Da Vinci Smart Manufacturing

BRD S09.02_Log Book_Tap Hole Log

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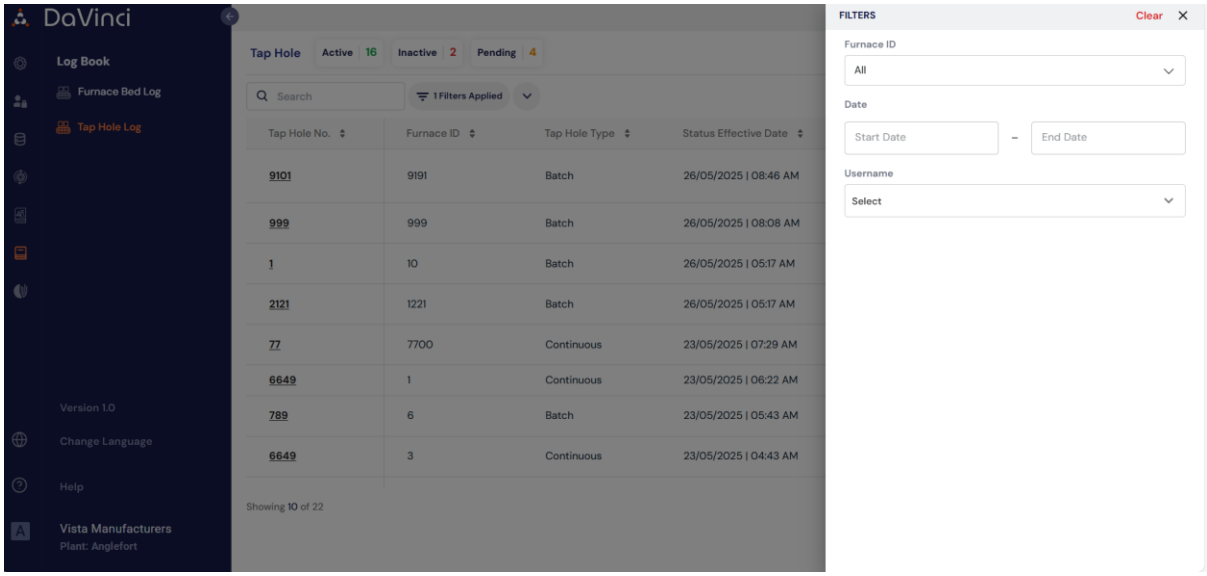
1. Tap Hole No. List Screen 3
1.1. Header Section 3
1.2. Tap Hole No. List 4
2. View Tap Hole Log List 7
2.1. Header Section 7
2.2. List Observation 8
3. Add Observation 9
4. Edit Observation 11
5. View Observation 13
5. Delete Observation 13

1. Tap Hole No. List Screen

Introduction
This document details the requirements for developing and implementing the Tap Hole Module which will allow users to manage tap hole records associated with a furnace. This module will offer functionalities such as viewing tap hole lists, activating/deactivating tap holes, and managing observations of active tap holes.

1.1. Header Section

- **Title**: "Tap Hole Log"
- **Stats Section:** Total count of Active | Inactive | Pending
- **Filters** -
    - Furnace ID -
        - Multi-select Dropdown
        - All furnaces for which log exists
    - Date Range
        - Date Range selector
    - User ID -
        - Multi-select Dropdown
        - Values: all usernames of existing records
        - User ID | First Name Last Name
- **Search Bar**: Tooltip text: Search by Tap Hole No.
- **View Change History**: The Change History functionality is designed to allow users to view, track, and download the modification history of tap hole records associated with furnaces. This feature provides visibility into the changes made to each tap hole, including activation, deactivation and ensures traceability and accountability for all modifications.
    - Timestamp of effective date
    - Field(s) modified
    - Previous and updated status (Active/Inactive)
    - Name of the user who made the change
    - **This option is not available for records in Pending status.**



