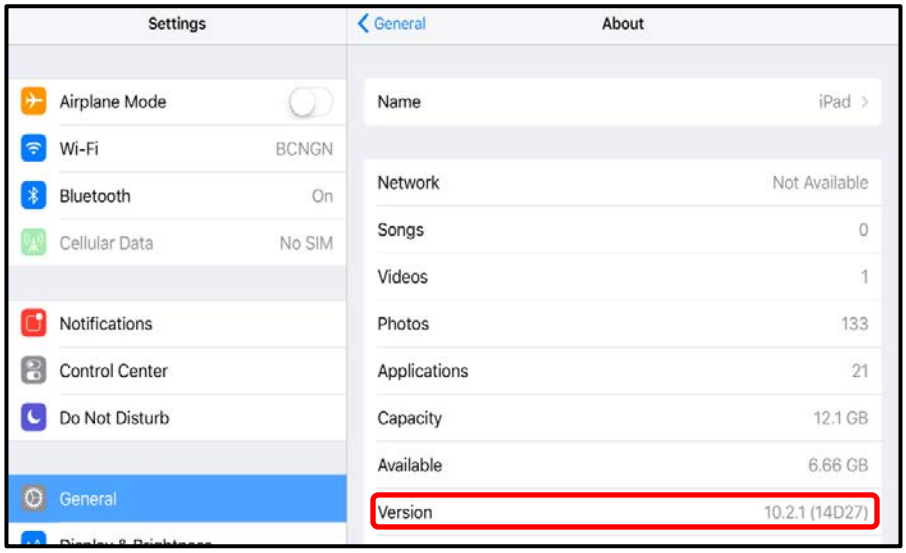
1. Navigate to the home screen and tap the **Settings** icon.



2. In the Settings sidebar, tap **General** and then tap **About.**



3. The iOS version is shown in the **Version** field.



2.2. Installing the EForwasteBC Application

Users can download the EForwasteBC application from the APP store. Search for 'EForwasteBC'. The application will then self-install onto your iPad.

Users unfamiliar with general tools and usage of the iPad can refer to Appendix B: iPad Basics at the end of this document for general iPad usage.

2.3. Opening the EForwasteBC Application

To open the EForwasteBC application, navigate to the home screen and tap the **EForwasteBC** application icon.

3. EForwasteBC Calculation Conventions

EForwasteBC is a waste data collection and compilation application that uses many calculations to produce the results and reports. Rounding of calculations has been completed in a number of sections of the software applied as follows:

3.1. Plot Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures ($0.00)

3.2. Stratum Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures ($0.00)

3.3. Block Level

- Volumes – 4 significant figures (0.0000)
- Values – 2 significant figures ($0.00)

3.4. Reports

- Species/Grade Volumes - 4 significant figures (0.0000)
- Species/Grade Values – 2 significant figures ($0.00)

3.5. Summary Totals

- Volumes - 2 significant figures (0.00)
- Values – 2 Significant Figures ($0.00)

Note: In many cases EForwasteBC uses more significant figures than the online waste system. In some calculations this may result in small discrepancies between results from EForwasteBC verses the online Waste System.

4. EForwasteBC Page naming

The various pages that control the use of EForwasteBC have been named to assist in the use of the application. The pages have been named by menu topic and then sequentially as the user progresses into the application, for example:

>Menu topic 'New Block

>Ifor202 'Cut block – New Block'

>Ifor203 'Stratum'

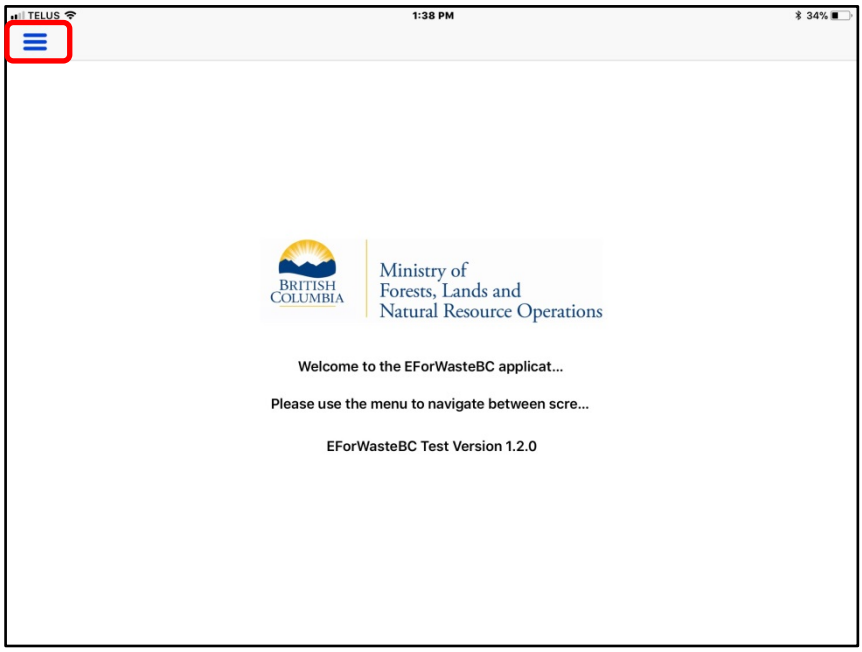
>Ifor204 'Plot' and 'Piece' data

Note: The application platform was designed from a previous application called iFORWASTE. The page names still carry the 'IFOR(___)' title from this previous application. The naming convention will be updated in future enhancements.

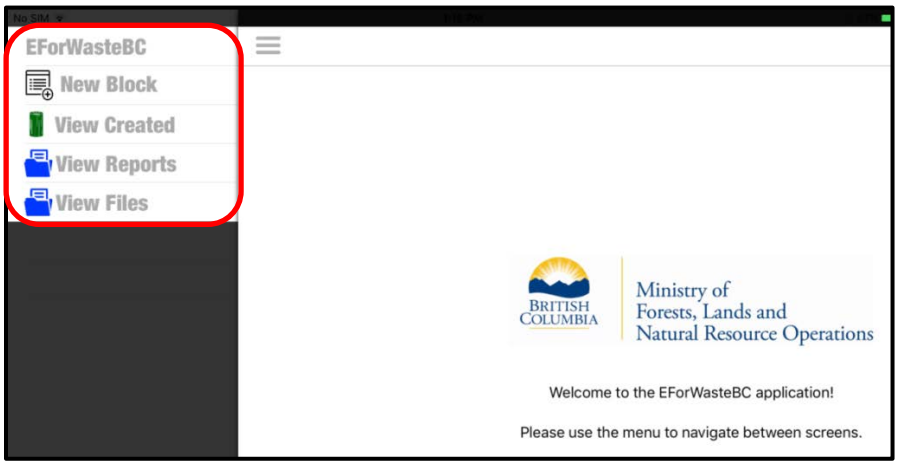
5. The EForwasteBC Menu

The EForwasteBC Menu can be accessed by tapping the EForwasteBC Menu button present at the top left of all screens.

From the EForwasteBC menu, the users can select any of the following options:



- **New Block (IFOR202)**: Create a new block to begin entering waste survey data Section 7- New Block
- **View Created (IFOR601)**: View and select existing cut blocks Section 8 View Created
- **View Reports (IFOR 301)**: View and select reports Section 8 - Reports.
- **View Files (IFOR 701)**: View and select files for export. Section 10 – View Files



6. The Cut Block Screen (IFOR 202)

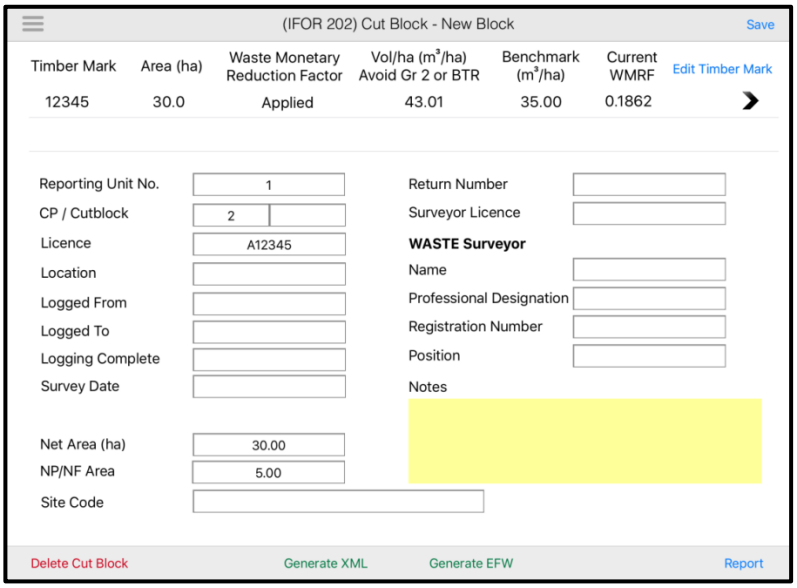
The Cut Block screen is where the Waste Surveyor enters the cut block identification information.

The Cut Block information screen is broken into 5 sections:

1. Cut Block Information (Section 6.1)
2. Timber Mark Information (Section 6.2)
3. Stratum Information (Section 6.3)
4. Cut Block Value/Volume Table (Section 6.4)

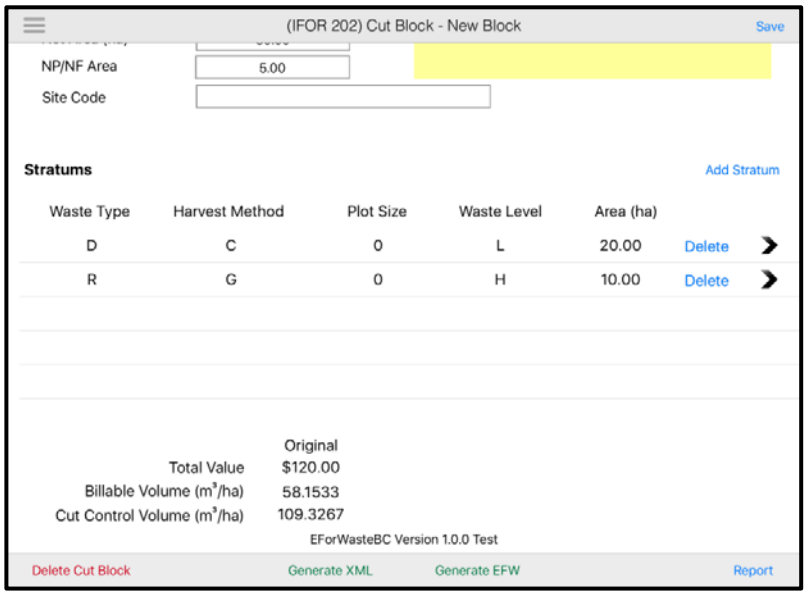
Timber Mark

Cut Block Information



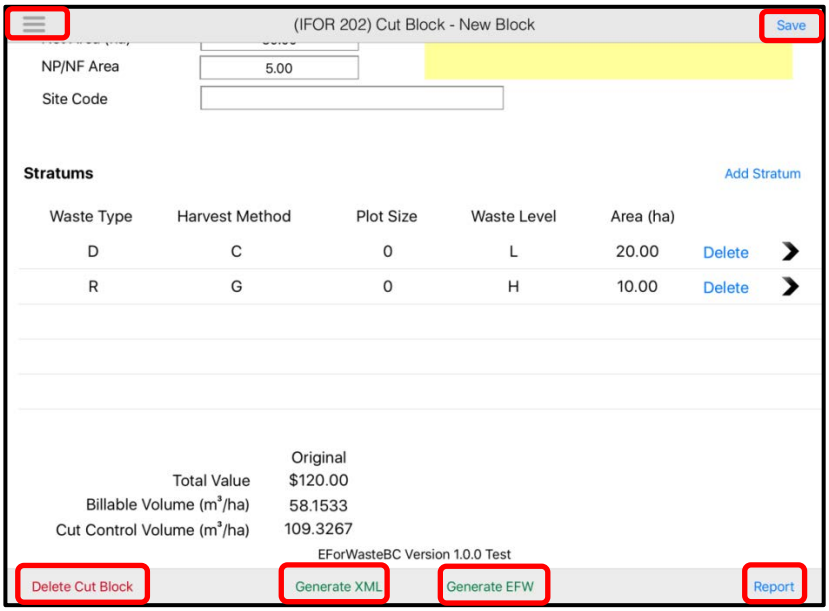
Stratums Information

Cut Block Value / Volume Table



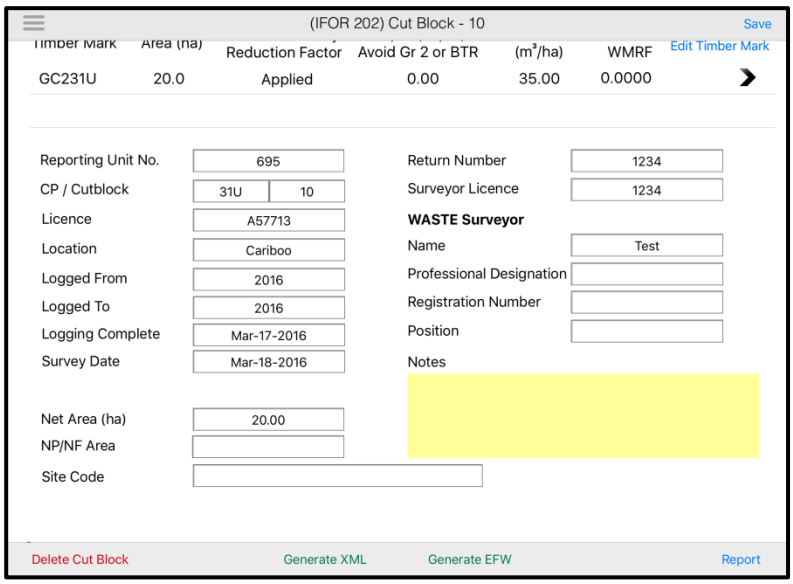
Other options available to the users in the Cut Block screen are:

- **Menu**: Return the user to the menu.
- **Save**: Saves any edits made in the Cut Block screen.
- **Report**: Generate a report for the cut block.
- **Generate XML**: Allows the user to generate an XML file for upload into the online Waste System.
- **Generate EFW file:** Allows the user to generate an EFW file to send to another user or save as a backup.
- **Delete Cut Block**: Removes the block from the iPad



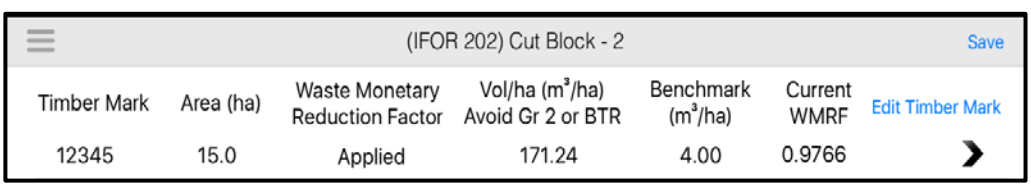
6.1. Cut Block Header Information

The Cut Block Information section of the Cut Block screen contains the general information for the cut block. The information required in this section is the same as is required within the online Waste system. Much of this information is also required to complete the creation of an xml file for upload into the online system. Users are expected to be familiar with the terms and definitions of the various fields identified on this screen therefore, only minimal descriptions have been provided within this manual.



6.2. Timber Mark Information

The Timber Mark Information section contains all information pertaining to the Timber Mark for the cut block.



To enter or edit Timber Mark information for a Cut Block, tap the **Edit Timber Mark** link located at the top right of the cut block screen. This will open the **Timber Mark screen** (see Section 7.3 – Timber Mark)

6.3. Stratum Information

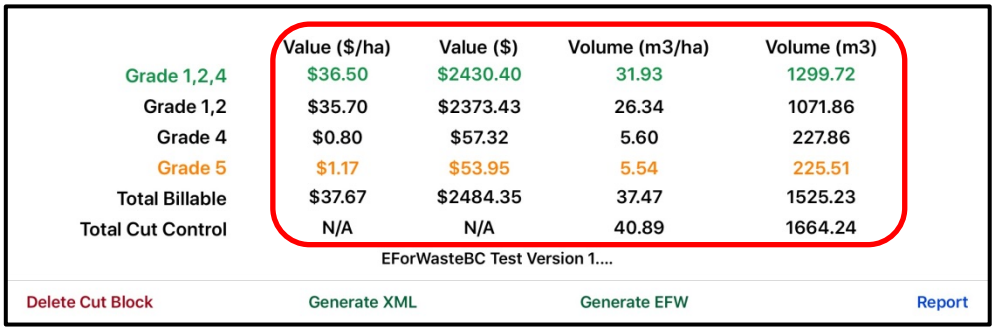
The Stratums Information section of the Cut Block screen contains all information pertaining to the Stratums for the cut block. A Stratum is a unique and non-overlapping sub-unit of a population which is sampled as a unit for which separate sampling statistics are calculated. Each Stratum represents a portion of the survey net area and the total of the stratum areas must total the Block net area. (see section 7.3.2 – Stratum)

Stratums — Add Stratum

Waste Type	Harvest Method	Plot Size	Waste Level	Area (ha)	
D	B	0	M	8	
R	R	0	M	2	
				0	Delete

6.4. Cut Block Value / Volume Table

The Cut Block Value/Volume Table at the bottom of the Cut Block screen displays the volume and value data for the block.



	Value ($/ha)	Value ($)	Volume (m3/ha)	Volume (m3)
Grade 1,2,4	$36.50	$2430.40	31.93	1299.72
Grade 1,2	$35.70	$2373.43	26.34	1071.86
Grade 4	$0.80	$57.32	5.60	227.86
Grade 5	$1.17	$53.95	5.54	225.51
Total Billable	$37.67	$2484.35	37.47	1525.23
Total Cut Control	N/A	N/A	40.89	1664.24

EForWasteBC Test Version 1....

Delete Cut Block | Generate XML | Generate EFW | Report

Note: As data is entered or changed at the Piece, plot and stratum level, the table changes in real time to reflect the new information.

6.5. Generate an XML and/or EFW file

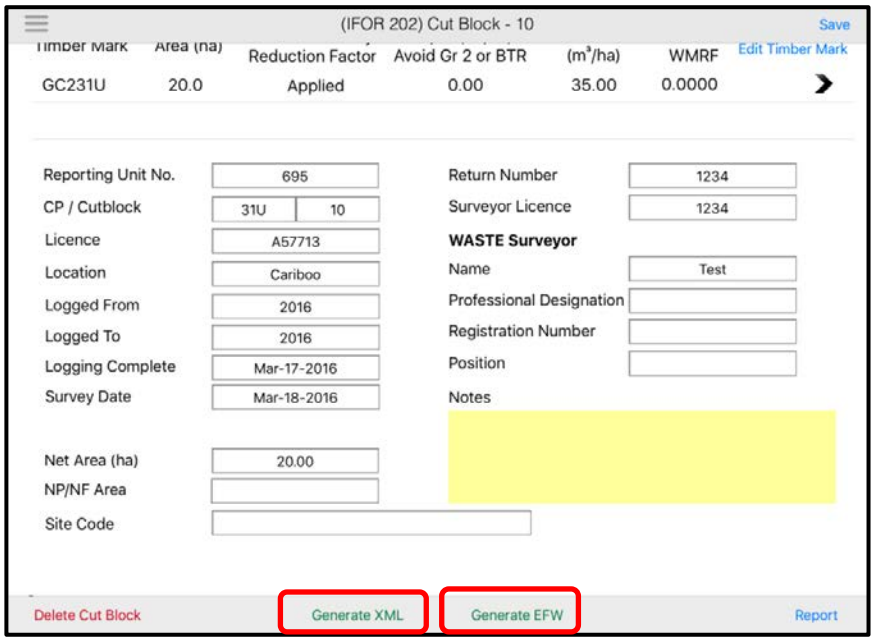
From the cut block screen, cut block data can be exported into either XML or EFW file format. By clicking on the generate XML or EFW links data is exported to the appropriate file and stored on the iPad.

6.5.1. EFW Files

EForwasteBC (EFW) files contain the waste data used in the application. The EFW files can be transferred between iPads for creation or merging of blocks via email or iTunes

6.5.2. XML Files

EForwasteBC also generates an **E**xtensible **M**arkup **L**anguage (.xml) file for upload into the online Waste System. Generation of the xml file is based on the file SCHEMA required for upload through the Electronic Submission Framework (ESF). The Block Header information must meet the requirements of this SCHEMA to generate the xml file.

