

**HALLIBURTON**

## Data QA/QC

Software User Manual

**Version 3.0.0.0**

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## • What's New!

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## What's New



### New Features

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div>Enhanced Rules-Editor</div><div><ul style="list-style-type: none"><li>General Alert Settings to globally set the default values</li><li>Conditional Alarm Settings which allows users to set alarm notification conditions for data gap detection, data streaming and out of range</li></ul></div><div>General alerts and conditional settings for growing objects</div></div>                                                                                          | <div><div>Enhanced Notification Panel</div><div><ul style="list-style-type: none"><li>Users can view Events notification from the Alarm panel</li><li>New well streaming</li><li>Well restart</li><li>New curve</li><li>New Log</li></ul></div><div>Promotes awareness on new events</div></div> | <div><div>Multi-tenant support</div><div><ul style="list-style-type: none"><li>Connects to multiple data sources simultaneously, enabling monitoring of UKS and USC wells simultaneously</li><li>User-friendly switch between UKS and USC using a checkbox on the main dashboard screen</li></ul></div><div>Allow concurrent monitoring of diverse well types</div></div> | <div><div>Platform Availability</div><div><ul style="list-style-type: none"><li>Displays default last 24 hours uptime of WITSML SOAP and ETP platforms</li><li>Offers filter options for last 7 days, 30 days, 3/6/12 months for relevant uptime details</li><li>Presents total operational time as a percentage</li></ul></div><div>Provides immediate visibility into platform uptime</div></div>                                                                                                                                               | <div><div>PDT Versioning</div><div><ul style="list-style-type: none"><li>From the UI navigate and select/export different PDT files available from InsiteAgent</li><li>Manages up to 10 versions with a naming convention PDT + timestamp</li><li>Automatically handles PDT file storage, deleting oldest files when exceeding 10</li><li>Imports only the newest PDT file from InsiteAgent</li></ul></div><div>Enables efficient analysis and comparison of PDT files</div></div> |
| <div><div>Enhanced Alarm Viewer</div><div><ul style="list-style-type: none"><li>Utilizes advanced filtering options (Severity, Type, Actions) for detailed well/wellbore insights</li><li>Exports detailed Well Alarm information in CSV format</li><li>Allows adding comments for selected well/wellbore</li><li>Displays detailed alarm history in the Activity Log section</li></ul></div><div>Enhances alarm management with comprehensive filtering capabilities</div></div> | <div><div>Navigational Tooltip</div><div><ul style="list-style-type: none"><li>Provides tooltips throughout the app for intuitive navigation</li></ul></div><div>Enhances user experience with seamless access to information</div></div>                                                        | <div><div>New PDT Import Notification</div><div><ul style="list-style-type: none"><li>Notifies user of new PDT availability from InsiteAgent</li><li>Highlights new PDT availability with a yellow icon next to each well/wellbore details on the monitoring dashboard</li></ul></div><div>Promotes awareness and prompt action on new PDT imports</div></div>            | <div><div>Reports</div><div><ul style="list-style-type: none"><li>Generates Well metadata reports as PDF</li><li>Downloads Detailed Reports as a PDF for the selected well</li></ul><div>Downloads Summary Reports as a PDF for the selected well</div><ul style="list-style-type: none"><li>Displays Platform availability table (SOAP and ETP)</li><li>Presents Issues Classified by Detection Type in charts</li><li>Shows Detection type vs Severity in a donut chart</li></ul></div><div>Provides comprehensive details of wells</div></div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



### Enhancements on features

- Enhanced Rules-Editor
  - General Alert Settings : User can now globally set default values for alert configurations
  - Conditional Alarm Settings : Users can now configure specific conditions for alarm notifications
- Alarm panel restructuring
- Performance optimized (Handled the no match found on the right side alarm panel when well is selected)
- Data gap icon -Green to grey colour change
- Import history to audit trail label change
- User manual integration
- Limit alarms on the right side panel to last 2 hours
- Reduce the platform uptime check interval to 1 minute and show red indication only for server unavailable case.
- Alarm counter reset every 24 hours from service start time.
- Disabled import workorder option.



### Resolved Issues

- Gap available status is showing in the dashboard screen but in gap monitor screen no gap is available message is showing for that well
- Automatic Frequency Detection not working.
- Monitor curves status showing is wrong
- Alarm manager screen comment is not working properly
- The Unchecked favorite well is not hidden from the UI, when the favorite filter option is active
- PSL filter is not working properly



### Known Issues

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- Observed status discrepancy for a specific well
- Downloading reports having huge amount of alarms may return error . Verified upto 15k alarms

## Application Versions

|                   |         |
|-------------------|---------|
| Current Version:  | 3.0.0.0 |
| Previous Version: | 2.0.0.0 |

## Introduction

The Data QA/QC application enables support personnel to detect data issues in RTS in real time. Remedial action can be made to rectify the data so that downstream applications can benefit from high-quality data.

This manual will walk you through the features and functionality of the DATA QA/QC application.

## Access and Credentials

Users can access the application through web browser over the Internet.

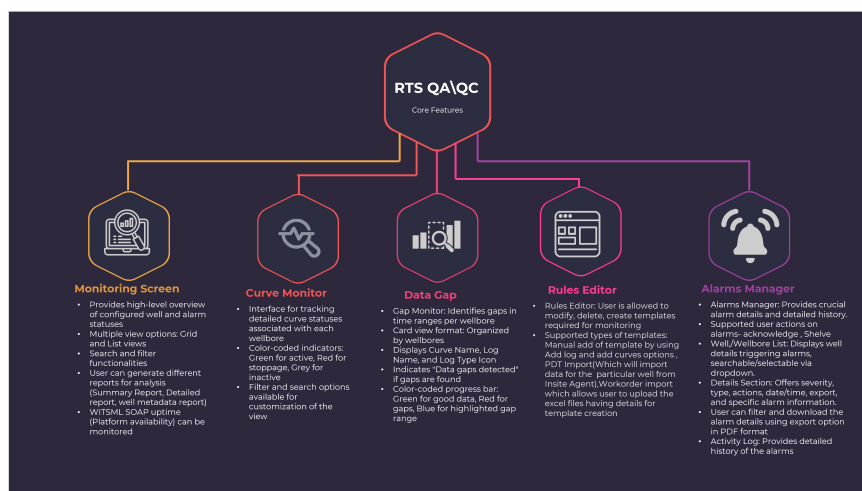
Log in with your Halliburton credentials on the authentication page.

## User Permissions

The user must be registered with OKTA and should have the authorization to access the application via OWAI.

Users will have access to the wells\wellbores which they are entitled to.

## Application overview



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## Login Page

Users can enter their credentials to access the application.

Users can access the system using Halliburton id, however the data is displayed based on the logged in user's access to the wells/wellbore.

**Please follow the below steps to login to the application.**

- Login to the application using HAL ID
  - You will be directed to the landing page once you have successfully logged into the system.
  - You will be prompted with error messages when:
    - Username is blank
    - Password is blank
    - Incorrect HAL ID or password



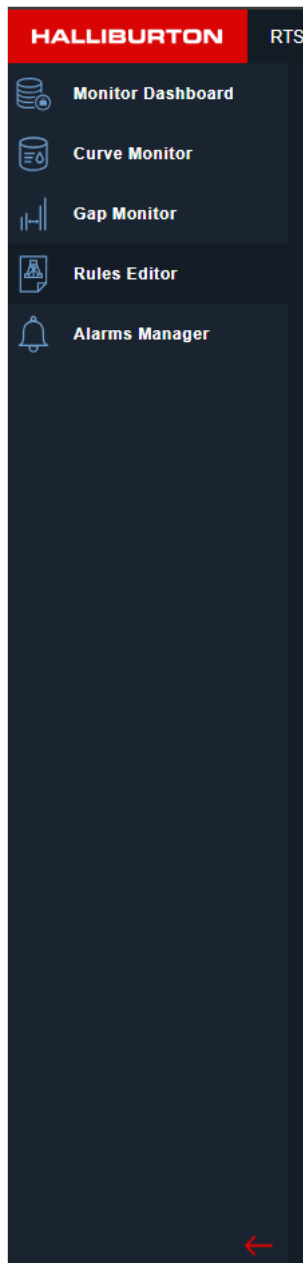
## Menu

This application has 6 menu items. Menu bar can be expanded/collapsed based on the user preference by clicking on the arrow button at the bottom.

