# Standard Operating Procedure for RFID Scanning


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Materials and Tests Unit

Materials & Tests Unit

NCDOT

# Standard Operating Procedure for RFID Scanning

## Objective:

To provide detailed instructions to assist approved M&T representatives with the process of scanning and recording RFID tags.

## Equipment Required:

- RFID Scanner (AT288 or Grokker)
- Tablet

## Pre-Inspection Process:

- Access the Idencia website- https://ncdot.idencia.net/ to generate the NCDOT Producers Production Report for the Precast facility you will visit.
- Review the report to verify the cast data. Print the report and take it with you to the facility.
- Sync the Idencia app on the tablet.
- Sync the RDIF scanner you will be using.:

  AT288 Scanner
  - The AT288 Scanner and the tablet will need to be connected via Bluetooth.
  - The AT288 Scanner will need to be paired with the Idenica app on the tablet.

  Grokker Scanner
  - Connect the Grokker Scanner to the tablet by plugging the Grokker audio cable into the tablets audio port.
  - The Grokker will need to be connected with the Idencia app on the tablet.

## On-Site Process:

- Report to the facilities QC personnel. The facility will generate an Idencia Production Report. Review this report with the QC personnel.
- Access the Idencia app on the tablet. Select 'View Items' to find the producer and to view cast items and cast dates.
- Cylinder Breaks
  - Witness the QC inspector test the compressive strength for the cylinders.
  - Record the cylinder break data in the Idencia app.
  - Open the Idencia website via the tablet to verify the break data was saved.
  - Enter the cast name in the search box. Break data will display under Item Details.
- Visual Inspection & RFID Scanning Process:
  - Proceed to the yard to begin the inspection of the precast products.
  - Perform a visual inspection followed by scanning the RFID tag of each piece.
  - When visual inspection and scanning is completed, open the Idencia website via the tablet to run a Grouped Daily Inspection Report.
  - The Grouped Daily Inspection Report will display. Review the report to verify the scanned pieces and cast break data has been received by the NCDOT Idencia server.

# Equipment

AT288 Scanner

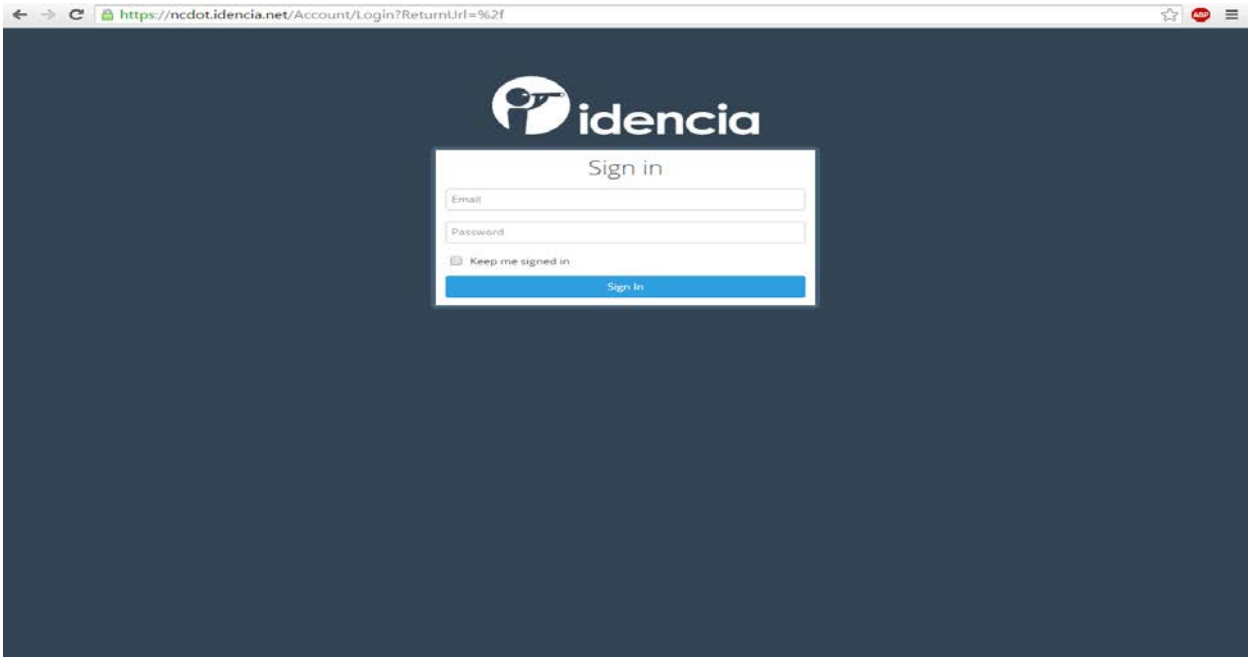
Tablet



Grokker Scanner

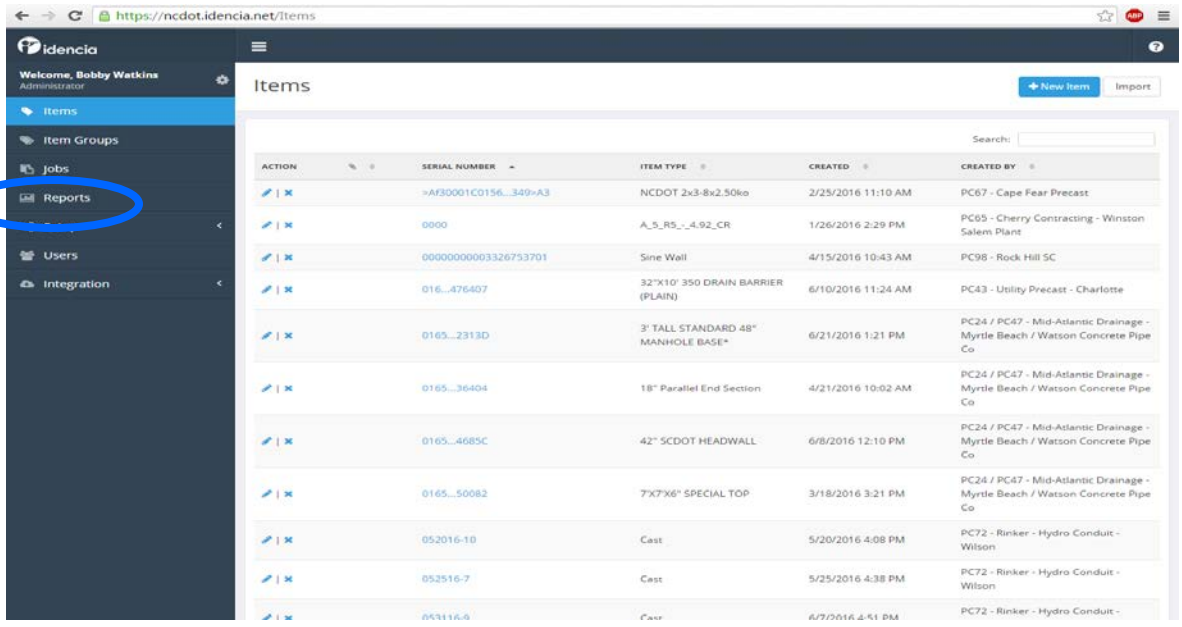
# Pre Inspection Process:

Prior to arrival at Precast Facility you should access the Idencia* website- https://ncdot.idencia.net/




Once logged into Idencia, you will generate the **NCDOT Producer Production Report** for the Precast Facility you will visit. This will give you cast and product details and will alert you to any errors that need to be addressed prior to the inspection.

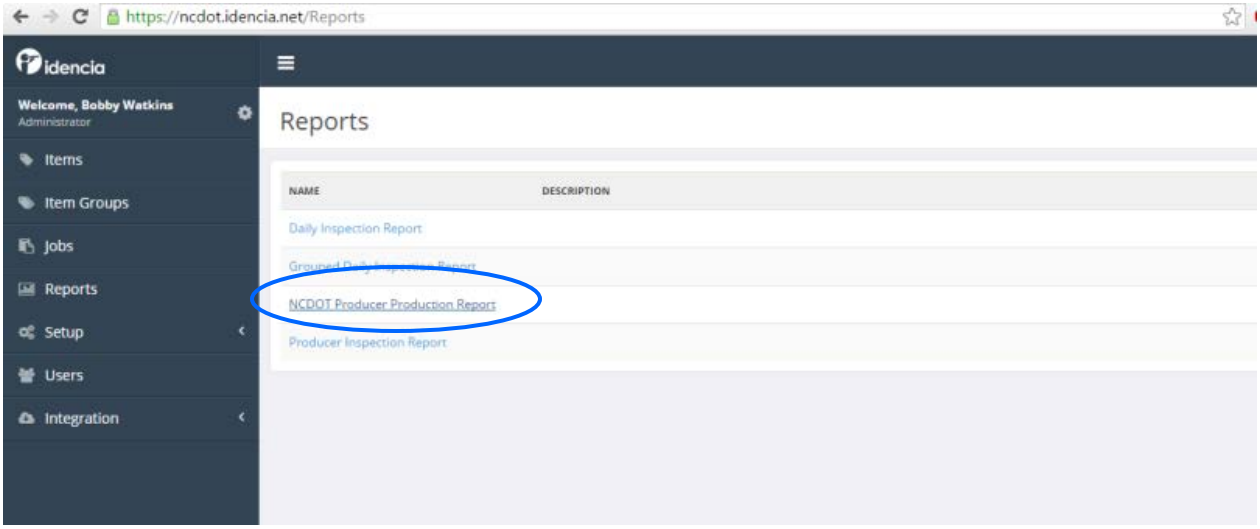
1. Click “Reports” on the left of the Idencia screen



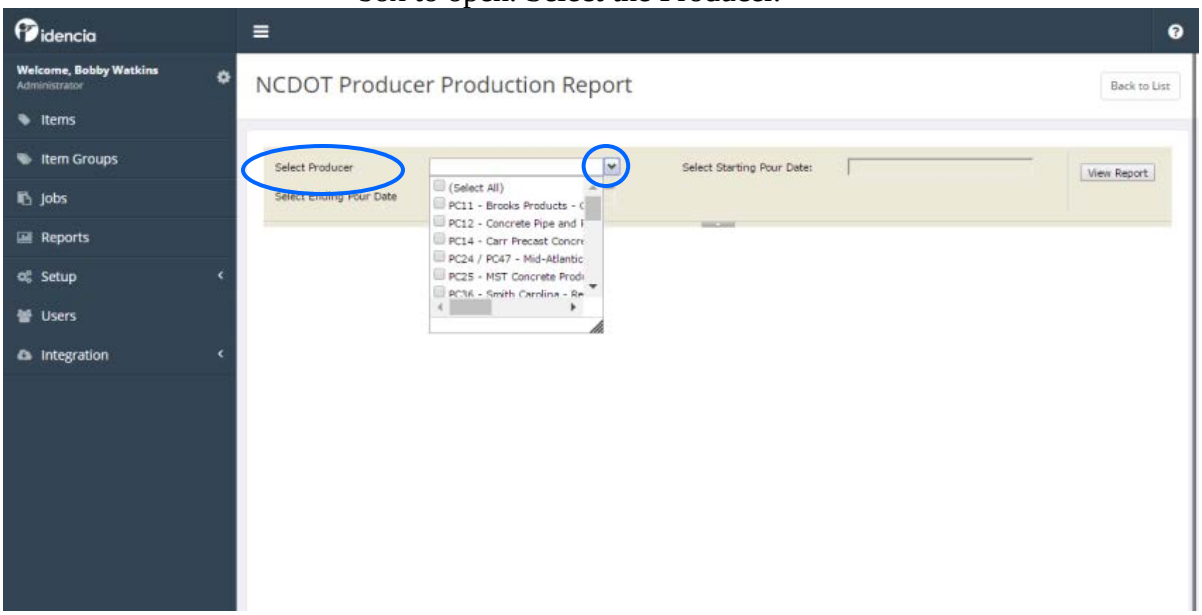

*Idencia-Applies RFID* Concrete Tracking to infrastructure products from the time of manufacture through end-of-life. The collection and management of data during production though the build and operating phases.*

*RFID-Radio Frequency Identification

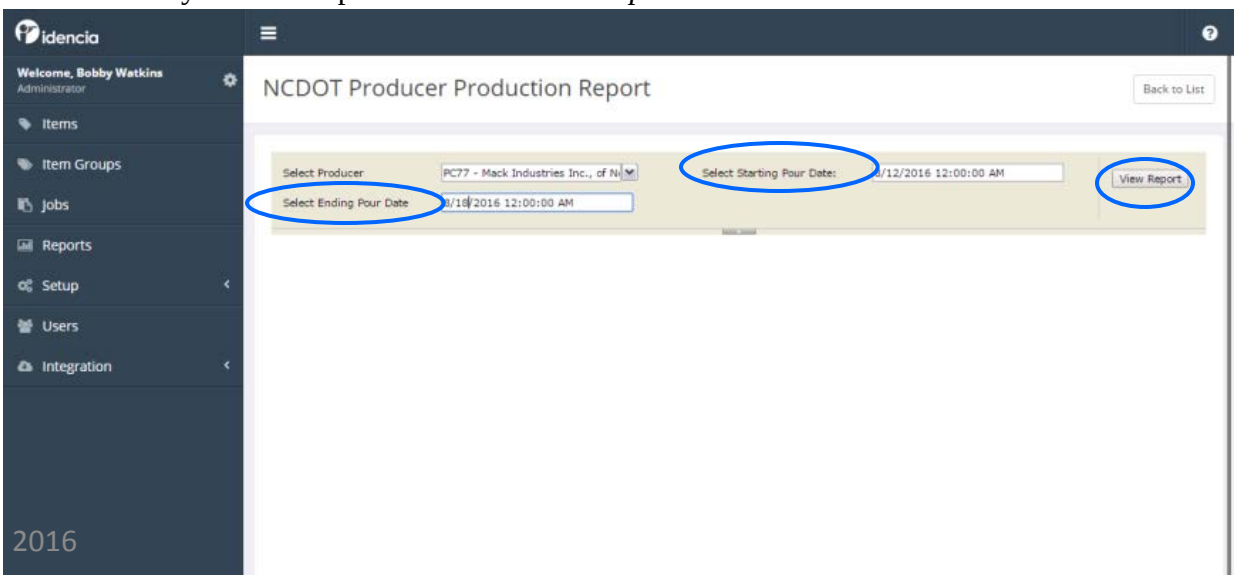
2. Click on NCDOT Producer Production Report