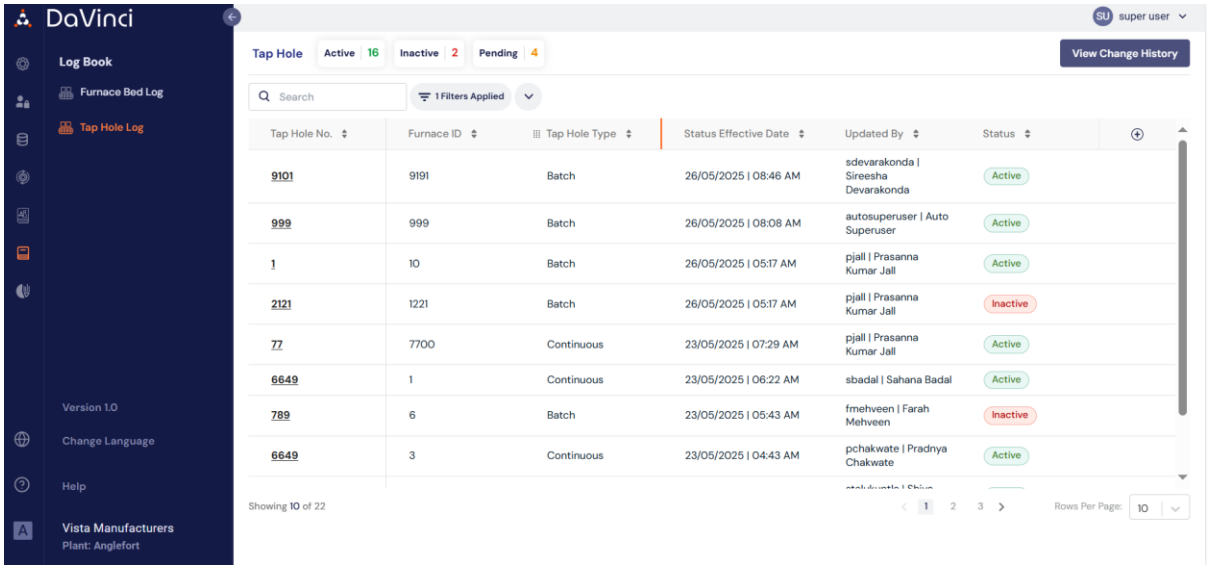
1.2. Tap Hole No. List

- Users must be able to view a list of tap holes associated with a specific furnace.
- Only one tap hole can be active for a furnace at a time.
- A tap hole in the “Pending” and “Inactive” status can be activated
- Active tap holes can be deactivated.
- **Table Default Sorting** : Latest Modified record
- Each row represents a single downtime event with key information such as,
    - Tap Hole No.
        - Tap Hole No. created in Furnace config screen is shown in default Pending state
        - Sorting: Yes
        - Frozen - Yes
    - Furnace ID
        - The furnace number for which the event is created
        - Sorting: Yes
        - Frozen: No
    - Tap Hole Type
        - Values: Continuous | Batch
        - Sorting: Yes
        - Frozen: No
    - Status Effective Date
        - Timestamp of date Taphole was made effective ie., activated/deactivated
        - Sorting: Yes
        - Frozen: No
    - Update By
        - Userid | First Name + Last Name of the user that made the most recent updation
        - Sorting: Yes
        - Frozen: No
    - Status

        - Current status of tap hole Active | Inactive | Pending
        - Sorting: Yes
        - Frozen: No
- **Note:** Horizontal scroll is required to be able to navigate through all columns and visualize all data but always respecting the frozen columns.
- **Action Buttons**: Depending on the status, system allows users perform following action on **Tap Hole**.
    - Active
        - View - Tap hole log list can be viewed in non-editable mode
        - Add Details - Tap Hole logs can be added
        - Deactivate - The deactivation icon appears on hover over a taphole entry in the Taphole List screen.
            - Tapholes in Active state can be deactivated.
            - When the deactivation icon is clicked, a popup will appear prompting for further Date and Time date picker input with a brief message explaining the activation process, such as: “To deactivate this taphole, please enter the deactivation date and time.”
            - Action Buttons
                - **Proceed** - Confirms the deactivation details entered and proceeds with the deactivation process.
                - **Cancel** - Closes the popup without making changes.
    - Inactive
        - View - Tap hole log list can be viewed in non-editable mode
        - Activate -
            - Tapholes in Pending and Inactive state can be activated.
            - The activation toggle icon appears on hover over a taphole entry in the Taphole List screen. Clicking on this icon triggers a popup. The popup will have the following
            - Popup prompting user to enter the Activation Date and Time from a date picker input with a brief message explaining the activation process, such as: “To activate this taphole, please enter the activation date and time.”
            - The prompt will ask user to confirm if the currently active taphole should be deactivated. If confirmed, the current active grading plan will be deactivated, and the selected grading plan will be activated.
            - **Validation**
                - Scenario 1: An Active Taphole Already Exists
                    - Validation Rule: When attempting to activate a new taphole, if there is already an active taphole, the date and time in the date selector should only allow dates after the last activation date of the currently active taphole.