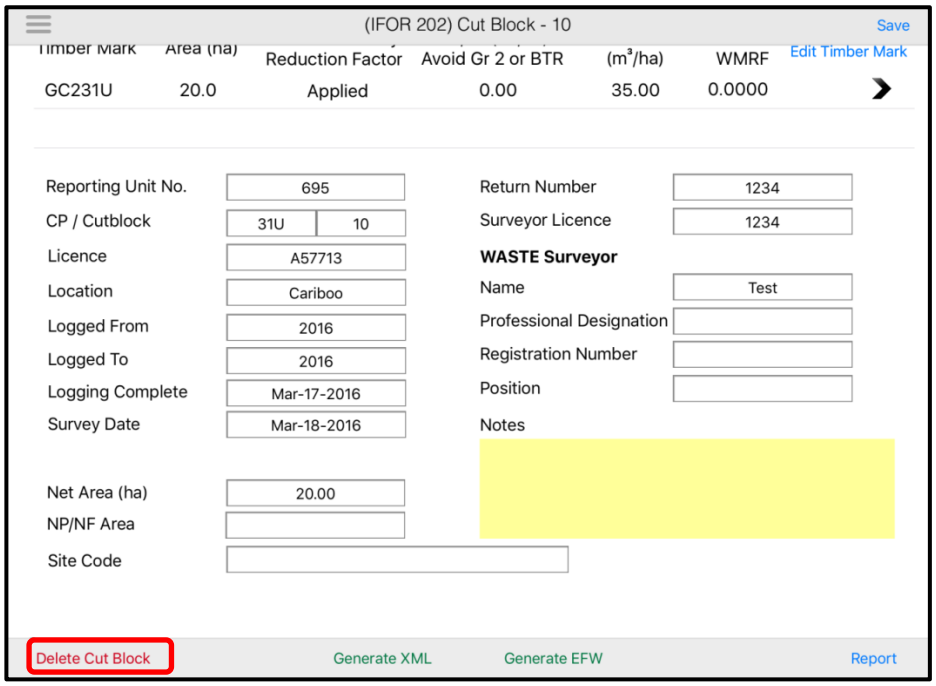


6.5.2.1. Uploading an XML file into the Waste System

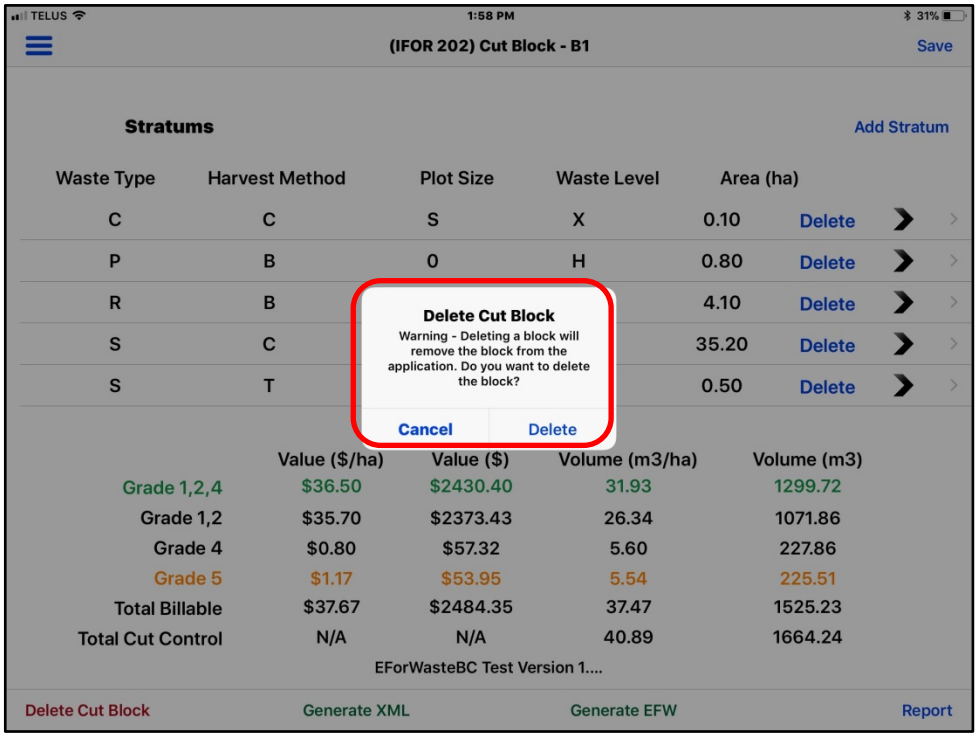
Once an XML file is generated in IFOR 202 and subsequently emailed or uploaded it can be saved on the user's computer and then uploaded through the Electronic Submission Site (ESF) into the Waste System

6.6. Deleting a Cut Block

The waste surveyor can delete a cut block from the EForwasteBC application in order to remove cut blocks that are no longer needed on the iPad.



Select the Delete Cut Block link and a window will appear to confirm the deletion. Selection of 'Delete' will remove the block and all associated data from the iPad. Selection of 'Cancel' will return the user to the cut block screen.



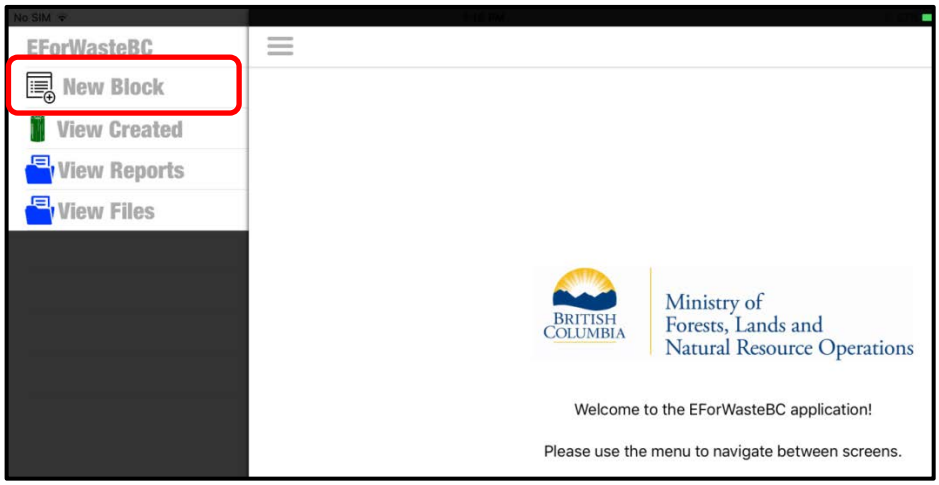
7. Creating a block and entering data

The flow to create a block has several routes depending on the type of survey to be completed. The outline below has been developed using the most complicated block sampling process (Ratio Sampling).

- **New Block** (Section 7.1)
  - **Select**
    - Interior Block (SRS Survey)
    - **Interior Block (Ratio Sampling)**
    - Coast Block
  - **Cut Block Screen** (IFOR202)
    - Complete Header information
      - **Edit Timber Mark** (IFOR401) (Section 7.2)
        - Complete Timber Mark Information
      - **Add Stratum** (IFOR202) (Section 7.3)
        - **Select**
          - **Create Standard Stratum**
          - Create Standing Tree
            - Complete Stratum Information (IFOR203)
            - Ensure 'Prediction Plots' and 'Measure plots' is correct
              - **Add a Plot**
                - Complete Ratio Sampling Stratum information
                - **Enter Plot number**
                - **Enter Green Volume**
                - **Enter Dry Volume**
                - Confirm Estimation information
                - Complete plot header Information
                - 'Measure Plot' – **Yes**
                - Enter piece data
                - 'Measure Plot' – **No**
                - Back to Stratum header, move to next plot.

7.1. New Block

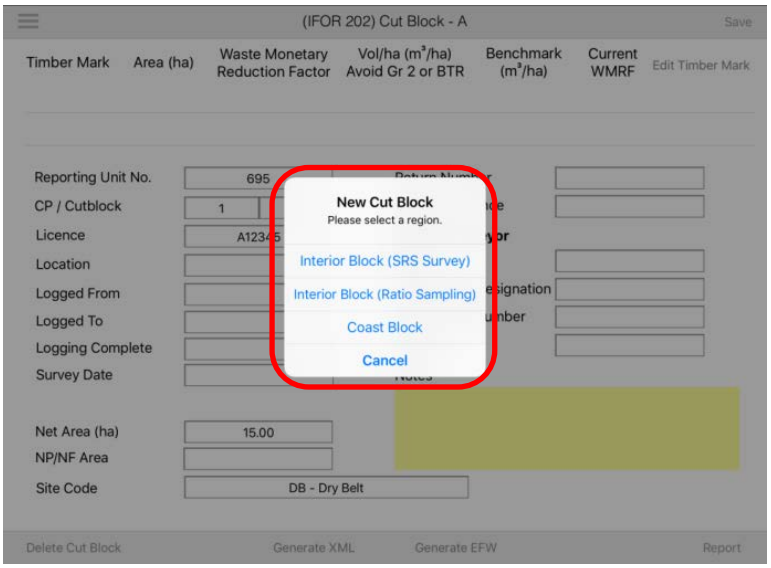
Select the new block menu option to record waste survey data.



When '**New block'** is selected the user is asked to select the applicable survey type.

7.1.1. Select Survey Method

- **Interior SRS Survey** – The Simple Random Selection (SRS) survey method requires the establishment and measurement of all plots within a block. The Interior selection initiates an Interior data collection format.
- **Interior Ratio Sample survey** - The Ratio Sample Survey method requires the establishment and estimation of plots with measurement of a randomly selected portion of them.
- **Coast Block** – The coast block sampling system and the Interior SRS method use the same data collection method. Plots are established within a block and all piece information is collected at each plot. The coast block selection initiates a coastal data collection format.



7.2. Cut Block Screen Details (iFOR202)

The cut block screen contains the block identifier information for the survey. Some or all of the information is required to upload the data into the online Waste system and or to merge files from two different iPads. The cut Block screen is created in one of two templates identified when a new block is created. The difference between the two screen templates are the block maturity/site code, waste billing rates and the selection of the appropriate log grades to be used on the plot data screens. The Cut Block Screen data entry field's requirements and entry types are indicated below:

- **Reporting Unit No.:** Required
- **CP / Cut block:** Required
- **Licence:** Required
- **Location: Optional,** User entered
- **Logged From:** Required, user entered
- **Logged To:** Required, user entered
- **Logging Completion Date:** Required, Pop up window entry
- **Survey Date:** Required, Pop up window entry
- **Net Area (ha):** Required, user entered, 2 decimals
- **NP/NF area:** Required, User entered, 2 decimals
- **Maturity Code:** (Coast) Required, Pop up window entry
  - Mature
    - 35m3/ha Benchmark, 15cm top DIB
  - Immature
    - 10 m3/ha Benchmark,10cm top DIB
- **Site Code**: (Interior) Required Pop up window entry
  - Dry Belt 4 m3/ha
  - Transition 10m3/ha
  - Wet Belt 20m3/ha
- **Return Number:** Required, user entered
- **Surveyor Licence**: Required if applicable
- **Waste Surveyor**:
  - **Name**: Required (100 character maximum).
  - **Professional Designation**: Required If registered
  - **Registration Number**: Required if registered
  - **Position**: Optional, Position of the Waste Surveyor (100 character maximum).
- **Notes**: Optional, General notes regarding the cut block Waste Survey (256 character maximum).

7.3. Edit Timber Mark screen (IFOR401)

The Timber Mark Data screen accessed from the '**Edit Timber Mark**' icon on the cut block screen contains the details of the Timber Mark. If there is more than one timber mark within the cut block, the Waste Surveyor can add or edit both the Primary Timber Mark and Secondary Timber Mark.

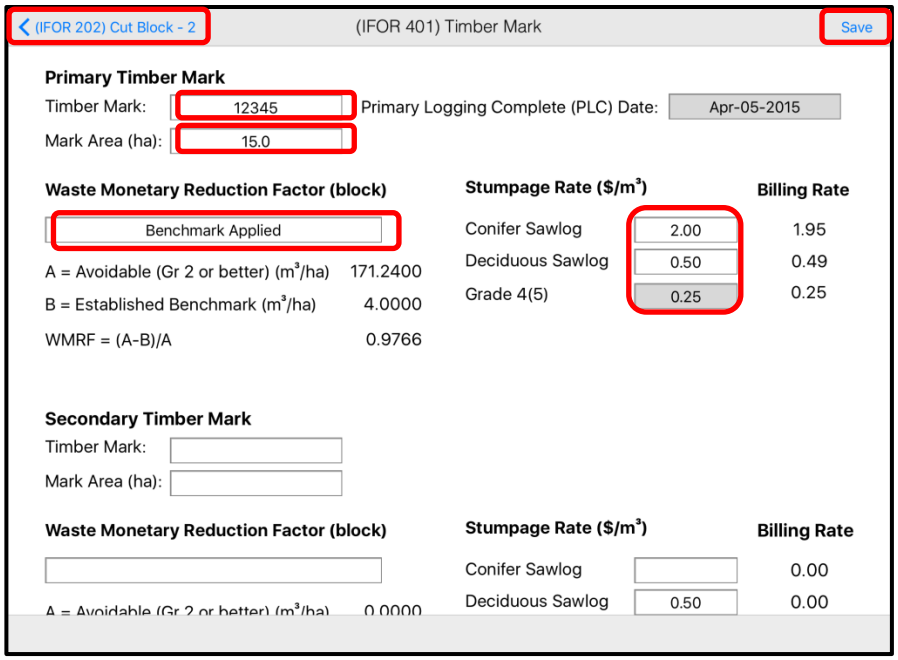
Note: the secondary Timber Mark is currently not activated. It will be added in a future version of EForwasteBC.

In the Timber Mark section, there are different types of text fields available:

- **Grey filled boxes**: These boxes cannot be edited as they contain information from other screens or locked data.
- **White filled boxes**: These boxes can be edited with text/numeric values by the WASTE surveyor during the survey.

The editable fields in the Timber Mark screen are:

- **Timber Mark:** Enter the applicable timber mark for the cut block
- **Mark Area:** Enter the Net Area from the Cut Block Screen
- **Waste Monetary Reduction Factor (block)** This field can be toggled between
  - **Benchmark applied –** Applies the applicable WMRF factor to the Waste Billing rate.
  - **Benchmark Not applied –** Does not apply the WMRF to the applicable waste billing rate. The Billing rate used in the application will be the unadjusted stumpage rate.
- **Conifer Sawlog**: The 12 month average stumpage Rate ($/m3) for Coniferous sawlog grades. Enter the sawlog rate applicable to the timber mark. This information can be obtained from the HBS 'rating' tab. It is calculated in accordance with the waste manual. The waste billing rate will be the applicable stumpage rate multiplied by the WMRF I.E. Sawlog Rate $10.25 X WMRF 0.7068 = Waste Billing rate $7.25.
- **Billing Rate** is the stumpage rate (sawlog, deciduous, Coast HB U, X and Y grade, Interior 1, 2 and 4) multiplied by the WMRF. I.E. Sawlog Rate $10.25 X WMRF 0.2406 = Waste Billing rate $2.47.



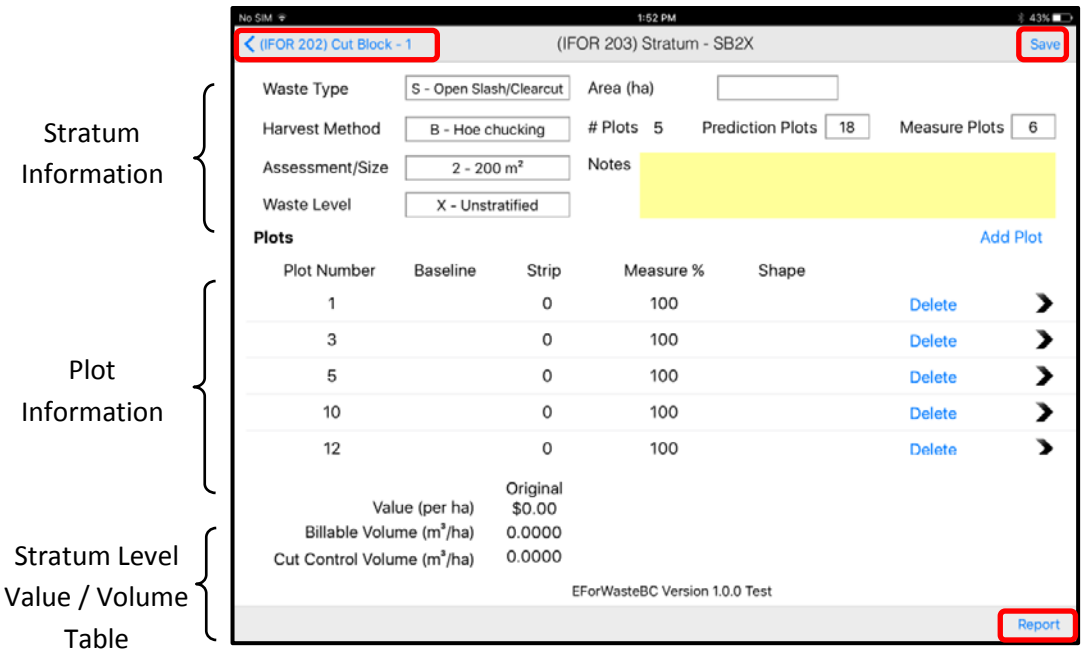
Other options available to the users in the IFOR 203 Stratum screen are:

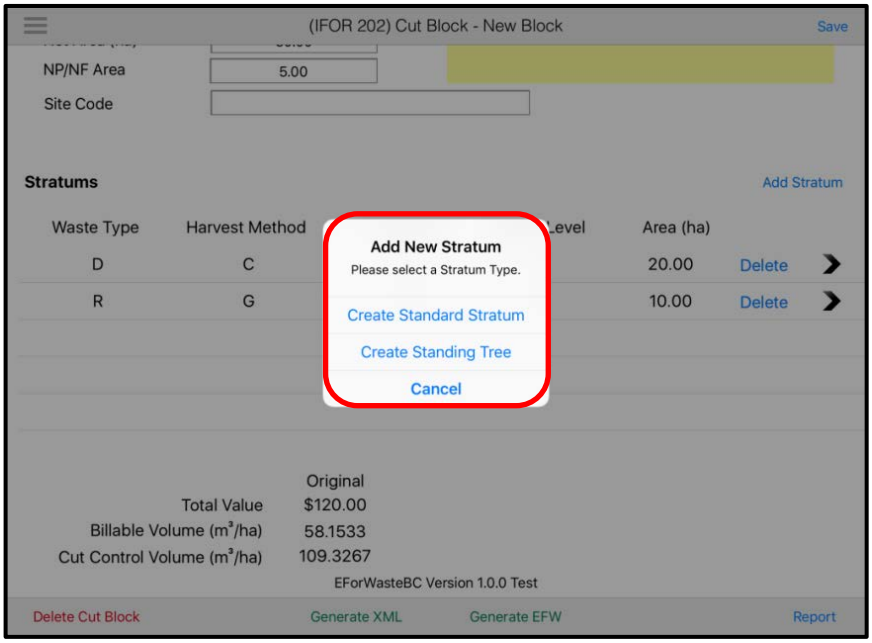
- **Cut Block - [Cut Block ID]**: Return the user to the Cut Block 202 screen.
- **Save**: Saves any edits made in the Stratum screen.