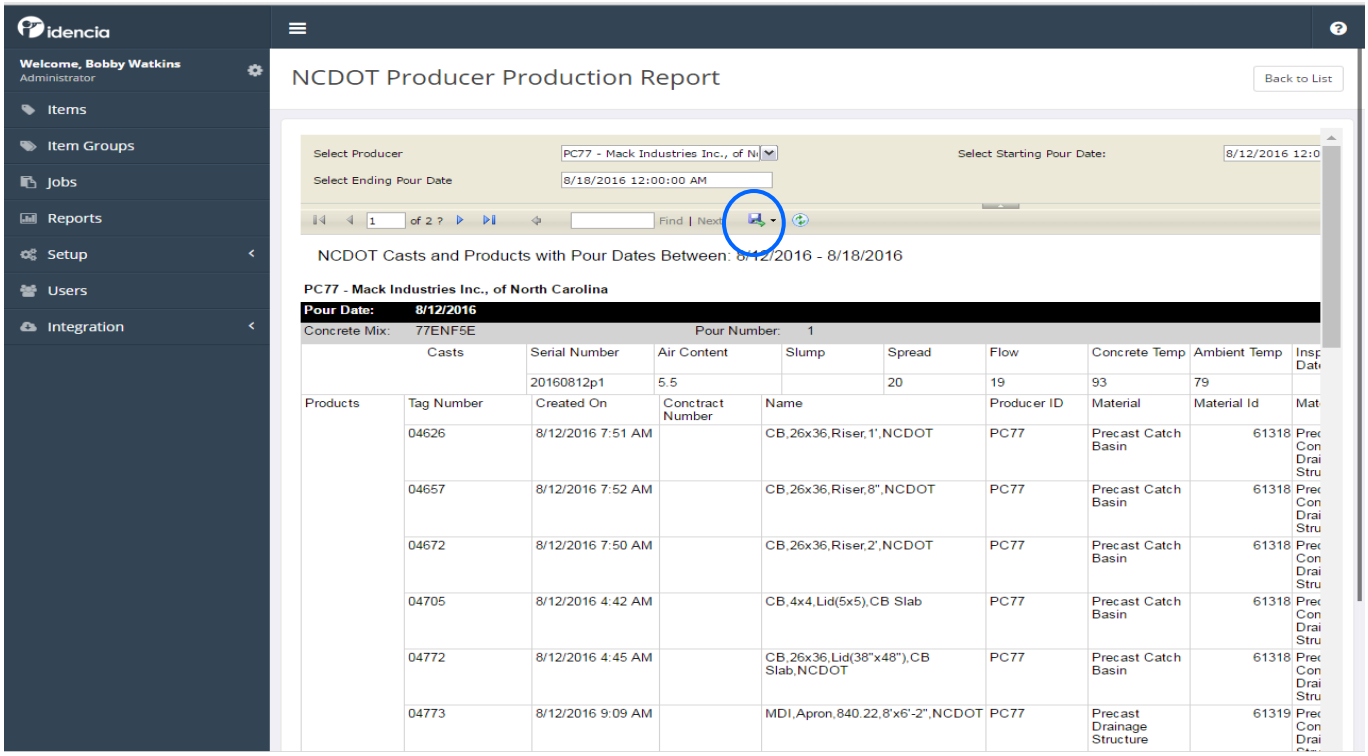

3. Click on the "Select Producer" down arrow for a drop down box to open. Select the Producer.




4. Select the *starting pour date* and the *ending pour date* based on your last inspection. Click *View Report.*

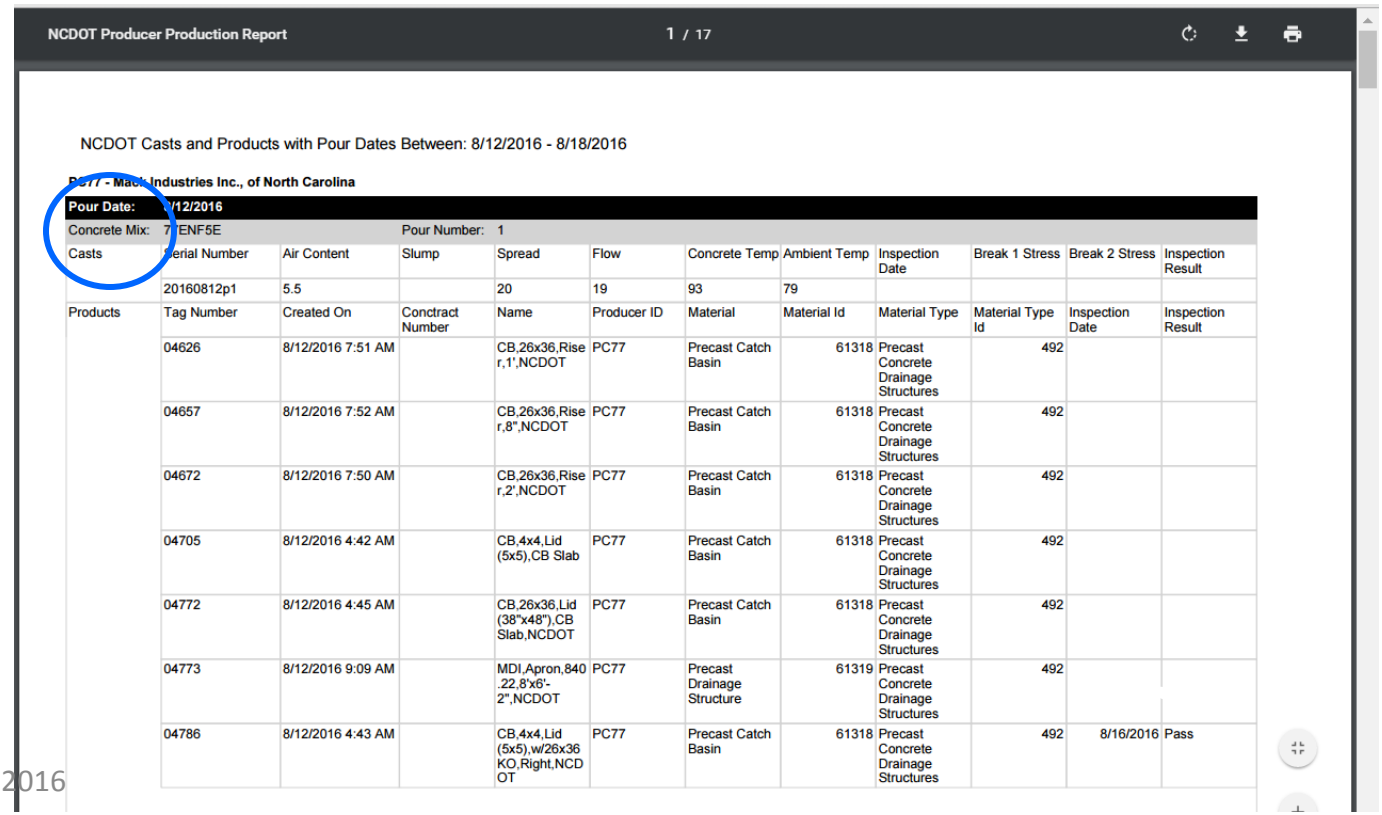


5. The report will display. To view the entire report, you will need to SAVE the report as a PDF. Click the Save icon. Select a location on your computer to save the report.




6. Locate and open the saved report on your computer-

- Review the entire report. Verify the ***Cast*** row has no missing data in the *Air Content*, *Slump*, *Spread*, *Flow*, *Concrete Temp*, *Ambient Temp* fields. Also check that the pour date and approved concrete mix design has been entered. **Print the report and take it with you to the plant**.



# AT288 Scanner


AT288 RFID Scanner must be “Paired” to the tablet prior to scanning Precast items.

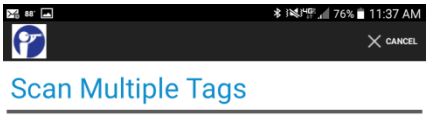
- Depress the power Key of the scanner and hold for 3 seconds to turn it on.
- Depress the IOS key, select the 6C setting. The 6C LED light will turn on.
- Depress the Bluetooth Key. The Bluetooth LED light will turn on.
- From your tablet, find and open tablet settings.
- Select Bluetooth from the selection.
- AT288 will appear under devices. This is the RFID Scanner.
- You will enter code 0000, then click OK.
- The RFID scanner is now paired with your tablet.

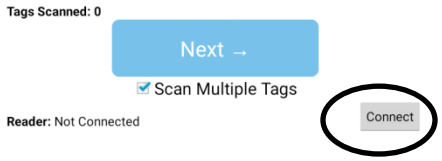
# Connecting the AT288 RDIF scanner to the Idencia app on the tablet

- Open the Idencia app from the tablet home screen
- 1. Select ***Scan Tag***
- 2. Select ***Connect*** in the bottom right corner
- 3. ***Select a device to connect*** window will open. Select AT288.
- 4. The AT288 scanner is connected and ready to read the RFID tags.

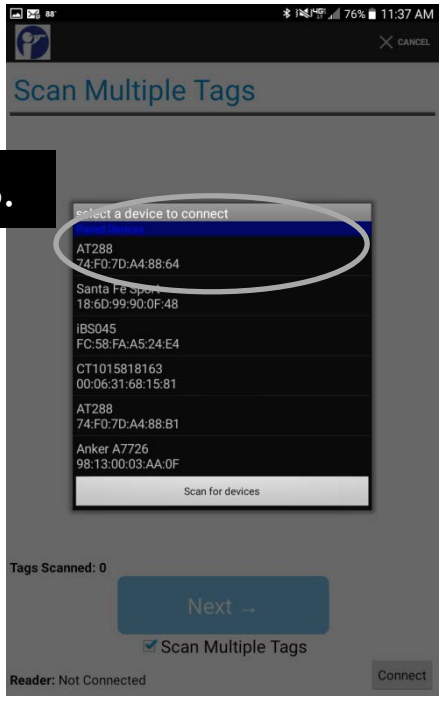
1.


2.

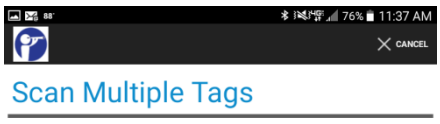


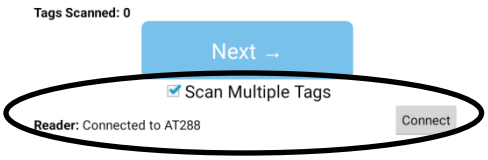




3.




4.



# Grokker Scanner


- Connect the Grokker Scanner to the tablet by plugging the Grokker audio cable into the tablets audio port.


- Once connected, open the Idencia app on the tablet.

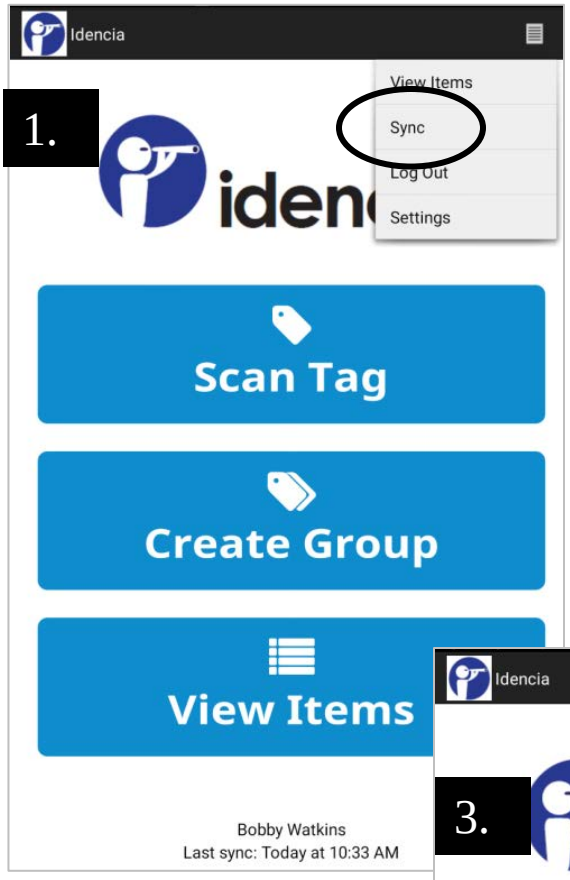
# Connecting the Grokker to the Idencia app on the tablet

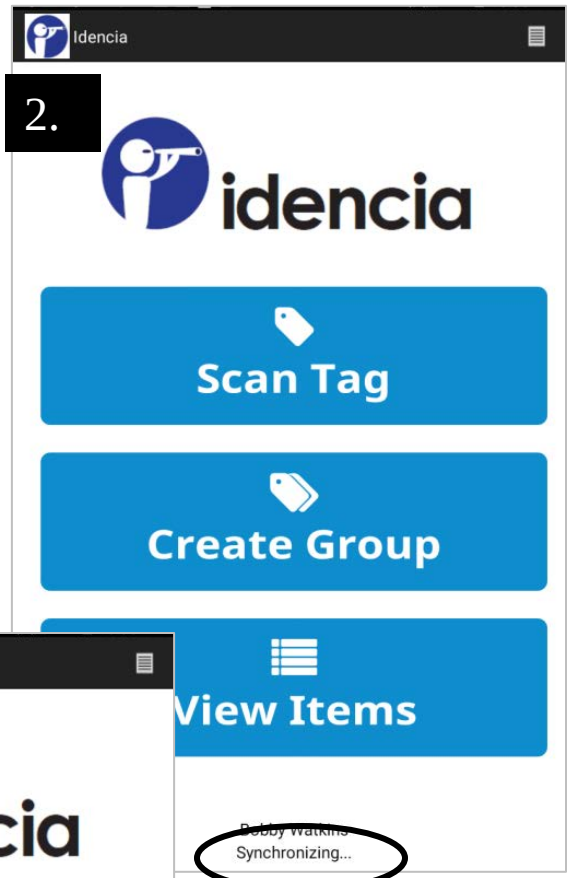
1. Select the white icon in the right corner of the app. Select ***settings*** from the drop down menu.
2. Settings will open. Select the default scanner ***U Grok it*** on the screen.
3. Select scanner box will open. Select U Grok it by touching the open circle.

