

Schematics in muddyboots.online

This document provides users the information that is required to create and edit schematics in the muddyboots.online (MBO) app. Supplemental information on the purpose and meaning of schematic status types is also included.

Creating an Empty Schematic

- Under the **Master Data** drop down, located under the **Fields** heading, click **List** to load the fields table.
- Select the Field where the schematic needs to be built, by clicking the field name in the table.
 - Use the search bar in the top right corner of the table to search for the required field.
 - If the required field is not present, it can be added using the **New** selection located under the **Fields** portion of the **Master Data** dropdown.

- **1** Click the **+** to add an Empty schematic to the current field.

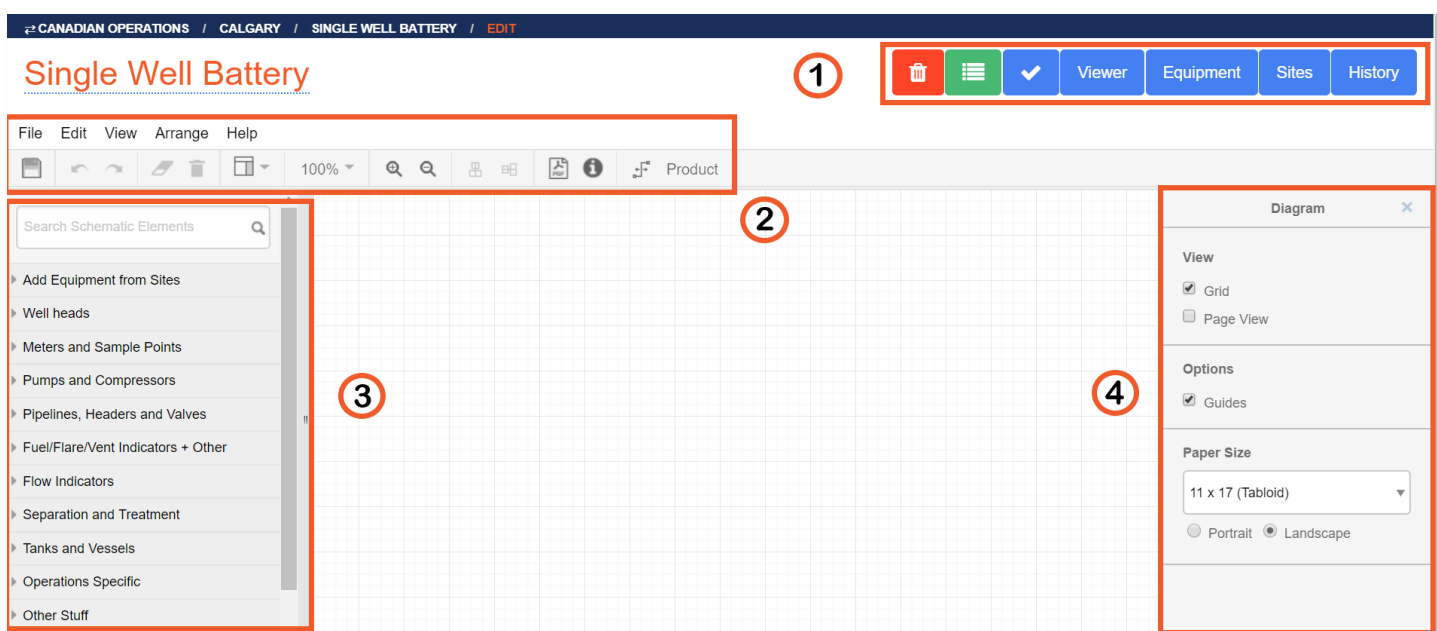
- **1** Enter the Schematic name for the new schematic.
 - **Remember:** Follow the companies naming convention.
- Click the **Create Empty Schematic** button to create an empty schematic.




Edit Mode Navigation











This Section will explain the functions of the various menus and toolbars contained in the schematic edit tool. There are 4 areas that are used while editing or creating a schematics within the MBO application. These areas are the, **1** MBO Action Buttons, **2** Schematic Toolbar, **3** Schematic Elements Library and, **4** Format Panel.











If starting a schematic from scratch follow the steps in “Creating an Empty Schematic” to start.

Tip: The best way to learn what the different buttons do, in the edit window, is to hover and read the tooltip, and never be afraid to click and experiment with the system.



- **1** The “MBO Action Buttons” contain multiple buttons that affect the schematic as a whole.
 -  The delete button is used to delete a schematic. The system will prompt to confirm the deletion of the schematic. After confirmation, the schematic will be permanently deleted from the system.
 - Verified schematics can not be deleted by MBO users. MBO will need to be contacted to delete previously verified schematics.
 - **Note:** Equipment will not be deleted from the MBO database when a schematic is deleted.
 -  The Notes button is used to view or add notes to a schematic.
 -  The Verify button, once clicked, will check to confirm that all flow lines on a schematic have been connected. If lines are not connected the system will highlight them in red.


-  The “Viewer” button is used to navigate from the edit mode to the view mode.
 - **Remember:** Save any work that has been completed before navigating away from the edit mode or all changes will be lost. The system will prompt the user if navigation is attempted without saving.
 -  The “Equipment” button will display a table of all the equipment on the open schematic
 - **Tip:** This list can be exported to an Excel spreadsheet.
 -  The “Sites” button will display a table of all the sites on the schematic.
 -  The “History” button will load a list of all the changes made to a schematic in historical order. Once a schematic has been verified by the “Schematic Verifier”, historical versions of the schematic can be viewed under the history portion of the schematic tool.
- **2** The Schematic Toolbar contains functions for tasks related to editing the schematic. Some of these functions are duplicated in the Format Panel and can be completed from both areas depending on user preference.
 -  The save button
 -  The “Undo” and “Redo” buttons can be used to undo mistakes or redo an undo between saves.
 - **Note:** These buttons will only work between saves. Once a change has been saved it can not be undone using the “Undo” arrow.
 -  The **eraser** button will remove the equipment from the schematic, but keep the equipment in the master database. The equipment can be added to schematics in the future if required.
 -  The **trash can** button will **permanently** delete equipment, and all the data associated with it, from the MBO database.
 - **Tip:** If equipment is unintentionally deleted, use the “Undo” button before saving the schematic. Once the schematic is saved the equipment will be deleted from the database.
 -  The view button can be used to toggle the “Format Panel” and the “Outline” window
 - Turning off the “Format Panel” and/or the “Outline” window will allow the users to have more space to work in the schematic tool.
 - **Note:** The format panel will be open by default.
 -  The zoom selection buttons can be used to select the level of zoom on the schematic
 - Use the “Zoom %” dropdown to select a pre-determined zoom level
 - Use the magnifying glass buttons to zoom in and out.

- Using the “+” and “-” keys on the keyboard will zoom the schematic in and out respectively
 - **Tip:** Holding the shift key and scrolling with the mouse scroll, will change the displayed zoom on the schematic.
-  The “Center” and “Middle” buttons are used to align multiple selected equipment on the vertical and horizontal planes respectively.
 - To align equipment vertically, click the  button.
 - To align equipment horizontally use the  button
 - **Note:** These functions are present in the “Format Panel” as well as by using key shortcuts. This explained in the “Aligning Equipment” portion of this document.
-  The PDF button will export the schematic to PDF format for printing or saving to an internal location.
 - **Best Practice:** MBO advises that the default 11x17 paper size format be used for best fit and the schematics be printed on 11x17 paper.
-  The Legend button will open the schematic legend.
 - The schematic legend will only show equipment and flow line types that have been added and saved to the open schematic.
-  The line format button will allow users to change the type of line used.
 - For lines that attach to schematic elements horizontally (arrow facing left or right) use the  “Horizontal” line type. This will make up 90% of the lines drawn in the system
 - For lines that attach to schematic elements vertically (arrows facing up or down) use the  “Vertical” line type
 - **Note:** The default line type is “Horizontal” however a selected line format will remain for all subsequent lines drawn on the open schematic after making a different selection.
 - **Best Practice:** MBO advises that only “Horizontal” and “Vertical” line type be used. Other line types should be avoided as they often make schematics difficult to update in the future and can cause arrow display problems.
-  The product selection provides flow product selections to change the flow product displayed on the schematic flow lines.
 - Select the lines that need to have their product type changed, click the  button and select the correct product from the resulting drop down.
 - **Note:** Product lines will always default to “Gas”
- **3** The “Schematic Elements” Library allows user to select or search for schematic elements to add to the schematic.
 - Click a heading to expand and view the schematic element selection
 - Use the “Search Schematic Elements” box to quickly find schematic elements to add

- The Schematic Element selection menu will be covered in more depth in the “Building and Editing Schematics” portion of this document.
- **4** The Format Panel is a dynamic menu that changes depending on what has been selected on the schematic grid. Many of the functions in the Format Panel are more in-depth functions from the Schematic Tool Bar.
 - With Nothing selected on the schematic the “Diagram” options will be available in the format Panel.
 - Users can change the “View” to show a grid on the schematic, or show the page margins by selecting “Page View”
 - “Guide” lines can be toggled on or off.
 - Paper size and print orientation can be selected under the “Paper Size” portion of the menu.
 - Selecting one or multiple schematic elements will toggle “Style”, “Text” and “Arrange” option tabs. The options under each tab will change depending on the schematic elements that have been selected.
 - The format panel will be covered in more depth in the “Building and Editing Schematics” portion of this document.