7.4. The Stratum Screen (IFOR203)

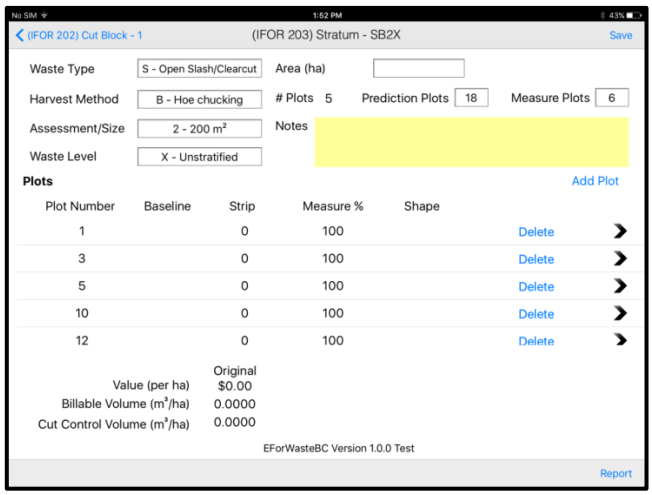
The Stratum screen allows stratum data to be added or edited. The Stratum screen consists of three sections:

1. Stratum Header Information (see Section 7.3.1 – Stratum Information)
2. Plot Information (see Section 7.3.2 – Plot Information)
3. Value/Volume table (see Section 7.4.6 –Value/Volume Table)

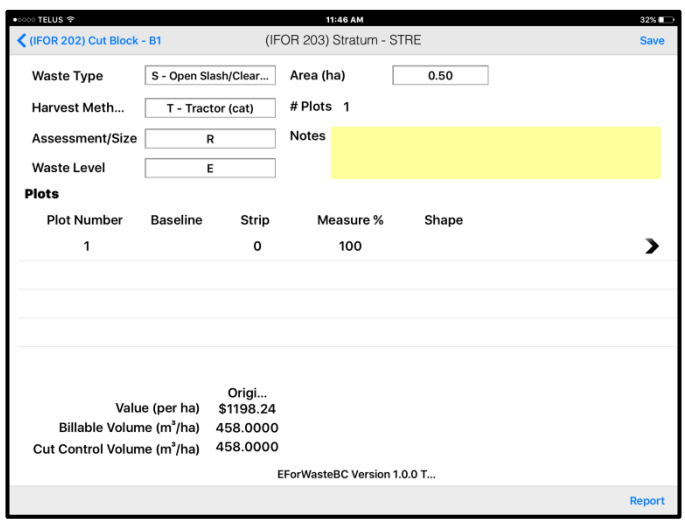




Plot Stratum - The Plot Stratum (IFOR203) is used for all plot based data collection. When selected a Stratum header screen is generated which leads to the plot data entry screen (IFOR204). Plot piece data can then be collected.



Standing Tree Stratum - The Standing Tree Stratum type is used to collected Percent estimate and 100% scale data. When selected a combination Stratum header and data entry screen (IFOR204) is generated. The appropriate percent estimate or 100% scale information is then entered.

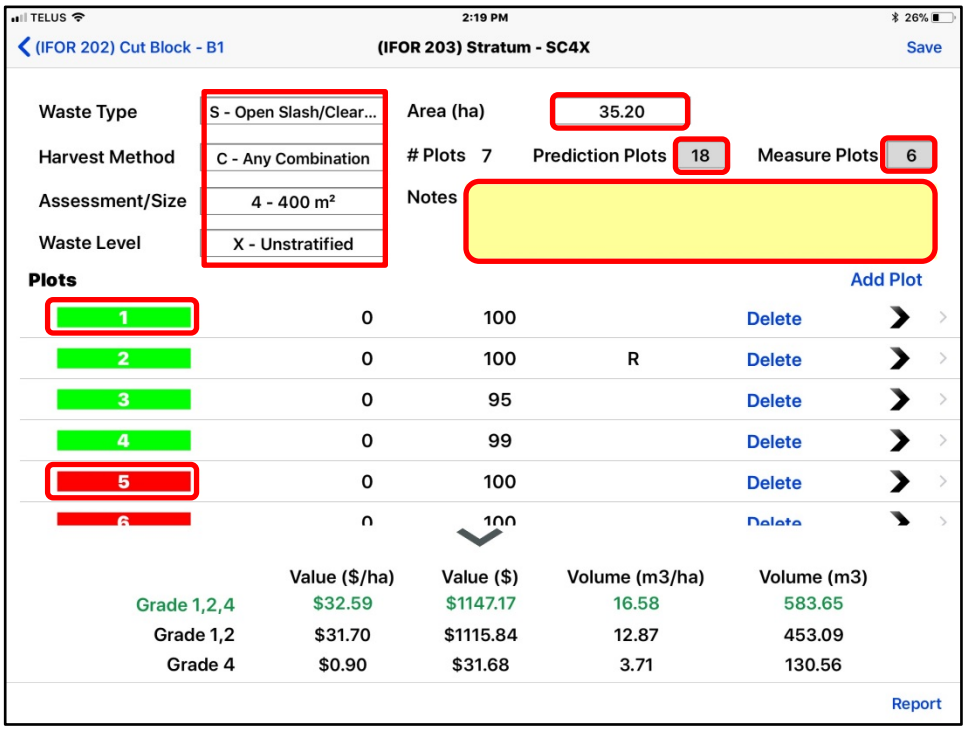


Other options available to the users in the IFOR 203 Stratum screen are:

- **Cut Block - [Cut Block ID]**: Return the user to the Cut Block 202 screen.
- **Save**: Saves any edits made in the Stratum screen.
- **Report**: Generate a report for the Stratum.

7.4.1. Stratum Header Information

The Stratum header Information section contains the identification details, area and a listing of the created plots for the particular stratum. When a Ratio sampling survey is completed Prediction plots will be identified by a red highlighted box, Measure plots will be highlighted by a green highlighted box. Both the White and Yellow filled boxes can be edited with Survey information.



The Stratum naming conventions are outlined below:

- **Waste Type**: Select one of the following Waste Types:
  - Dispersed Types:
    - S - Open Slash/Clear cut
    - F - Felled and bucked
    - G - Group retention
    - D - Dispersed Retention
    - T - Standing Stem
  - Accumulated Types:
    - L - Landings
    - R - Roadside
    - W - Window, Debuilt Road
    - C - Cold Decked
    - P - Spot accumulation
    - O - Off-site landing

- **Harvest Method**: Select one of the following Harvest Methods:
  - S - Spar (high lead)
  - G - Grapple yarder
  - T - Tractor (cat)
  - P - Horse
  - R - Rubber-tiered skidder
  - M - Hand logging
  - B - Hoe chucking
  - H - Helicopter
  - W - Wyssen
  - O - Other
  - C - Any combination
- **Assessment/Size**: Select one of the following Assessment Sizes:
  - 0 - 50 m2
  - 1 - 100 m2
  - 2 - 200 m2
  - 3 - 300 m2
  - 4 - 400 m2
  - 5 - 500 m2
  - 6 - 600 m2
  - 7 - 1 000 m2
  - 8 - 5 000 m2
  - 9 - 10 000 m2
  - E - Estimate Percent
  - O- Ocular Estimate
  - S - 100% Scale
- **Waste Level**: Select one of the following Waste Levels:
  - L - Light
  - M - Medium
  - H - Heavy
  - X - Unstratified
- **Area (ha)**: The area of the stratum.
- **Notes**: The Waste Surveyor can enter any general notes regarding this Stratum (256 character maximum).

Note: Any edits to the fields above will result in the Stratum Name being updated. The Stratum name is defined as 4 characters generated by:

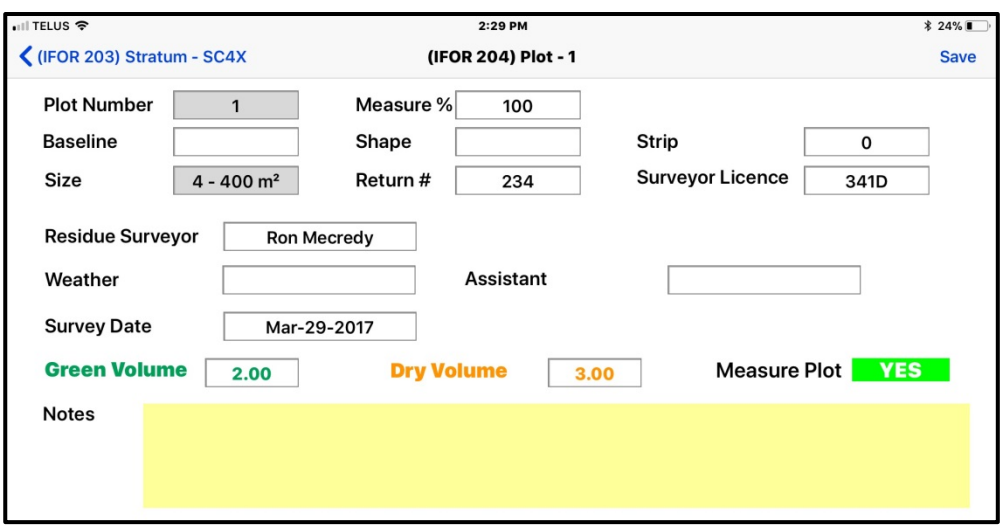
1. *The FIRST character (alpha) is the one-letter code for Waste Type.*
2. *The SECOND character (alpha) is the one-letter code for Harvest Method.*
3. *The THIRD character (numeric) is the one-digit number which identifies the Assessment Method/Size used.*
4. *The FOURTH character (alpha) is the one-letter code for waste level.*

7.5. The Plot Screen (IFOR204)

7.5.1. The Plot Header

The plot header information contains all the information required to identify the plot location, size, surveyor and survey date. Four plot header templates can be generated depending on the type of survey and stratum, Basic SRS plot, Ratio Sampling plot, Percent estimate and 100% piece scale. Both the Interior SRS survey and Coast Survey use the same plot header template. The Ratio sampling method uses an adapted plot header that indicates plot volume estimates. The Percent Estimate and 100% piece scale use a slightly adapted format very similar to the basic plot header. The plot header screen data entry field's requirements and entry types are indicated below:
In the Plot header Information section, there are different types of text fields available:

- **Grey filled boxes**: These boxes cannot be edited as they contain auto filled information.
- **White filled boxes**: These boxes can be edited with audit text/numeric values by the waste surveyor.



- **Plot number:** Required
  - Interior SRS and Coast – Auto filled sequentially
  - Interior Ratio Sampling – User defined during plot volume estimations
- **Baseline:** Optional, user defined
- **Size:** Auto filled at stratum creation
- **Residue Surveyor:** Required, Auto filled from Cut Block Screen or User entered
- **Assistant:** Optional, User entry
- **Weather:** Optional, User entered
- **Survey Date:** Required, Auto filled
- **Green Volume:** Filled at plot creation
- **Dry Volume:** Filled at plot creation
- **Measure Plot:** Auto Entry
- **Measure %:** Required, Default 100%, User entry
- **Shape:** Required, Pop up entry
  - C - Circular
  - S - Square
  - R - Rectangular
  - X - 100% scale
- **Return#:** Required, User entry
- **Strip:** Optional, User entry
- **Surveyor Licence:** Required, User entry
- **Notes:** Optional, User entry, (256 characters maximum).

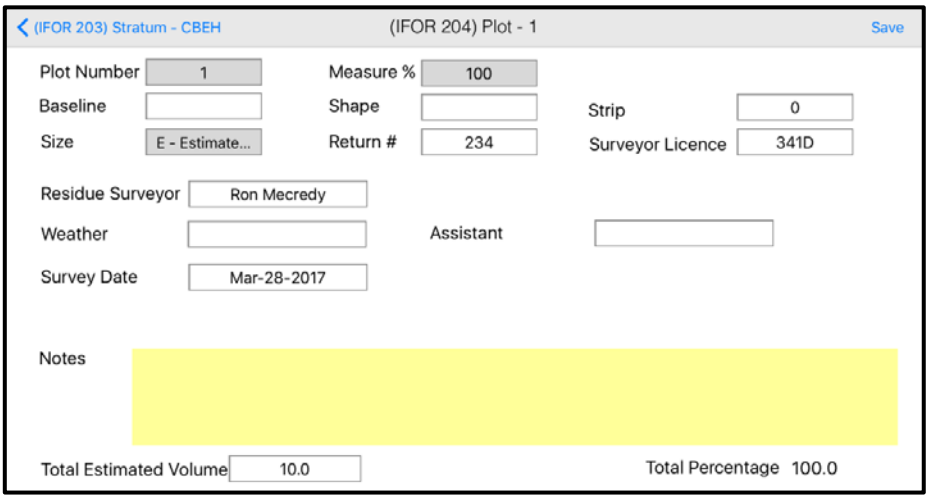
7.5.2. Creating a new plot

Plots are created by tapping the Add Plot link located at the middle of the right side of the Stratum Screen.

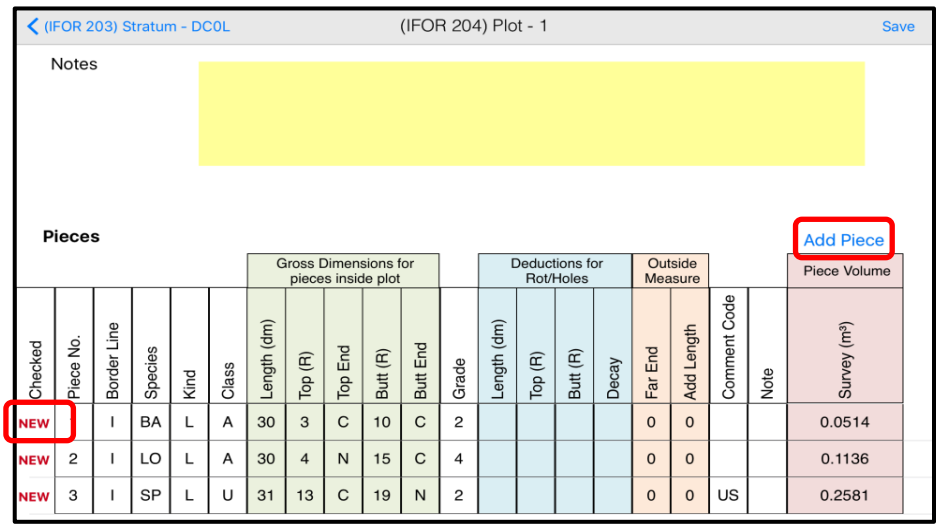
7.5.2.1. Basic plot functions, Interior SRS and Coast surveys

Interior SRS and Coastal plots are created with the plot number, plot size, measure %, surveyor name, survey date auto filled. User entry of the baseline, shape, strip, weather, assistant and notes is required by the user.

Plot Header Information



Plot Data entry



7.5.2.2. Adding Plot pieces

Plot pieces are added by selecting the '**Add Piece**' link. A new data line is added each time the link is tapped.

1. Quick Entry

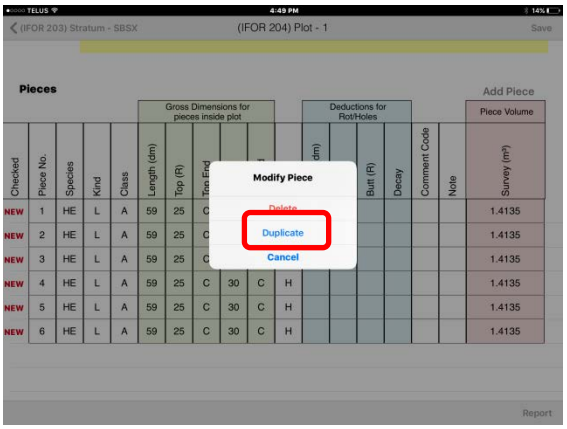
The application contains a 'Quick Entry' feature to allow rapid collection of piece data. The Quick entry feature is initiated when the user taps any required data field (Borderline code to Grade). The quick entry does not apply to deductions, Outside Measures, Comment Codes or Notes. When a data field is entered the app will 'slide' to the next empty field. The quick entry feature can be ended at any time by tapping the '**<**(Ifor 203)Stratum' Icon. Piece data is entered in the following manner;

- Tap on an empty field
  - A selection box or keypad will open
    - Select appropriate code from selection window or,
    - Select the numeric data required.
      - The user enters the required numeric information and the app will slide to the next field.
        - The number of characters required to 'slide' for each field has been set within the application as follows;
          - Length – 2 IE. 25
            - When 3 characters are required exit the quick entry field and enter the correct values. IE. 125
            - The quick entry will resume sliding to the next empty field.
          - Top – 2 IE. 05
          - Butt – 2 IE. 05

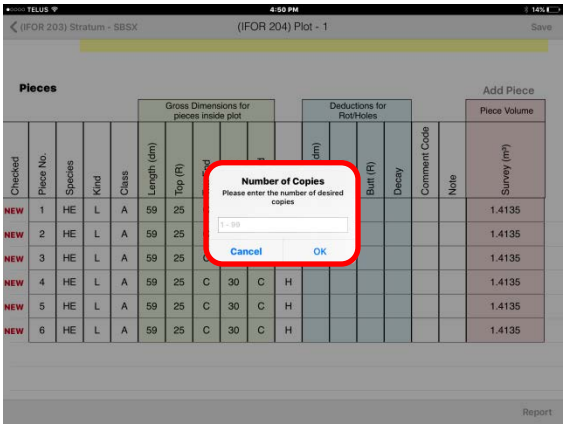
2. Multiple piece Entry

The application also allows the surveyor the ability to enter multiple pieces with the same characteristics using a single entry. Multiple pieces can be entered using the following procedure:

1. Tap the 'NEW' letters at the left of the screen.
2. On the 'Modify Piece' pop up window, select 'Duplicate'



3. In the 'Number of Copies pop up window, enter the number of pieces required.



4. The application will add the indicated number of pieces to the plot in numbered sequence.

The following fields can be added or edited into the Pieces table:

- **Border Line**: Select one of the following border line code values:
  - B - Borderline piece (measure inside portion only)
  - I - Completely inside plot
  - X - Length exceeds plot width

- **Species**: Select one of the following tree species code values:
  - AL - Alder
  - AR - Arbutus
  - AS - Aspen
  - BA - Balsam
  - BI - Birch
  - CE - Red Cedar
  - CO - Cottonwood
  - CY - Cypress
  - FI - Douglas Fir
  - HE - Hemlock
  - LA - Larch
  - LO - Lodgepole Pine
  - MA - Maple
  - OT - Other (Cherry)
  - SP - Spruce
  - UU - Pacific Yew
  - WB - Whitebark Pine
  - WH - White Pine
  - WI - Willow
  - YE - Yellow Pine
- **Kind**: Select one of the following Material Kind code values:
  - B – Bucking/trimming waste
  - D - Down tree/snag
  - L - Log, slab, Sliver, chunk
  - S – Stump
  - T - Tree
  - U - Undersize
  - W - Bucking/trimming waste
  - X - Special Product
- **Class**: Select one of the following Waste Class code values:
  - A - Avoidable
  - U – Unavoidable
- Gross Dimensions for pieces inside plot fields:
  - **Length (dm)**: Enter the length (in decimeters) the "in plot" length of the piece.
  - **Top (R)**: Enter the gross diameter (in Radians), inside bark of the top end.
  - **Top End**: Select one of the following Top End code values:
    - B - Broken

        - C - Cut (bucked)
        - N - Natural
        - P - Pencil
        - U - Undercut
        - X - Buried
    - **Butt (R)**: Enter the gross diameter (in Radians) the inside bark of the large end.
    - **Butt End**: Select one of the following Butt End code values:
        - B – Broken
        - C - Cut (bucked)
        - N - Natural
        - P - Pencil
        - U - Undercut
        - X - Buried
- **Grade:** Select one of the following Grade code values:
    - The following Grades are available for cut blocks in the Coast Resource Area
        - B - Peeler
        - C - Peeler
        - D - Lumber
        - F - Lumber
        - H - Sawlog
        - I - Sawlog
        - J - Gang Sawlog
        - K - Cedar Shingle
        - L - Cedar Shingle
        - M - Cedar Shingle
        - U – Utility Sawlog
        - W – Deciduous Sawlog
        - X – Chipper
        - Y - Lumber reject
        - Z - Firmwood reject
    - The following Grades are available for cut blocks in the Interior Resource Area
        - 1 - Premium Sawlog
        - 2 - Sawlog
        - 4 - Lumber Reject
        - Z - Firmwood reject
        - 6 - Undersize
- **Deductions for Rot/Holes fields:**

- **Length (dm)**: Enter the length (in Decimeters) for the deduction.
- **Top (R)**: Enter the gross diameter (in Radians) the diameter deduction for the top end.
- **Butt (R)**: Enter the gross diameter (in Radians) the diameter deduction for the butt end.
- **Decay**: Select one of the following Decay values:
  - B- *Butt rot*
  - *C- Conk rot*
  - *H - Heart rot*
  - P - Pocket rot
  - R - Ring rot
  - S- Sap rot
  - T- Top rot

- **Outside Measures fields:** (Not required)
  - **Far End**: Enter the diameter (in Radians) of the actual end of the piece when it is outside the plot boundary. This value can be estimated.
  - **Add Length**: Enter the length (in metres) the additional length of the piece that is outside the plot boundary. This value can be estimated.
- **Comment Code:** The Waste Checker can select one of the following comment codes:
  - BK- Breakage
  - BN - Bunch knots
  - BR - Buried
  - CA - Candelabra
  - CC - Creek cleaning
  - CF – Cat face
  - CK - Crook
  - CL - Culvert log
  - CP - Company piece
  - CR - Severe Crook
  - DP - Dead potential
  - DU - Dead useless
  - FC – Frost crack
  - FK - Fork
  - FL - Fluted Butt (NOT IN XML)
  - FP - Fence post
  - FW - Firewood
  - GL – Guy line stump
  - HK - Hooked
  - HN - Heavy knots

- HP - Helipad
- HS - Holding stump
- IN - Inaccessible
- KN - Knots
- LB - Long butt
- LN - Large knots
- MB - Machine breakage
- MP - Multiple part piece
- NP - Nil plot
- OB - Obstructed
- ON - Oversize knots
- PR - Pocket rot
- RE - Reconstructed
- S1 - Segment 1
- S2 - Segment 2
- S3 - Segment 3
- SA - Sapling
- SB - Shake block
- SH - Shatter
- SL - Slab
- ST - Standing tree
- SW - Sweep
- TR - Whole tree
- US - Unsafe
- WD - Coarse woody debris
- WF - Windfall
- WS – Wind shear

- **Note:** A field is available to edit or enter text about the piece (256 characters maximum).
- **Piece Volume fields:**
  - **Survey (m^3)**: The piece volume calculated based on the survey input values for the Piece.