# The Idencia app on the tablet will need to sync to ensure all data is current and up to date

Open the Idencia app from the tablet home screen

1. Select the white icon in the right corner of the app. Select ***Sync*** from the drop down menu.
2. ***Synchronizing*** will display at the bottom of the screen.
3. ***Last sync*** message will display with the current sync time.

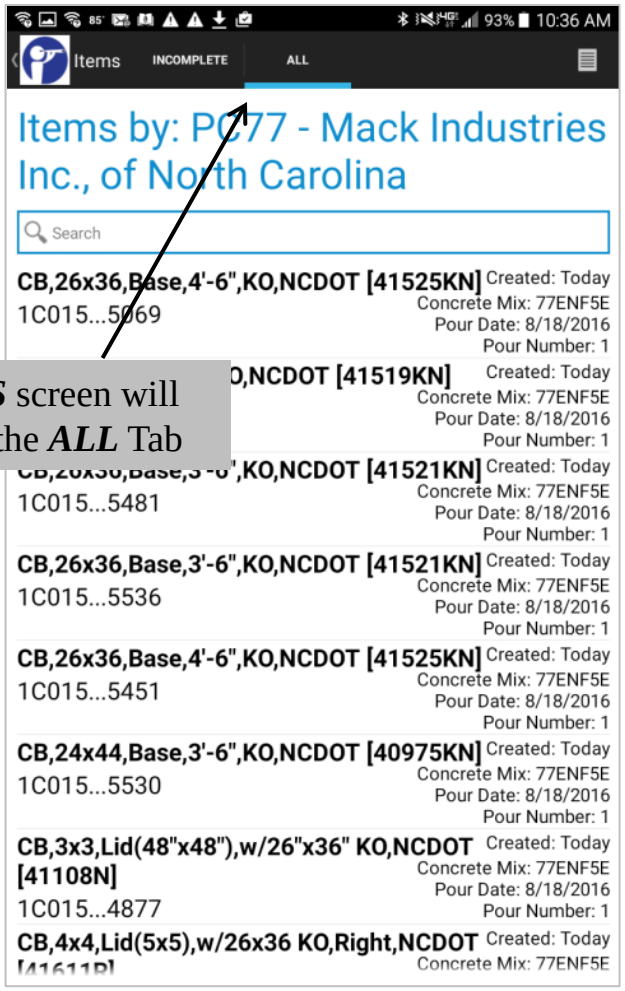


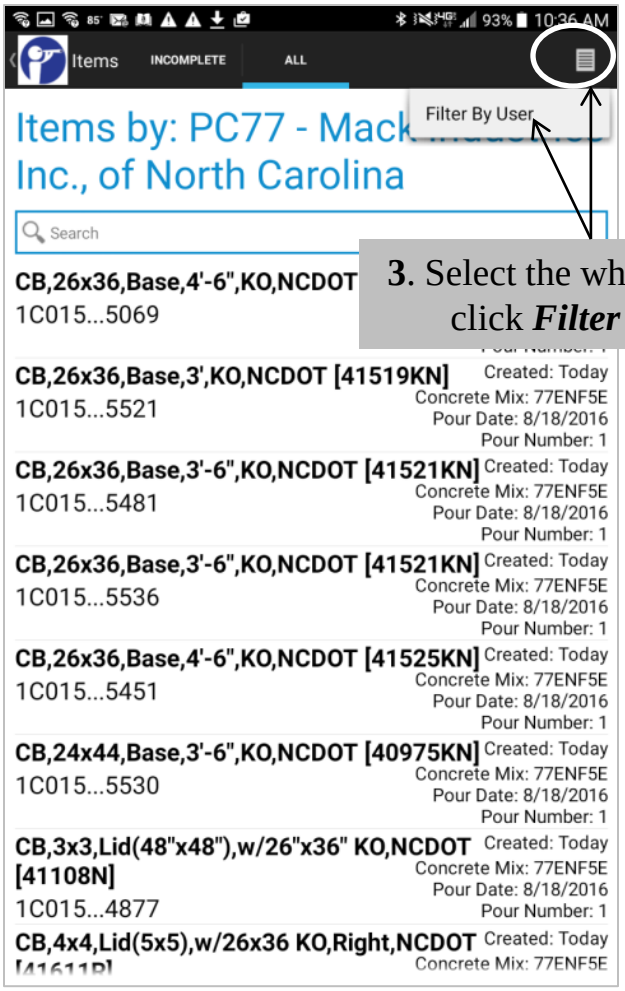

# Recording Cylinder Breaks

- Report to the facilities QC personnel. The facility will generate an Idencia Production Report. Review this report with the QC personnel.
- Access the Idencia app on the tablet. Select ***View Items*** to view cast dates and record the compressive strength break data.

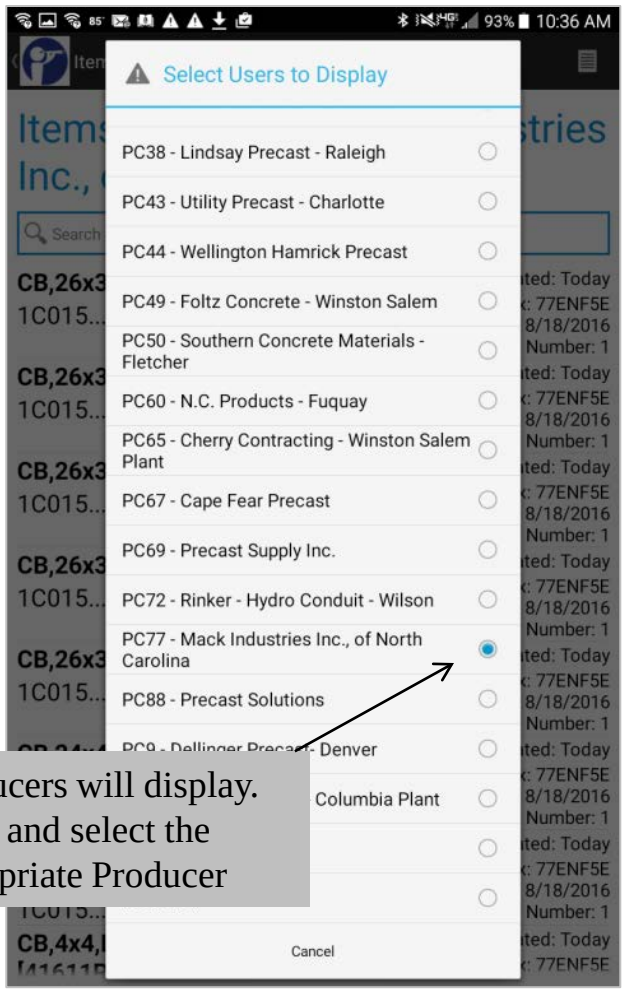

**1**. Select ***View Items***



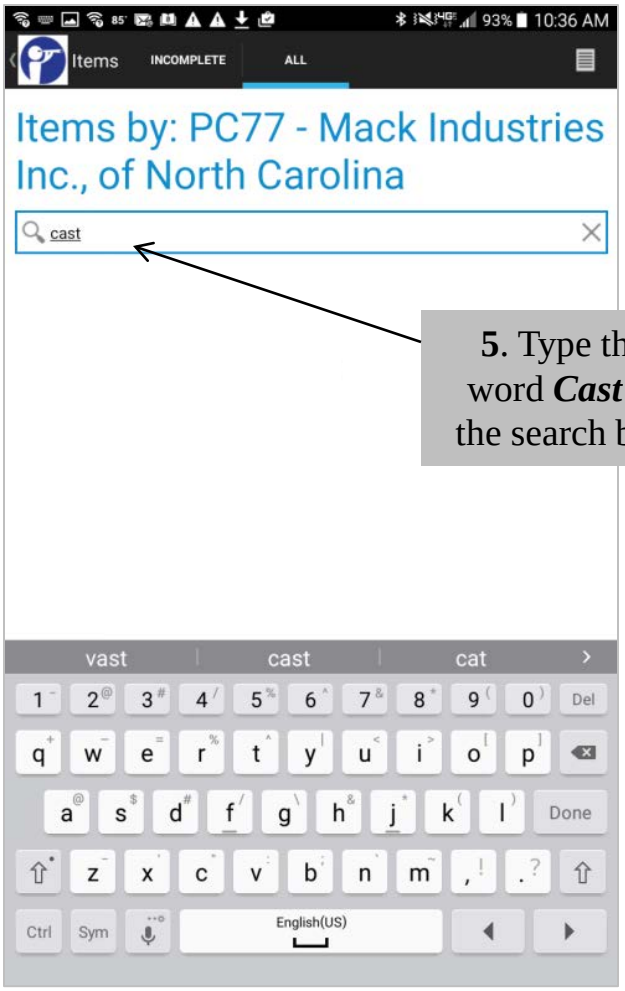

**2**. The ***ITEMS*** screen will open. Select the ***ALL*** Tab




**3**. Select the white icon and click ***Filter by User***

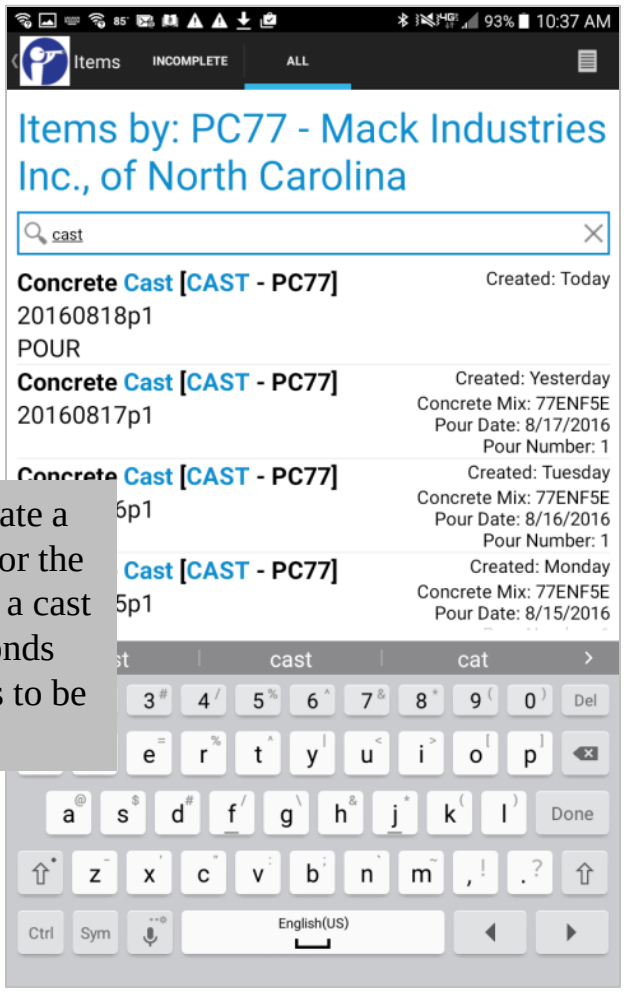



**4**. Producers will display. Find and select the appropriate Producer




**5**. Type the word ***Cast*** in the search box

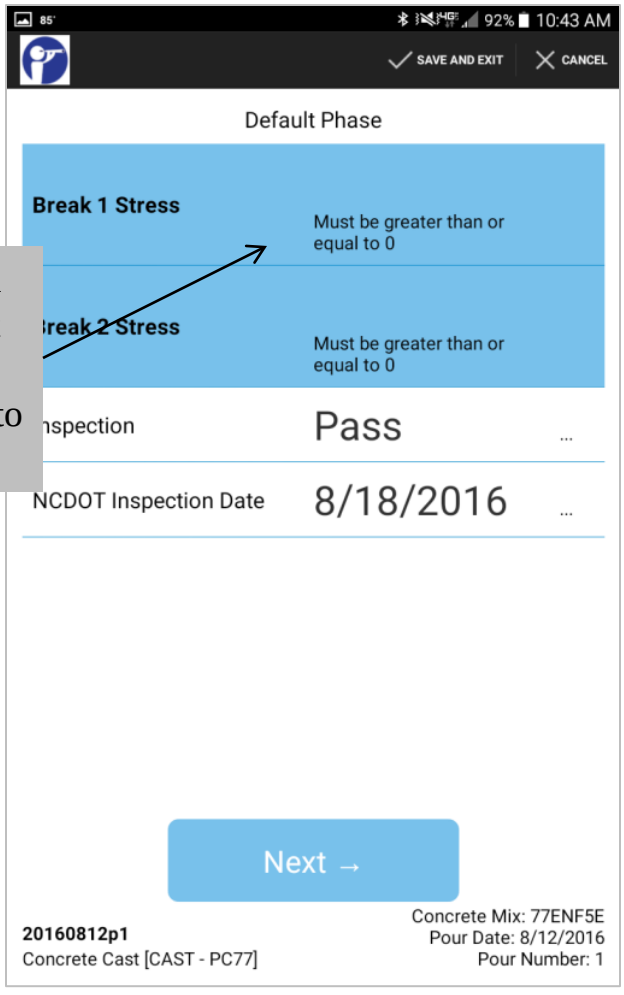
- During a concrete pour, the producer makes at least two cylinders-per pour date-per mix used. This is your ***CAST*** date.