- Monitor Dashboard
- Curve Monitor
- Gap Monitor
- Rules Editor
- Alarms Manager

Menu bar can be expanded/collapsed based on the user preference by clicking on the arrow button at the bottom.

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## Application Topbar

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### Top bar buttons

- Tenant Selection Checkboxes
- Theme Button
- User Name and Logout button

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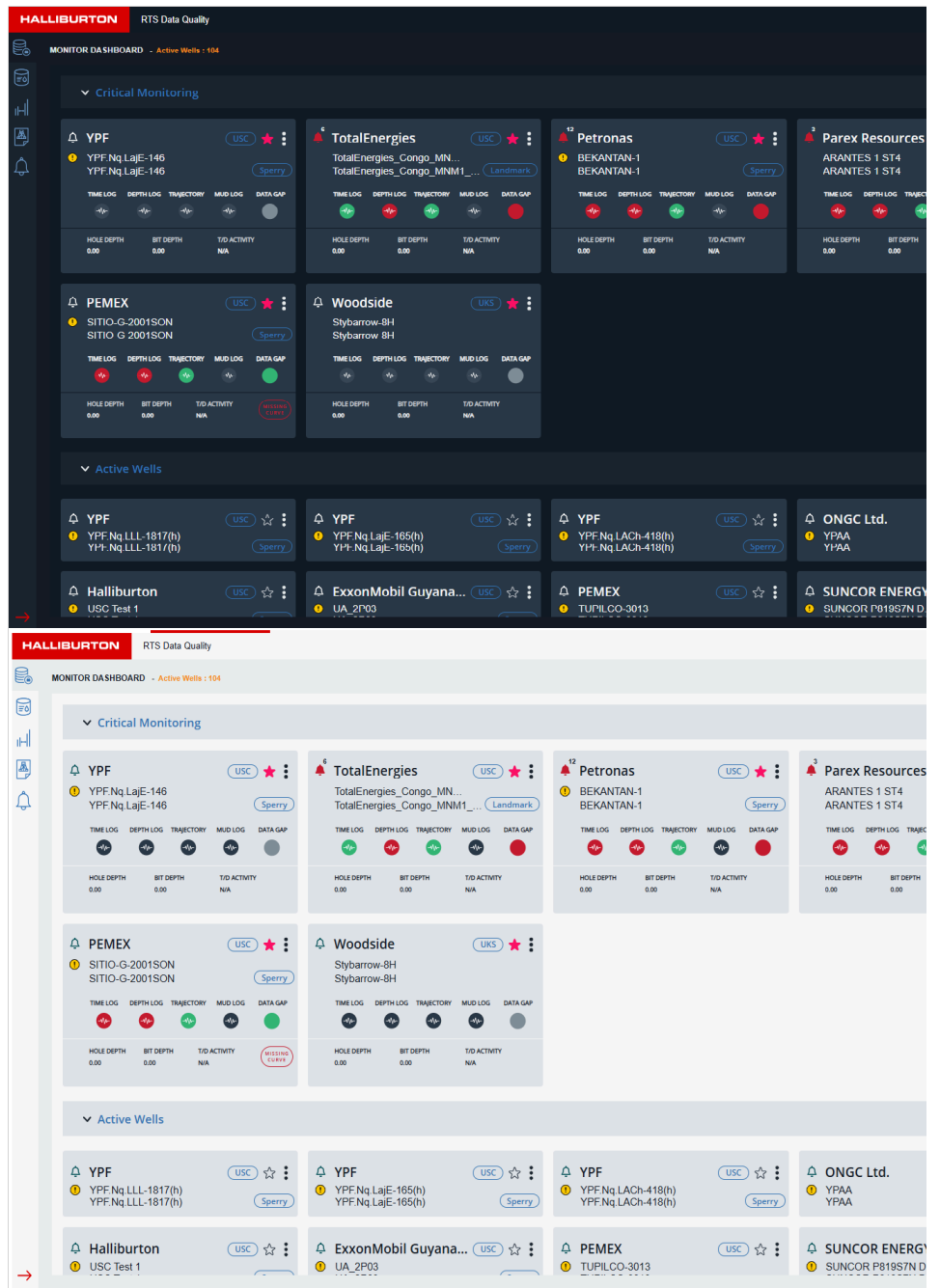
| Issues | Operator               | Environment | Well/Wellbore              | Time Log | Depth Log | Trajectory | Mud Log | PSL      | Data Gap | Actions |
|--------|------------------------|-------------|----------------------------|----------|-----------|------------|---------|----------|----------|---------|
|        | Petrobras              | USC         | BRUNO1001<br>BRUNO1001.1   |          |           |            |         | Sperry   |          |         |
|        | HESCO Alaska, LLC      | USC         | BCU 11A<br>BCU 11A         |          |           |            |         |          |          |         |
|        | PEMEX                  | USC         | BAATE 1001<br>BAATE 1001   |          |           |            |         | Sperry   |          |         |
|        | Petrobras Inc          | USC         | BRUNO1001.1<br>BRUNO1001.1 |          |           |            |         | Landmark |          |         |
|        | SPRINT                 | USC         | BRUNO1001.1<br>BRUNO1001.1 |          |           |            |         | Sperry   |          |         |
|        | TOTALENERGIE           | USC         | ALJ 278<br>ALJ 278         |          |           |            |         | Sperry   |          |         |
|        | Halliburton            | USC         | BAATE 1001<br>BAATE 1001   |          |           |            |         |          |          |         |
|        | CPOC                   | USC         | ALJ 278<br>ALJ 278         |          |           |            |         | Sperry   |          |         |
|        | SINTE OIL COMPANY      | USC         | BAATE 1001<br>BAATE 1001   |          |           |            |         | Sperry   |          |         |
|        | AKARUL OIL OPERATIO... | USC         | ALJ 278<br>ALJ 278         |          |           |            |         | Sperry   |          |         |
|        | VIP Energy             | USC         | BAATE 1001<br>BAATE 1001   |          |           |            |         | Sperry   |          |         |
|        | BIGSUN Energy          | USC         | ALJ 278<br>ALJ 278         |          |           |            |         | Sperry   |          |         |
|        | Petrobras Inc          | USC         | BRUNO1001.1<br>BRUNO1001.1 |          |           |            |         | Landmark |          |         |
|        | 3M Petroleum           | USC         | ALJ 278<br>ALJ 278         |          |           |            |         | Landmark |          |         |

## Theme

The application theme can be toggled between dark and light theme based on the user's preference by clicking on the theme button on the top-right of the title bar.



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## Monitor Dashboard

This screen serves as a crucial tool for QA/QC monitoring, allowing users to track the status of growing objects configured within the system.