7.5.3. Piece Data Edits

When entering data into the Plot Pieces screen it is common to miss or enter incorrect values or enter values that do not meet the standards for the measurement. These issues can result in either an "**Error**", where the user will not be able to continue until the values have been corrected, or a "**Warning**", where the user will be able to continue however, a message will be displayed and the user can continue to the next screen.

To correct an inaccurate code or numeric value, the surveyor selects the field and enters or selects the appropriate value.

7.5.3.1. Errors

Error Messages

These messages will be generated when the plot or stratum is exited or when reports are requested. They will prevent exit from a plot or generation of an xml file and reports. All Error messages must be corrected before the survey is completed and an xml file is generated.

Block Level Errors

1. Cut block screen
   a. Error message: "Plot Data Error, Reports cannot be generated"
      - Conditions:
        - When navigating to Report Generation Screen
        - Generated when an error exists within a plot, stratum or block header screen
        - Error Message: lists all pieces missing piece detail
          - Eg. "Stratum CC4X Plot 1 Piece 2"
   b. Error Message: "Plot Data Missing, Stratum/Plot has no pieces"
      - Conditions:
        - Stratum has no plots
        - Plot has no pieces
        - Warning Message lists the stratum/plot that has no pieces.
          - Eg. "Stratum CC4X Plot 1 has no pieces" or "Cut block has no pieces"

Stratum Level Errors

1. Ratio Sampling Stratum Screen
   a. Error message: "Missing Required Field, Please enter Prediction Plot and Measure Plot and try again"
      - Conditions:
        - New ratio stratum created
        - Prediction and Measure plot fields are cleared (blank)
   b. Error message: "Please select Waste Type and try again."

- Conditions:
  - New ratio stratum created
  - Waste Type, not entered (blank)

c. Error Message: "Measure Plot can't be greater than Prediction Plot. Please enter valid value and try again."
   - Condition: The number of measure plots exceeds the number of prediction plots

d. Error Message: "Prediction Plot and/or Measure Plot are non-standard values, Accept?" (Yes/No)
   - Condition: When the default value of Measure Plot and Prediction Plot have been changed. The warning is required to confirm the values entered.

Plot level Errors:

1. Error message: "_____ missing."
   The error message inserts the appropriate missing data element(s) into the message.
   a) Condition 1:
      - Material **Species, Kind** , **Grade, or Waste class** code is missing.
   b) Condition 2:
      - Assessment method code is P and **border line** is missing
   c) Condition 3:
      - Assessment method code is P or S
      - **Top end or butt end** code, **top diameter** or **length** is missing
   d) Condition 4:
      - Assessment method code is P or S
      - Material kind code is not S
      - **Butt diameter** or butt end code is missing
   e) Condition 5:
      - Residue Surveyor **name** missing
2. Error message: "Comment Code is required for waste class 'U'."
   a) Condition:
      - Assessment method code is P or S
      - Waste class code is U
      - Comment code is missing
        - Comment Codes are required for all unavoidable pieces

3. Error message: "Top cannot be less than 5r."
   a) Coast
      - Conditions:
        - Assessment method code is P or S
        - Maturity Code is I - immature
        - Top diameter < 5r
   b) Interior
      - Conditions:
        - Assessment method code is P or S
        - Top diameter < 5r
4. Top diameter < 8 Error message: "Top cannot be less than 8r."
   a) Coast
      - Conditions:
        - Assessment method code is P or S
        - Maturity Code is 'M-Mature'
        - Top diameter < 8r
5. Error message: "Deduction length >= Piece length."
   a) Condition:
      - assessment method code is P or S
      - length deduction >= length
6. Error message: "Top deduction >= top dimension."
   a) Condition:
      - assessment method code is P or S
      - top deduction >= top
7. Error message: "Butt deduction >= Butt dimension."
   a) Condition:
      - assessment method code is P or S
      - butt deduction >= butt
8. Error message: "Missing decay type."
   a) Condition:
      - assessment method code is P or S
      - Length deduction or top deduction or butt deduction > 0
      - Decay type code is missing
9. Error message: "Missing deduction information."
   a) Condition:
      - assessment method code is P or S
      - Length deduction, top deduction and butt deduction = '0', '_'
      - Decay type code is selected

10. Deduction Errors
    a) Error Message: "Kind 'W' <50% Sound
        - Condition: If Kind= 'W' and Net Volume<50% of Gross Volume
    b) Error Message: "Net Volume <= 0"
        - Condition: Net volume < 0.000
    c) Error Message: "Log Grade 1 or 2 <50% Sound"
        - Conditions
            - Interior
                - Kind = L,T
                - Grade 1 or 2
                - Net Volume<50.0% of Gross Volume
    d) Error Message: "More than 2 deductions"
        - Conditions
            - More than 2 deduction types have been assigned to a piece.
11. Error message: "Kind 'L', length must be >= 30."
    a) Condition:
        - Assessment method code is P
        - Material Kind code is L
        - Borderline Code is not B
        - Length < 30
12. Error message: "Kind 'W', length cannot be >= 30."
    a) Condition:
        - Assessment method code is P
        - Material Kind code is W
        - Length > 30
13. Error message: "Kind W, butt Code Broken not allowed."
    a) Condition:
        - Assessment method code is P or S
        - Waste type code is W
        - Butt end code is B

14. Error Message: "Kind L, W, T missing butt end code."
    a) Condition:
        - Waste type code is L or W or T
        - Butt end code is missing.

15. Plot Screen
    a) Error message: "Measure Percentage cannot be greater than 100%."
    b) Error message: "Measure Percentage cannot be 0%."
    c) Error message: "Plot number already exists in stratum. Please correct the plot number. "
    d) Error message: "Total Estimate Percentage is not 100%".
        - Condition:
            - Assessment Method code is "E"
            - Sum of the percentage estimates of pieces is <> 100%
    e) Error message: "Total Estimate Volume is 0".
        - Condition:
            - Assessment Method code is "E"
            - Total Estimated Volume is '0'

Warning Messages:

These messages will be generated when the Stratum or plot is exited. They will not prevent generation of an xml file or reports. Warnings are intended to flag a potential error and should be reviewed by the surveyor prior to exiting a plot, stratum or block.

Block Level Warnings

1. Cut block screen
   - Warning message on screen: "Stratum area did not add up to block net area."
     - Condition: The sum of the stratum areas does not equal the block net area
2. Cut block screen
   - Warning message: "Plot Data Missing"
     - Warning message lists the stratum/plot that has no pieces.
       a) Eg. "Stratum CC4X Plot 1 has no pieces" or "Cut block has no pieces"

Stratum Level Warning

1. Warning Message: "By changing the assessment method code, all existing data will be removed. Proceed?"
   - Condition: A plot sampled stratum 'Assessment size' is selected for a change to 'E-Estimation Percent' or 'O-Ocular estimation'.
     - The change of Assessment Size will require a new plot template therefore, all existing plot level data will be removed

Plot Level Warnings

1. Warning message: "Length should not exceed plot dia. 'x' m"
   - Condition:
     - Kind = 'L'
     - Assessment method code is P or S
     - Piece length is greater than plot diameter
     - 'X' value is determined by the formula 'length X = SQRT(Plot size/ pi)*2'
2. Warning message: "Top or Butt out of Range"
   - Condition 1:
     - Assessment method code is P or S
     - Material kind code is not 'S'
     - Top is greater than butt
   - Condition 2:
     - Assessment method code is P or S
     - Material kind code is L,W
     - Length >= 10
     - (butt – top) >= 4
     - butt – top > (length /(10 x 1.25))

3. Warning Message: " Timbermark area does not equal Block Net Area"
    - Condition: Primary Timbermark (IFOR401) Mark Area(ha): does not equal Block (IFOR202) Net Area(ha)
4. Warning Message: " Kind 'L' or 'T' Less than 33% Sound"
    - Condition: Kind L or T Net volume is <= to 33%
5. Warning message: "Kind 'S', Grade should not be '_'.
    - Coast
        - Conditions:
            - Assessment method code is P or S
            - Material Kind code is S
            - Scale Grade code is 'Y'
    - Interior
        - Conditions:
            - Assessment method Code is P or S
            - Material Kind Code is S
            - Scale Grade Code is '4'
6. Warning Message: "**Kind B=Breakage, Should be W-Bucking Waste?**"
    - Condition: If 'Kind' is B-Breakage a warning is needed to ensure user intended to select 'B'. Code B should only be selected for Breakage surveys. Most frequent selection should be W-Bucking/Trimming waste.

7. Warning Message: "If Kind=S (Stump) then butt(R) Field is not required."
    - Condition: Kind is stump and butt measurement has been entered
    - Note: Online waste system will not allow xml upload if butt measurements exist for a stump.

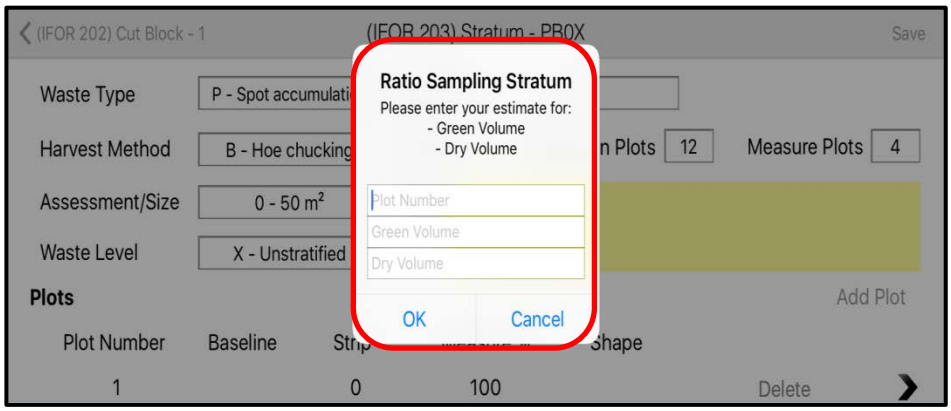
7.5.4. Creating a Ratio Sampling plot

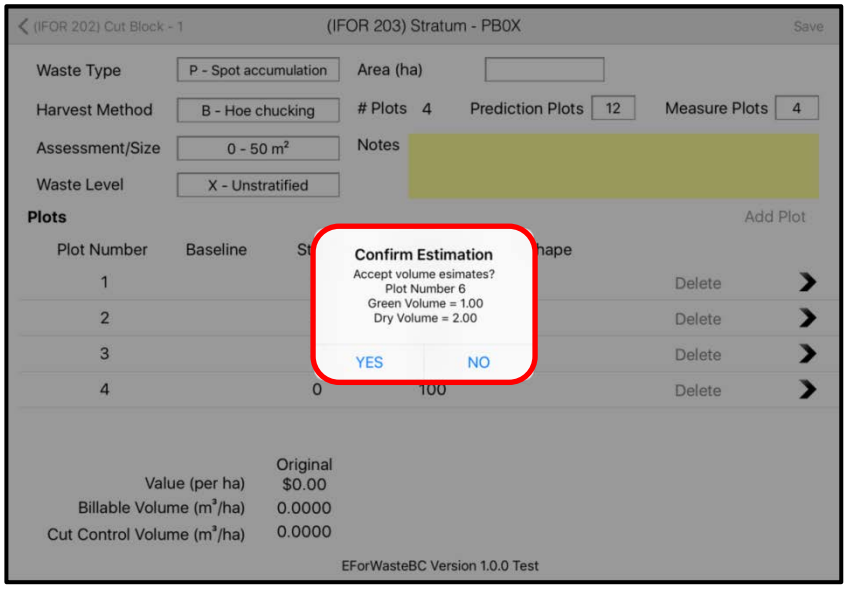
Prediction of Grade 1, 2, green grade 4 and dead Grade 4 volumes in combination with random plot selection are required within the ratio sampling system. The random selection process requires the user to identify a sample population (Prediction Plots) and a number of samples of those plots to be selected for measurement (Measure plots).

The plot selection process is based on a sample (e.g., 6 plots) selected from the full population of plots (e.g., 18 prediction plots). The determination of prediction vs measure plots is made by random selection within the application. The selection of the measure plots is completed in two steps: 1) an initial sample selection of 5 plots is randomly selected from the prediction population; and 2) additional plots are selected from the remaining plots in the population. The additional plots are selected at a reduced probability, thus the total sample size will usually achieve the required

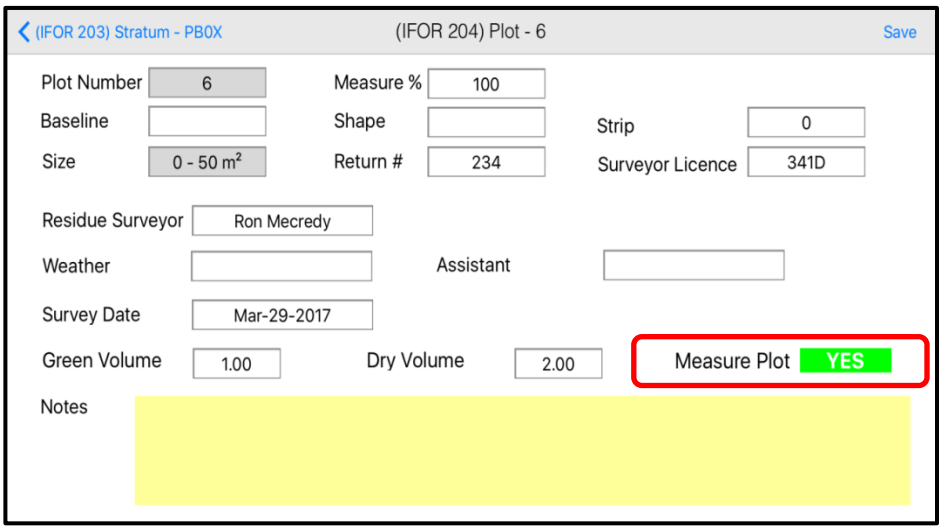
objective size. As an example, in dispersed populations requiring 18 predictions and 6 measure plots, a measure plot sample of 5, 6 or 7 plots will occur approximately 90% of selections, 8 plots 8% of the selections and 9 or more plots <1% of selections. The objective of the sample selection is to achieve a predetermined number of randomly selected measure plots. The selection of plot numbers to be measured is determined when a stratum is created and the required number of prediction and measure plots is confirmed. Identification of measure plots is completed when a new plot is created.

When creating a new plot the user is asked to enter the plot number, an estimate of Grade 1, 2 and green 4 and a separate estimate of dead Grade 4 volume (total m3 in the plot). The user is asked to confirm the estimation before the final selection is made. The data is then stored and the plot is created. The estimate of Green and Dead volumes is then displayed on the plot header and will be reported on the Plot Prediction report.

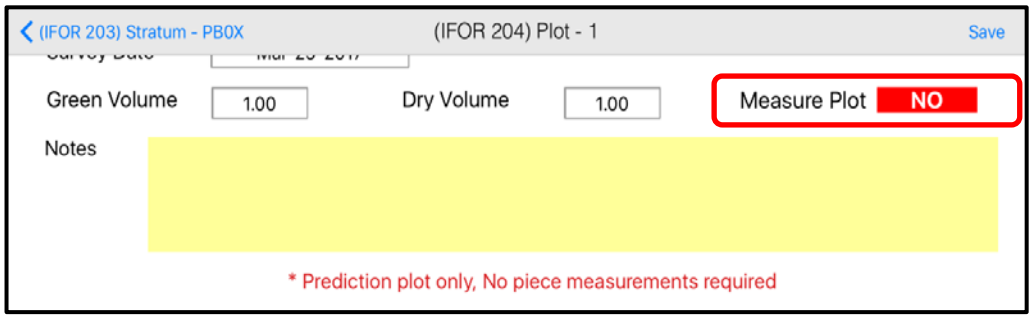




When the plot is created the selection of a Prediction of Measure plot is indicated on the plot header, a bold YES is highlighted in green indicating a measure plot. At this point the surveyor can move to measuring piece data.



If the Measure plot indicator indicates a bold No highlighted in Red the plot is a prediction plot and no further work is required at this location.

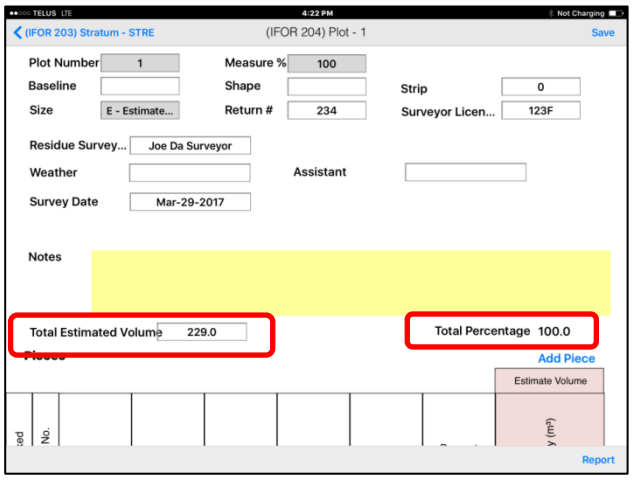


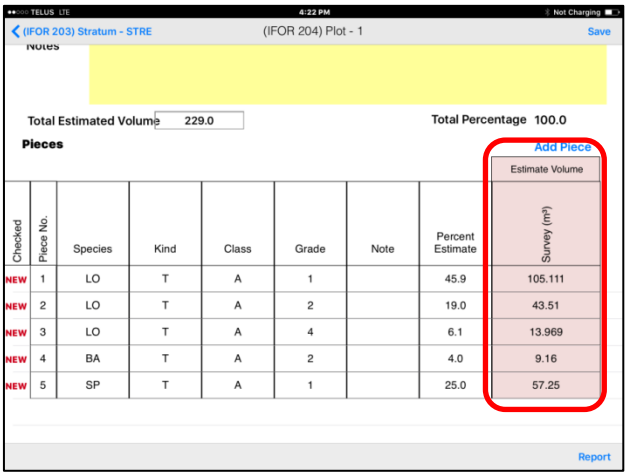
The Surveyor does have the option to collect the plot data however, it is not required.

Note: The block and stratum volume and value summaries do not include data from prediction plots.