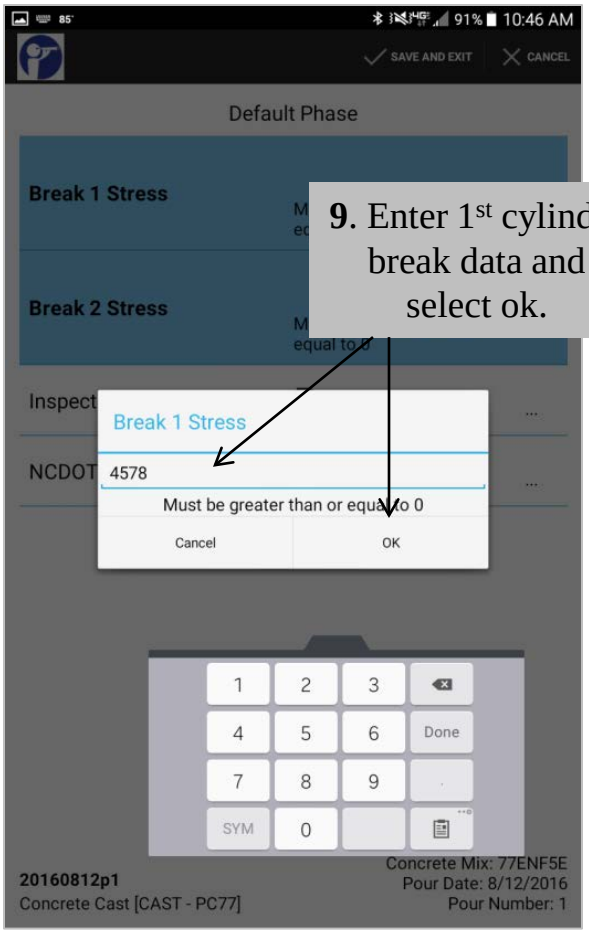



**6**. This will generate a list of cast dates for the Producer. Select a cast date that corresponds with the cylinders to be broken.

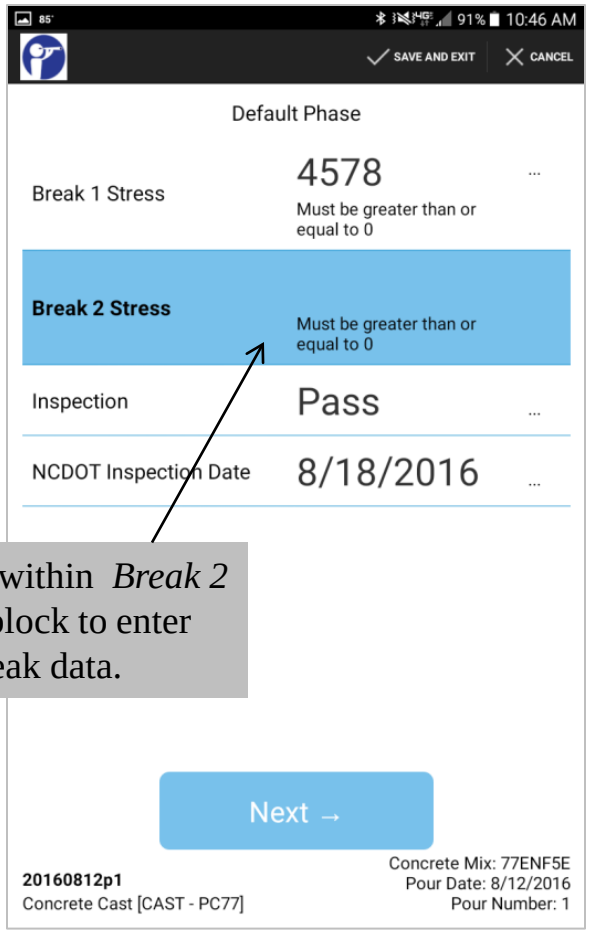

**7**. Select ***Concrete Test Inspection.***

**8**. The break screen will open in Default Phase. Click within *Break 1 Stress* block to enter Break data.

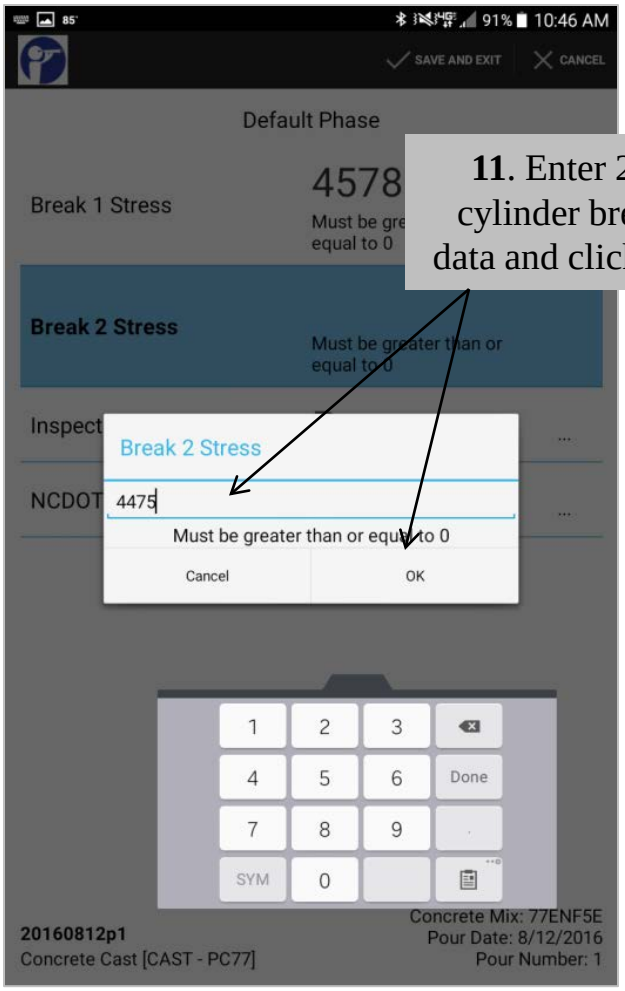




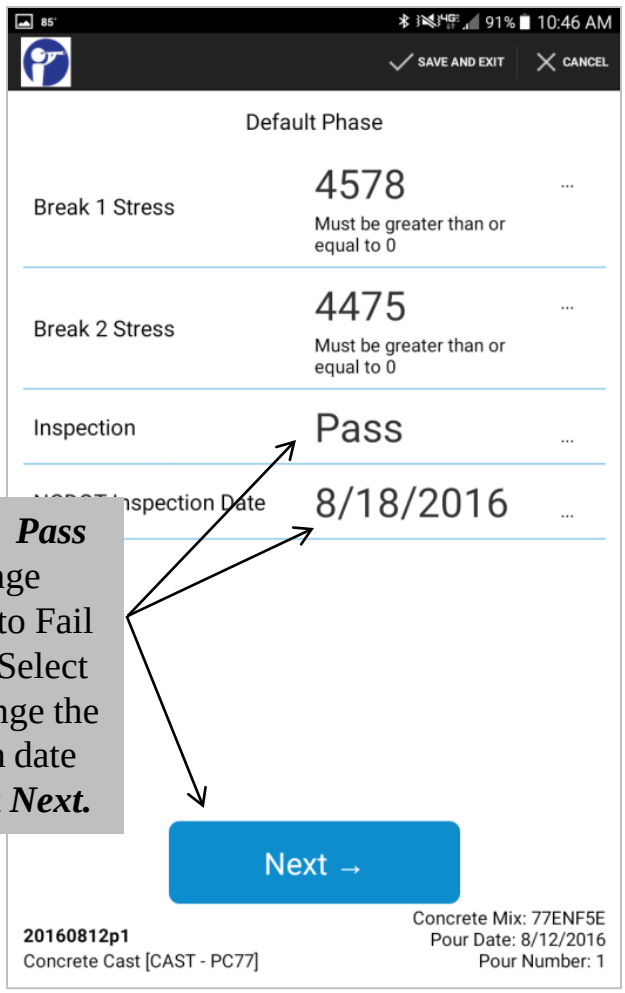

**9**. Enter 1st cylinder break data and select ok.



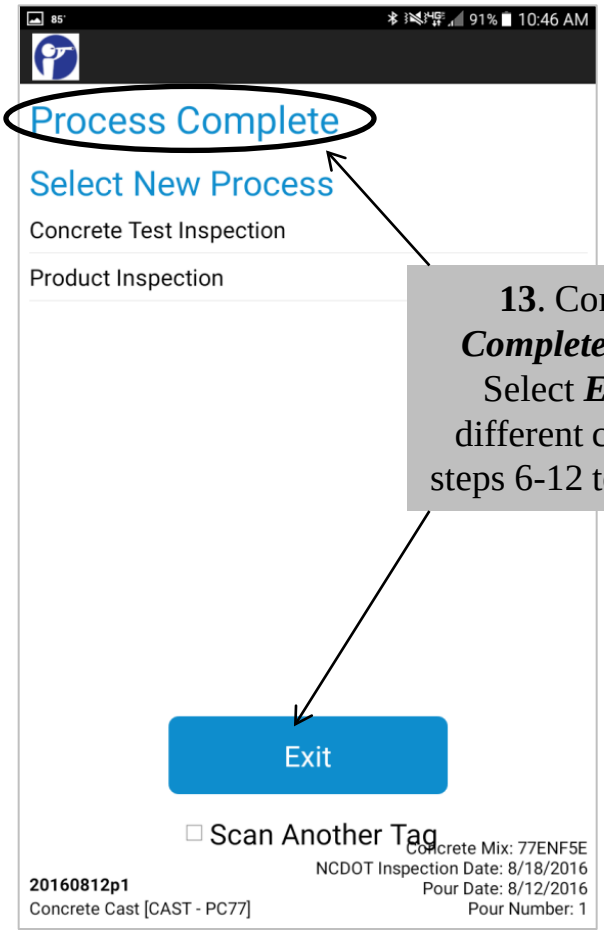

**10**. Click within *Break 2 Stress* block to enter break data.




**11**. Enter 2nd cylinder break data and click ok.



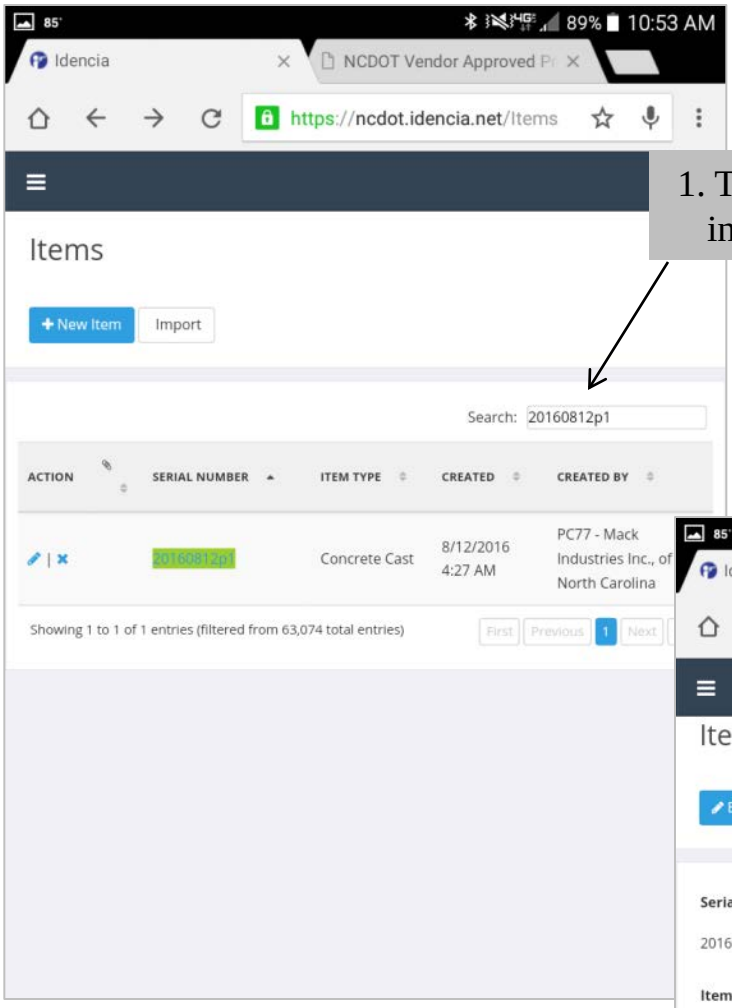

**12**. Select ***Pass*** to change inspection to Fail if needed. Select date to change the inspection date then Select ***Next.***