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## Tool Bar Options

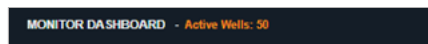
Upon accessing the Monitoring Screen, users will encounter the following tool bar options:

### Title Bar options:

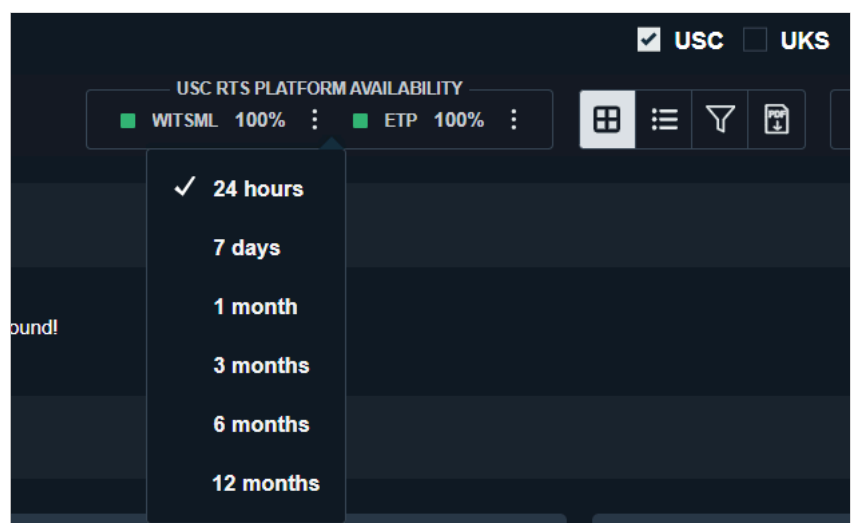
- UKS / USC Environment Checkbox: ☐ Based on the selection wells will be displayed. If both environments are unchecked all wells will be displayed.



- **Active Wells:** Displays the count of active wells in the list.



- **RTS Platform availability:** This option will be displayed only when one of the environments is selected
  - **Green:** Indicates an active connection.
  - **WITSML and ETP:** Percentage of availability will be displayed.
  - **When clicked on 3 dots:** Users can view the time frame /availability of WITSML and ETP server.



- Display Controls: Users can view the monitoring data in 2 ways
  - List View (Default)
    - In the List View, monitoring data is presented in a structured table format. In this view, users will see only the default columns.



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| Fields                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Default Columns are:</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Issues                                                                 | <ul style="list-style-type: none"><li>■ Within this column, an alarm icon is featured in a distinct red color. This icon is accompanied by a numerical count of the associated issues. When users click on this icon corresponding to a specific well, it will expand the Alarm Panel on the right side of the screen. This expanded panel displays alarm details and related information.</li></ul>                                                                                                                                                                                                |
| Operator                                                               | <ul style="list-style-type: none"><li>■ Operator name will be displayed here</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Well\Wellbore name                                                     | <ul style="list-style-type: none"><li>■ The name of Well and wellbores are displayed here.<ul style="list-style-type: none"><li>■ Well is displayed in small font</li><li>■ Wellbore is displayed in big font</li></ul></li><li>■ Wellbores can be sorted by clicking on the arrow button next to the wellbore header</li><li>■ When the connection to the source is lost, an alert sign will appear on the wellbore side, allowing the user to check the status of the wellbore.</li><li>■ When a source connection is lost the respective wellbore status row will turn grey</li></ul>            |
| <b>Default Growing Objects available here are TimeLog and DepthLog</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Time log                                                               | <ul style="list-style-type: none"><li>■ This column helps user to monitor the time log data flow</li><li>■ Below icon will be displayed for the user to monitor the data<ul style="list-style-type: none"><li>■  - To show the status of object whether it is streaming in real time or not.</li></ul></li></ul> <p><b>Color Legends</b></p> <p>Color legends are followed to depict the status of data flow:</p> <ul style="list-style-type: none"><li>■ Red: No logs streaming (Streaming Stopped)</li></ul> |

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|                                |                                                                                                                                                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <ul style="list-style-type: none"> <li>■ Green: All logs streaming (Streaming is active)</li> <li>■ Yellow: Some logs streaming, some stopped (Detected stoppage in streaming)</li> <li>■ Grey: Real-time streaming (Inactive)</li> </ul>                                                                      |
| Depth log                      | <ul style="list-style-type: none"> <li>■ This column helps the user to monitor the depth log data flow in.</li> <li>■ Icon is same as of Time log column.</li> </ul>                                                                                                                                           |
| <b>Additional Columns are:</b> |                                                                                                                                                                                                                                                                                                                |
| Trajectory                     | <ul style="list-style-type: none"> <li>■ This column helps the user to monitor the Trajectory data flow in.</li> <li>■ Icon is are same as of Time log column.</li> </ul>                                                                                                                                      |
| Mud Log                        | <ul style="list-style-type: none"> <li>■ This column helps the user to monitor the mud log data flow in.</li> <li>■ Icon is same as of Time log column.</li> </ul>                                                                                                                                             |
| Data Source                    | <ul style="list-style-type: none"> <li>■ Source server name will be displayed here</li> </ul>                                                                                                                                                                                                                  |
| Service Type                   | <ul style="list-style-type: none"> <li>■ Service types will be displayed here           <ul style="list-style-type: none"> <li>■ Drilling</li> <li>■ Well Testing</li> <li>■ Cementing</li> <li>■ Coil Tubing</li> <li>■ Well Fracturing</li> <li>■ Wireline</li> <li>■ Wellbore Fluids</li> </ul> </li> </ul> |

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## Data Gap Fill

This column will display the data Gap fill status of each wellbore to be monitored based on the data streaming.

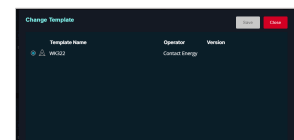
Color legeneds followed here:

- Green: Good Data (No gap identified)
- Yellow: Gap History (When the data gap is fixed ,the indicator will turn yellow)
- Red: If gap is identified

## Configure Icon

Each wellbore has a three-dot button next to it. When clicked a menu will be diplayed as shown in the Figure below with 4 options, Rules Editor ,Change Template , Detailed Template ,and Summary Report:

- **Rules Editor:** which will direct the user to respective Template screen allowing the user to simply configure/edit the template for log, trajectory, Mudlog, and curves individually.
- **Change Template:** When clicked on this option a pop-up window will be displayed. Users can select their required template from the list and click save to change the template for the wellbore.



- **Detailed Report:** When you select this option, a PDF report for the related well will be downloaded. A complete detailed Well report contains the:
  - Well
  - Wellbore
  - Wellbore UID
  - Operator
  - Timezone
  - Data Source
  - Service
  - Source Type
  - Log
  - Log Type

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- Gap , Delay and Status details will be reported

Sample Report (For reference purpose) :  
[Detailed Report](#)

- **Summary Report:** Users can download the PDF report of selected well.

Sample Report (For reference purpose) :  
[Summary Report](#)

- **Monitoring screen default grid headers are:**

- Issues
- Operator
- Well/wellbore Name will be displayed
- Time Log

- **Adding Columns to the Grid:**

To enhance the grid view, you can easily add more columns using the Column Chooser feature. To access the Column Chooser, follow these steps:

- Click on the **"Columns"** button.
- Selected box contains default columns and additional columns for users to add. The Column Chooser is divided into two sections: "Available" and "Selected."
- Selected (Default) Columns
  - In the **"Selected"** box, you will find the default columns, which are displayed in grey font.
  - Users can modify the order of these columns by clicking the "Up" and "Down" arrows to rearrange them as needed.
- **Additional Columns**
  - Additional columns, displayed in white font, can be found in the **"Available"** box.
  - Users have the flexibility to add the required additional columns to the "Available" box. You can do this by selecting the desired column and clicking the appropriate button to move it to the "Available" box.
  - Alternatively, you can choose to add all available columns to the "Available" box for a comprehensive view.