        - Purpose: This ensures that two tapholes are not active simultaneously, maintaining accurate operational records.
    - Scenario 2: No Active Taphole Exists
        - Validation Rule: If no taphole is currently active, the date and time in the date selector should only allow dates after the last deactivation date of the most recently deactivated taphole.
        - Purpose: This ensures that the new activation date is logically consistent with the operational timeline, preventing overlap or conflicts in the activation history.
    - When the activation toggle icon is clicked, a popup will appear Action Buttons
        - **Proceed** - Confirms the activation details entered and proceeds with the activation process.
        - **Cancel** - Closes the popup without making changes.
- Pending
    - View - Tap hole log list can be viewed in non-editable mode
    - Activate - Selected record will be activated. A message will be prompted “To activate this taphole, please select activate date and time.Please note the current active taphole will get deactivated.” Upon selecting the date and time from the calendar, actiavteion can be completed. **Current date and time will be set as default.**

- **Pagination Controls**: Navigation buttons to browse through multiple pages of records, if applicable (for more than 10 records).
- Rows Per page : Default 10, Dropdown values: 10, 20, 30, 40, 50
- **Customize Columns:**
    - Users can enable or disable all columns based on their preference.
    - Only the enabled columns will be visible in the list.
    - Columns marked as ‘frozen’ will be enabled by default and cannot be modified.



2. View Tap Hole Log List

The Taphole Details screen opens when a user clicks the View icon, which appears upon hovering over a taphole entry in the Taphole List screen. The Taphole Details screen provides comprehensive information and management options for a specific taphole.

- It displays key details such as the furnace number and taphole number, along with the latest updates.
- Users can view a list of observations related to the taphole, with options to add, edit, or delete observations based on their permissions.

2.1. Header Section

- **Title**: Back Icon | Furnace ID : 140 | Tap Hole No.: 5
- **Search Bar**: **Search Bar**: Tooltip text: Search by Observation ID (e.g. 12 in FB_12)
- **Filters** -
    - Date Range
        - Date Range selector
    - User ID
        - Multi-select Dropdown
        - Values: all usernames of existing records
        - User ID | First Name Last Name
- Clear Filter - This will clear all the applied filters
- All Filter drop downs should be sorted alphabetically / numerically
- Filter options will not reset unless the user navigates to a different menu or module. This means any filters applied will persist as long as the user remains within the same menu option, ensuring continuity until a module change occurs.
- **Action Buttons in Header:**
    - Add Observation: Button to create a new Observation