7.5.5. Standing Tree and Percent Estimate samples

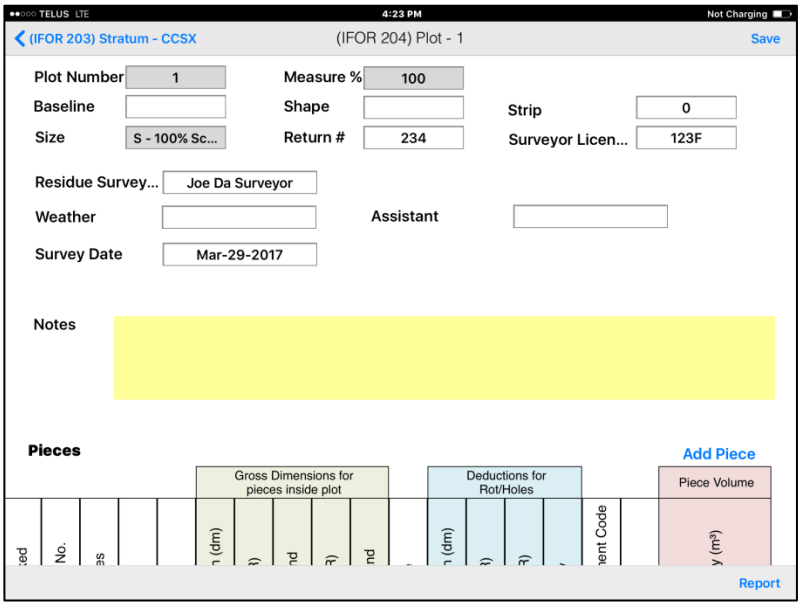
The Standing tree and Percent Estimate stratum plot is created with the plot number and other header information auto filled in the same manner as the SRS/Coast plot. To complete the plot, the surveyor enters an initial volume estimate, followed by the percent by species, grade and waste class each piece represents within the plot. The total volume by species, grade and waste class **must** add up to 100% of the estimated volume. The Volume estimate field is auto filled by the application. This plot entry screen does not use the quick entry feature.

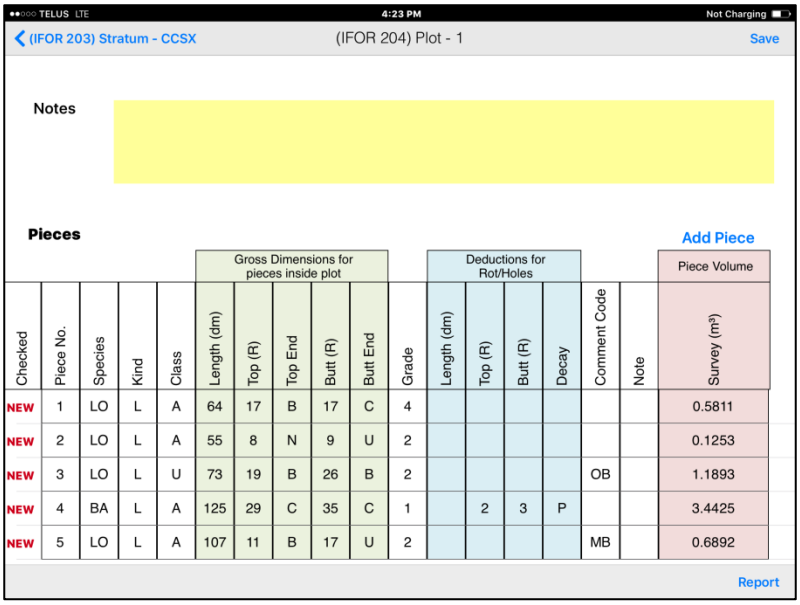




7.5.6. 100% Scale

The 100% Scale stratum plot is created with the plot number and other header information auto filled in the same manner as the Standing Tree plot. To complete the plot the surveyor enters the piece measurements for each waste piece. This plot entry screen does not use the quick entry feature.

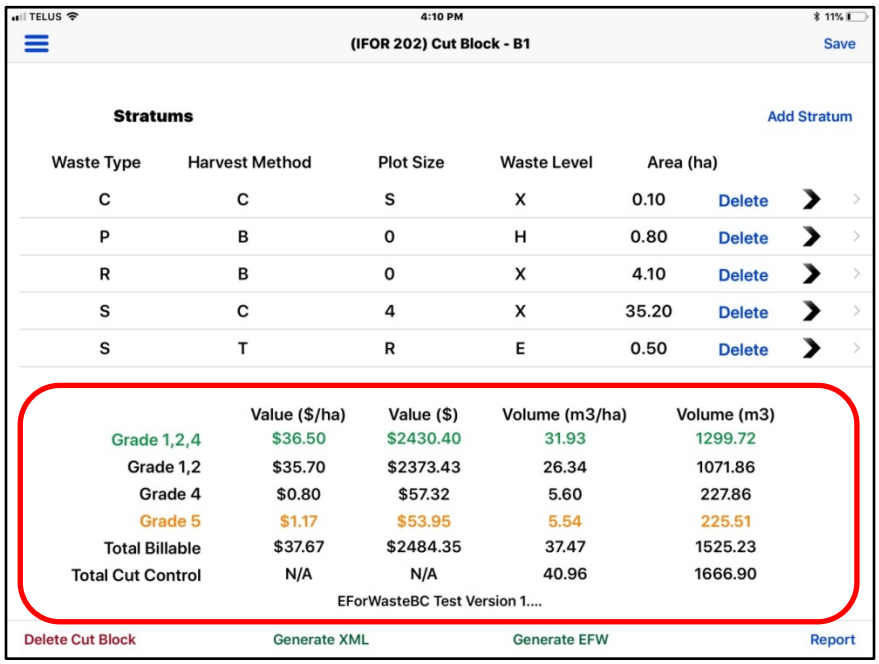




Checked	Piece No.	Species	Kind	Class	Length (dm)	Top (R)	Top End	Butt (R)	Butt End	Grade	Length (dm)	Top (R)	Butt (R)	Decay	Comment Code	Note	Survey (m³)
NEW	1	LO	L	A	64	17	B	17	C	4							0.5811
NEW	2	LO	L	A	55	8	N	9	U	2							0.1253
NEW	3	LO	L	U	73	19	B	26	B	2					OB		1.1893
NEW	4	BA	L	A	125	29	C	35	C	1		2	3	P			3.4425
NEW	5	LO	L	A	107	11	B	17	U	2					MB		0.6892

7.5.7. Value/Volume Tables

The Value/Volume table that appears at the bottom of the Block, Stratum and plot screens displays the survey results in real time. The values are adjusted in real time as strata, plots and pieces are created.



This information is presented to assist the surveyor by displaying the survey results and provide feedback on the ratio plot prediction values. The values represent the survey level being viewed. Values on the plot screen will report plot level results only, values at the stratum and block level report the weighted results at the stratum and block level. It is important that the area, stumpage rate and benchmark zone are correctly entered. If these values are not correct the table results will not be correct.

Notes:

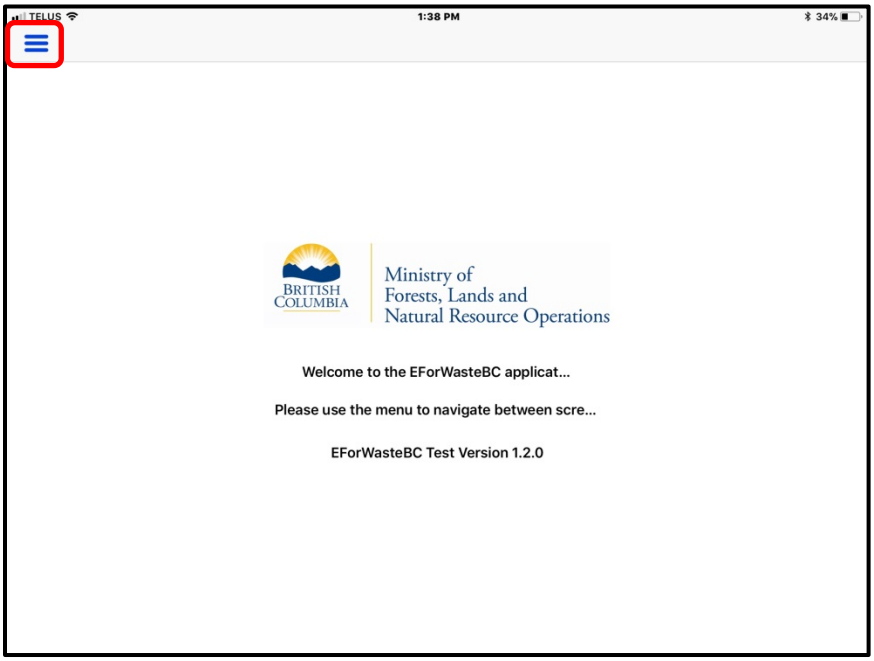
- The block and stratum volume and value summaries do not include data from prediction plots.
- Billable values include Avoidable volumes
- Total Billable values include grades 1,2,4 and Dry 4(5)
- Cut Control values include Avoidable and Unavoidable volumes

8. View Created (IFOR601)

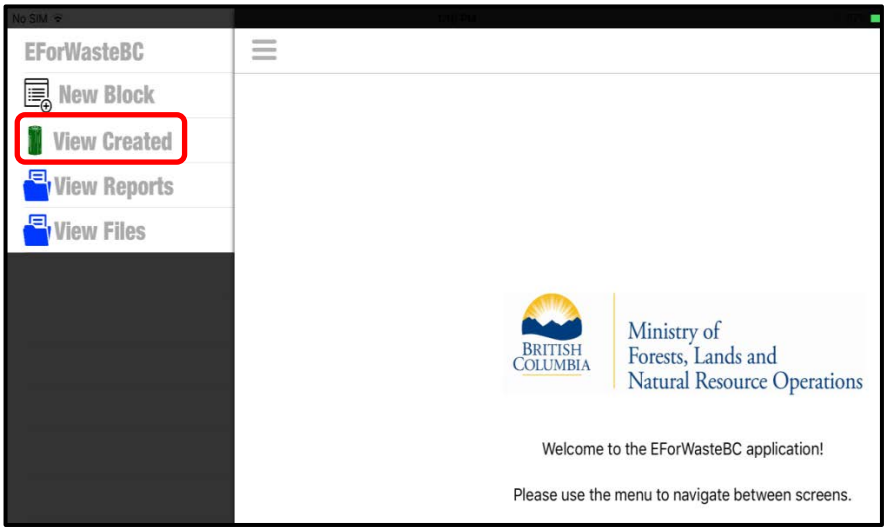
The **View Created** section of EForwasteBC is a listing of all existing blocks on the iPad. The Waste surveyor will use the View Created screen to view created blocks and access block data on the iPad.

To open the list of blocks created on your iPad:

1. Tap the EForwasteBC Menu button.

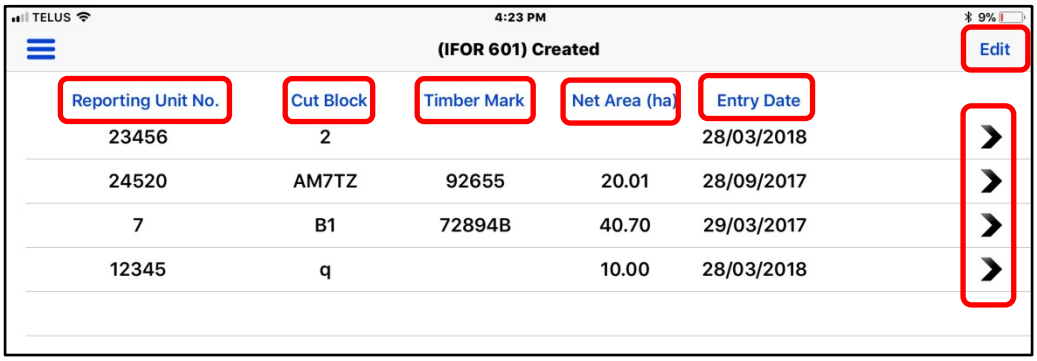


2. Tap **View Created**.

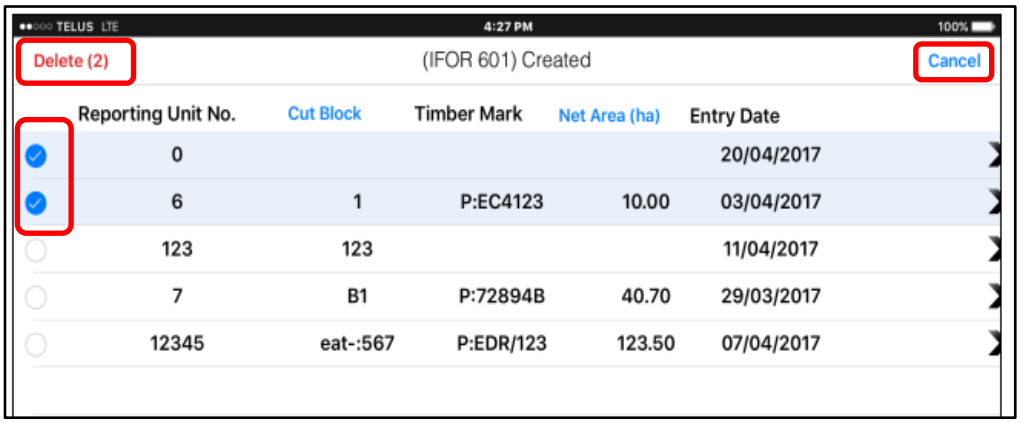


Functions available from the View Created screen are:

- Listing of the blocks on the iPad
- Sorting of blocks by: Reporting unit number, **Cut block, Timber Mark, Net Area** or **Entry Date**
- Access a selected block by tapping anywhere within the line occupied by the block.



- Deleting Blocks through the **Edit** icon in the top right of the screen
  - Delete all blocks by selecting **Delete All** or,
  - Select blocks to be deleted by using the radio button and tap **Delete (X)**
  - **Exit the delete function by tapping the 'Cancel icon in the top right of the page.**



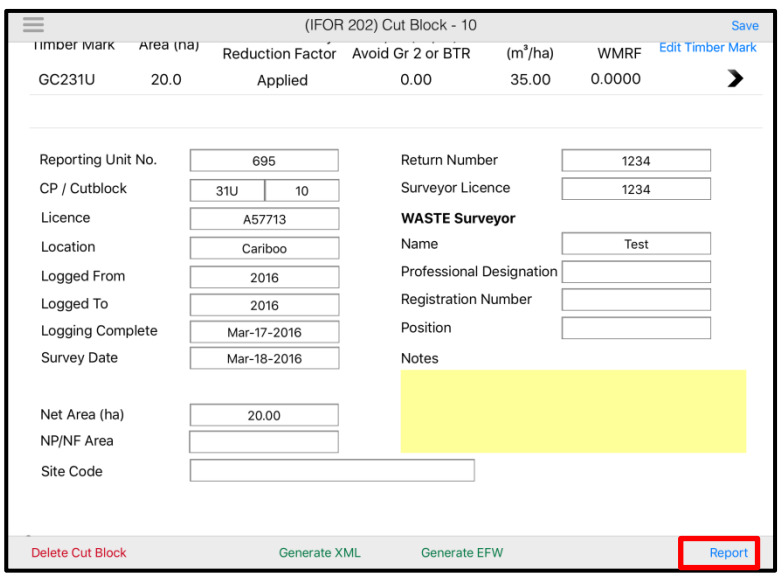
9. View Reports

EForwasteBC can generate four reports, **Block Type Summary, FS702, Plot Tally,** and **Plot Prediction Reports.** The reports have been presented and formatted similarly to the reports of the same names within the online waste system. The reports are designed to give the surveyor a summary of the waste survey information at the block level. Where ratio sampling is used the block level reports will generate information based on the measure plots only. Final waste billing values will be generated at the reporting unit level through the online waste system. All reports can be viewed within EForwasteBC, emailed directly from EForwasteBC or exported directly installed iPad applications such as to Adobe or 'Pages' as a PDF. The generate reports option is available in many screens.

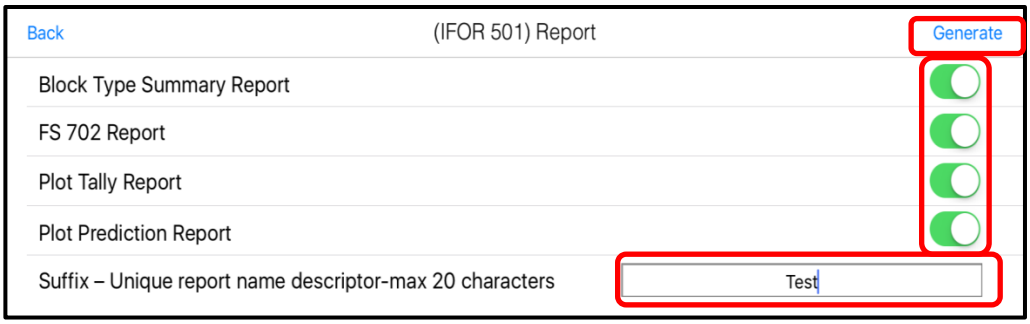
Note: The reports generated from EForwasteBC are an approximation of the waste billing information that will be generated from the online waste system. Where discrepancies are found, the online waste system will be considered the correct information.

9.1. Generate Report

The user can generate a report from most of the EForwasteBC screens by tapping the **Report** button at the bottom right of the screen.

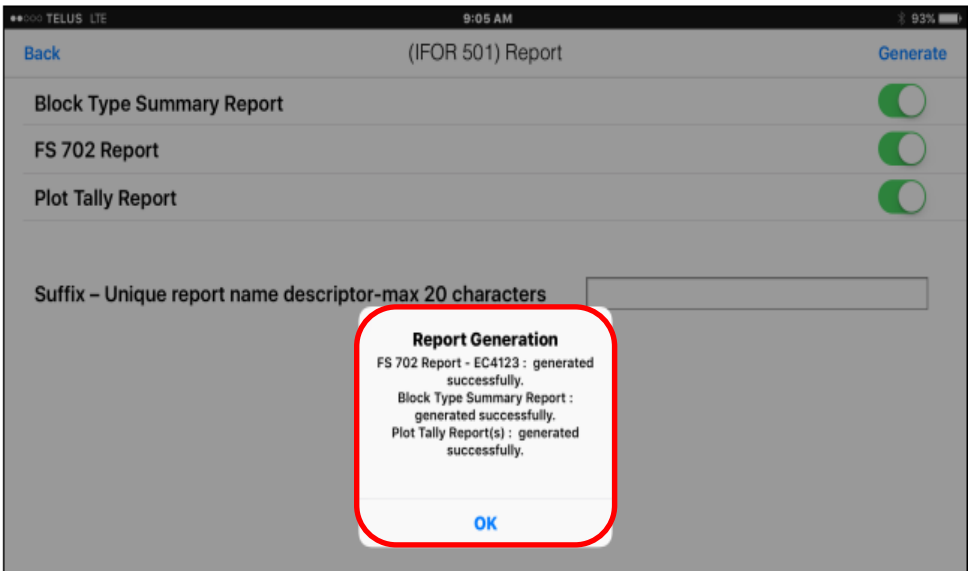


- From the Reports list, switch the toggle for each of the reports the user wishes to create. The toggle will turn green for each report to be generated.



- The user has the ability to add a unique suffix to the report name to aid in identification of the report at a later date. The suffix is comprised of any unique description up to 20 characters. (I.E. 'Ver1-He', 'Ver2 CE' etc.)

- Tap **Generate** and a report confirmation will appear. Tap **OK**.



9.1.1. Block Type Summary Report

This report presents a summary of the block by stratum and block totals. The tables are presented to display the species and grades collected in the survey within each stratum. The report presents the information in total cubic meters (m3) and by cubic meters per hectare (m3/ha).