- Card View

- The Card View offers an alternative display option. Here, well data is divided into two sections: "Critical Monitoring" and "Active Wells."
- Users have the flexibility to personalize their experience by selecting their favourite wells or wellbores. This can be done by clicking on the star icon, which will turn red once added to the "Critical Wells" section.
- The Card View presents a comprehensive overview of monitoring data, making it easier for users to quickly identify and prioritize critical information.

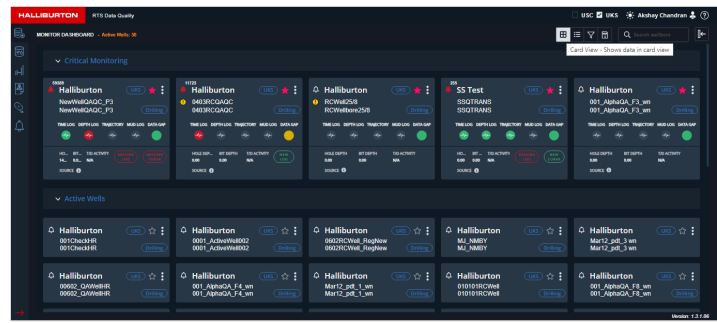
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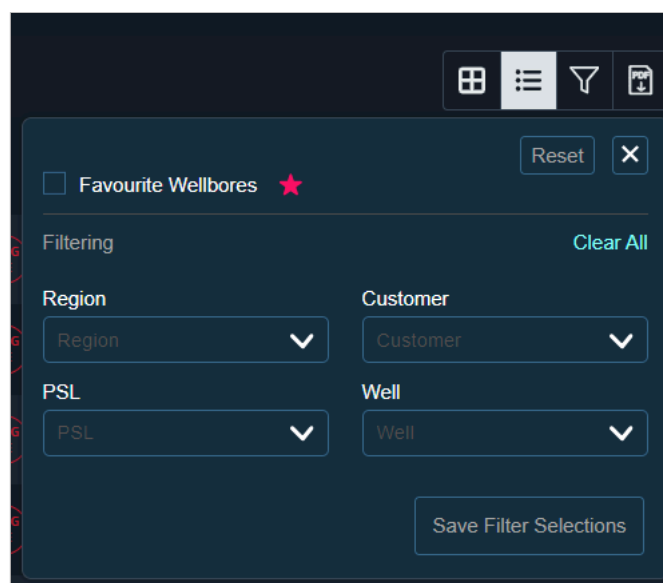
#### ■ Card Information explained:

- Yellow Indicator to notify users on New PDT availability

## Filter Functionality

The combined filter functionality allows users to refine their search based on various criteria, including PSLs, Region, Customer, Wells/Wellbore. Follow these steps to utilize the filter:

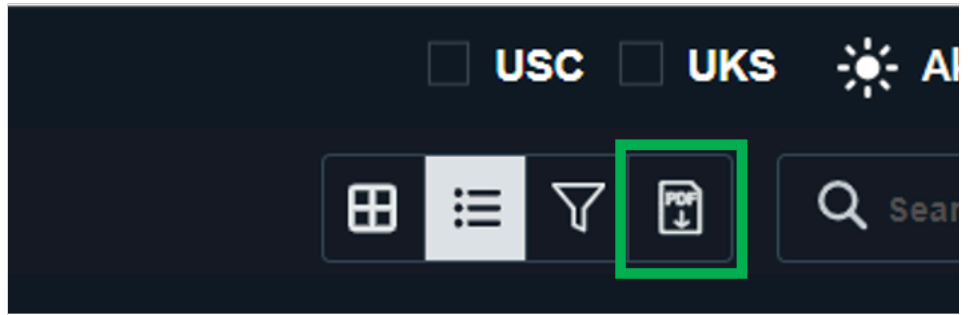
1. Accessing Combined Filters:
  - Navigate to the filter options in the search interface and look for the "Filters icon".
2. Favourite Wellbores:
  - If this option is selected, the list will be narrowed down to only include favorite wellbores.
3. Choosing Filter Criteria:
  - Select criteria such as PSLs, Region, Customer, Wells/Wellbore.
4. Applying Filters:
  - Click the "Close" button to instantly update search results based on chosen criteria. Reset button is also available.
5. Saving Filter Selections:
  - Click on "Save Filter Selections" to store filter configurations for future use.
  - Provide a descriptive name for the filter selection and click "Submit".



## MetaData Report

Users can download the details of Active wells in the monitoring by clicking on the PDF button which will download Metadata Well report PDF.

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## Search Functionality

Users can utilize the search functionality to look for specific well and wellbore names.

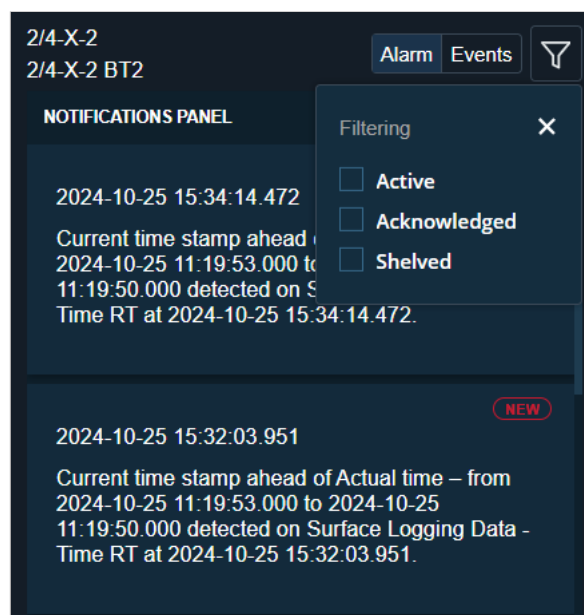
## Notification Panel

The **Notification Panel** helps users monitor alarms and events specific to a selected wellbore. It includes the Alarms Tab for viewing active alerts and the Events Tab for receiving notifications on wellbore updates.

### Alarm Tab

The Alarms Tab provides detailed information on alerts. Users can filter the list based on different statuses to streamline the view:

- Filter Options:
  - **Active:** Shows currently active alarms.
  - **Acknowledged:** Displays alarms that have been reviewed.
  - **Shelved:** Lists alarms that are temporarily set aside.

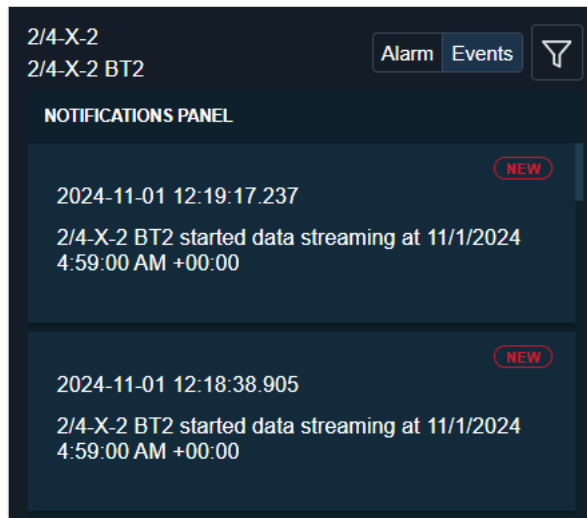


### Events Tab

The **Events Tab** notifies users of key updates and changes in wellbore activity. Notifications include:

- **New Well Availability:** Alerts users when a new well becomes available.
- **Streaming Started Notification:** Notifies users when data streaming begins for a wellbore

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## New Log/Curve Notification

Apart from the configured logs or curves in template if any new logs or curves are added in RTS the system will identify (every 12 hour system will check RTS for any new logs or curves) and shows notification for the user as pill icon in the dashboard screen.

### INFO

Sorting Grid information is performed by clicking the arrow button adjacent to the grid headings.