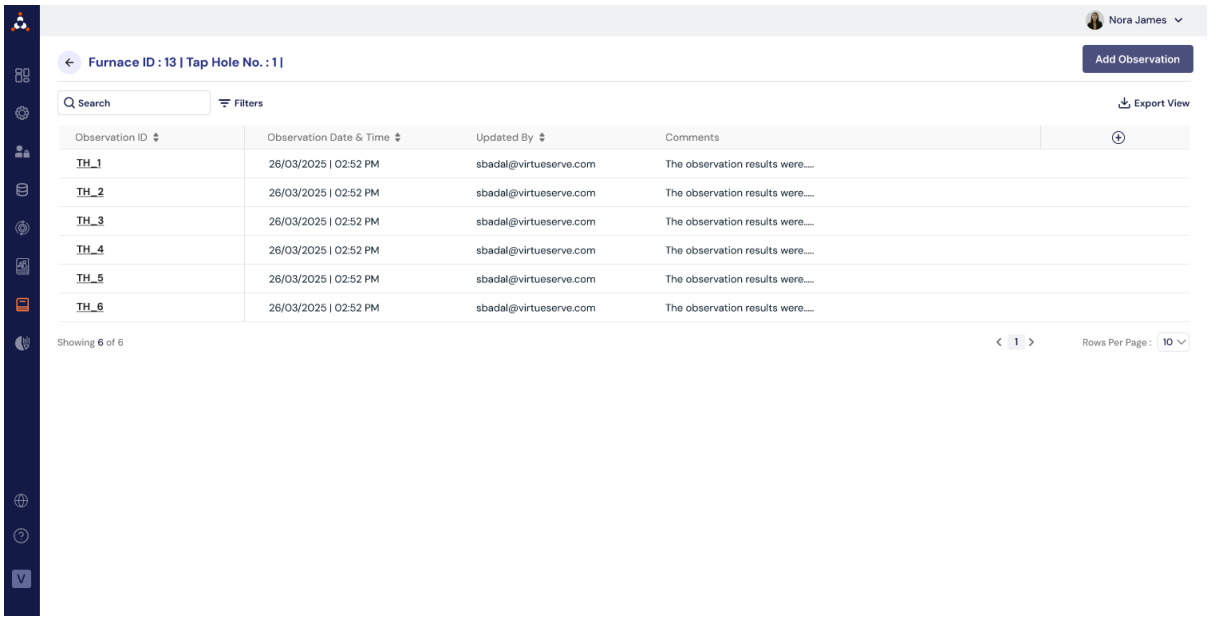
2.2. List Observation

- **Table Default Sorting** : Latest Modified First
  - **Observation ID**:
    - System-generated ID in the format (FB_incremental number from 1).
    - Sorting: Yes
    - Frozen - Yes
  - **Observation Date & Time**
    - Date and Time recorded for the observation
    - Sorting: Yes
    - Frozen: No
  - **Updated By**
    - User ID | First Name Last Name who made the updation
    - Sorting: Yes
    - Frozen: No
  - **Comments**
    - Comments recorded for the observation
    - Sorting: No
    - Frozen: No
    - Comments will be truncated and can be viewed fully the tooltip on hover
    - **Note:** Horizontal scroll is required to be able to navigate through all columns and visualize all data but always respecting the frozen columns.
    - **Action Buttons**: View, Edit, Delete icons will appear next to each observation based on the user's permissions.
      - View - User can view observation details in read only mode
      - Edit - User can edit observation details
      - Delete - User can delete observation details. Deletion will be a soft delete.
      - **Pagination Controls**: Navigation buttons to browse through multiple pages of records, if applicable (for more than 10 records).
      - Rows Per page : Default 10, Dropdown values: 10, 20, 30, 40, 50
    - **Export Function**: The export function must extract ALL the information of the list of records shown based on the combined results of filter selection, sort and search criteria. as the following example:

Observation ID	Furnace ID	Observation Date & Time	Tap Hole No.	Flame	Flame Colour	Tap Hole Bottom	Metal Output	Furnace Tapping	Slag	Flame Intensity	Comments	Updated By	

TH_8	140	04/07/2025 | 07:10 AM	5	Yes	White	Hard	Bottom	Easy	Sticky	Heavy	No Comments	superuser | Super User
TH_7	140	04/07/2025 | 07:10 AM	5	Yes	White	Hard	Bottom	Easy	Sticky	Heavy	No Comments	superuser | Super User
TH_6	140	04/07/2025 | 07:10 AM	5	Yes	White	Hard	Bottom	Easy	Sticky	Heavy	No Comments	superuser | Super User

- **Exported File Name**: "TapHoleLog_DDMMYY"
- **Customize Columns:** Users can enable or disable all columns based on their preference. Only the enabled columns will be visible in the list. Columns marked as 'frozen' will be enabled by default and cannot be modified.



3. Add Observation

- The **"Add Observation"** feature allows users to record key furnace bed conditions through a structured form. This functionality is accessed from the **Tap Hole Log List** screen or using the "ADD icon" from a particular Tap Hole No. in Tap Hole No. listand is designed to ensure that critical furnace behaviour is captured in a standardized and validated manner.

- **Header:** Add Observation | Close Icon
- **Trigger and Access:** When the user clicks on the **"Add Observation"** button located on the **Tap Hole Log List** screen, a **side panel** (slide-in form) will appear on the right side of the screen.
- This panel contains the observation entry form.
    - **Furnace ID**:
        - Non-editable and pre-populated with the Furnace ID associated with Tap Hole No.
        - Default value - No
    - **Tap Hole No.**
        - Non-editable and pre-populated with Tap Hole No. whose logs are listed
        - Default value - No
    - **Observation Date and Time***:
        - A date-time picker for the timestamp of the observation.
        - Mandatory - Yes
        - Default value - Current Date and time
        - Field Type - Single Select Dropdown Values: All active furnaces
        - Validation - No
    - **Flame***:
        - Mandatory - Yes
        - Default value - No
        - Field Type - Radio Button
        - Values : Yes, No
        - Validation - No
    - **Flame Colour***
        - Mandatory - Yes
        - Default value - No
        - Field Type - Radio Button
        - Values : White, Red
        - Validation - No
    - **Tap Hole Bottom***
        - Mandatory - Yes
        - Default value - No
        - Field Type - Radio Button
        - Values : Hard, Soft
        - Validation - No
    - **Metal Output***
        - Mandatory - Yes
        - Default value - No
        - Field Type - Radio Button
        - Values : Bottom, Top
        - Validation - No
    - **Furnace Tapping***
        - Mandatory - Yes
        - Default value - No
        - Field Type - Radio Button