Building and Editing Schematics

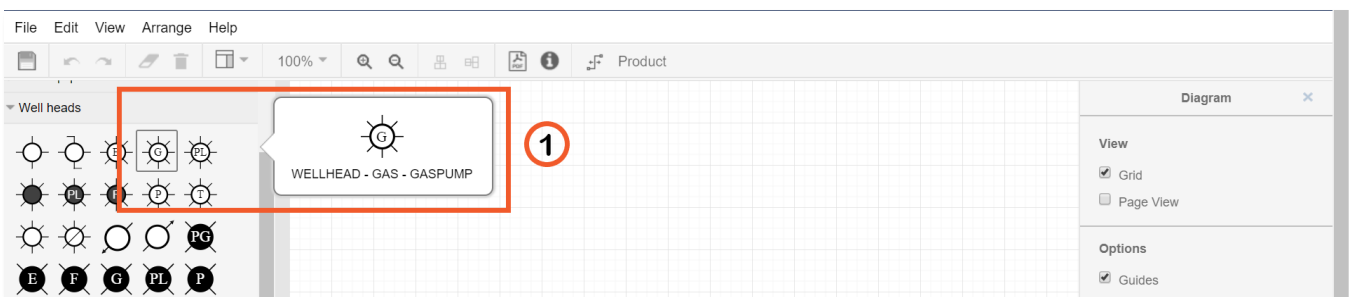
This section will cover building and editing schematics.

To begin follow the instructions to create a blank schematic or navigate to an existing schematic and click the  edit button in the top right corner of the screen. If possible, clone a similar, existing schematic, to save time when building new schematics. Please contact MBO for Schematic Cloning instructions.

(a) Adding Equipment


Expand a schematic element category to view the schematic elements. Schematic element menus are broken out by type category. **Remember:** Schematic elements can also be searched for using the “Search Schematic Elements” box.

The following example will use the “Well heads” schematic element category.



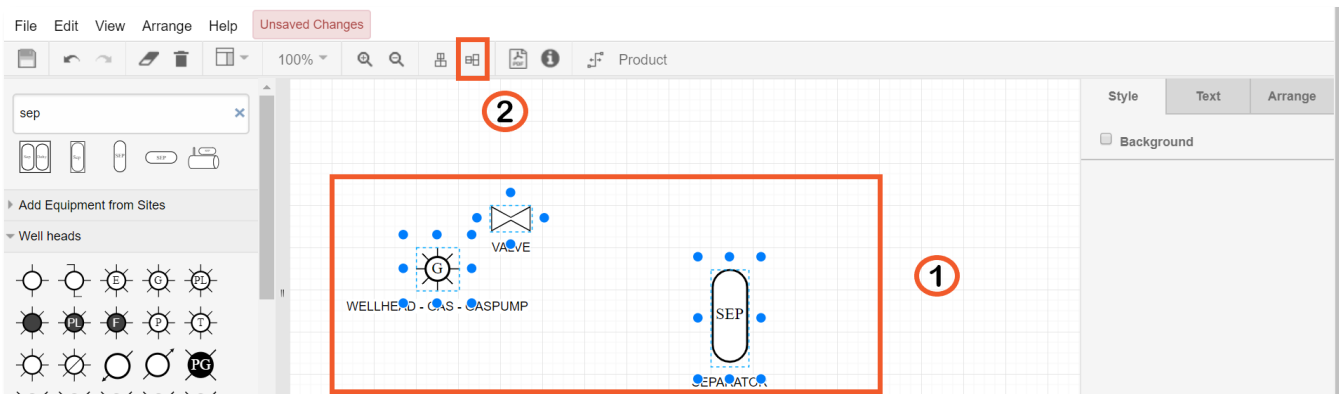
- ① Hover the mouse over a schematic element to view the schematic element name
 - Click and drag the schematic element on to the schematic.
 - Single clicking Schematic Elements will place them on the bottom left portion of the schematic.




The screenshot shows a software window titled "WELLHEAD - GAS - GASPUMP". It features a form with the following fields: "Well Identifier" (text input with "WELLHEAD - GAS - GASPUMP" entered), "Short note" (text input), "Surface location" (dropdown menu with "Search" selected), "Serial Number" (text input), and "Well license number" (text input). Red boxes highlight the "Well Identifier" and "Surface location" fields, with circled numbers 1 and 2 below them.

- Once a Schematic Element has been placed on the schematic, an Equipment Details window will automatically open containing a form to fill out with Equipment Details.
 - Every schematic element has 2 mandatory fields that need to be filled out in order to save the schematic. These required fields are shown in the picture above as ① and ②.
 - The remaining Equipment Details can be filled in while building the schematics or imported to the system after the schematic has been built.
 - Every schematic element will have different details that can be filled out.
- ① The “Equipment Name” field should be filled out following with the companies naming convention for the equipment being added to the system. This box cannot be blank.
 - Note:** Wellheads will show “Well Identifier” instead of “Equipment Name” as shown in the above example.
- ② The Surface Location box should be filled out with information regarding the physical location of the equipment.
 - This information can be in the forum of an LSD, GPS Coordinate or a written description.
 - Best Practice:** When possible, enter LSD or GPS coordinates.
 - If the Surface location has already been added to the MBO Software it will automatically be populated into a dropdown list when 2 or more characters from the Surface Location have been typed in the box.
 - New Surface locations will automatically create sites in MBO once the schematic has been saved.
 - Tip:** If adding a new Surface location, save the schematic once the equipment has been created to ensure that the selection populates into the drop down for subsequent equipment with the same Surface Location.
- Once all the required information has been filled out, click the  button located at the bottom of the equipment details window.

(b) Aligning Equipment/Moving Equipment

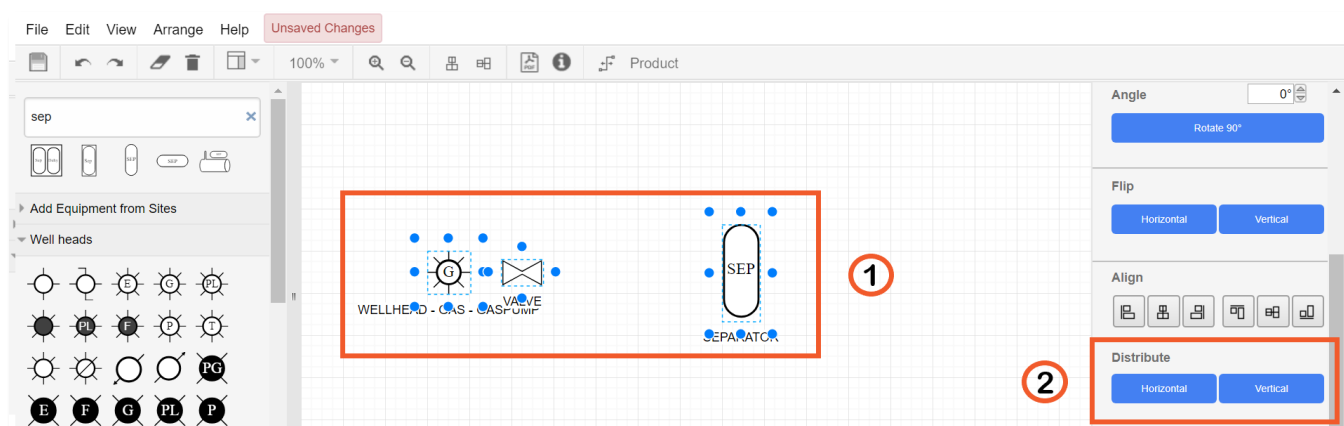
It is best practice to align Schematic Elements vertically and horizontally. This keeps the schematics easy to follow. Schematic Elements can also be moved in order to show flow or reduce white space.