- Operator, Well/Wellbore, Data Source, Service Type: Sortable in ascending/descending order
- Time Log, Depth Log, Trajectory and Mud Log:
  - Initially, problematic data will be displayed during sorting.
  - Following that, live data will be displayed.
  - Inactive data will be displayed later

By default, problematic data will appear first in the grid when the screen is refreshed.

## Curve Monitoring

Users may keep track of the curves for each wellbores here. The curves are categorized based on the log(Depth, Time, Trajectory, Mudlog)

1. The curves for the new wellbore will be auto populated in this screen dependent on the log.
  - If the curve is not streaming, the colour changes to red. When clicked on the red dot user will be navigated to the **Alarm** page ,where alert details will be displayed
  - once the real-time streaming is detected, the colour changes to green.
  - Color legends followed for curves :
    - Green : Active
    - Red : Stoppage



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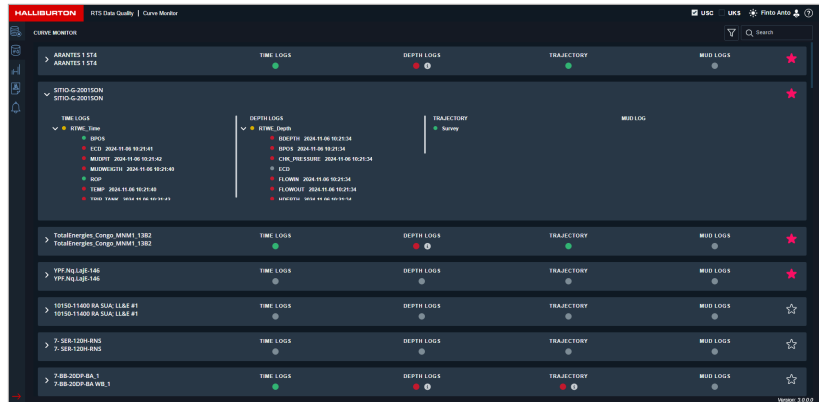
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- Grey : Inactive

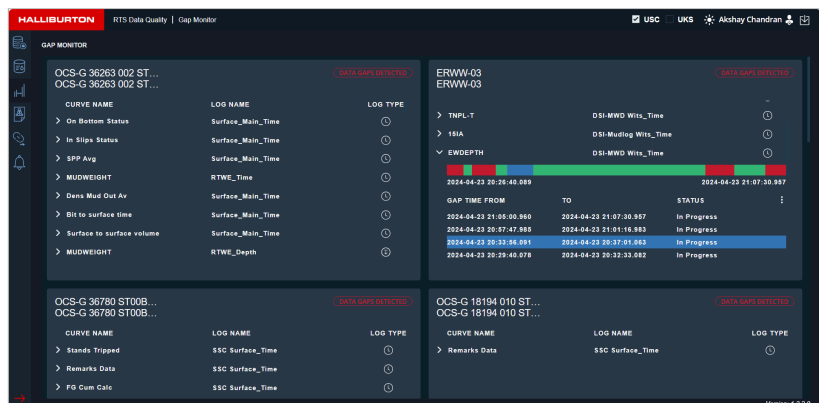
2. Filter : Users can utilize the filter option to narrow down the list (Same filetr functionality in Monitoring screen)
3. Search functionality: Search the list by wellbore names
4. Users have the flexibility to personalize their experience by selecting their favorite wells or wellbores. This can be done by clicking on the star icon, which will turn red.



## Gap Monitor

The Gap Monitor page is designed to display gaps identified between a specified range of time for each wellbore. Each wellbore may have multiple curves, and the presence of gaps in these curves is indicated by the appearance of the text "Data gaps detected" for the entire wellbore section.

- Details are displayed in a card view format based on wellbores
  - Under each Wellbore, Curve Name ,Log name and Log type icon will be displayed for the streaming data
  - Each curves can have a dropdown option based on the data streaming, it will display the gap range occurred. When the Gap range from and To is selected the progress bar will highlight the gap portion in blue color
  - Color indication on bar :
    - Green: Good Data (No gap identified)
    - Red: If gap is identified (Critical Curve BDP)
    - Blue: Gap range will be highlighted

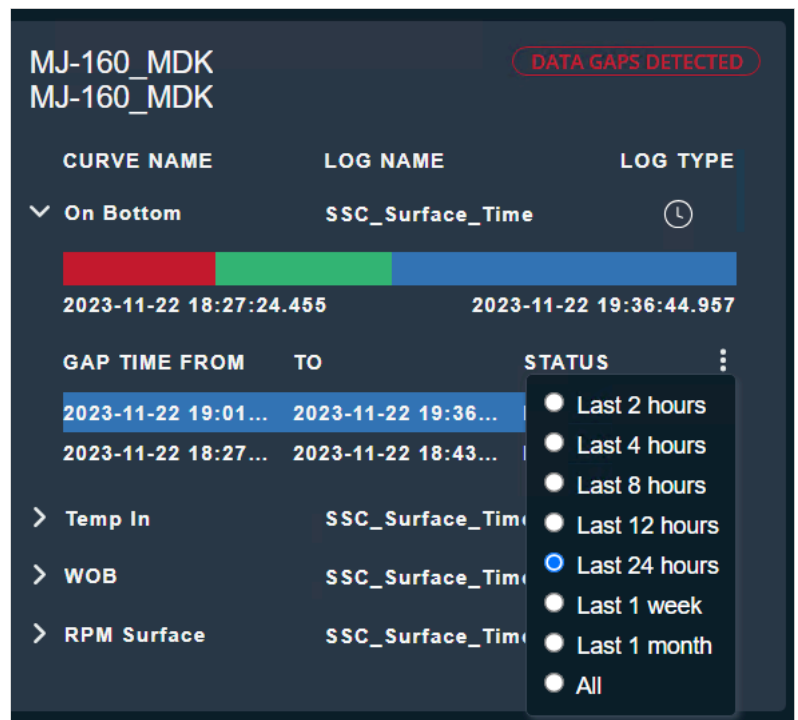


- Filter functionality is available in all details sections. Click on the 3 dots to open the filter range window (Please refer to the Figures below)

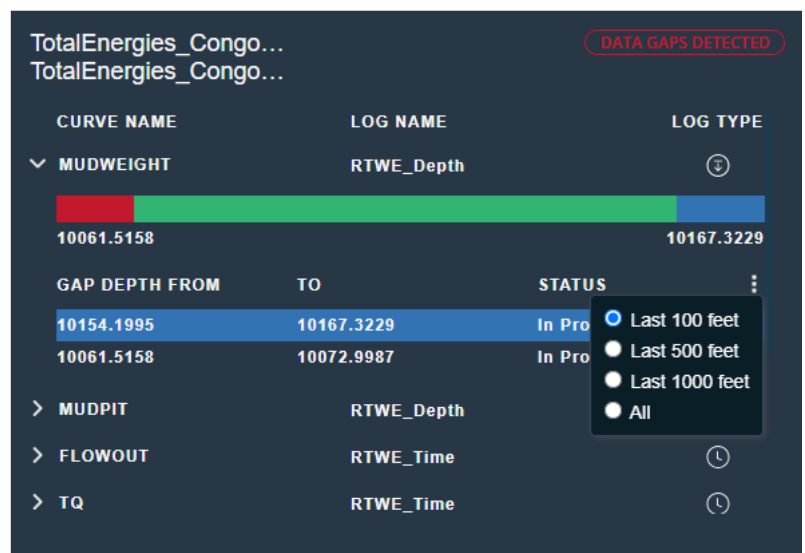
- Default data loaded for time log: **last 24 hours**

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- Default data loaded for Depth log,Trajectory and Mud Log: **last 100ft**



## Rules Editor

This screen aids users to change the configuration of wellbore specific templates. Here, users have the flexibility to input data for various objects manually or import data.