Block Type Summary Report

License	Cutting Permit	Cut Block	Timber Mark	Reporting Unit
A16789	12	34	1234	45

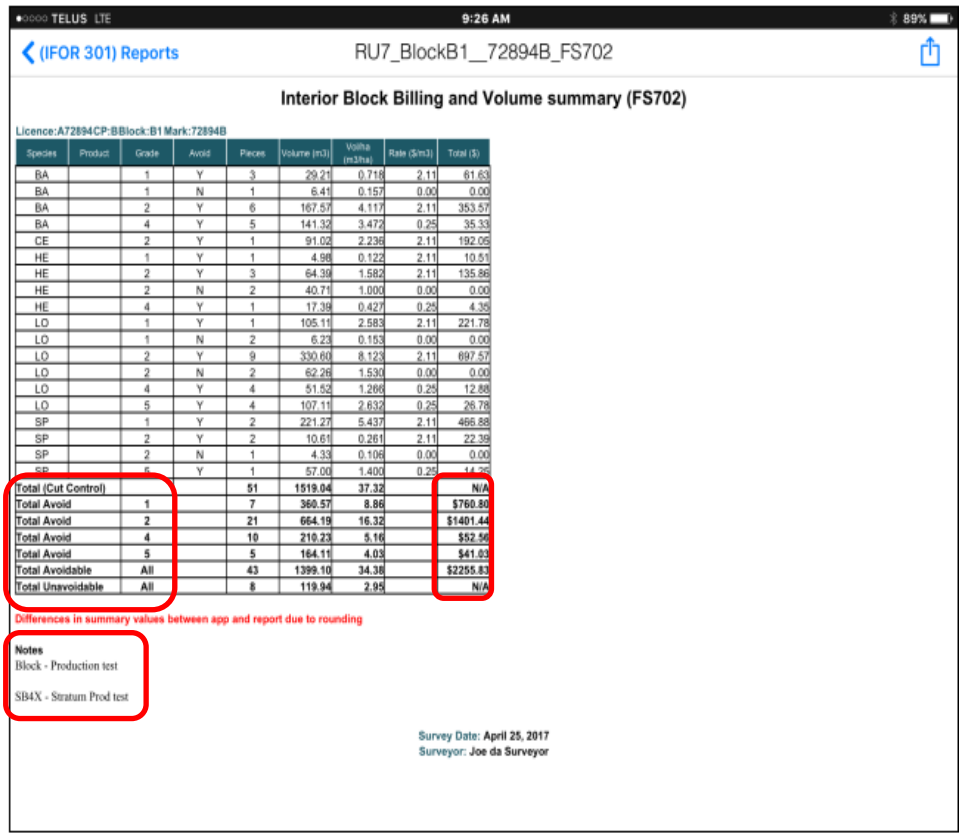
Type Stratum								Area (Ha)				
DC2L								25.00				
			Grade Volume (m3)					(m3)/Ha				
Species	Waste Class	Kind	Grd 1	Grd 2	Grd 4	Grd 5	Other	Grd 1	Grd 2	Grd 4	Grd 5	Other
SP	Avoid	Log, slab. Sliver, chunk	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Waste Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Species Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
	All Species	Avoid	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Unavd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Type Stratum Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0

Type Stratum								Area (Ha)				
All								25.00				
			Grade Volume (m3)					(m3)/Ha				
Species	Waste Class	Kind	Grd 1	Grd 2	Grd 4	Grd 5	Other	Grd 1	Grd 2	Grd 4	Grd 5	Other
SP	Avoid	Log, slab. Sliver, chunk	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Waste Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		Species Class Total	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
	All Species	Avoid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Unavd	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0
		BlockTotal	0.0	0.0	0.0	2135.6	0.0	0.0	0.0	0.0	85.4	0.0

Report Date: **April 06, 2017** Auditor: **Test**

9.1.2. FS702 Report:

This report shows a complete volume and value summary by species and grade for the block. The report is a reproduction of the FS702 billing that would be produced for the block. The FS702 is produced on either a Coast or Interior template and also summarizes some other key attributes from the survey. Notes recorded on the Block Header or Stratum header are reproduced onto the report.



TELUS LTE 9:26 AM 89%

(IFOR 301) Reports RU7_BlockB1__72894B_FS702

Interior Block Billing and Volume summary (FS702)

Licence:A72894CP:BBlock:B1 Mark:72894B

Species	Product	Grade	Avoid	Pieces	Volume (m3)	Volha (m3/ha)	Rate ($/m3)	Total ($)
BA		1	Y	3	29.21	0.718	2.11	61.63
BA		1	N	1	6.41	0.157	0.00	0.00
BA		2	Y	6	167.57	4.117	2.11	353.57
BA		4	Y	5	141.32	3.472	0.25	35.33
CE		2	Y	1	91.02	2.236	2.11	192.05
HE		1	Y	1	4.98	0.122	2.11	10.51
HE		2	Y	3	64.39	1.582	2.11	135.86
HE		2	N	2	40.71	1.000	0.00	0.00
HE		4	Y	1	17.39	0.427	0.25	4.35
LO		1	Y	1	105.11	2.583	2.11	221.78
LO		1	N	2	6.23	0.153	0.00	0.00
LO		2	Y	9	330.60	8.123	2.11	697.57
LO		2	N	2	62.26	1.530	0.00	0.00
LO		4	Y	4	51.52	1.266	0.25	12.88
LO		5	Y	4	107.11	2.632	0.25	26.78
SP		1	Y	2	221.27	5.437	2.11	466.88
SP		2	Y	2	10.61	0.261	2.11	22.39
SP		2	N	1	4.33	0.106	0.00	0.00
SP		5	Y	1	57.00	1.400	0.25	14.25
Total (Cut Control)				**51**	**1519.04**	**37.32**		**N/A**
Total Avoid		**1**		**7**	**360.57**	**8.86**		**$760.80**
Total Avoid		**2**		**21**	**664.19**	**16.32**		**$1401.44**
Total Avoid		**4**		**10**	**210.23**	**5.16**		**$52.56**
Total Avoid		**5**		**5**	**164.11**	**4.03**		**$41.03**
Total Avoidable		**All**		**43**	**1399.10**	**34.38**		**$2255.83**
Total Unavoidable		**All**		**8**	**119.94**	**2.95**		**N/A**

Differences in summary values between app and report due to rounding

Notes
Block - Production test

SB4X - Stratum Prod test

Survey Date: April 25, 2017
Surveyor: Joe da Surveyor

9.1.3. Plot Tally Report:

The Plot Tally report presents all of the information collected within a waste plot. The report also summarizes the plot volume and reports any notes: collected by the surveyor.

Waste Plot Tally Card

Licence	CP	Block	Date	Cert	Refit	B Line	Strip	Plot	Measure	Stratum		
A72894	B	B1	03/29/2017	341D	234		0	1	0	R	B	0	X

	Gross Dimensions for Pieces Inside Plot										Deductions for Rot/Holes				Outside Measurements				
Status	Piece Number	Borderline	Species	Kind	Class	Length	Top Diameter	End Code	Butt Diameter	End Code	Grade	Length	Top	Butt	Decay Code	Far End	Add Length	Comment Code	Notes	Piece Volume
O	1	I	HE	W	A	19	14	C	15	B	2					0	0			0.1257
O	2	I	BA	W	A	3	13	B	13	C	4					0	0			0.0159
O	3	I	HE	S	U	1	27	C			2					0	0	OB		0.0229
O	4	I	BA	W	A	9	10	B	11	C	2					0	0			0.0312
O	5	B	LO	L	A	6	10	B	10	N	5					0	0	MB		0.0189

Plot Volume: 0.215
Notes
Plot -

Survey Date: **April 25, 2017**
Surveyor: **Joe da Surveyor**

9.1.4. Plot Prediction Report:

The Plot Prediction report summarizes the information collected on a Ratio Sampling Prediction Plot. The information will be exported from EForwasteBC and used later in the full compilation of the block and reporting unit results. Generation of the plot prediction report is only required on Ratio sampling projects.

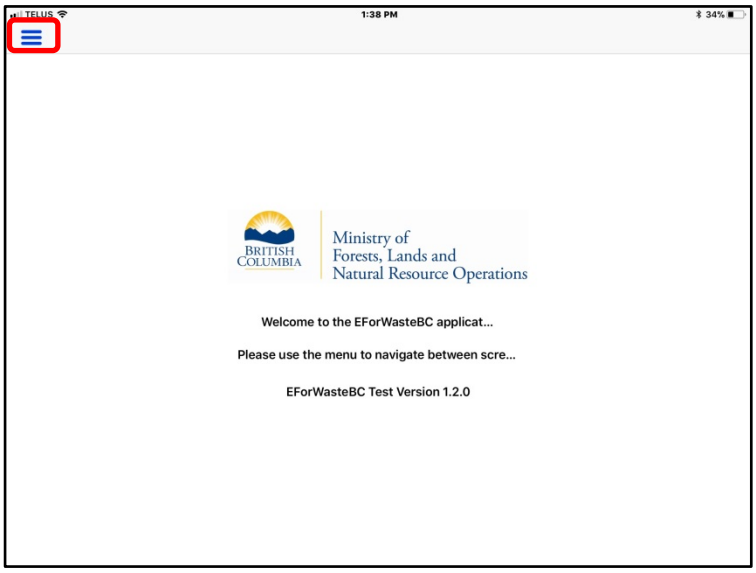
Surveyor	Reporting Unit	License	CP	Block	Stratum (IE. SG2X)	Plot No.	Time stamp	GPS coordinate	Random Selection indicator	Predicted Green Volume	Predicted Dry Volume	All prediction attempts
Test	45	A16789	12	34	DC2L	1	2017-04-05 15:54	N/A	NO	2	4	New Plot Added
Test	45	A16789	12	34	DC2L	2	2017-04-05 15:54	N/A	YES	2	4	New Plot Added

9.2. View Reports

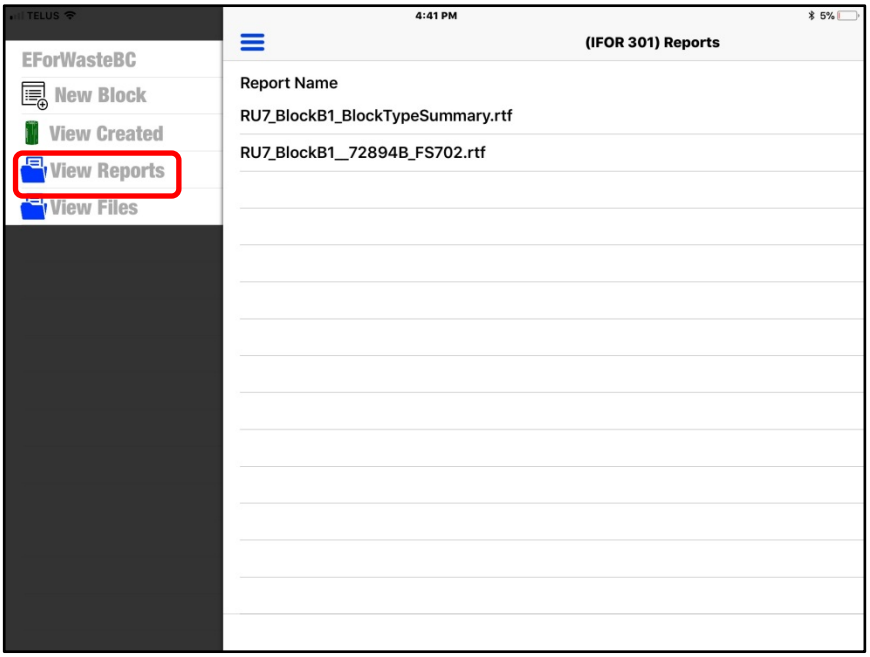
The user has the option to view the reports in several ways, within the EForwasteBC application, on 'Pages' as a PDF, email or via export to a PC where they can be viewed in 'rtf' format or converted to a pdf document.

9.2.1. View reports in EForwasteBC

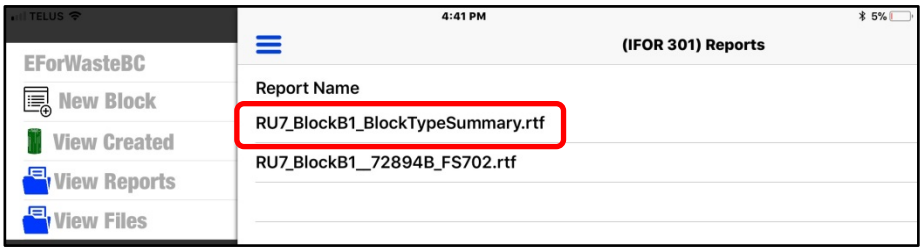
1. Tap the **EForwasteBC Menu** button.



2. Tap **View Reports**.



3. All available reports will be shown in the Reports list (IFOR 301).

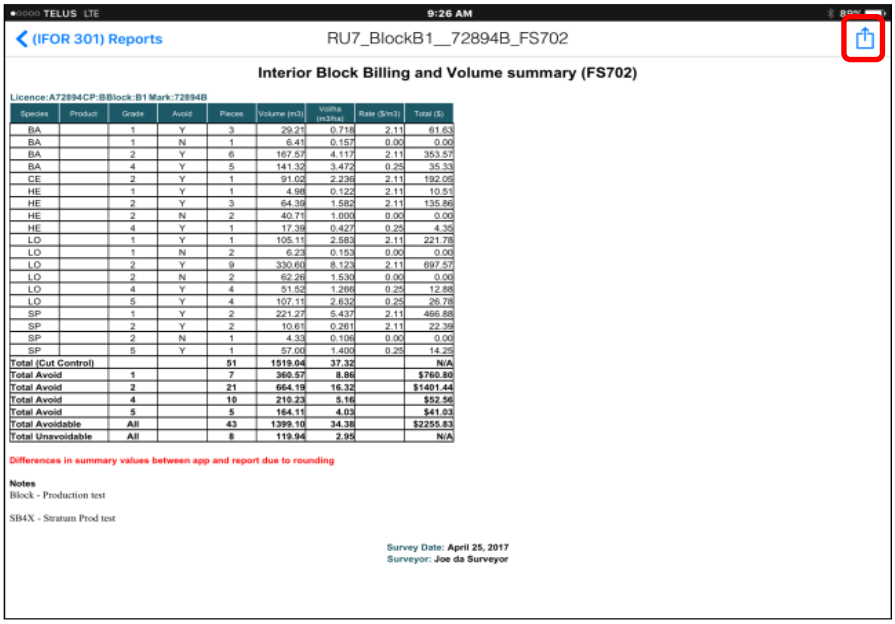


4. Tap a report to view the report in EForwasteBC.

Note: The report can be viewed within EForwasteBC however; the format and size may be difficult to read. It is recommended to open the report in 'Pages' or 'Adobe'.

9.2.2. View reports in 'Pages'

1. Open the report in EForwasteBC
2. Tap on the icon in the top right



Species	Product	Grade	Avoid	Pieces	Volume (m3)	Vol/ha (m3/ha)	Rate ($/m3)	Total ($)
BA		1	Y	3	29.21	0.718	2.11	61.63
BA		1	N	1	6.41	0.157	0.00	0.00
BA		2	Y	6	167.57	4.117	2.11	353.57
BA		4	Y	5	141.32	3.472	0.25	35.33
CE		2	Y	1	91.02	2.236	2.11	192.05
HE		1	Y	1	4.98	0.122	2.11	10.51
HE		2	Y	3	64.39	1.582	2.11	135.86
HE		2	N	2	40.71	1.000	0.00	0.00
HE		4	Y	1	17.39	0.427	0.25	4.35
LO		1	Y	1	105.11	2.583	2.11	221.78
LO		1	N	2	6.23	0.153	0.00	0.00
LO		2	Y	9	330.60	8.123	2.11	697.57
LO		2	N	2	62.26	1.530	0.00	0.00
LO		4	Y	4	51.52	1.266	0.25	12.88
LO		5	Y	4	107.11	2.632	0.25	26.78
SP		1	Y	2	221.27	5.437	2.11	466.88
SP		2	Y	2	10.61	0.261	2.11	22.39
SP		2	N	1	4.33	0.106	0.00	0.00
SP		5	Y	1	57.00	1.400	0.25	14.25
Total (Cut Control)				**51**	**1519.04**	**37.32**		**N/A**
Total Avoid		**1**		**7**	**360.57**	**8.86**		**$760.80**
Total Avoid		**2**		**21**	**664.19**	**16.32**		**$1401.44**
Total Avoid		**4**		**10**	**210.23**	**5.16**		**$52.56**
Total Avoid		**5**		**5**	**164.11**	**4.03**		**$41.03**
Total Avoidable		**All**		**43**	**1399.10**	**34.38**		**$2255.83**
Total Unavoidable		**All**		**8**	**119.94**	**2.95**		**N/A**

3. Select ‘Save PDF to Pages’

a. A message will appear ‘Saving to Pages’
b. Pages will open showing the report.
   i. You can now view the report in full size with the ability to zoom in as needed

9.2.3. Transfer Reports to PC

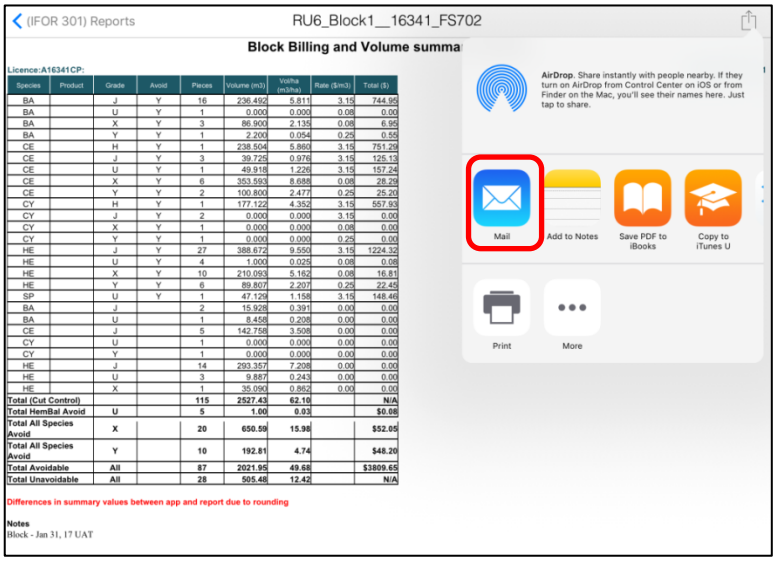
Once reports have been created, they can be transferred to the surveyor’s personal computer to edit, save, store, and share. The reports can be transferred by emailing or by direct connection to the PC through iTunes.

The report files are saved as .rtf (Rich Text Format files) and can be opened using MS Word. Word allows all fields/text in the report to be edited and saved.

9.2.3.1. Email

To transfer a report(s) from the iPad to the computer through email:

a. In the View Reports menu select a report
b. Select the share upload icon and tap mail.



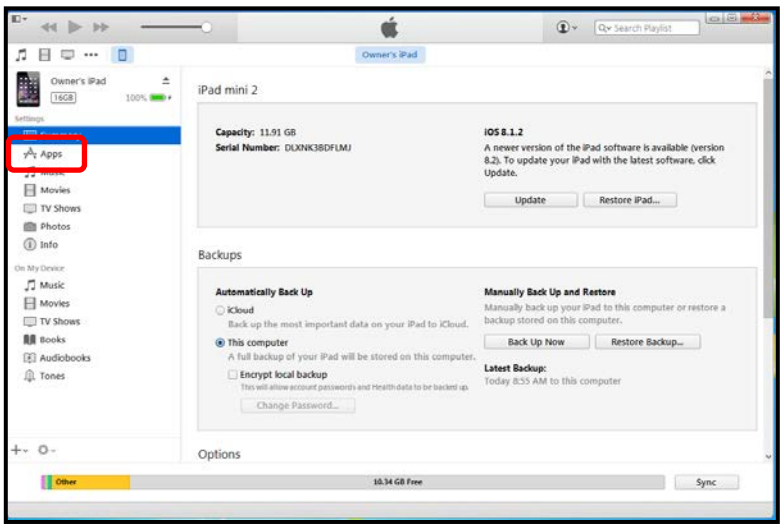
i. An email message will be generated with the report included as an attachment.
ii. Add your email address and any other recipients you wish to send the report to.
iii. Add a subject name
iv. Tap send and the report will be sent
v. Open the report from Microsoft Word
   1. The report can now be viewed, edited and saved as a word document.