    - Values : Easy, Intermediate, Difficult
    - Validation - No
- **Slag***
    - Mandatory - Yes
    - Default value - No
    - Field Type - Radio Button
    - Values : Sticky, Normal, Lumpy
    - Validation - No
- **Flame Intensity***
    - Mandatory - Yes
    - Default value - No
    - Field Type - Radio Button
    - Values : None, Light, Medium, Heavy
    - Validation - No
- **Comments**:
    - Mandatory - No
    - Default value - No
    - Field Type - User Input
    - Validation - All (Including special characters), no min, max 100 characters, space allowed
- **Actions:**
    - **Save -** Saves the record, user is returned to the observation list with a success message, and the new observation is displayed.
    - **Cancel** - No data is saved, side panel is closed immediately, and the user is returned to the main Observation List view.

4. Edit Observation

The **Edit Observation** feature allows users to modify an existing furnace bed observation through a side panel interface, similar in layout to the “Add Observation” form. This feature ensures users can correct or update recorded data while maintaining the integrity of the original furnace reference.

All previously entered fields are **pre-populated** and can be modified by the user, **except** for the **Furnace ID and Tap Hole No.**

These fields are **non-editable** in edit mode to preserve the association between the observation and the originally selected furnace.

- **Furnace ID**:
    - Non-editable and pre-populated with the existing value.
    - Default value - No
    - Mandatory: Yes
- **Tap Hole No.**
    - Non-editable and pre-populated with the existing value.
    - Default value - No

    - Mandatory: Yes
- **Observation Date and Time**
    - Editable and pre-populated with the existing value.
    - Default value- Current Date and time will be displayed as default.
    - Mandatory: Yes
- **Flame***
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes

- **Flame Colour***
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Tao Hole Bottom***
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Metal Output***
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Furnace Tapping**
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Slag***
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Flame Intensity**
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes
- **Comments**
    - Editable and pre-populated with the existing value.
    - Default value - None
    - Mandatory: Yes

Actions:

Save - Saves the record, user is returned to the observation list with a success message, and the new observation is displayed.

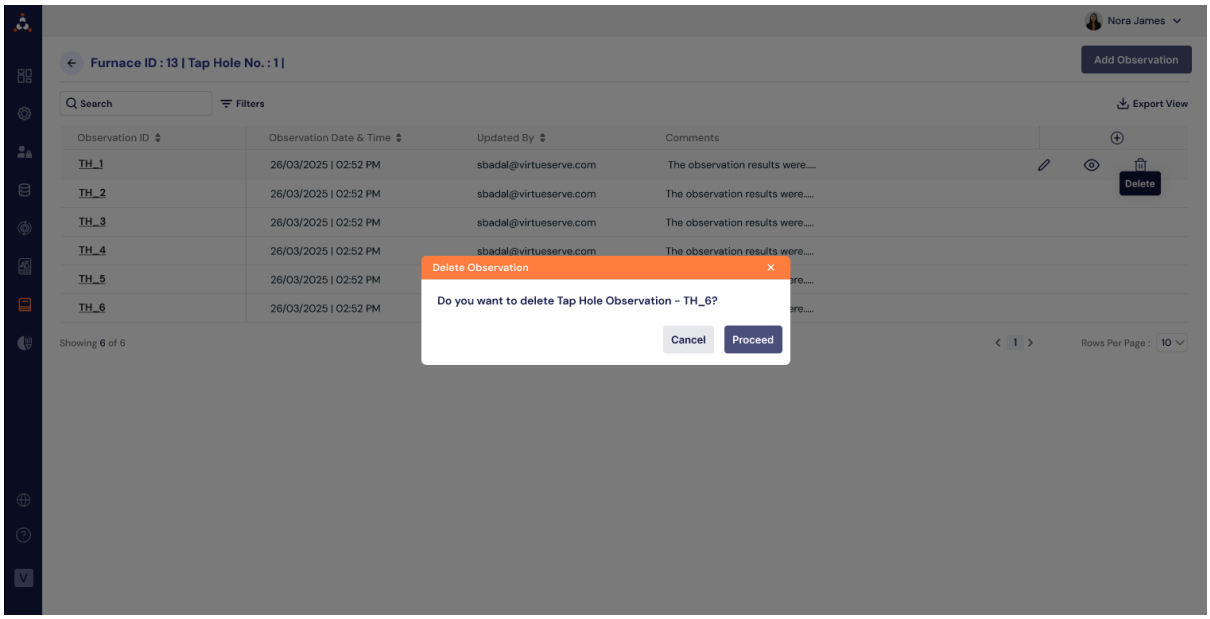
Cancel - No data is saved, side panel is closed immediately, and the user is returned to the main Observation List view.