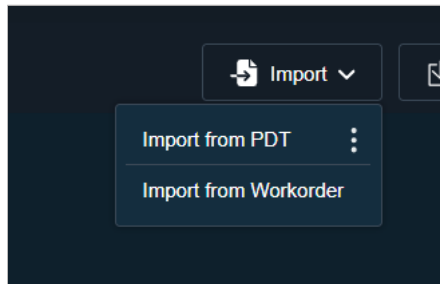
Configuration for Logs, Trajectory, Mud log, and curves will be included in the template.

1. All templates with operator names are displayed on the left side of the screen.
2. A search functionality is available in the template list for searching the template name and operator.
3. A collapse/expand button will appear on the right side of the pane to reveal the selected template information, which includes Monitor Time, Depth Log, Monitor curves, Monitor Trajectory, and Monitor Mud Log.
4. Once the template is modified click **Save** button to save the template configuration

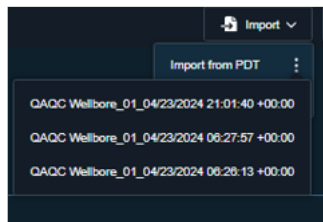
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5. Import Button: Users can import the data in 2 ways

- Import From PDT
- Import from Workorder



- To view the PDT versions click on the 3 dots next to Import from PDT

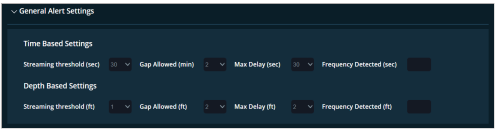


This Page allows you to configure global settings and alert criteria for data monitoring in each wellbore. Here, you can set parameters for **streaming frequency, data gaps and maximum delay** for both time logs and depth logs. It also enables configuring alert settings that will trigger alarms based on specific conditions.

## General Alert and Conditional Alarm Settings

| Fields                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Alert Settings | <p>The <b>General Alert Settings</b> apply to all time and depth logs, establishing base thresholds to monitor data streaming and delay conditions.</p> <ul style="list-style-type: none"><li>• <b>Fields and Default Values</b><ul style="list-style-type: none"><li>◦ <b>Streaming Threshold:</b> Default - 30 sec / 1 ft</li><li>◦ <b>Gap Allowed (min/ft):</b> Default - 2 min</li><li>◦ <b>Max Delay (sec/ft):</b> Default - 30 sec / 2 ft</li><li>◦ <b>Frequency Detected (sec/ft):</b> Default - 0 (auto-updated, non-editable field)</li></ul></li><li>• <b>Indicator Colors</b><ul style="list-style-type: none"><li>◦ If data arrives within 30 seconds, the monitoring screen displays <b>green</b>.</li><li>◦ If data exceeds this threshold, the screen displays <b>red</b>.</li></ul></li><li>• <b>Setting Values</b><ul style="list-style-type: none"><li>◦ Use dropdown menus to select values for <b>Streaming Threshold, Gap Allowed, and Max Delay</b> from a predefined list.</li><li>◦ <b>Frequency Detected</b> updates automatically and cannot be manually</li></ul></li></ul> |

edited.



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## Conditional Alarm Settings

The **Conditional Alarm Settings** let you define specific conditions under which alarms are triggered. You can tailor alerts to identify interruptions in streaming and thresholds for data values.

### Data Streaming Conditions

#### ◦ Intermittent Streaming

##### ■ Fields and Default Values

- **Duration:** Default - 10 min
- **Interval:** Default - 5 min
- **Severity:** Default - High
- Alarm triggered if streaming starts and stops multiple times without resuming steadily within a set time.
- Adjust time **interval** and alarm **severity** via dropdown menus

#### ◦ Data Stream Stoppage

##### ■ Fields and Default Values

- **Duration:** Default - 3 min
- **Interval:** Default - 5 min
- **Severity:** Default - Critical
- Alarm triggered if streaming halts and does not resume within a specified interval.
- Set the duration and severity of the alarm.



### Out-of-Range Conditions

#### ◦ Minimum Threshold

##### ■ Fields and Default Values

- **Min Threshold:** Default - 3
- **Duration:** Default - 5 min
- **Severity:** Default - Medium
- An alarm triggers if values fall below the user-set minimum for a specified time.
- Choose alarm severity via dropdown.

#### ◦ Maximum Threshold

##### ■ Fields and Default Values

- **Max Threshold:** Default - 3

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- **Duration:** Default - 5 min
- **Severity:** Default - Medium

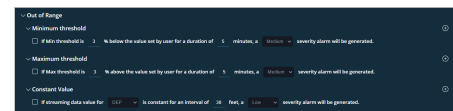
- Alarm triggers if values exceed the user-defined maximum for a specified time.
- Choose alarm severity from dropdown options.

- **Constant Value (Depth Log Based)**

- **Fields and Default Values**

- **Sensor:** Default - DEP
- **Interval:** Default - 30 ft
- **Severity:** Default - Low

- Trigger alarms if streaming values for a specific depth curve stay constant over a defined interval.
- Automatic population of downhole depth; if unavailable, surface depth or other depth logs will be used.



## Data Gap Conditions

Define alarms based on gaps in data over time or depth. Custom thresholds allow monitoring both **Time-Based** and **Depth-Based gaps**.

- **Time-Based Data Gaps**

- **Fields and Default Values for first condition**

- **Duration:** Default - 10 min
- **Severity:** Default - High

- **Fields and Default Values for second condition**

- **Interval:** Default - 2 min
- **Duration:** Default - 10 min
- **Severity:** Default - Critical

- Set an alarm if a data gap surpasses the **Gap Allowed** value for more than a specified time (default is 10 minutes).
- Customize intervals to detect multiple gaps, triggering an alarm if more than one gap is found within the set time.



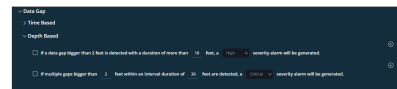
- **Depth-Based Data Gaps**

- **Fields and Default Values for first condition**

- **Duration:** Default - 10 ft

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- **Severity:** Default - High
- **Fields and Default Values for second condition**
  - **Interval:** Default - 2 ft
  - **Duration:** Default - 30 ft
  - **Severity:** Default - Critical
- Configure alerts if data gaps exceed the **Gap Allowed** threshold for more than a specified depth (default is 10 feet).
- Set intervals to detect multiple depth gaps, triggering an alarm if multiple gaps are found within the set range.
- **Severity Options:** Choose the alarm severity level for each condition to receive precise notifications (e.g. **Critical**, **Warning**).



## INFO

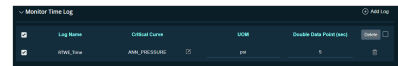
- By clicking on the + icon in Conditional settings we can add upto 4 conditions.
- By clicking on the delete icon we can delete a condition.

## Adding growing object details inside a template

| Fields           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitor Time Log | <p>This section contains the following fields that allow the user to configure the Time log.</p> <ul style="list-style-type: none"> <li>• <b>Add log:</b> User can add 5 new logs to the section.</li> <li>• Monitor Time Log Grid               <ul style="list-style-type: none"> <li>◦ <b>Log name:</b> It describes the name of the log.</li> <li>◦ <b>Critical curve:</b> Selected critical curve will be displayed here. View and edit the critical curve by clicking the edit icon, which opens a pop-up window displaying available curves for selection.</li> <li>◦ <b>UOM:</b> User can enter the unit info here</li> </ul> </li> </ul> |

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- **Double Data Point (sec):** Enter the value
- **Delete button:** User can delete the log.