9.2.3.2. ITunes

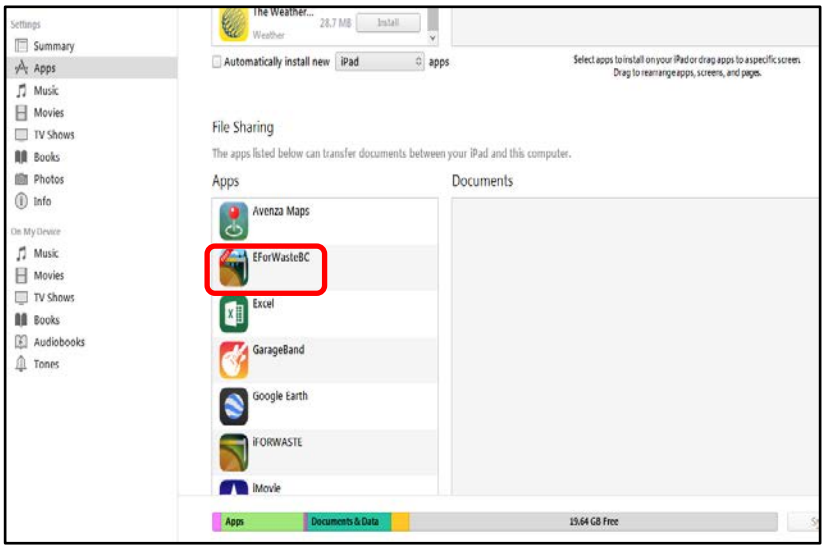
To transfer a report(s) from the iPad to the computer through direct transfer:

a. Plug the iPad into computer using the iPad supplied USB cable.
b. On the your desktop computer, open iTunes (this may happen automatically)
c. Click the iPad button on the top of the iTunes bar

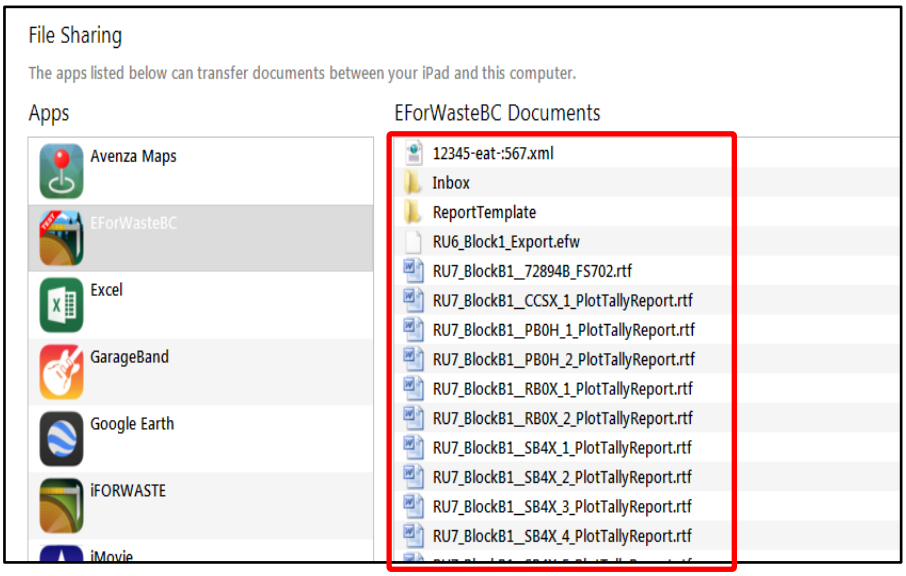
d. Under **Settings**, select **Apps**



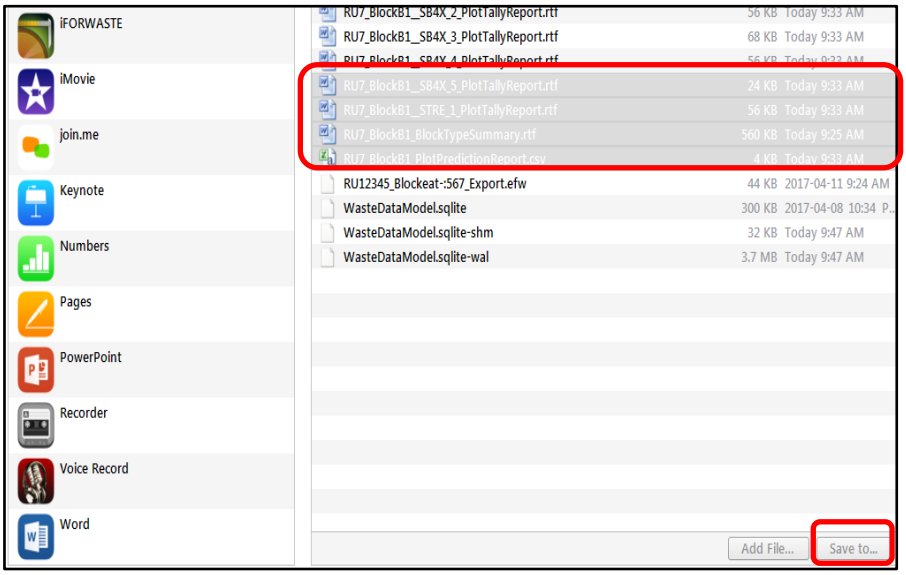
e. Scroll down to the bottom of the Apps screen to File Sharing section and click the **EForwasteBC** icon.



f. Once EForwasteBC icon is clicked, the **EForWasteBC Documents** section will be displayed.

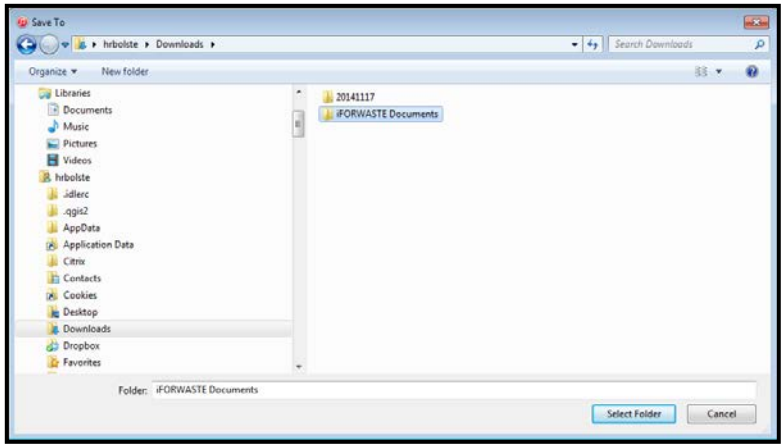


g. Select the report(s) to be transferred to the user's computer and click the Save To button.



*Note: Users can select multiple reports by holding **Shift** and clicking multiple files in the EForwasteBC **Documents** section.*

h. Navigate to the appropriate folder on the computer to save reports to and click Select Folder.



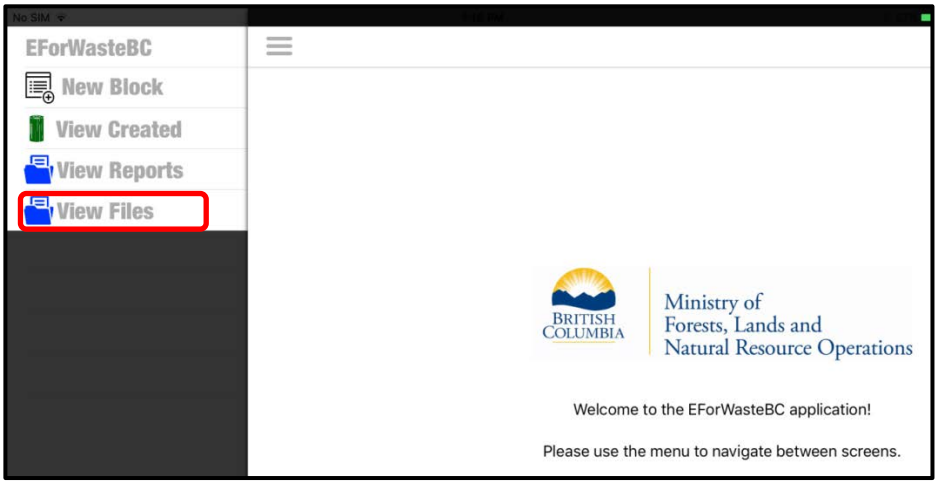
i. The Reports will be downloaded to the user's computer to the folder selected above.

10. View Files

The primary function of the View Files screen is to store, delete and transfer files that have been exported from a cut block or imported to the iPad. From the View Files screen the user can manage imported and exported files or email files to other people or places.

10.1. Storing files

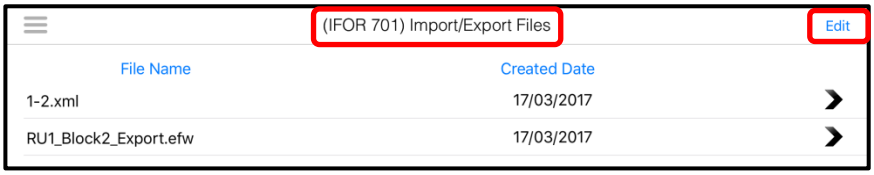
When a block is exported either to an EFW or XML file a copy of the file is stored on the iPad. All stored files are listed on the View Files screen. A file can then be sent to another user via email.



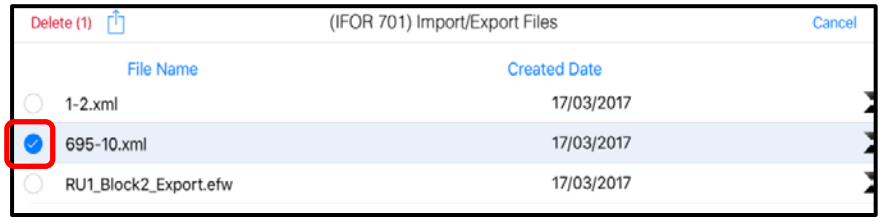
10.2. Emailing files (IFOR701)

Both EFW and XML files can be emailed directly from EForwasteBC via the IFOR701 screen. To email a file

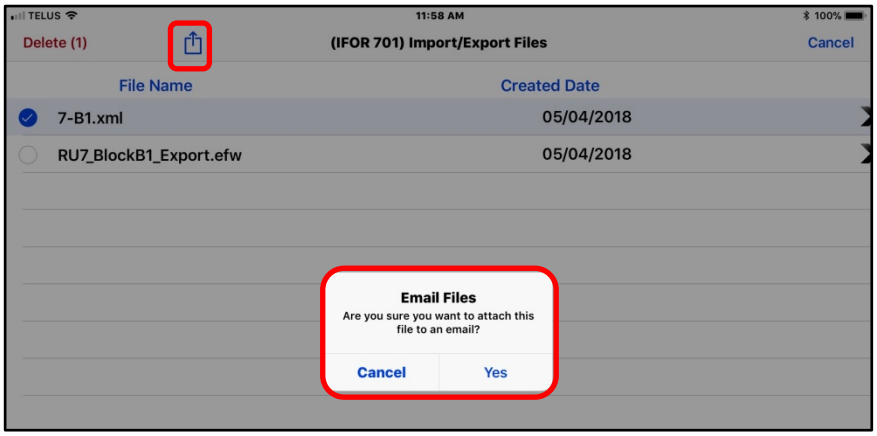
a. Select 'Edit' from the IFOR701 screen



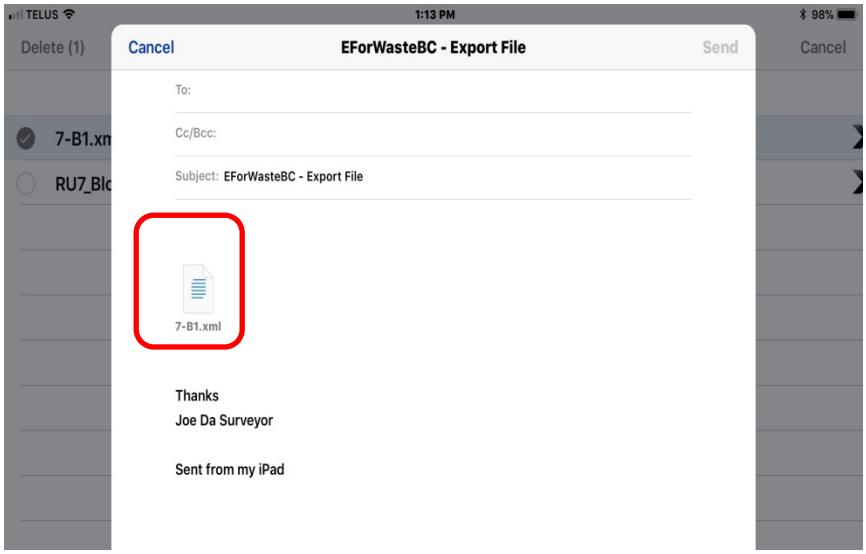
b. Select the file(s) to be emailed by selecting the radio button to the left of the file.



c. Select the upload file icon and then select yes when prompted to attach the file to an email.



d. An email will be automatically generated with the file(s) attached.



e. Address the email and tap 'Send'.

2. The files will be sent via email to all addresses selected.

10.3. Importing files

Blocks can be imported into EForwasteBC in two ways, via email or iTunes. Blocks imported through email are opened directly from an email. Blocks imported via iTunes must be manually transferred and are stored on the View Files page then 'imported' into the View Created page.

10.3.1. Importing by email

a. Cut Block files (.EFW) can be imported directly into EForwasteBC from emails.
   i. Open the email containing an .EFW file on the iPad.
   ii. Tap the file icon then select EForwasteBC from the sharing dropdown.

The file will be imported directly into EForwasteBC with two possible outcomes

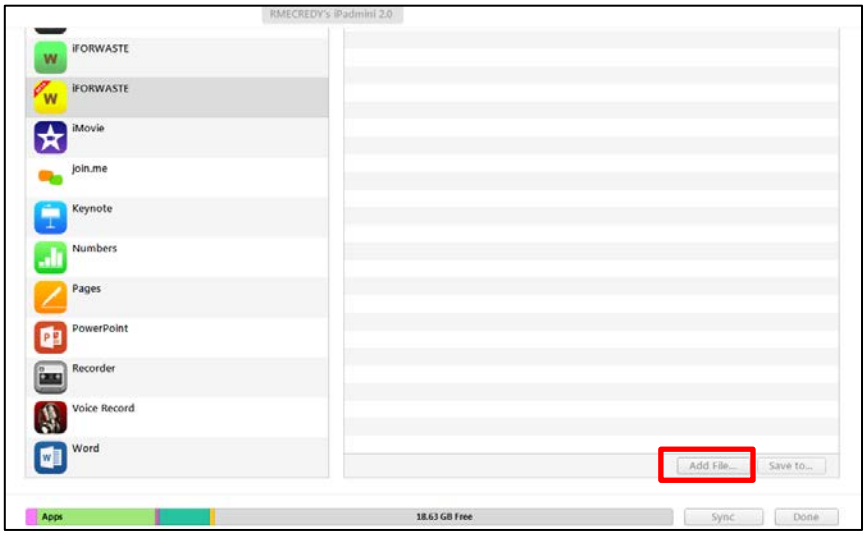
1. A message advising the import was successful will be displayed

2. A message advising the import failed because the cut block already exists is displayed. If you still wish to import the file you will need to delete the original version and reattempt the import process.

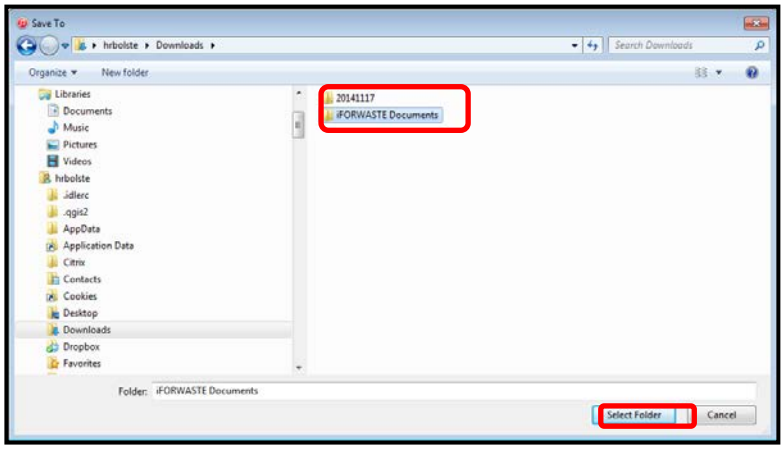
10.3.2. Importing through iTunes

a. Connect the iPad to a computer and access the application files as instructed in section 9.2.3.2.

b. In the **EForwasteBC** Documents section select the 'Add File Button'

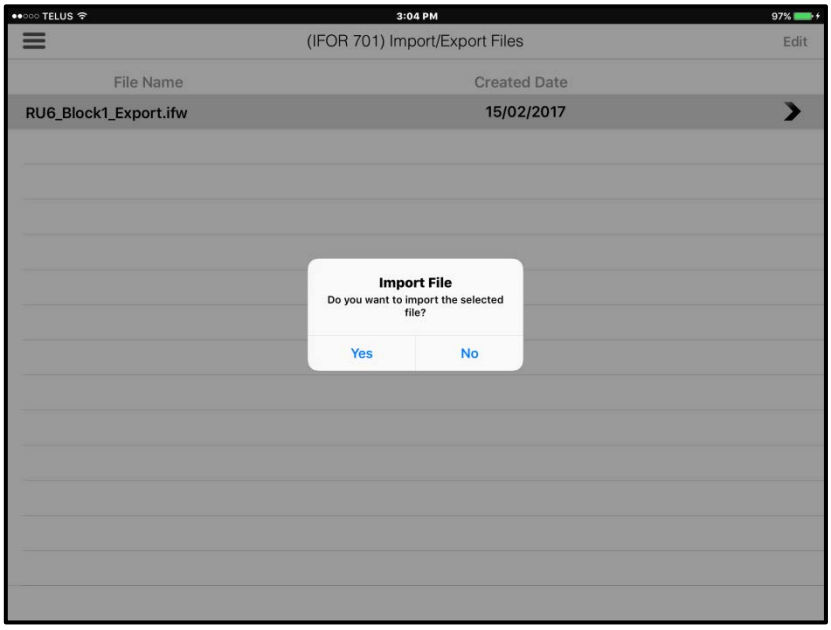


c. Navigate to the appropriate folder on the computer containing the file to be imported and select the file.



d. The file will be transfered to the user's iPad and appear in the IFOR701 Screen.

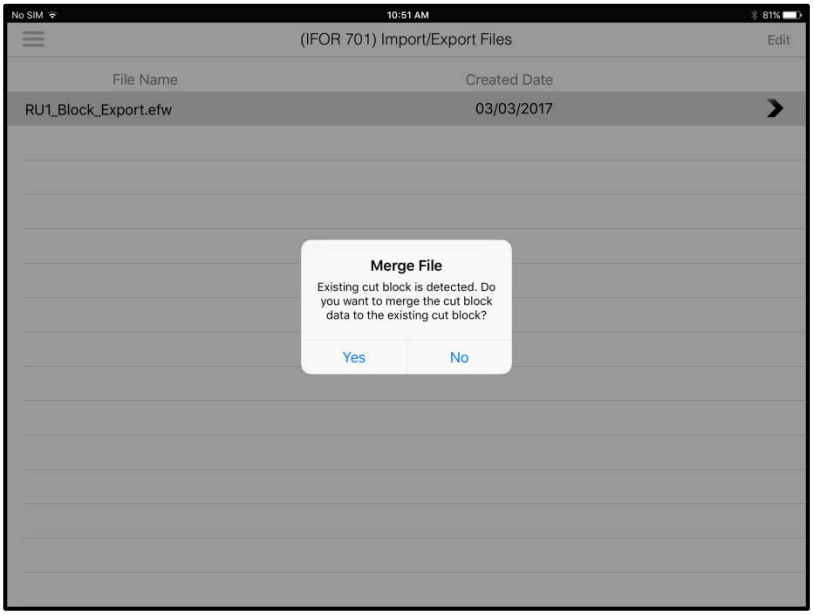
e. On the iPad, select the file. A window will appear asking if you want to import the selected file.



Select 'Yes' and the block will be downloaded into the 'View Downloaded' screen.

11. Merging Files

EForwasteBC allows the user to merge (combine) files created on different iPads. The merge feature will be triggered when the user imports cut block data from an email or an exported file in the “View Files “screen (IFOR 701). The application detects an existing cut block when the same Cut Block ID, Cutting Permit ID (CP), Reporting Unit number and License exists. A pop up window will appear asking the user if the imported data should be merged with another block.



The merge feature will only succeed if the following conditions exist.

- The Cut Block screen (IFOR 202), Stratum Screen (IFOR 203) and Timber Mark screen (IFOR 401) in both Cut Blocks are identical.
  - If any field on these screens contains different data the merge will fail.
    - The application will show a list of mismatched field names.
  - If originating file contains data in a field and the same field in the imported file is blank the merge will be accepted.
    - The data contained in the field will be maintained in the new dataset.
  - A stratum cannot contain duplicate plot numbers.
    - When a duplicate plot number exists the merge will fail and the application will show a list of duplicate plot numbers.

11.1. The Merging Process

The merge process allows two files, (original and import files) to be merged into a single file on the originating iPad. The merged file will contain the block header information (cut block screen- IFor202) and any unique strata and plot data contained within each file to be merged. Within a given stratum all unique plot numbers will be merged as well as all plot data.