- **1** Select the equipment that needs to be aligned, starting with the reference equipment. In the example above, the “Wellhead – Gas – Gaspump” is the reference piece of equipment that the valve and separator will be horizontally lined up in the center of.
 - Multiple pieces of equipment can be selected by holding the Ctrl key on Windows or the Cmd key on Macs and clicking the target equipment.
- **2** Click the  button to align the equipment on a horizontal plane.
 - There are additional align selections located under the Arrange tab of the Format Panel, in the “Align”  portion of the “Format Panel”.
 - This can also be accomplished by using the keyboard shortcut Ctrl+m on Windows or Cmd+m on Macs
- To align equipment on a vertical plane, follow steps **1** and **2** above, but use the  button.
 - This can also be accomplished using the keyboard shortcut Ctrl+e on Windows or Cmd+e on Macs or the additional align selections in the “Format Panel”.
- Once equipment has been placed on the schematic, it can be moved using different techniques.
 - Click and Drag – Click and drag equipment to different positions on the schematic.
 - If “Guides” are turned on, blue lines will appear to show how schematic elements are located in relation to other schematic elements, while dragging.
 - Click and arrow keys – Equipment can be selected and moved using the arrow keys on the keyboard. Press the arrow keys to move equipment 1 pixels, hold shift and press the arrow keys to move equipment 10 pixels.
 - This is helpful when making small orientation adjustments or straightening lines on the schematic.
- Multiple pieces of equipment can be moved at once using the above techniques by selecting multiple pieces of equipment using drag and highlight, or holding the Ctrl key on Windows or the Cmd key on Macs and clicking multiple pieces of equipment.

(c) Distribute Equipment

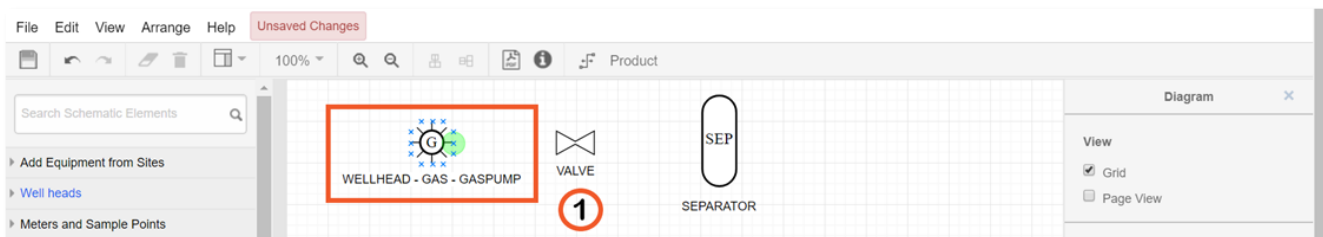
To evenly space equipment, use the Distribute function located under the Arrange tab of the Format Panel.



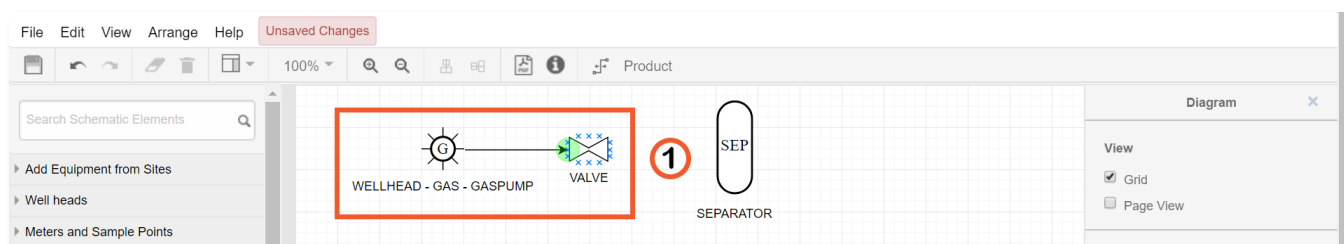
- **1** Select the equipment to be distributed.
 - Equipment can be selected by holding the Ctrl key on Windows or the Cmd key on Macs and clicking the target equipment
 - Equipment can also be selected by highlighting the target equipment.
 - To highlight, click and drag over the target equipment.
 - **Note:** Equipment was aligned in the “Align Equipment” portion of this document
- **2** Click the **Horizontal** tab in the “Distribute” portion of the “Format Panel”.
- To perform the distribute function on the vertical plane, follow the steps above but use the **Vertical** button.

(d) Connecting Flow Lines

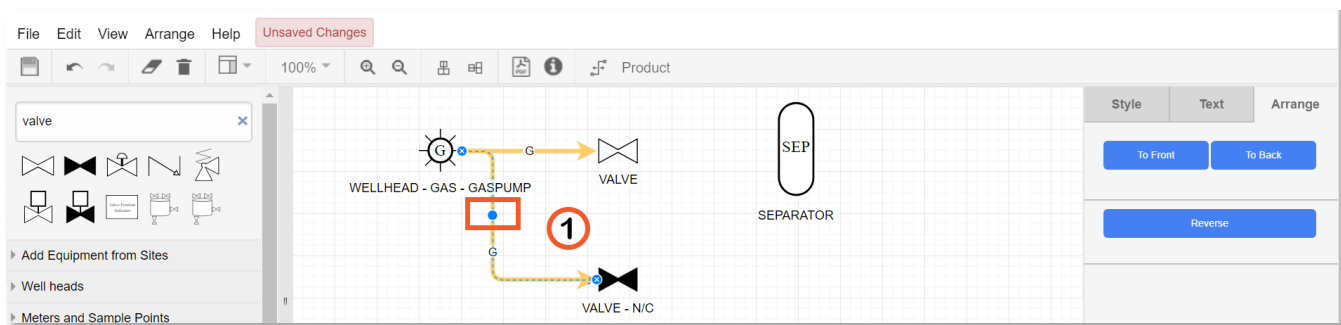
Note: Equipment has been distributed using the Distribute function covered in the “Distribute Equipment” portion of this document







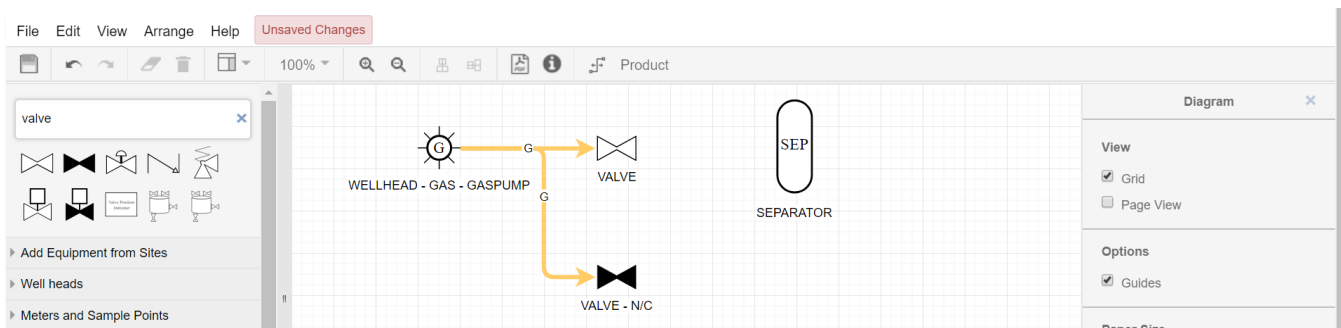
- ① Hover the mouse over a Schematic Element to see the connection points, the blue “x” that appears around the perimeter of the Schematic Element. A green circle indicates that the mouse is hovering over a connection “x”.
- Click a connection point and drag to start drawing a line.