## Monitor Depth log

- **Add log:** User can add 5 new logs to the section.
- Monitor Depth log Grid
  - **Log name:** It describes the name of the log.
  - **Critical curve:** Selected critical curve will be displayed here. View and edit the critical curve by clicking the edit icon, which opens a pop-up window displaying available curves for selection.
  - **UOM:** User can enter the unit info here
  - **Time Log | Depth Curve** Time log and Depth curve list will be displayed in the dropdown. User can select the required log and curve from the list
    - Time Log : Time logs will be displayed from the wellbore based on the selected critical curve
    - Depth Curve: Depth curve list is displayed based on the time log list
  - **Double Data Point (ft):** Enter the value
  - **Delete button:** User can be able to delete the log.
  - Fields are free to edit



## Monitor Curves

This section displays the following columns.

- **Count:** Display the count of curves selected
- **Filter:** Filter the list based on time and depth
- **Add Curves:** On clickink Add curves user can add new curves to the list.
- **Log Type:** This displays the type of the log in icons. A check box is available next to the log type , were users can add required curves to the template. Users can select all the curves at once or they can select the specific curves
- **Log name:** This describes the corresponding log name for each curves

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selected.

- **Curve Name:** This displays the selected curve.
- **UOM:** User can enter the unit info here
- **Min and Max:** This field allows users to input both the minimum and maximum values. Alerts will then be shown based on these threshold values.
- **Delete button:** User can be able to delete the curve

| Log Type  | Log Name | Curve Name | UOM | Min | Max |
|-----------|----------|------------|-----|-----|-----|
| RTM_Depth | ADAMT001 | ADAMT001   | ft  |     |     |
| RTM_Depth | ADAMT002 | ADAMT002   | ft  |     |     |
| RTM_Depth | ADAMT003 | ADAMT003   | ft  |     |     |
| RTM_Depth | ADAMT004 | ADAMT004   | ft  |     |     |
| RTM_Depth | ADAMT005 | ADAMT005   | ft  |     |     |

### Monitor Trajectory

This section should display with the following columns.

- **Add Trajectory:** On click user can add a trajectory.
- **Trajectory:** Displays the the name of Trajectory.View and edit the trajectory by clicking the edit icon, which opens a pop-up window displaying available trajectory for selection.
- **Time Log | Depth Curve** Time log and Depth curve list will be displayed in the dropdown.User can select the required log and curve from the list
  - Time Log : Time logs will be displayed from the wellbore based on the selected trajectory
  - Depth Curve: Depth curve list is displayed based on the time log list
- **Frequency(ft):** It allows the user to enter the value in feet based on the station values.
- **Delete button:** User can delete each trajectory
- Fields are free to edit

| Trajectory | Time Log | Depth Curve | Frequency (ft) |
|------------|----------|-------------|----------------|
| Survey     | RTM_Time | DEPTH       | 100            |

### Monitor Mud Log

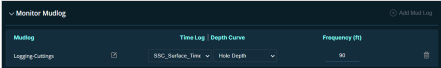
This section will display with the following columns.

- **Add Mudlog:** On click user can add a Mudlog.
- **Mud Log:** This describes the name of the Mudlog.
- **Time log | Depth curve:** user can enter the curve which is critical. If it is a critical curve system will be filling the gaps for the complete logs for that type.



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- Time Log : Time logs will be displayed from the wellbore based on the selected mud log
- Depth Curve: Depth curve list is displayed based on the time log list
- **Frequencny(ft):** Allows the user to enter the value in feet based on the geology interval.
- **Delete button:** User can delete each Mudlog.
- Fields are free to edit



### Import History

This section will display the activities happened in the rules editor page

The Import History section provides a comprehensive overview of the actions that have taken place on the page.

**This section is organized into three columns:**

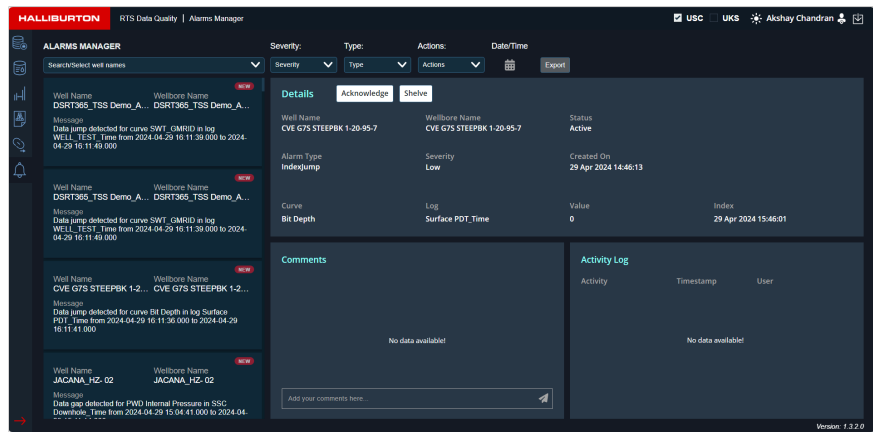
- **Action:** This column displays a concise description of the actions that occurred on the page.
- **Date:**The Date column indicates the specific date on which each action took place. This information allows users to track the chronological sequence of events.
- **User:**The User column provides the name of the user responsible for each action. This helps in attributing actions to specific individuals and facilitates accountability.

| Action                                                                                | Date                 | User        |
|---------------------------------------------------------------------------------------|----------------------|-------------|
| Critical Curve is updated to SST Gamma Ray KC RT for SSC_Download_Time in time logs   | 19 Apr 2024 16:01:50 | Namuna Bari |
| UCM is updated to ghm for SSC_Download_Time in time logs                              | 19 Apr 2024 16:01:50 | Namuna Bari |
| Critical Curve is updated to SST Gamma Ray KC RT for SSC_Download_Depth in depth logs | 19 Apr 2024 16:01:50 | Namuna Bari |
| UCM is updated to ghm for SSC_Download_Depth in depth logs                            | 19 Apr 2024 16:01:50 | Namuna Bari |
| Time Log is updated to SSC_Surface_Time for SSC_Download_Depth in depth logs          | 19 Apr 2024 16:01:50 | Namuna Bari |
| Depth Curve is updated to Hole Depth for SSC_Download_Depth in depth logs             | 19 Apr 2024 16:01:50 | Namuna Bari |
| SSC_ALPHA2_Depth removed from depth log                                               | 19 Apr 2024 15:26:29 | Namuna Bari |
| SSC_ALPHA2_Time removed from time logs                                                | 19 Apr 2024 15:26:29 | Namuna Bari |
| SSC_Concenting_Time removed from time logs                                            | 19 Apr 2024 15:26:29 | Namuna Bari |
| Temperature removed                                                                   | 19 Apr 2024 15:26:29 | Namuna Bari |

## ALARMS MANAGER

The Alarms Manager interface serves as a pivotal tool for monitoring and managing alarm incidents effectively. It offers a comprehensive overview of alarm details and their historical context. Comprising four distinct sections, namely the Well List, Details, Comments, and Activity Log, this interface empowers users with actionable insights into alarm occurrences.