- Example:
  - iPad A
    - Reporting unit 123456
    - License A98765
    - Cutting Permit A1
    - Cut Block 1
      - Stratum: SB2X
        - plots: 1, 3, 5, 10, 12
      - Stratum PB0X
        - Plots 1,2,3,4
  - iPad B
    - Reporting Unit 123456
    - License A98765
    - Cutting Permit A1
    - Cut block 1
      - Stratum: SB2X
        - Plots: 2, 4, 6, 7, 8, 9, 11
      - Stratum: CCSX
        - Plot 1
  - Will become
    - iPad A
      - Reporting unit 123456
      - License A98765
      - Cut block 1
        - Stratum: SB2X
          - plots: 1,2,3,4,5,6,7,8,9,10,11,12
        - Stratum PB0X
          - Plots 1,2,3,4
        - Stratum: CCSX
          - Plot 1

Caution:

- Cut block Screen (Ifor202) fields: **Return number, Surveyor License, Name, Designation, Number** and **Position** in the imported file will not be copied to the 'parent' file. The surveyor name will be retained within each plot in the 'child' and 'parent' file
- Plot header information created within each iPad will be retained after a merge.
- Notes contained in each file will be appended to the originating file.
- It is recommended that the file containing the majority of information be used as the originating 'Parent' file.

Appendix A: iPad Basics

This section outlines general iPad practices for users who are new and unfamiliar with the general functions of an iPad.

1. Turning the iPad On and Off

To turn on the iPad:

1. Find the Sleep/Wake button on the top right of your device.
2. Press and hold down the button for a few seconds. The device will turn on.

3. If a passcode has been set on the iPad, enter the passcode.

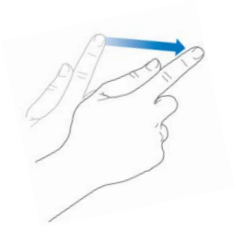
To turn off the iPad:

1. Find the Sleep/Wake button on the top right of your device.
2. Press and hold down the button for a few seconds until a small slide bar appears across the top of the display.

3. Drag the slider to power off the iPad.

2. Navigating between iPad Home Screens

The user can navigate between home screens by swiping to the side to move from screen to screen. This can be required for navigating to the EForWasteBC app.


3. Arranging Apps on the Home Screen

An iPad can display up to 11 home screens, allowing for plenty of room to organize apps that are loaded onto the iPad.

To move apps on a Home screen:

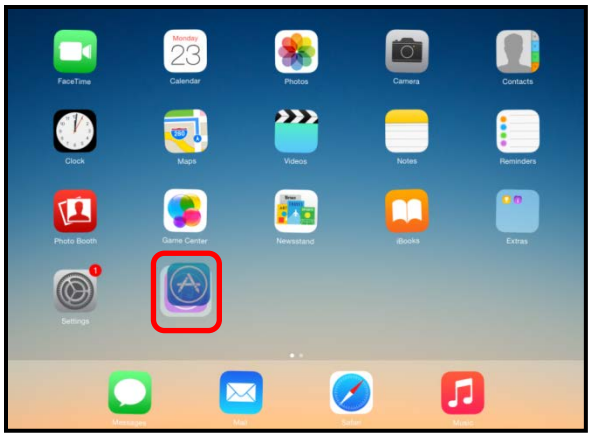
1. Tap and hold any app on that page. The app icons all jiggle.
2. Press, hold, and drag an app icon to another location on the screen to move it.
   a. To move an app from one screen to another, while apps are jiggling, you can tap and drag an app to the left or right to move it to the next screen.
3. Tap the **Home** button to complete the app move (stops icons from jiggling).

3.1. Organizing Apps into Folders

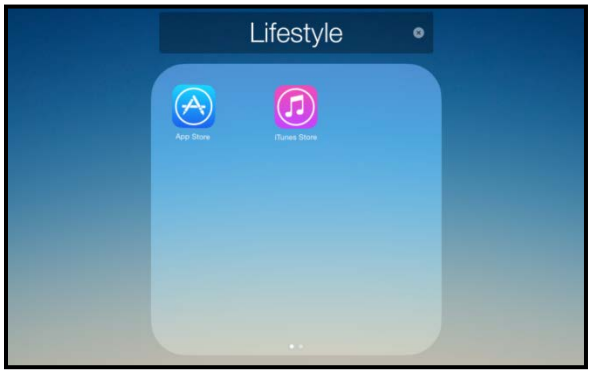
IPad lets you organize apps into folders to sort common uses and functions.

To create an apps folder:

1. Tap and hold any app on that page. The app icons all jiggle.
2. Drag an app on top of another app.

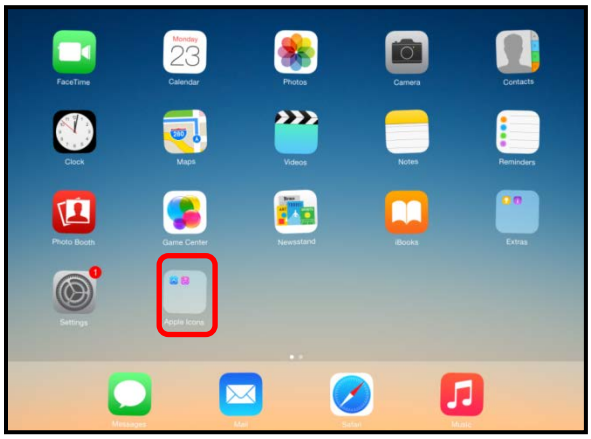


3. The two apps get added to a single folder.



4. Change the name for the folder by tapping in the name field and typing the folder name to be used.

5. Tap anywhere outside of the bar to save the name and folder.



6. Tap the **Home** button to complete the app move (stops icons from jiggling).

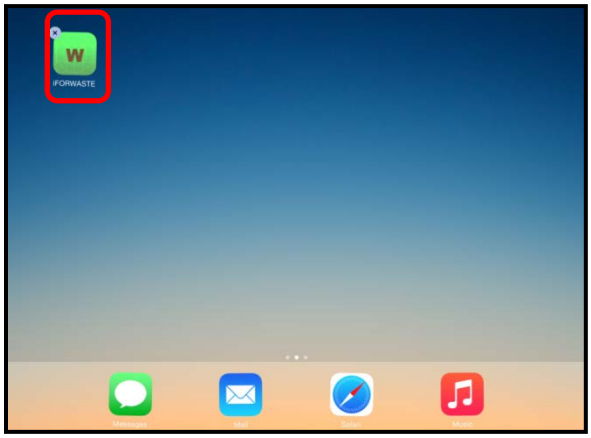
3.2. Deleting Apps From iPad

When an app is no longer needed it can be deleted to save space on the iPad.

Note: Apps that come built into the iPad cannot be deleted.

To delete an app from the iPad:

1. Navigate to the app to be deleted. Tap and hold the app until all apps begin to jiggle.
2. Tap the **Delete** button (small x in the top left of the icon) for the app you want to delete.



3. In the confirmation dialog, tap **Delete** to proceed with the deletion.
4. A dialog asking to rate an app before deleting it appears. Either tap the **Rate** button to rate the app or **No Thanks** to opt out of the survey.

4. Unique IPad settings for EForwasteBC

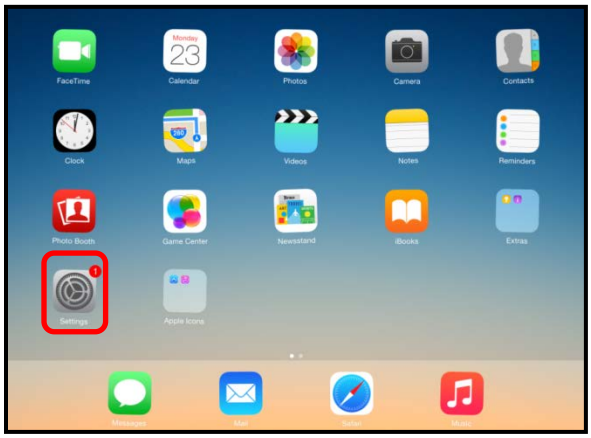
4.1. Passcode

4.1.1. The "Require Passcode" option allows the user to set the amount of time that passes by before the iPad asks for a passcode.

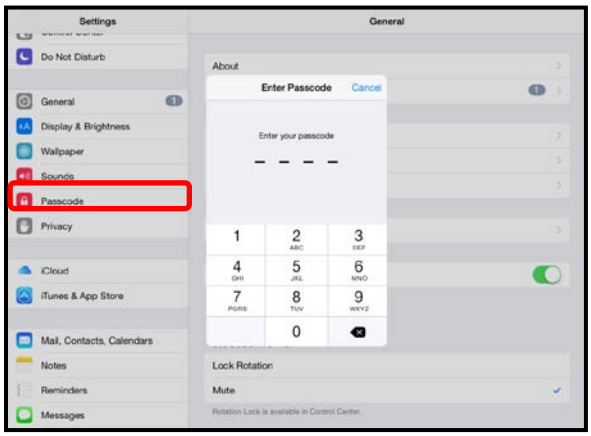
- "Immediately" will request that you enter a passcode upon turning on the device or waking it up from sleep.
- Otherwise, you can pick a time between 1 minute to 4 hours for the lock time. iPads typically use a default setting of 15 minutes.

The user can use the following steps to set a password for the user's iPad.

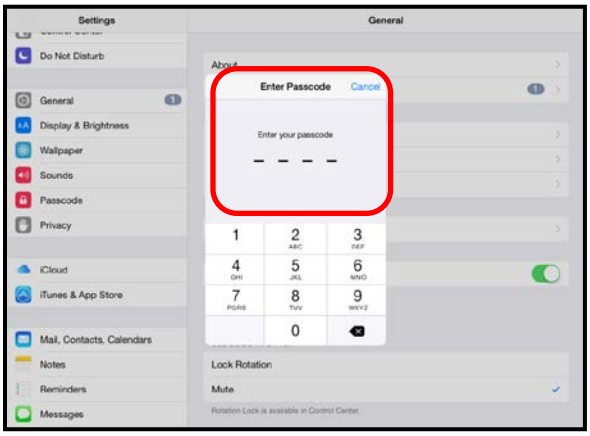
1. From the iPad Home screen, tap **Settings**.



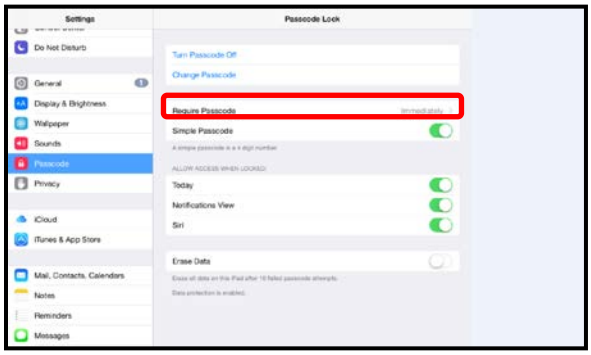
2. Tap **Passcode**.



3. The Passcode Lock screen appears. Enter the **iPad Passcode**.



4. Tap **Require Passcode**.



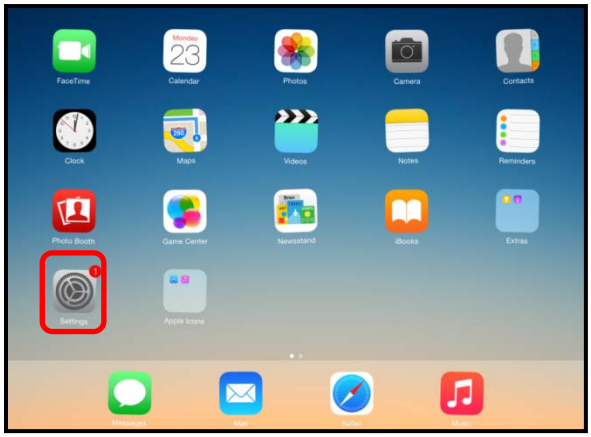
5. Select the desired length (recommended option is 1 hour).

4.2 Font Size

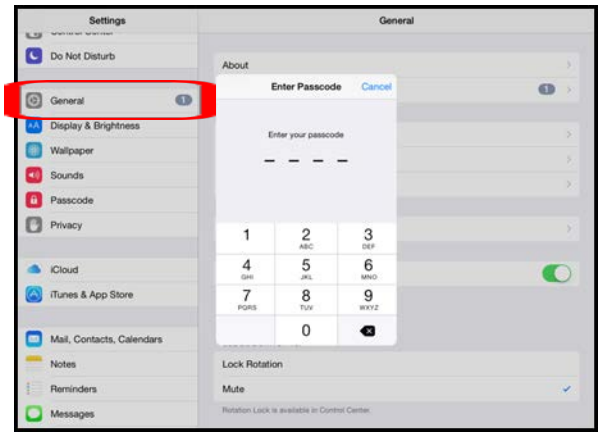
4.2.1 The default iPad font size needs to be reduced to allow some of the screens to display correctly.

4.2.1.1 The user can use the following steps to set a password for the user's iPad.

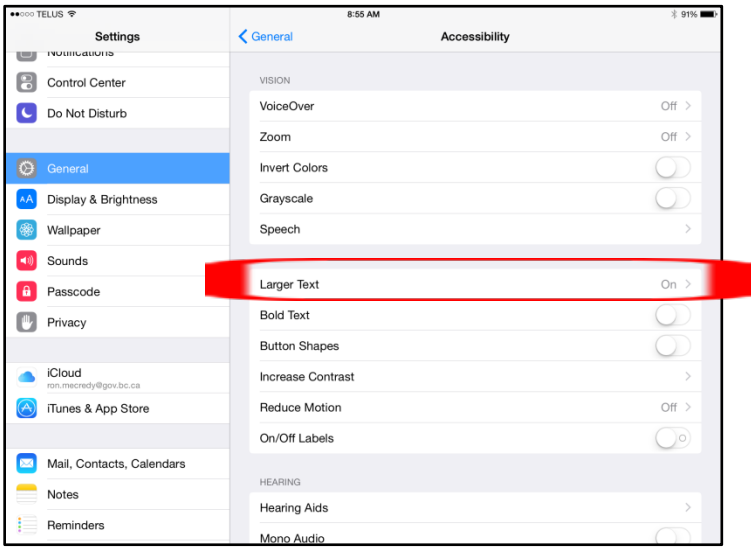
1. From the iPad Home screen, tap Settings.



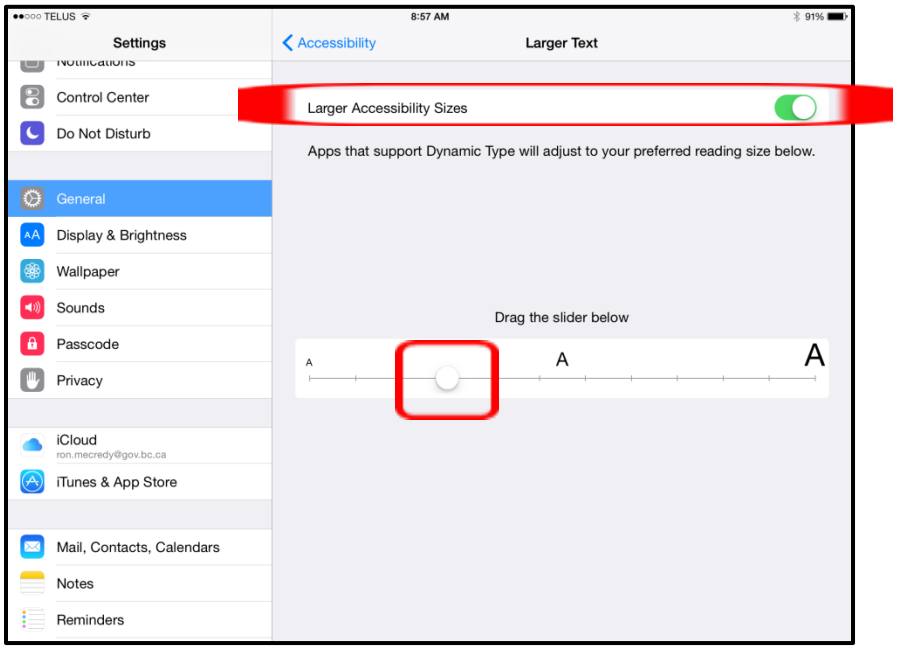
2. Tap **General**



3. Tap Accessibility



4. Tap 'Larger Text'
   4.2 Set 'Larger Accessibility Sizes' to On
   4.3 Set Scroll bar to 3rd setting point



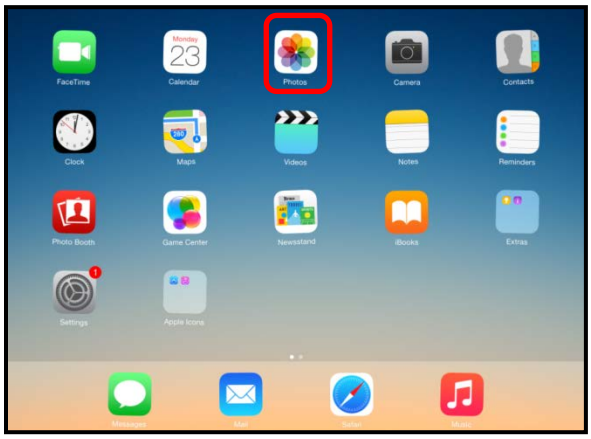
5. Taking Screenshots

To take a screenshot on your iPad:

1. Locate the Home and Sleep/Wake buttons. The Home button is located directly below your iPad's display. The Sleep/Wake button on the top right of your device.

2. Simultaneously press the Home button and Sleep/Wake button when viewing the screen you want to capture. The iPad will flash if done correctly.

3. Once screen is captured, photos will automatically be saved in the **Photos** app. The screen shot can then be transferred to a desktop computer or emailed if the iPad has that capability.



4. Navigate to Photos app to view captured screenshot.

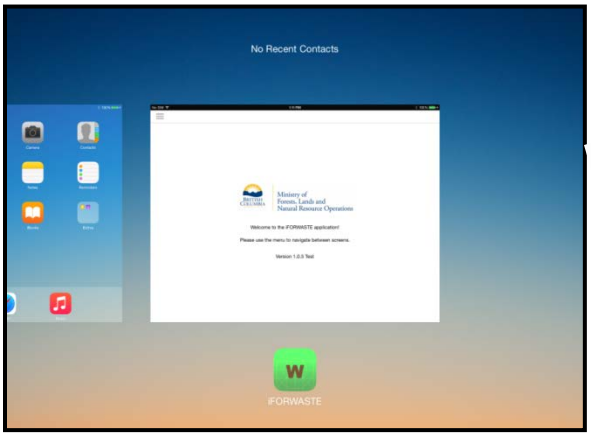
6. Closing an Application

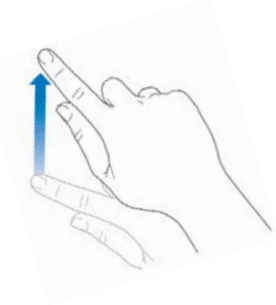
Tapping the home button will minimize the current application the user is using and open the Home Screen. This will not close the application properly and it will still be open in the background.

To close an application:

1. Double click the home button to open the multitasking screen.

2. Press and hold the application window to be closed and swipe to the top of the screen.





7. User Guide

The Apple iPad user Guide contains all general information for the iPad including:

- An overview of iPad buttons and screens
- Common iPad functions
- Customizing the iPad
- General iPad help

The User Guide for the iPad 4 Mini can be found at the following location:
https://manuals.info.apple.com/MANUALS/1000/MA1595/en_US/ipad_user_guide.pdf

8. Protective Case

Care and Maintenance for a protective case can be found on the 'Survivor' website:
http://griffintechnology.com/support/survivor)

To clean a protective case:

1. Remove the iPad from the protective case
   i. Be sure to use a flat and stable surface when removing iPad from protective case.
   ii. Unclip screen protector from plastic shell, starting at the top of the iPad.
   iii. Place both hands on both sides of the top left corner of the case. Use your thumbs to press out and down on the case until you hear a click. Work your way around, repeating this motion on the other corners of the case. When pressing down on the third corner, the iPad will come out of the hard plastic shell.
2. To clean the protective case it is suggested to us a clean, lint free cloth with warm water. Avoid applying corroding cleaning products such as alcohol and chemical based cleaners.
3. Be sure to allow protective case to completely air dry before putting the iPad back into the case.