- ① To connect a flow line, drag the line to a corresponding connection point on a Schematic Element.
 - A green circle will appear when a connection has been made.
- Release the mouse button to drop the line.



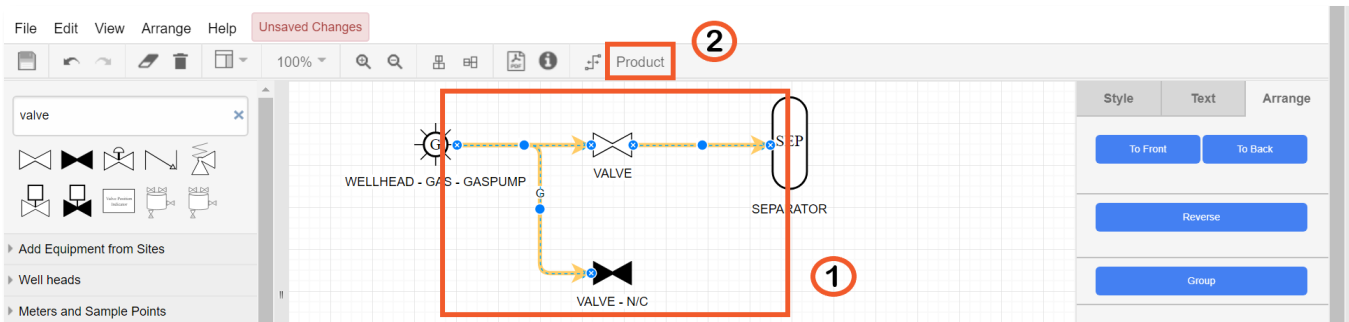
- 1 Click on the  located in the middle of a line to reposition the line.
 - Horizontal Line types  can be moved left and right. This will be the majority of the lines drawn
 - Vertical line types  can be moved up and down.
- Clicking any of the  blue dots when a line is selected will allow the user to change the lines orientation.



- The above picture shows the flow line moved to the right to clear the “Wellhead - Gas – Gaspump” title.
- After all Flow Lines have been connected and the schematic has been saved, click the  button in the “MBO Toolbar” to verify that the lines are connected.
 - Lines that have not been connected correctly will appear in red, indicating that they need to be connected correctly.

(e) Changing Flow Line Product Types

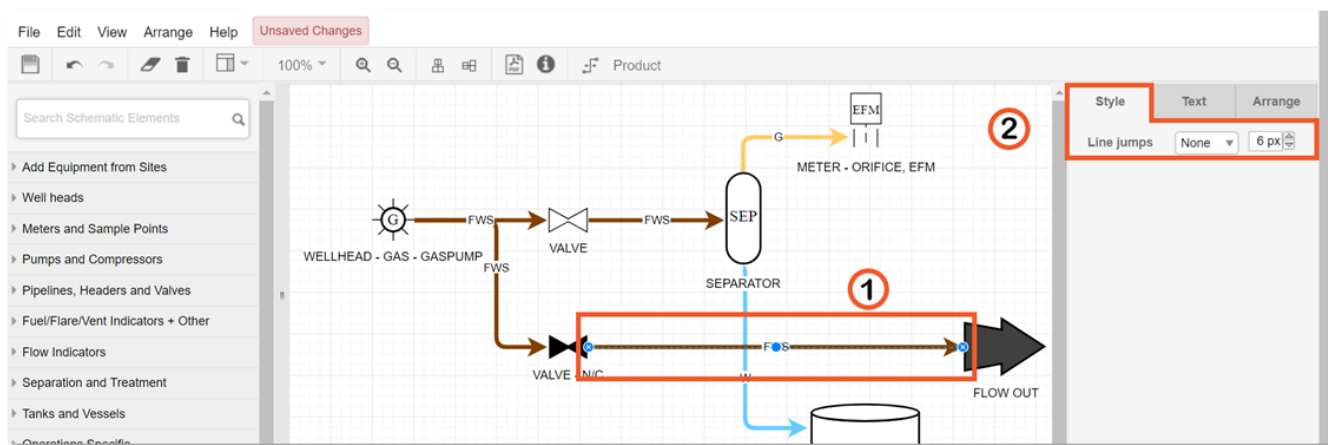
The default product line type is “Gas”. It will be necessary to change the line type to correctly display the product flow.



- **1** First select the flow lines to be updated to the correct product.
 - Multiple flow lines can be selected by clicking each line while holding the Ctrl key on Windows or Cmd on Macs.
 - Flow lines can also be selected by clicking on white space and dragging the selection window over the target flow lines
 - **Note:** Highlighted equipment will not be affected by the product selection.
 - If all lines on a schematic are required to be changed to the same product type all lines can be selected by using the keyboard shortcut Ctrl+a on Windows or Cmd+a on Macs.
 - **TIP:** To select only the flow lines on a schematic select “Select Flow Lines”, located under the “Edit” Drop down of the “Schematic Toolbar” or use the keyboard shortcut Ctrl+Shift+E on Windows or Cmd+Shift+E on Macs.
- **2** Click on the **Product** selection and select the desired product type from the product list. In the example “Full Well Stream” will be selected.

(f) Flow Line Jumps

Often flow lines will intersect each other. To make it easier to distinguish flow, users can apply line jumps.

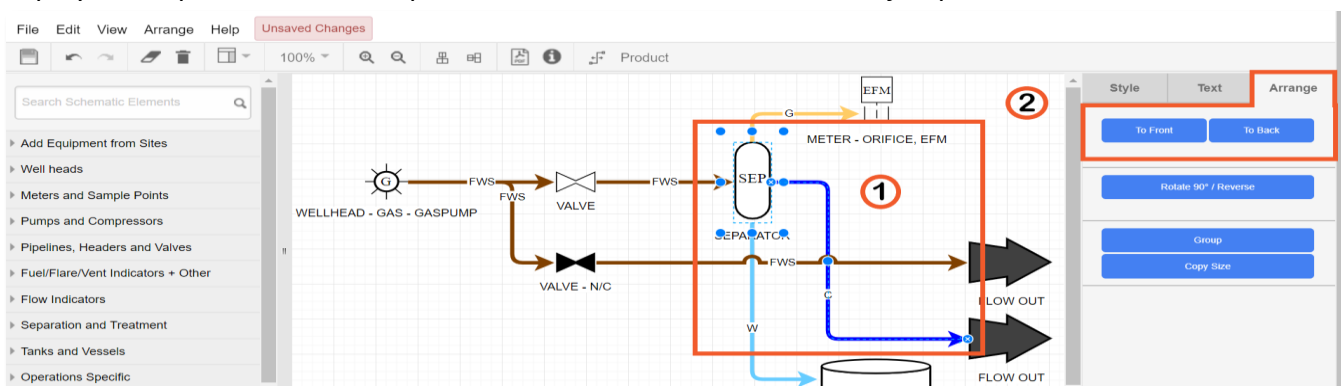


- **1** Select the flow line or lines that “line jumps” need to be applied to by clicking on the line or selecting multiple lines.
- **2** With a line, or multiple lines selected, enter the “Style” portion of the “Format Panel”
 - Select the line jump style from the dropdown box. Selections include “None”, “Arc”, “Gap” and “Sharp”
 - Select the line jump size, in pixels by clicking the up or down arrows on the “line jump size” box.
 - **Note:** Once line jumps are turned on, any subsequent line that is drawn will automatically have line jumps applied
- **Note:** The line that is on the top or front will jump. See below on how to move Schematic Elements to Front/Back

(g) Moving Flow Lines and Equipment Front to Back

Flow lines will often need to be rearranged to display the lighter product on top or jumping over lines carrying heavier products. Occasionally equipment will need to be brought to the front so that text is not obscured by flow lines.

The example below shows a Separator and a Condensate Line that will be brought to the front in order to display the Separator text on top of the water flow line and create a jump in the condensate line.



- **1** Select single, or multiple schematic elements that are required to be moved forward or back.
 - In the example, both the “Separator” and the “Condensate” line are required to be moved forward
 - **Remember:** When selecting multiple schematic elements, all selected elements will be affected the same way
- **2** Enter the “Arrange” tab of the “Format Panel” and select the **To Front** button to bring elements forward. Select the **To Back** button to move elements behind.
- Schematic elements can also be moved forward or back by selecting a schematic element, right clicking on the selected element and selecting “To Front” or “To Back” from the resulting menu.