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- Sections overview
  - Well List
  - Details
  - Comments
  - Activity Log

## Well/Wellbore List

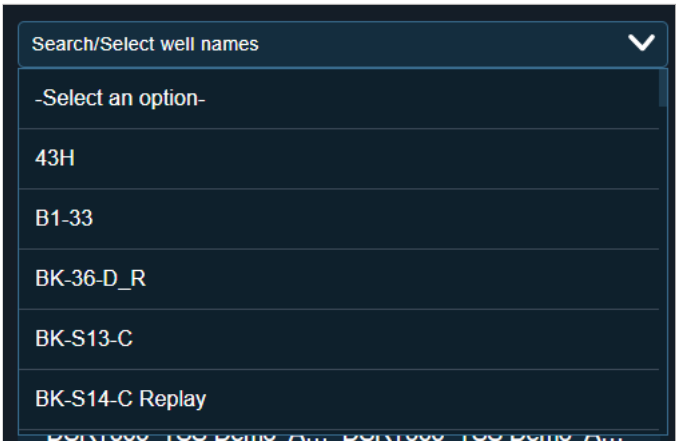
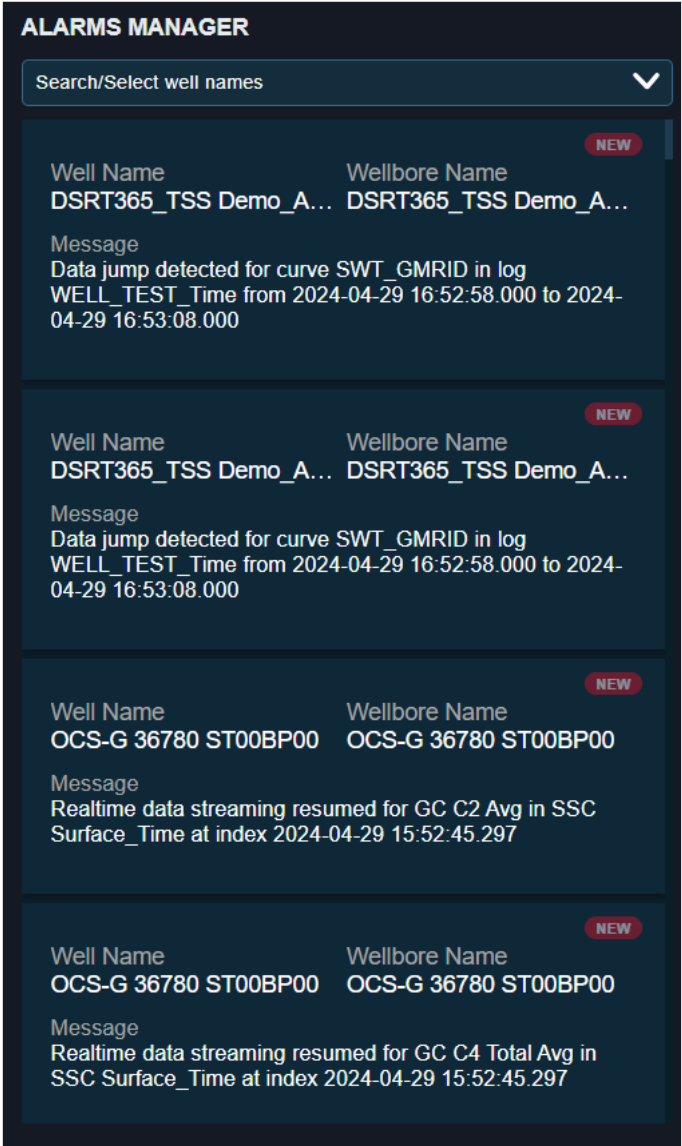
This section comprises a list of well details that have triggered an alarm. Users can view the details of the selected well in the Details Section.

- Users can search/select well names by clicking on the dropdown

Well details are displayed in a card format:

- Well Name
- Wellbore Name
- Message
- If the alert is New, it will be displayed at the top-right corner in red color

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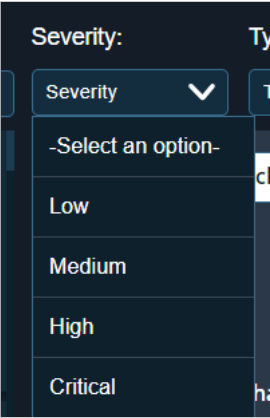


## Details Section

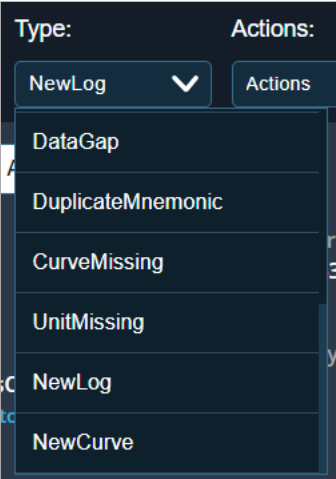
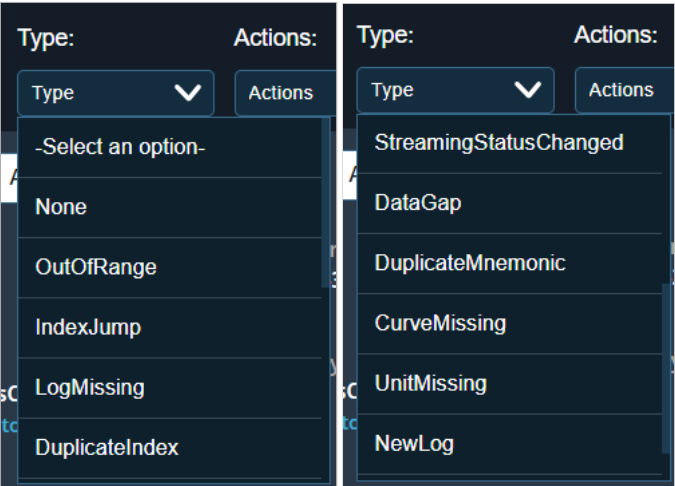
Within the "Details" tab, users can find the following information:

- **Dropdown filter operations:** Users can filter the list of alarms based on Well, Severity, Type, and Actions
- **Severity:** Severity levels can be selected from the dropdown

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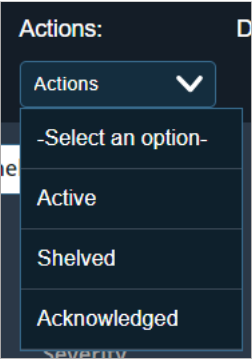


- Type: Users can select the type of alarm from the dropdown



- Actions:
  - Active
  - Shelved
  - Acknowledged
  - Date/Time:

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- Export: This option will be enabled when the well name is selected from the dropdown list. Users can select the dates from the date option and based on that the data will be exported.

Attaching sample CSV file for reference.

[Sample File](#)

**Alarm Details based on selected filter options:**

- Well Name: Displays the name of the associated well.
- Wellbore: Shows the name of the linked wellbore.
- Status: Indicates the current alarm status (Active, Shelved, or Acknowledged).
- Alarm Type: Displays the category of the alarm.
- Severity: Display the selected severity
- Created On: Shows the date and time when the alarm was created.
- Curve Details: Provides specific information about the alarm's associated log name and value.
- Log: Will display the type of Log: Time/Depth
- Value: Will display the value of the curve
- Index: Will display the index value of the curve
- Actions:

| Details      |                  |                      |                      |
|--------------|------------------|----------------------|----------------------|
| Acknowledge  |                  | Shelve               |                      |
| Well Name    | Wellbore Name    | Status               |                      |
| AM_Test_Well | AM_Test_Well     | Active               |                      |
| Alarm Type   | Severity         | Created On           |                      |
| IndexJump    | Low              | 29 Apr 2024 15:58:17 |                      |
| Curve        | Log              | Value                | Index                |
| Depth        | Surface_log_Time | 0                    | 29 Apr 2024 16:58:12 |

- Shelve: Allows shelving of the alarm. Users can select shelving options and provide reasons.

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- Acknowledge: Acknowledge the alarm.

## Activity Log

The "Activity" tab focuses on re-triggered alarms occurring during shelved time. It provides historical data on alarm activities.

- Activity: Displays re-triggered activities after shelving.
- Timestamp: Shows the time and date of each event.
- User: Displays user details associated with each activity.