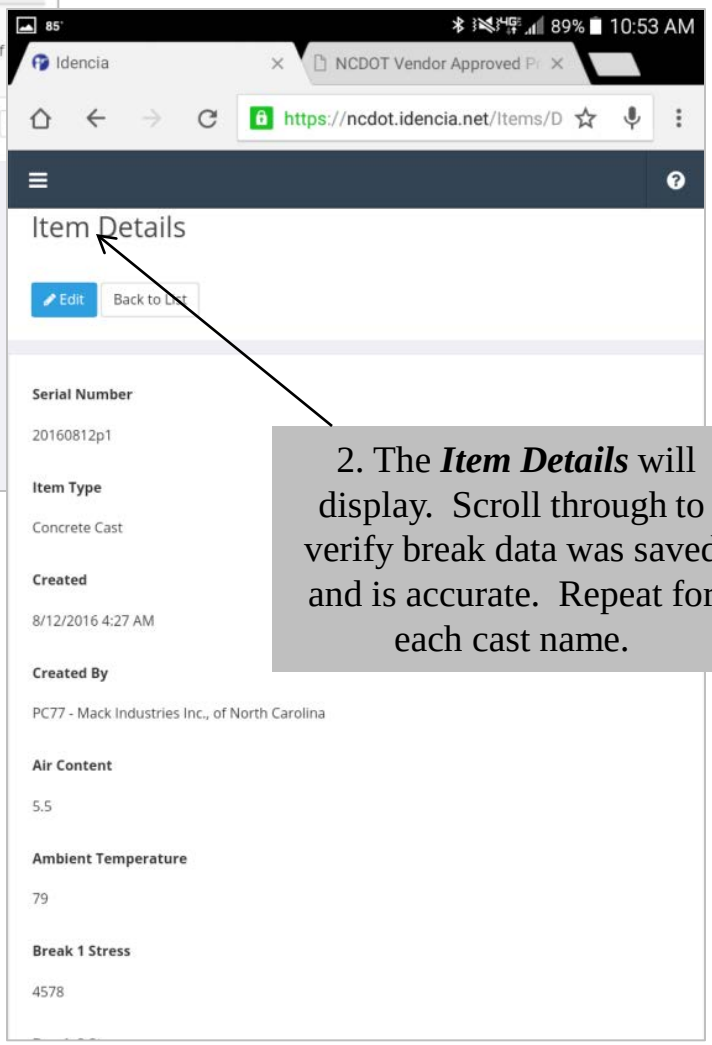

**13**. Confirm ***Process Complete*** message. Then Select ***Exi***t to choose a different cast date. Repeat steps 6-12 to enter break data.

# Once ALL of the cast break data has been entered, you will access the online version of Idencia to verify the break data was saved.

- Open the Idencia Website on your tablet.
- You will verity the cast break data entered of each cast date (The cast date represents the cast name)




1. Type the cast name in the search box.

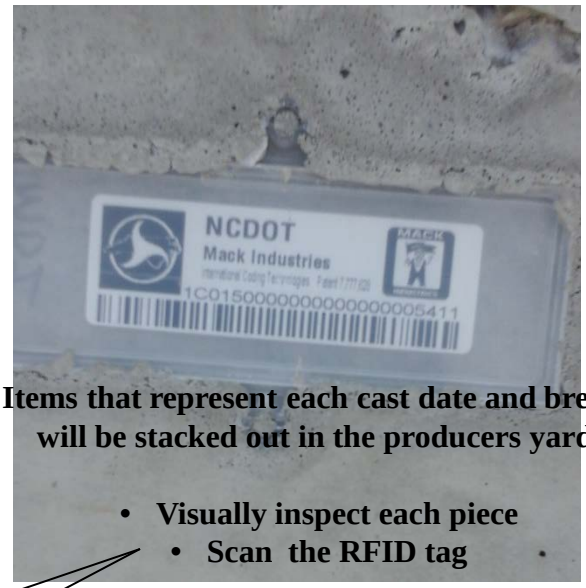



2. The ***Item Details*** will display. Scroll through to verify break data was saved and is accurate. Repeat for each cast name.

# Visual Inspection

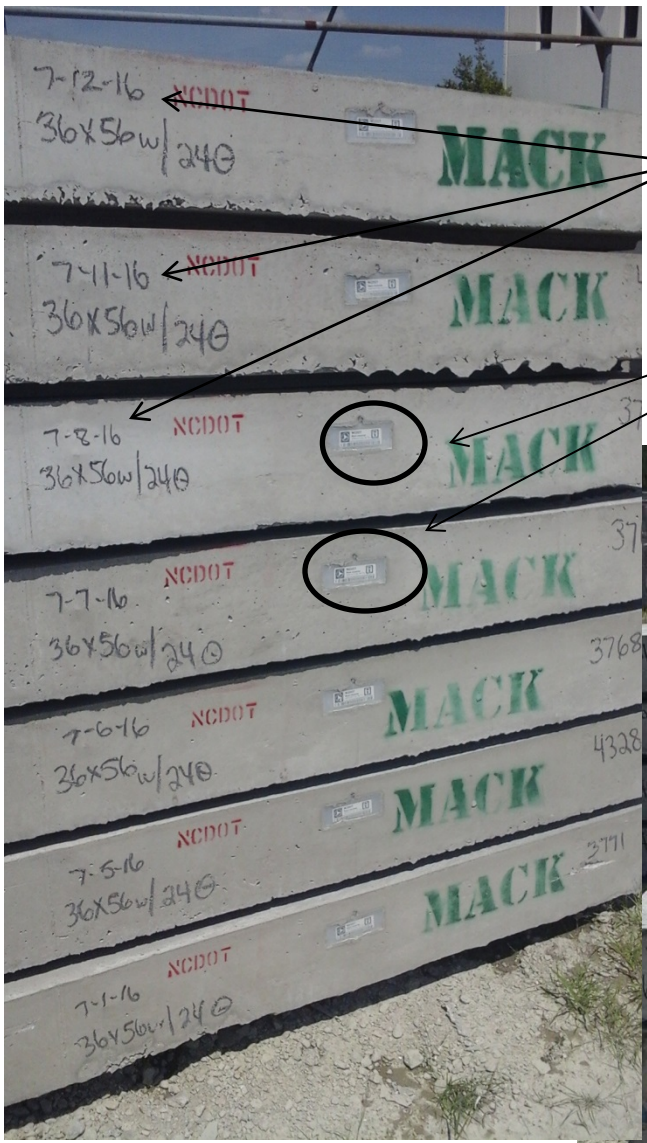
A visual inspection for precast items shall be conducted to ensure no steel of any kind is exposed. No cracks and minimal to no bug holes, chips, voids or honeycombing. Please refer to the Precast SOP for additional details.

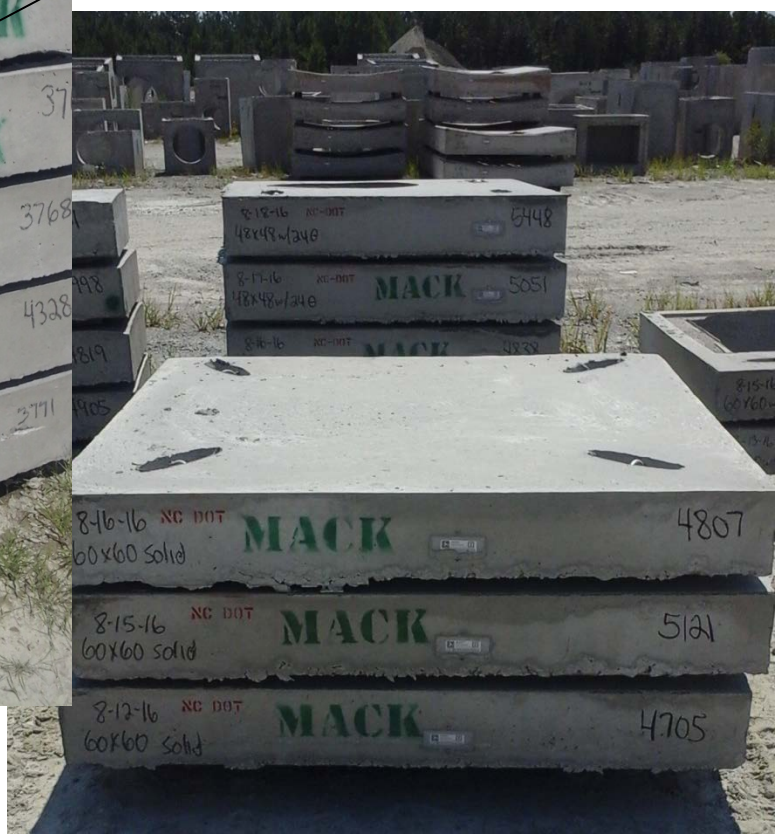
- Proceed to the NCDOT inspection area of the producers yard.
- Perform a visual inspection followed by scanning the RFID tag of each piece.




**Items that represent each cast date and breaks will be stacked out in the producers yard.**

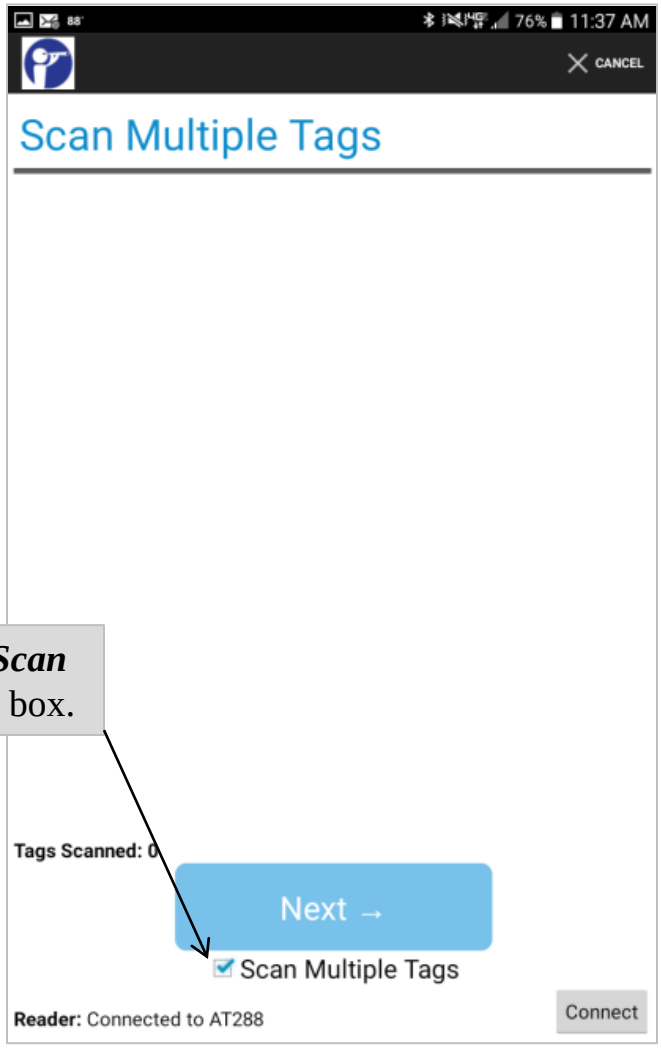
- **Visually inspect each piece**
- **Scan the RFID tag**