(h) Additional Format Panel Functions

Remember: The “Format Panel” is a dynamic menu, so selecting different schematic elements displays different options on the Format Panel tabs.

Style Tab – Primarily used for line jumps and text boxes, the style menu contains options for “line jumps” on flow lines, background toggle for equipment and line styles/fill options for delineators and text boxes

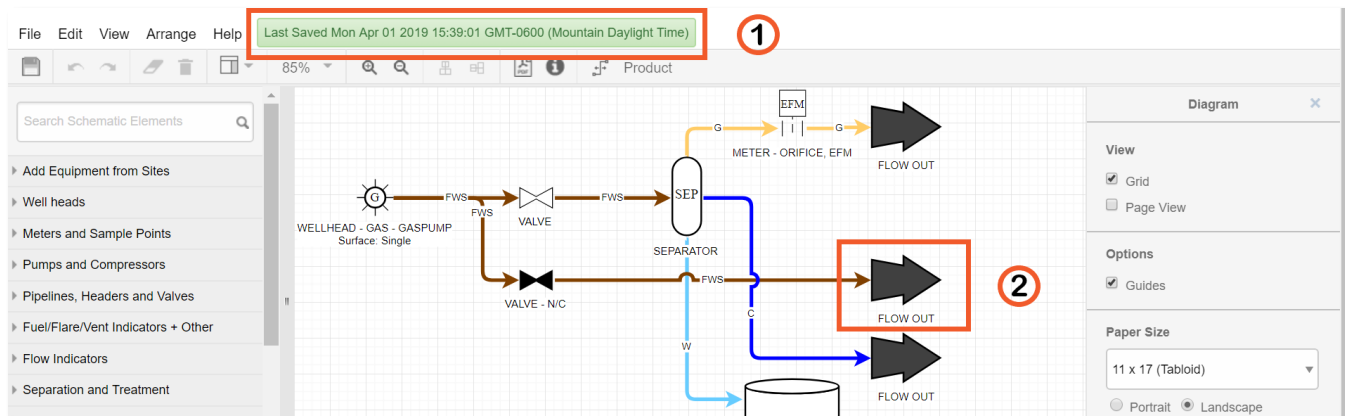
Text Tab – Text options for all schematic elements are located under the text tab. The text size, position and format can be edited similar to Microsoft Office products.

Arrange Tab – Contains options for manipulating schematic elements. This includes moving schematic elements forward or back, size adjustment in pixels using manual entry or button clicks, position adjustment using manual entry or button clicks, angle adjustments using manual entry or 90° increments, Flip options, copy size/paste size options, align options and distribute options.

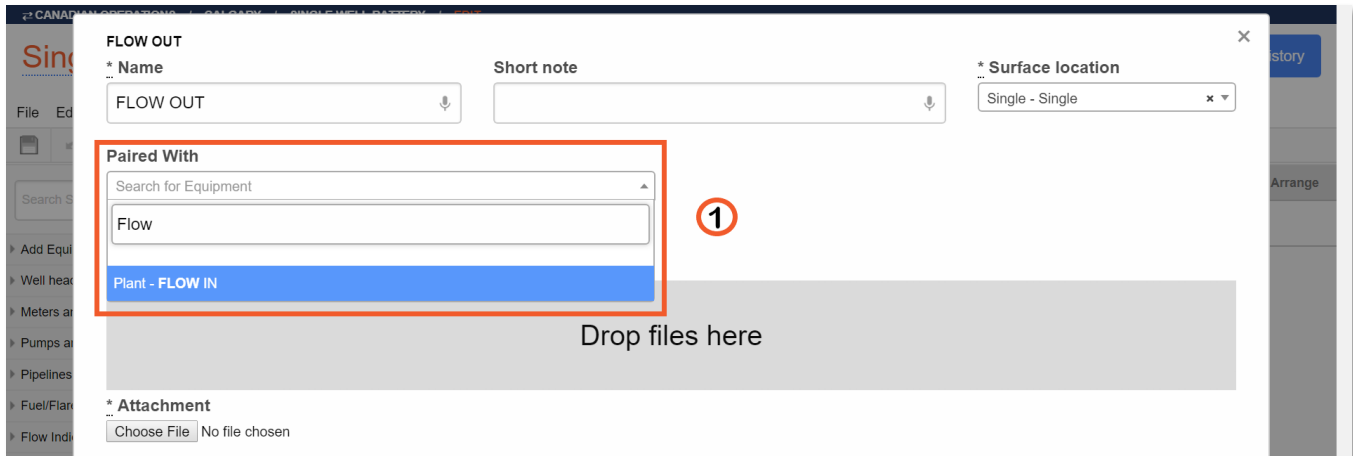
(i) Linking Flow Arrows Across Schematics

To quickly follow flow from schematic to schematic and perform the “Equipment Upstream” and “Equipment Downstream” functions, the schematics must be linked using the “Flow Out” and “Flow In” arrows. This will help users visually see how products flow between schematics.

Flow arrows must be placed on the schematics before they can be linked. Place a “Flow Out” arrow equipment type when a product is flowing away from a specific schematic and place a corresponding “Flow In” arrow equipment type on the schematic where the product flows to. Flow arrows are typically named with a description of where they are flowing to or where they are flowing from.



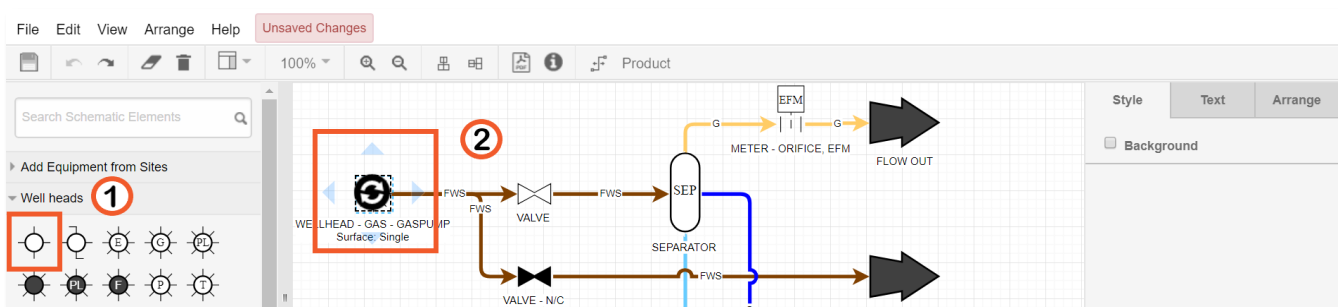
- **1** After a flow arrow has been placed, the document must be saved in order to pair the flow arrow
 - **Note:** Both the “Flow Out” arrow, and the corresponding “Flow In” arrow must be created and saved in the MBO system before linking can occur.
- **2** Double click on a saved flow arrow to open the Equipment Details window.




- **1** In the “Paired With” search for equipment box, start to type the corresponding name or site name/surface location of the flow arrow. Select the correct corresponding flow arrow name from the resulting list.
 - **Note:** “Flow In” arrows can only be paired with “Flow Out” arrows and vice versa. There is a 1 to 1 relationship with the arrows, multiple “Flow Out” arrows can not be paired to 1 “Flow In” arrow and vice versa
- Click the **Update Equipment** button to finish pairing the flow arrows.
 - **Tip:** Save the schematic after pairing each flow arrow, this will prevent accidentally pairing a corresponding arrow twice. Only arrows that are not paired will show up the “Paired With” search menu.

(j) Updating Equipment Types in Edit mode



Equipment type changes can be done from the schematic edit window. If the equipment type has changed but the data associated with that equipment needs to be retained, it is possible to update the equipment symbol from the schematic editing tool. This function will mostly be used for the wellhead equipment type, which will be used in the example below.




- **1** Click and drag the new equipment type from the “Schematic Elements” menu.
 - Only schematic elements in the same category can replace existing schematic elements. For example, wellheads can only be updated to wellheads, meters can only be updated to meters, ext.
- **2** Drag the selected schematic element so that the **mouse cursor** falls on the middle of the equipment to be updated. A  symbol indicates that the schematic element symbol will be updated.
 - **Remember:** This method only updates the “Equipment Type” in the MBO system. This will retain any equipment details, or operate data if there is operate data present.