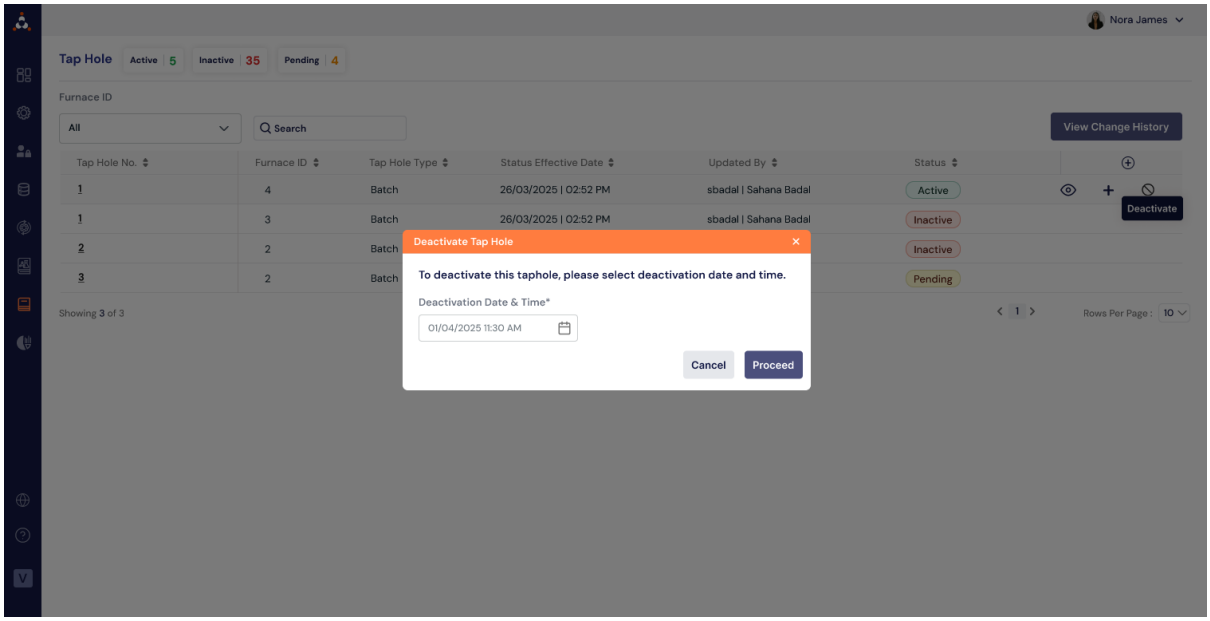
5. View Observation

The **View Observation** mode allows users to review the details of a recorded furnace bed observation in a **read-only side panel**. This panel presents all previously saved values in a non-editable format.

5. Delete Observation

- Users with **edit permissions** can delete an each record observation from the list.
- Clicking Delete opens a **confirmation popup** with **Cancel** and **Proceed** options.
- Do you want to delete Tap Hole Observation - TH_6?
- Clicking **Proceed** deletes the observation, refreshes the list, and shows a **success message**.
- The deleted record will no longer be visible in the list.




Nora James
Tap Hole
Active 5
Inactive 35
Pending 4
Furnace ID
All
Search
View Change History
Tap Hole No.
Furnace ID
Tap Hole Type
Status Effective Date
Updated By
Status
1 4 Batch 26/03/2025 | 02:52 PM sbadal | Sahana Badal Active
1 3 Batch 26/03/2025 | 02:52 PM sbadal | Sahana Badal Inactive
2 2 Batch Inactive
3 2 Batch Pending
Deactivate
Showing 3 of 3
Rows Per Page : 10
Deactivate Tap Hole
To deactivate this taphole, please select deactivation date and time.
Deactivation Date & Time*
01/04/2025 11:30 AM
Cancel
Proceed