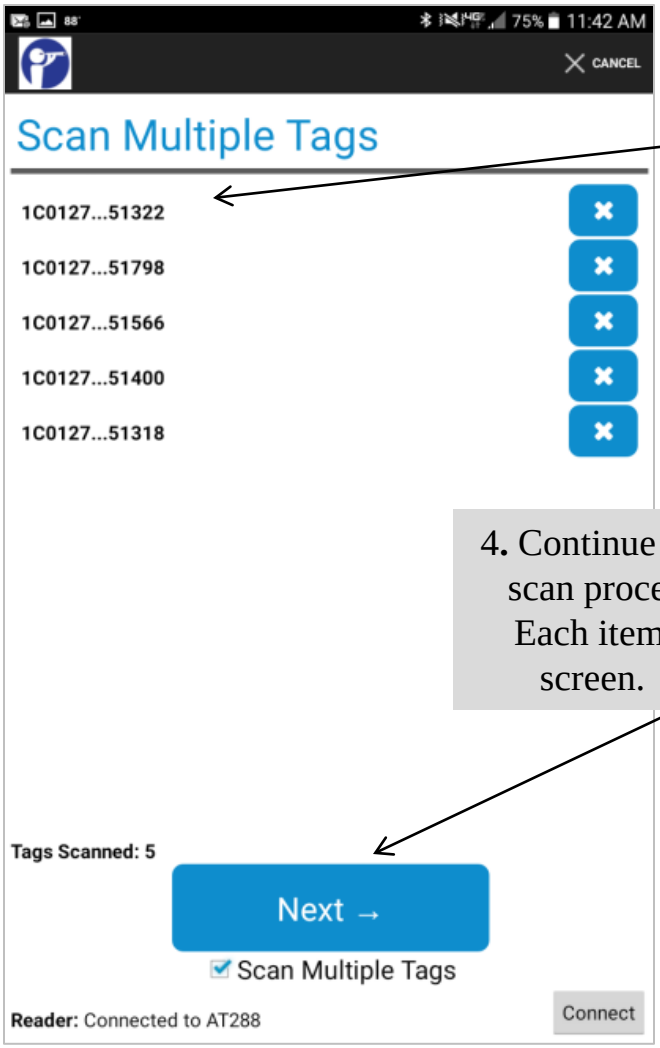



# Scanning with the AT288


**1.** To begin scanning, open the Indencia App & Select ***Scan Tag.***

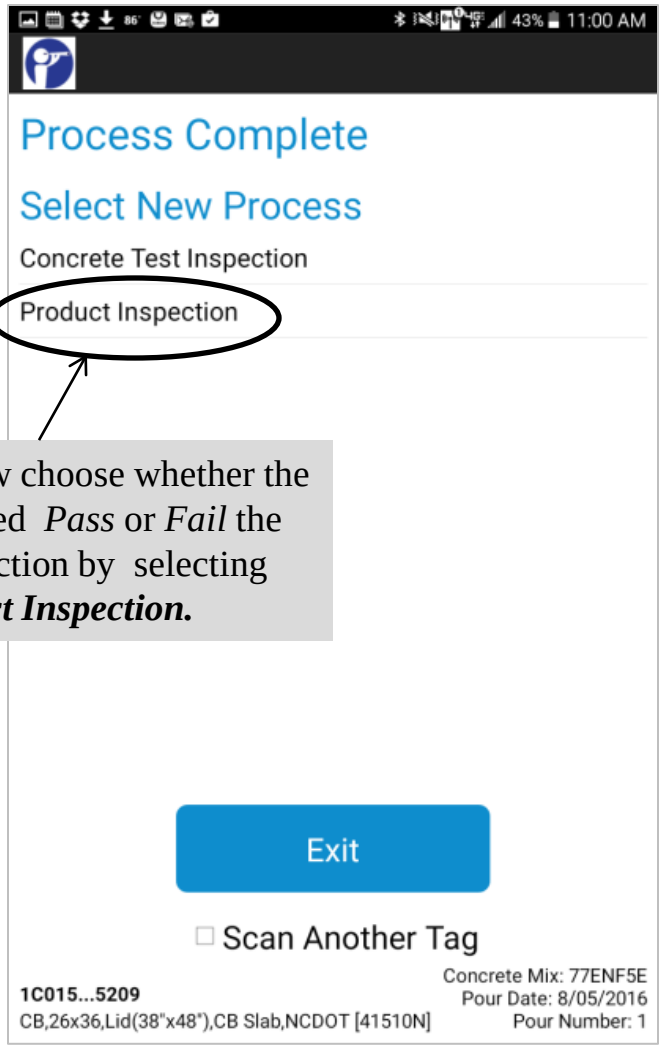



**2.** Select the ***Scan Multiple Tags*** box.

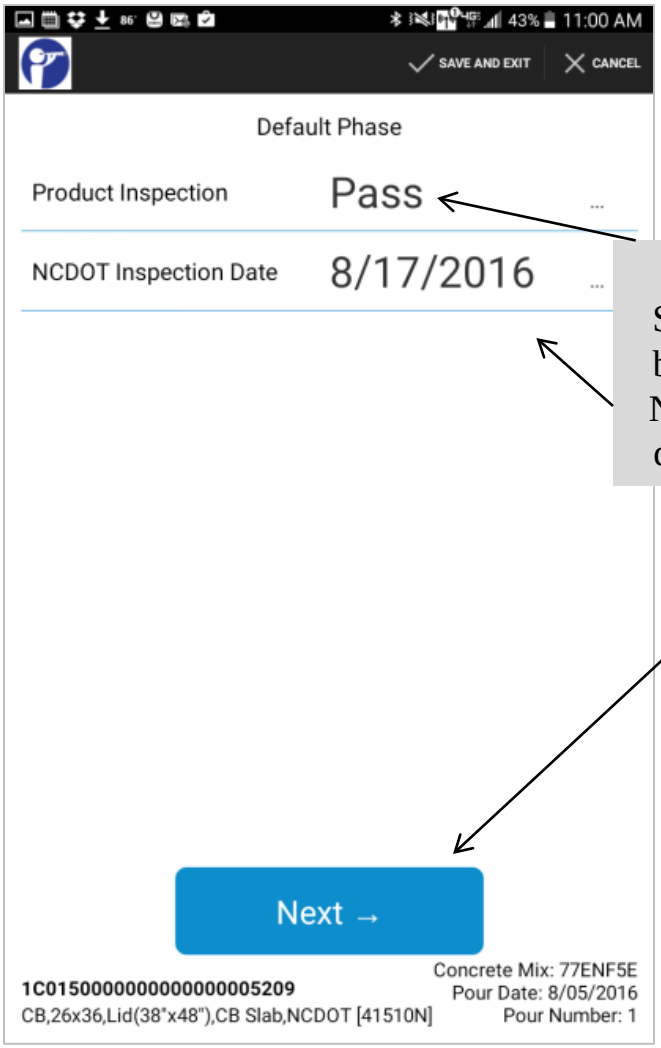



3. To scan the RFID barcode, push the **Scan Key** on the scanner. When the RDIF tag is scanned, the tag numbers appear on the tablets screen.

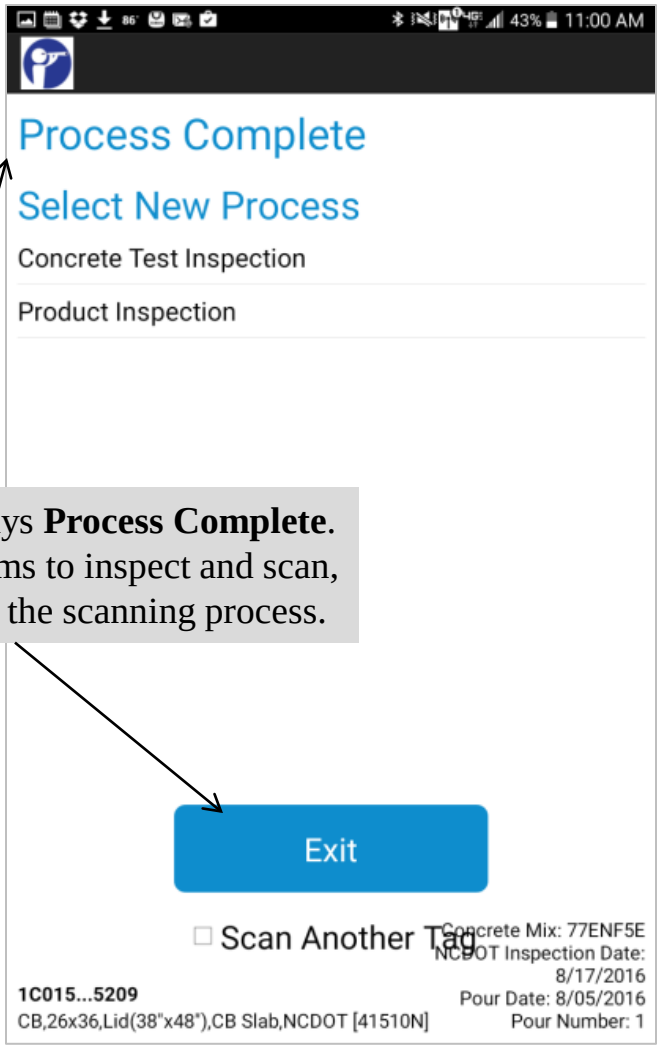
4. Continue the visual inspection-scan process for 10-15 pieces. Each item will display on the screen. Then select ***Next.***




5. You will now choose whether the pieces scanned *Pass* or *Fail* the visual inspection by selecting ***Product Inspection.***



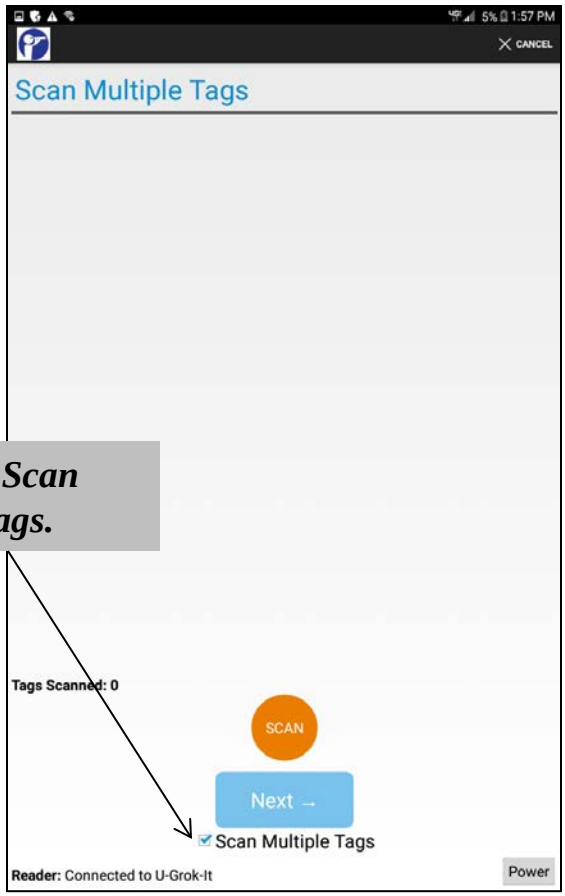

**6.** ***Pass*** is the product inspection default. Select Pass to make a Pass or Fail selection based on the items just scanned. Ensure the NCDOT Inspection Date is correct. Select a date if it needs to be changed. Select ***Next.***



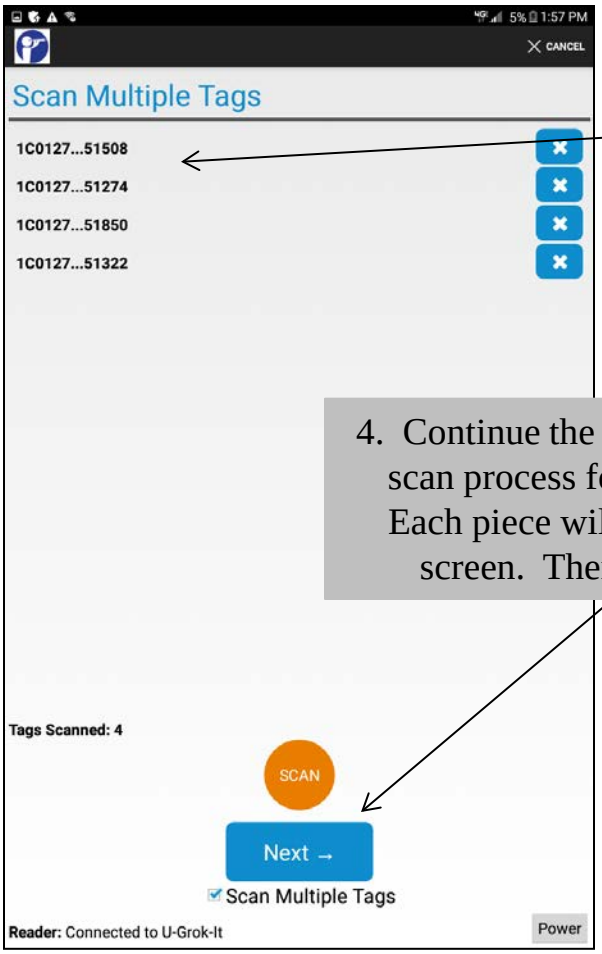

**7.** Verify message says **Process Complete**. If you have more items to inspect and scan, select Exit to repeat the scanning process.

# Scanning with the Grokker


1. To begin scanning, open the Indencia App & select ***Scan Tag.***



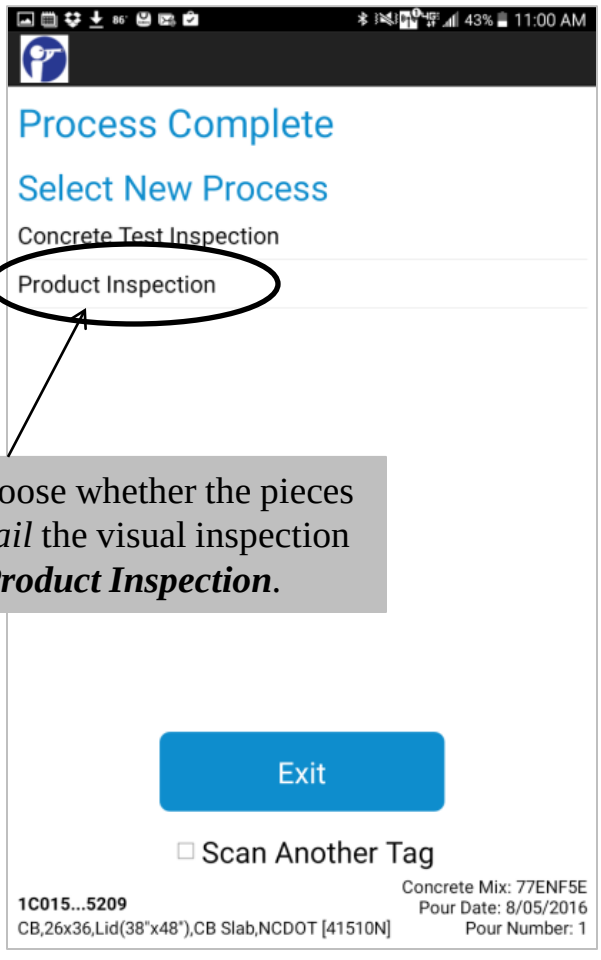

2. Select the ***Scan Multiple Tags.***



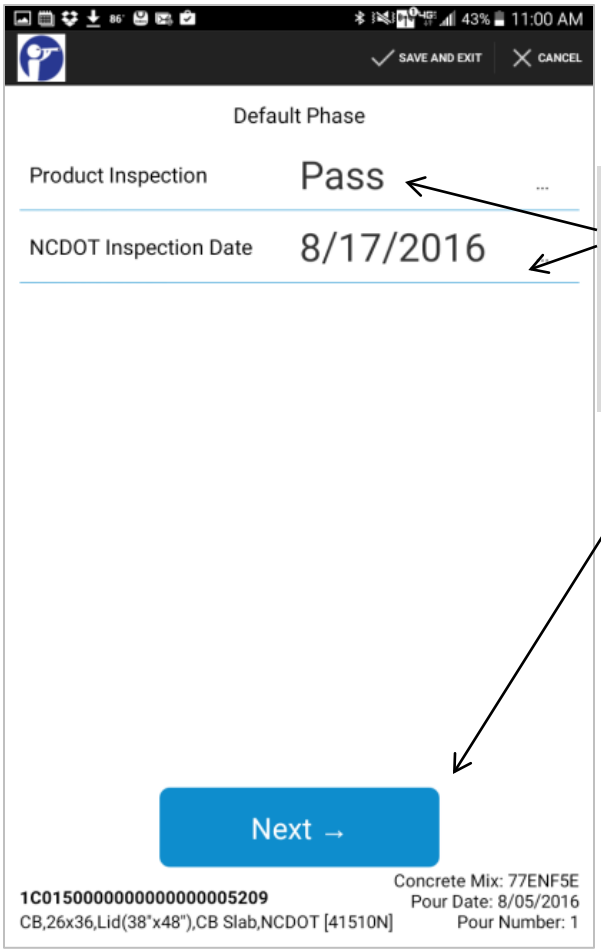

3. To scan the RFID barcode, push the **Scan Key** on the tablet screen. When the RDIF tag is scanned, the tag numbers appear on the tablets screen.