(k) Finishing a Schematic - Best Practices

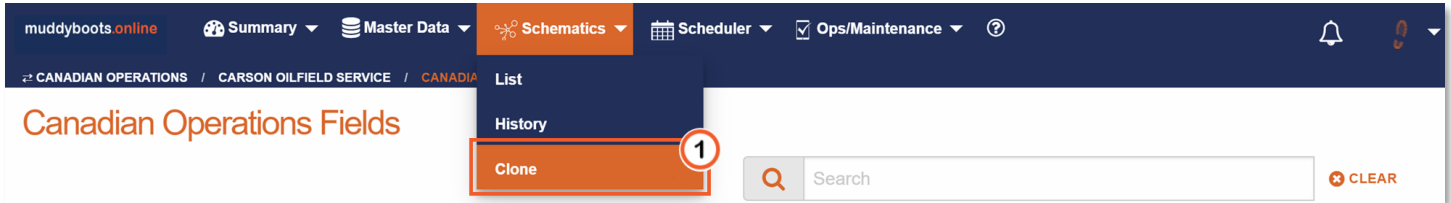
Once a schematic has been edited or created, finished and saved, the following recommended best practices ensure that the schematic will provide maximum benefit for all users.

- Export the schematic to PDF using the  button and check the PDF to make sure there is not excess white space present on the schematic print out.
 - If there is excess white space on the bottom of the schematic, try and compress the schematic horizontally, if possible.
 - If the schematic can not be neatly compressed horizontally, move the entire schematic into the center of the page by moving the schematic elements down until the white space is even top and bottom.
 - **Remember:** Ctrl+a on Windows or Cmd+a on Macs selects all equipment. Use Shift+arrow keys to move the schematic elements down.
 - If there is excess white space on the right of the schematic, try and compress the schematic vertically, if possible.
 - If the schematic can not be neatly compressed vertically, move the entire schematic into the center of the page by moving the schematic elements to the right until the white space is even left and right.
 - **Remember:** Ctrl+a on Windows or Cmd+a on Macs selects all equipment. Use Shift+arrow keys to move the schematic elements right.
 - Save the schematic.
- Click the  button in the MBO toolbar to ensure that all flow lines are connected.
 - Correct any unconnected lines that will be highlighted in red, if present, and re-check for connections.
 - **Remember:** Lines must be connected in order for the “Upstream Downstream” functions to work correctly.
- Turn on the “Tool Tips” to display equipment details when the mouse is hovered over equipment on the finished schematic.
 - Under the “View” menu in the “Schematic Toolbar” click the “Tooltips” selection to turn on “Tool Tips”
- Take a final look at the schematic, double check that equipment is present and placed correctly, flow is represented correctly, and equipment is aligned as much as possible.

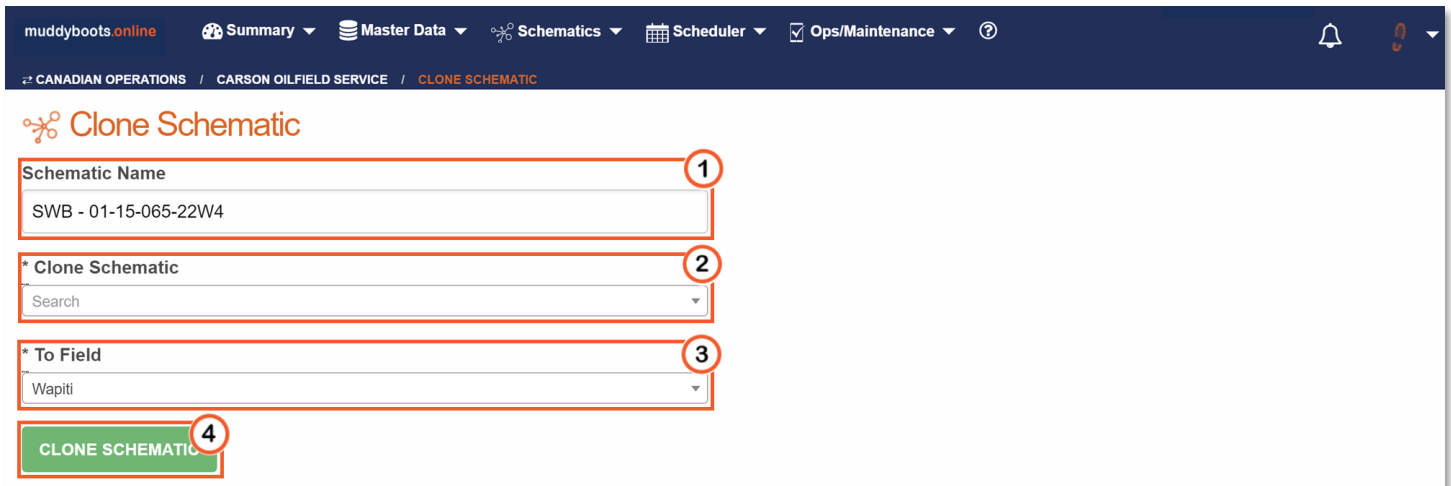
Click the  button to load the “Sites on Schematic” page. Double check that all sites have been correctly entered into the MBO system.

Creating a New Schematic via Cloning an Existing Schematic

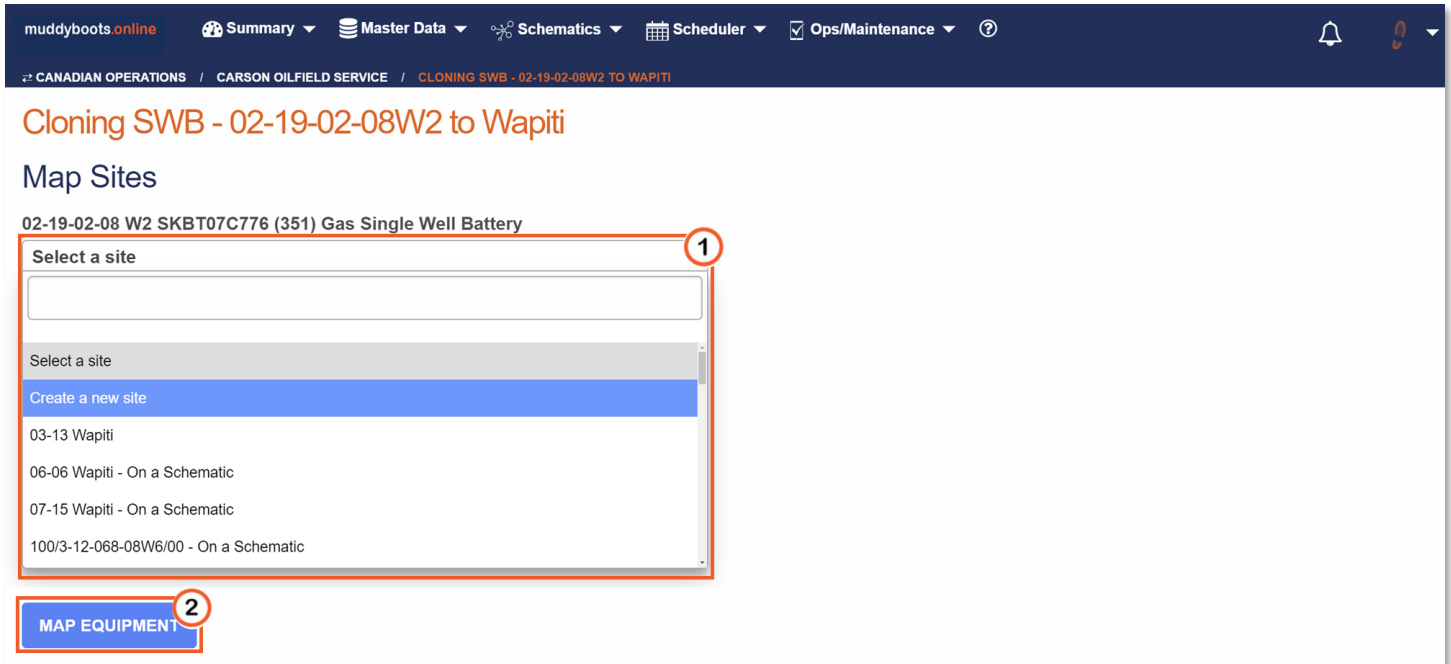
This section will cover cloning existing schematics for quickly generating a ‘Typical’ or similar flow diagram.



- To Clone an existing schematic, begin by determining the equivalent / near equivalent schematic you wish to use as the template for the new flow diagram.
 - Note:** Copy the Name of the schematic to be used as this will be required for choosing the schematic to clone
- ① Navigate to and click ‘Clone’ under the Schematics dropdown.



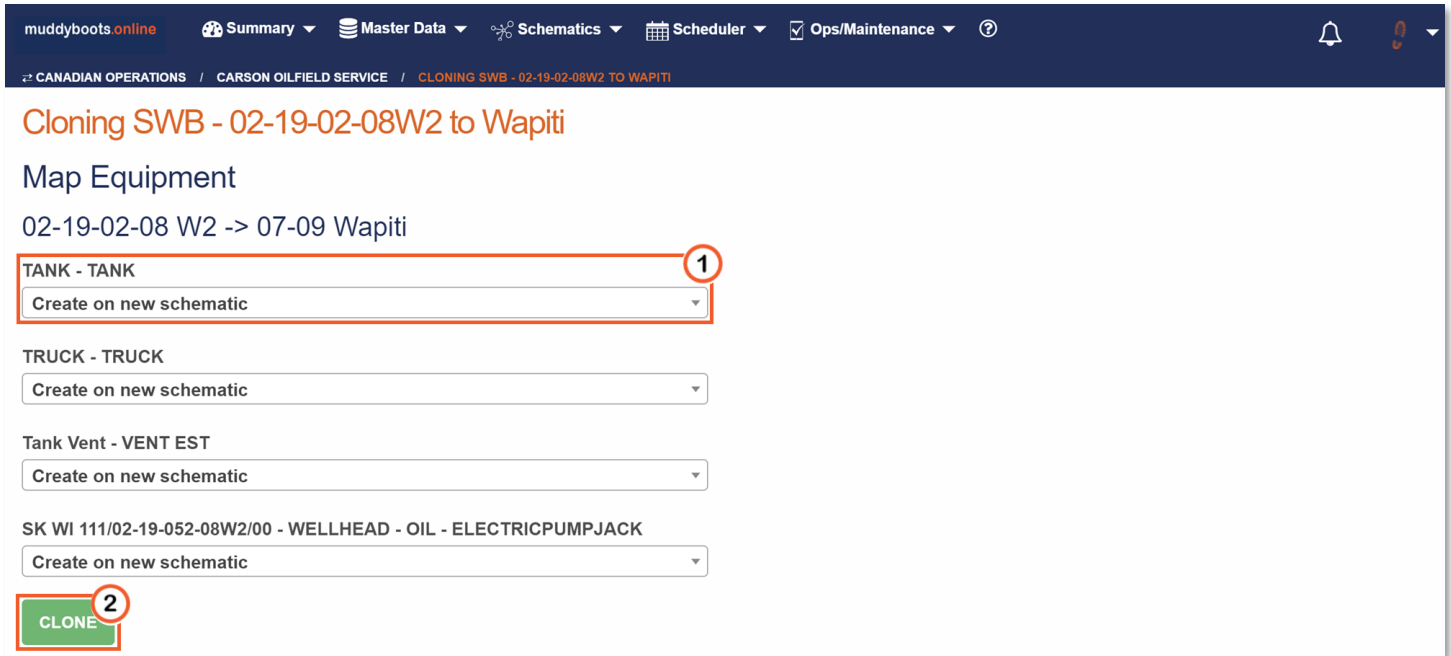
- ① Name the new schematic.
 - Note:** The name of the schematic does not affect the name of the surface location(s) where the equipment assets are located.
- ② Choose the schematic you wish to clone. Search by typing or pasting the name of the schematic you wish to copy.
- ③ Choose the field where the new schematic will be located.
 - Note:** The field list choice will be limited to the hierarchy currently set. In the image above, this is the ‘Canadian Operations’ Area that contains the ‘Wapiti’ field.
- ④ Once satisfied with settings in the first three boxes, click **CLONE SCHEMATIC** to move to the next step.



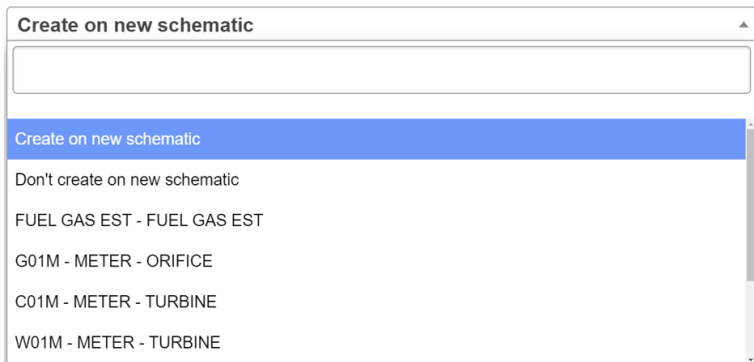
- 1 Select the surface location that the cloned schematic equipment will be created on. Existing sites within the previously selected field will be available and a note will be included if there is already system equipment on the sites, noted by 'On a Schematic'
 - Note:** Choose 'Create a new site' if the surface location does not currently exist.

WARNING! If the same surface location as the schematic being cloned is chosen, the equipment is not duplicated but rather the current schematic equipment is displayed again on the new schematic. Please confer with your muddyboots representative on the implications of 'duplicating' the same schematic.

- 2 Click MAP EQUIPMENT to move to the equipment mapping stage.



- 1 At this stage, you are given options for each piece of equipment being cloned.



- Create on new schematic: Clones the equipment to the chosen surface location and places on the schematic as is.
 - Don't create on new schematic: Does not clone the equipment and leaves a blank space on the new schematic.
 - Equipment choice list: The choice of any existing equipment on the surface location of the new schematic is available and each unique asset can be selected to swap out for what would otherwise be cloned.
 - **Note:** This is typically used where a well list has already been loaded and can be placed on the new schematic.
- 2 Click **CLONE** to complete the schematic cloning process. You will now be redirected to view the new schematic created.

Schematic Company Summary, Management, and Definitions

Depending on your regulatory body, flow schematics need to be maintained and annually verified to remain in compliance. Muddyboots integrates schematic status elements to ensure compliance is met and non-compliant flow diagrams can be easily managed. Schematic management begins with understanding of the schematic status's and how they are controlled within the MBO platform.

(a) Schematic Company Summary

A company summary of schematic status, changes, and review requirements is available under the main Summary dropdown. The schematic summary lists the current state of all schematics, the previous 2-months changes and requirements, along with a granular summary of individual flow diagrams requiring attention.

The screenshot shows the 'Canadian Operations Schematic Summary' page. At the top, there is a navigation bar with 'Summary', 'Master Data', 'Schematics', 'Scheduler', and 'Ops/Maintenance' dropdowns. Below the navigation bar, the breadcrumb trail reads 'CANADIAN OPERATIONS / CARSON OILFIELD SERVICE / CANADIAN OPERATIONS SCHEMATIC SUMMARY'. The main content area is titled 'Canadian Operations Schematic Summary' and is divided into three columns for 'June 2021', 'May 2021', and 'April 2021'. Each column displays statistics for 'Deleted from all Fields', 'Created', 'Modified', and 'Verified' counts. The 'June 2021' column is highlighted with a red box and a circled '1'. Below these columns is a 'Needs Attention' section, also highlighted with a red box and a circled '2', which lists unverified schematics under 'Calgary' and 'Fort McMurray'.