4. Continue the visual inspection-scan process for 10-15 pieces. Each piece will display on the screen. Then select ***Next.***

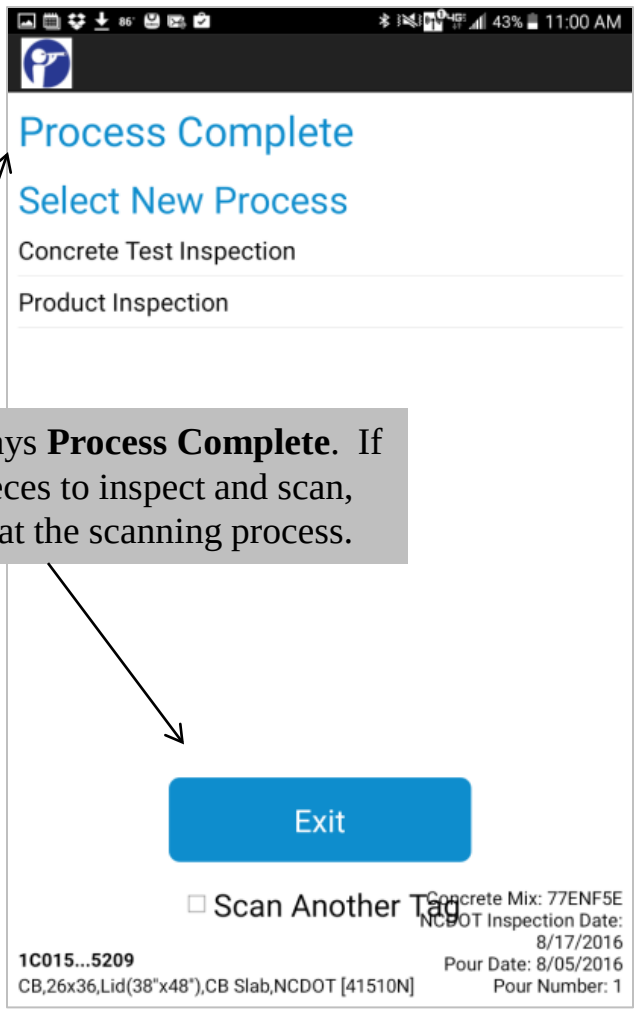
*Selecting ***Next*** will let you ***Select New Process.*** You will need to record the Product Inspection results as Pass or Fail.




5. You will now choose whether the pieces scanned *Pass* or *Fail* the visual inspection by selecting ***Product Inspection***.



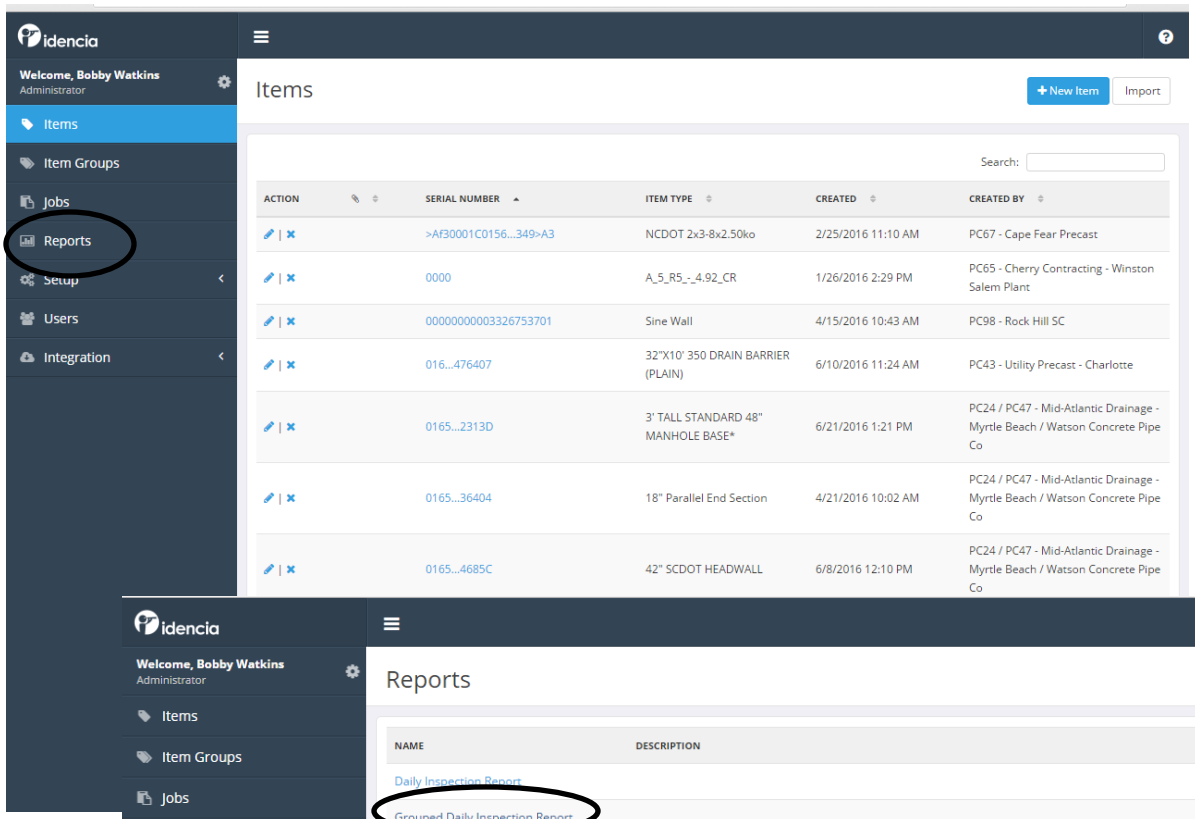

**6.** ***Pass*** is the product inspection default. Select Pass to make a ***Pass*** or ***Fail*** selection based on the items just scanned. Ensure the NCDOT Inspection Date is correct. Select a date if it needs to be changed. Select ***Next***.

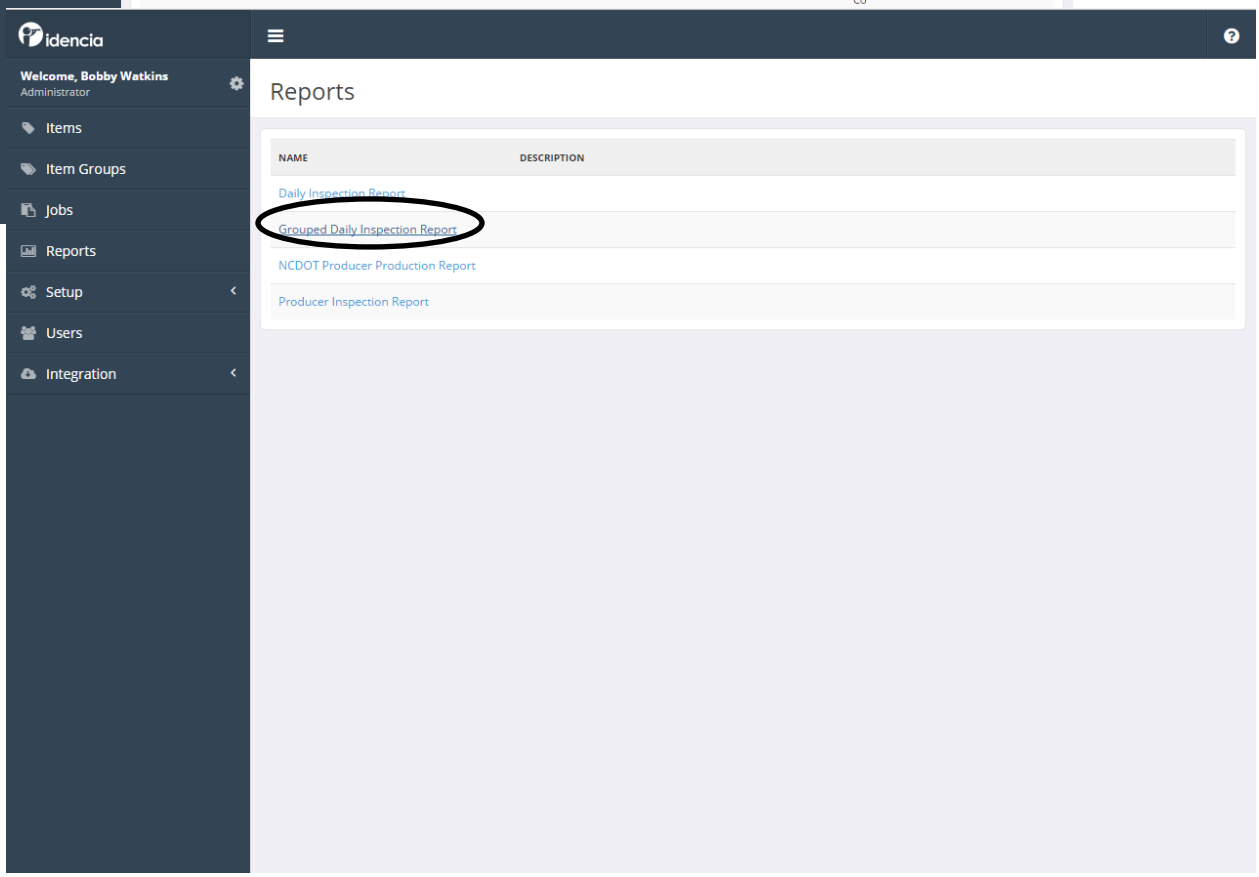



**7.** Verify message says **Process Complete**. If you have more pieces to inspect and scan, select ***Exit*** to repeat the scanning process.

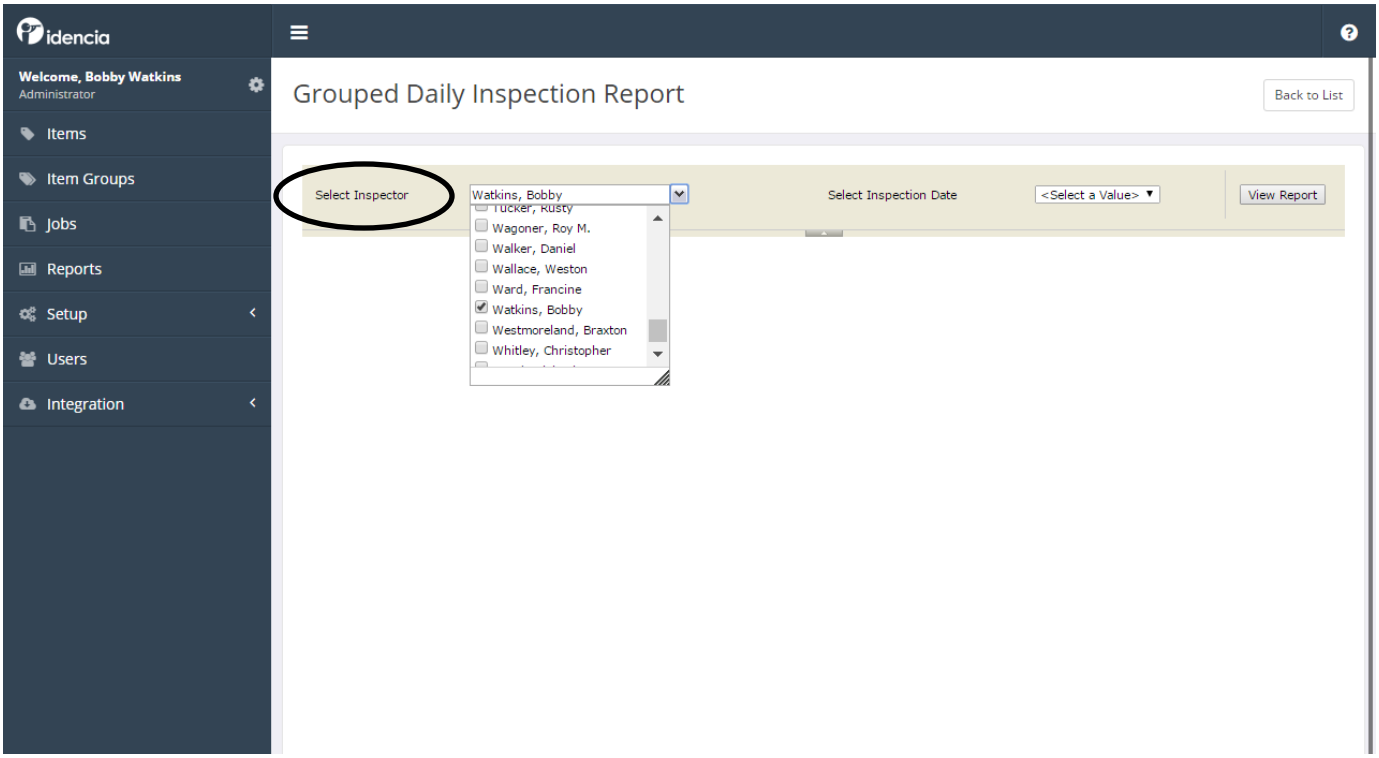
# Verify the pieces scanned are being recorded in Idencia

- You will need to verify the pieces are being recorded in Idencia once you finish scanning by running a ***Grouped Daily Inspection Report***
- To display the ***Grouped Daily Inspection Report***, open the online version of Idencia.
- Click “Reports” on the left of the Idencia screen
- Click on Grouped Daily Inspection Report

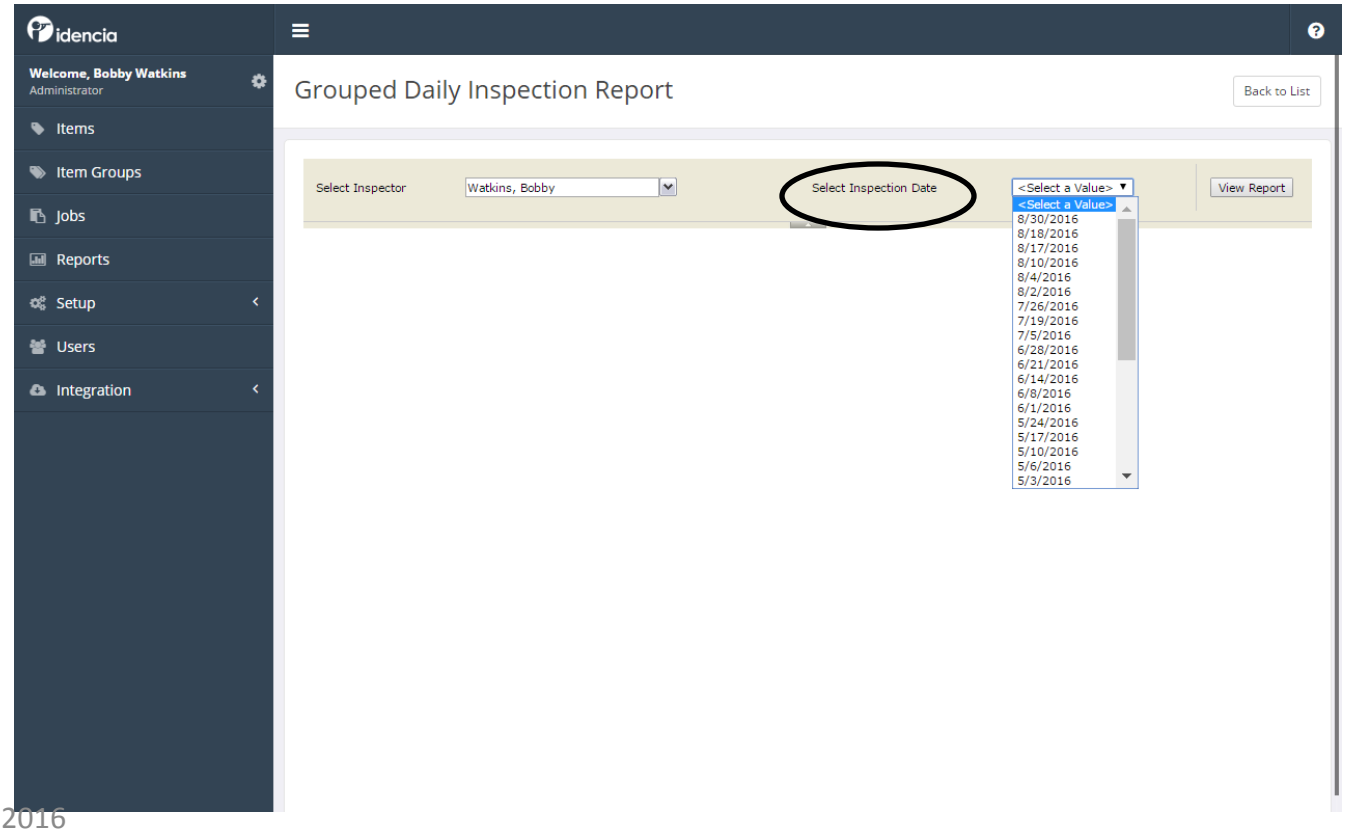


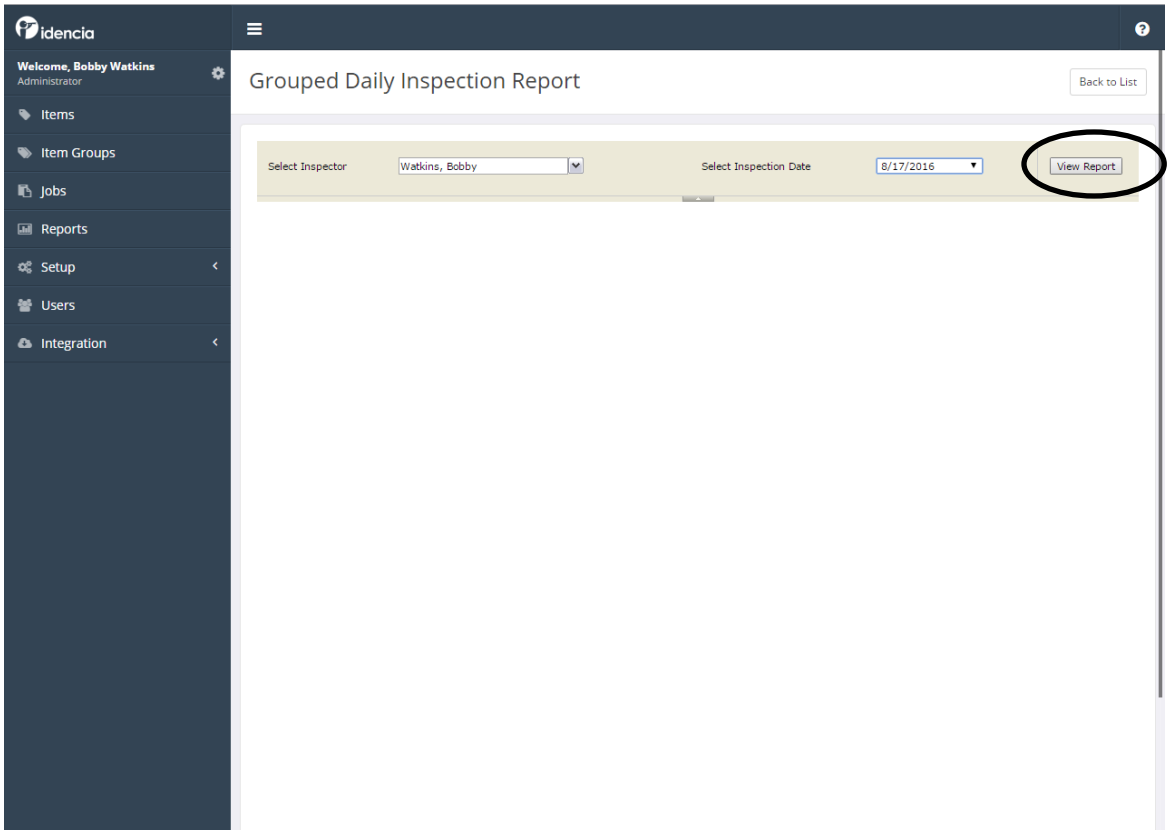
- Click on the ***Select Inspector*** down arrow for a drop down box to open. Select your name.



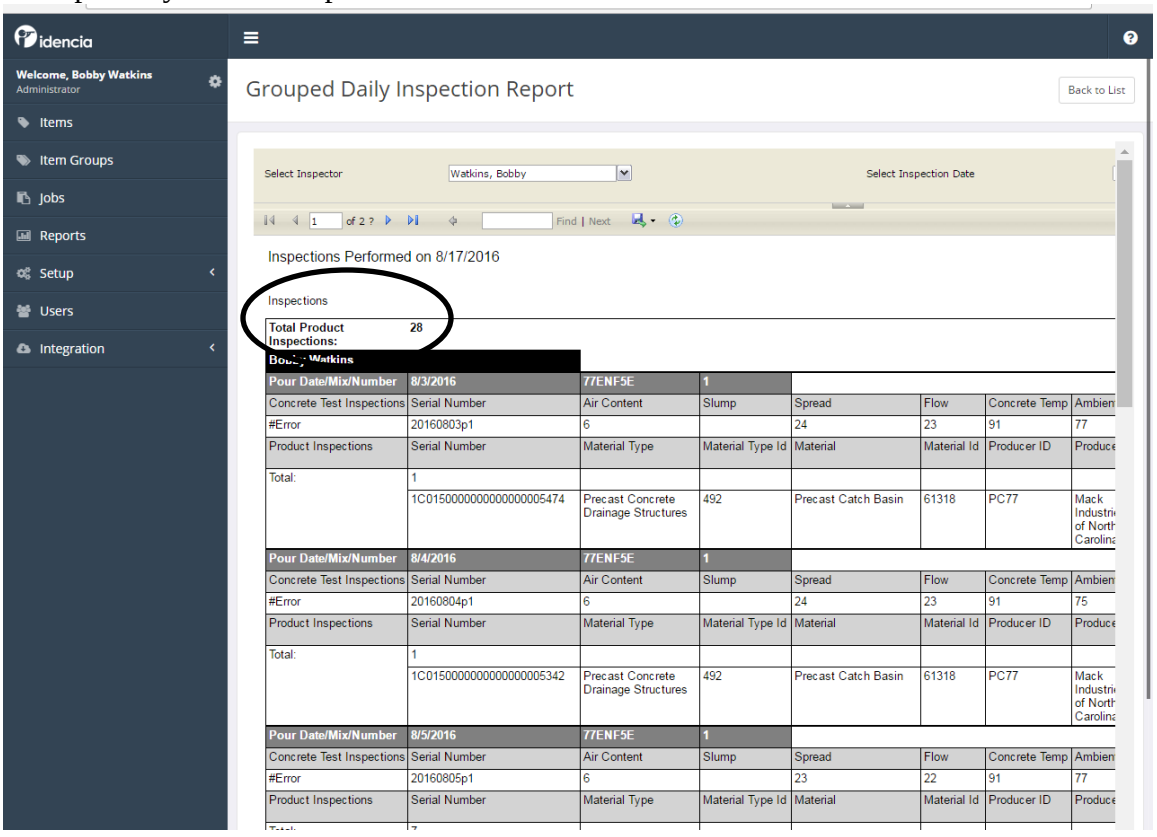

- Click ***Select Inspection Date*** down arrow for a drop down box to open. Select the Inspection Date.



- Click ***View Reports***




- The report will display and you can quickly verify the scans are being recorded by looking at ***Total Product Inspections.*** This number will let you know how many pieces you have inspected.




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Pour Date/Mix/Number** | **8/3/2016** | **77ENF5E** | **1** | | | | |
| Concrete Test Inspections | Serial Number | Air Content | Slump | Spread | Flow | Concrete Temp | Ambien |
| #Error | 20160803p1 | 6 | | 24 | 23 | 91 | 77 |
| Product Inspections | Serial Number | Material Type | Material Type Id | Material | Material Id | Producer ID | Produce |
| Total: | 1 | | | | | | |
| | 1C015000000000000005474 | Precast Concrete Drainage Structures | 492 | Precast Catch Basin | 61318 | PC77 | Mack Industri of North Carolina |
| **Pour Date/Mix/Number** | **8/4/2016** | **77ENF5E** | **1** | | | | |
| Concrete Test Inspections | Serial Number | Air Content | Slump | Spread | Flow | Concrete Temp | Ambien |
| #Error | 20160804p1 | 6 | | 24 | 23 | 91 | 75 |
| Product Inspections | Serial Number | Material Type | Material Type Id | Material | Material Id | Producer ID | Produce |
| Total: | 1 | | | | | | |
| | 1C015000000000000005342 | Precast Concrete Drainage Structures | 492 | Precast Catch Basin | 61318 | PC77 | Mack Industri of North Carolina |
| **Pour Date/Mix/Number** | **8/5/2016** | **77ENF5E** | **1** | | | | |
| Concrete Test Inspections | Serial Number | Air Content | Slump | Spread | Flow | Concrete Temp | Ambien |
| #Error | 20160805p1 | 6 | | 23 | 22 | 91 | 77 |
| Product Inspections | Serial Number | Material Type | Material Type Id | Material | Material Id | Producer ID | Produce |

- At the end of your inspection, return to the producers office and compare the ***Grouped Daily Inspection Report*** with the ***NCDOT Producers Production Report***. The producer representative used the NCDOT Producers Production Report to manually check off pieces as you scanned the RFID tag. If the total and pieces match on both reports, your inspection is complete. If the totals do not match, check the Grouped Daily Inspection Report for duplicates and omissions. It may be necessary to return to the yard and re-scan some pieces. Resolve any discrepancies prior to leaving producers facility in order to expedite the FIR process.