Month	Deleted from all Fields	Created	Modified	Verified
June 2021	0	0	0	0
May 2021	0	0	0	0
April 2021	0	0	1	0

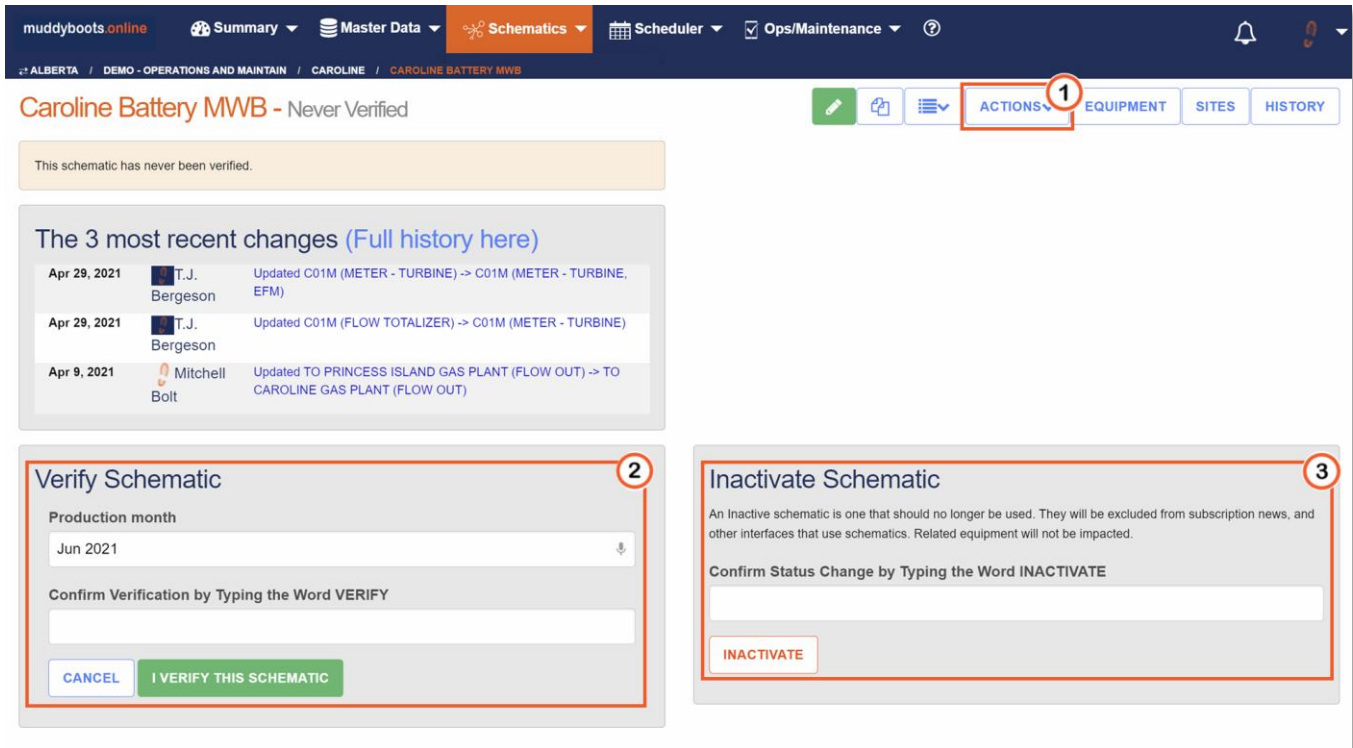
Needs Attention

- Calgary**
 - 04-22-024-01W5 Gas Battery - Princes Island - unverified
 - AB BT 0982245 Oil MWB Proration Battery - unverified
 - AB GP 0002132 07-06-024-01W5 MRU Gas Plant - unverified
- Fort McMurray**
 - Big Rock Water Injection 10-10 - unverified

- ① Monthly Summary
 - Displays the current months flow diagram summary, with quick links to filtered links for easy management of any 'non-verified' schematics: *Expired*, *Unverified*, and *Never Verified*.
 - The previous months summaries are also available to view a unified changelog.
- ② Needs Attention Summary
 - A granular summary of all schematics that need attention due to moving into an unverified or expired status.

(b) Schematic Status Management

New schematics will have an original status of *Never Verified*, these schematics will have to be actioned to either verify the diagram or to Inactivate the schematic to remove the diagram from email subscriptions and verification requirements.

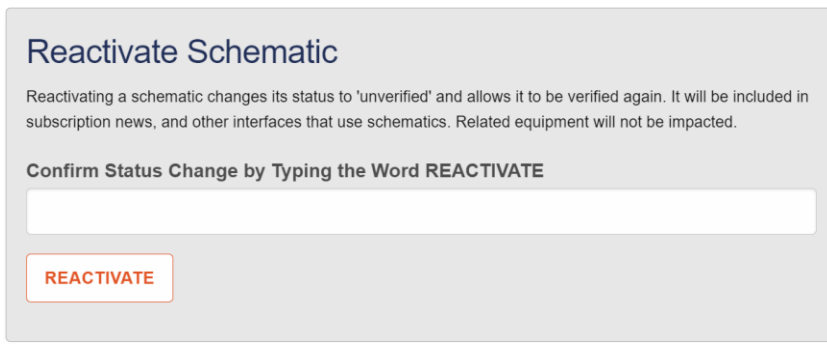


- 1 When viewing a schematic, click **ACTIONS** to expand the Action dropdown menu. These options are only available for those users with the **Schematic - Verifier** system access role.

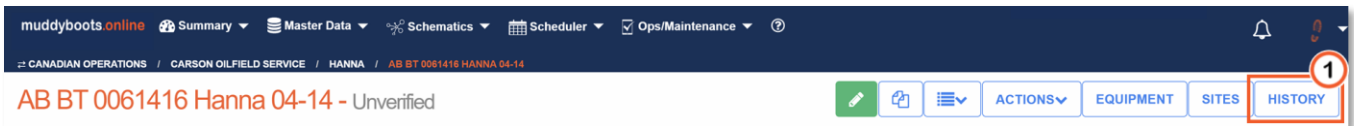
This menu will display the following information and options:

- o A note on the schematic status.
- o Recent schematic history, with a link to the complete list of schematic changes.
- o 2 Verify Schematic options:
 - This option allows verification of the schematic with the production month selectable and noted for review.
 - Type VERIFY, and click **I VERIFY THIS SCHEMATIC** to record a verification. This will verify the schematic for 12 months from the day it was verified, after 12 months the schematic moves into and *Expired* status to be re-verified.
 - If Schematic Workflows have been enabled, the workflow for schematic verification will be present in place of typing the word VERIFY. Review *Workflow Quickstart* documentation for more information.

- ③ Inactivate Schematic options:
 - This option updates the schematic status to *Inactive*, thereby removing the schematic from subscriptions, verification requirements, and other schematic interfaces.
 - Type INACTIVATE, and click **INACTIVATE** to update to an *Inactive* status.
Note: An Inactivated schematic can be reactivated
- Reactivate Schematic Options



- If an Inactive schematic needs to be reactivated, open the **ACTIONS** panel, type REACTIVATE, and click **REACTIVATE**. This will give the schematic in an *Unverified* status.



- ① Unverified and Expired Schematics
 - Unverified and Expired schematics both require verification but reached that requirement in two distinct ways.
 - Unverified schematics have been altered in some way and now have a single or many changes applied to them.
 - Expired schematics have gone beyond the verification period of 12 months and now require a review and verification.
 - Historically verified schematics and a full history of schematic changes can be reviewed under the schematic **HISTORY**.

Note: If schematic Workflows have been setup for verification purposes, Expired schematics will automatically initiate a workflow with email notification that will require attention to complete the verification process.

(c) Schematic Status Types and Definitions

Never Verified – This is a schematic that has not been expressly verified by a user with the *Schematic Verifier* System Role. This is typically the status of new schematics that have been recently built and require a review to ensure correct layout, flow, assets, etc.

Verified – A Verified schematic has been expressly verified by a user with the *Schematic Verifier* access role. A verified schematic remains in a verified state for 1 year from date verified, with the Production Month noted. All verifications of a single schematic can be viewed on the schematic History page, and each verification can be viewed to see the previous iterations of the flow diagram. If any changes occur on the schematic prior to the 1-year period ending, the schematic moves into an **Unverified** State. If no changes occurred within the 1-year period, after the year the schematic state is updated to **Expired**.

Unverified – An Unverified schematic is a schematic that was previously verified but has been modified since the verification was completed and prior to the schematic expiring. All changes made since the previous verification can be viewed on the schematic history page.

Expired – An Expired schematic is a flow diagram that was last verified >1 year previous. The Flow schematics move to an Expired status to meet AER Directive 017 compliance guidelines.

Inactive – An Inactive schematic is one that should no longer be used, and the status has been expressly set to Inactive by a user with the *Schematic Verifier* role. Schematics with this status will be excluded from subscription news, and other interfaces that use schematics. Related equipment will not be impacted.