Materials Management System (MMS)
User's Guide – Construction

Version 3.1

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Maryland Department of Transportation

State Highway Administration

Office of Materials Technology

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1 Overview

1.1 Material Management System (MMS) Goals

The implementation of a single electronic MMS has the following mission critical goals:

- Manage the materials quality process throughout the construction project life cycle; this should include support for materials quality activities in traditional design-bid-build construction contracts, as well as design-build and other innovative contracting methods;
- Allow information sharing and knowledge transfer among key SHA stakeholders;
- Allow one-stop data entry and status reporting on progress against material quality goals;
- Provide construction project managers with a notification of potential materials discrepancies as part of the preparation of construction contractor progress estimates;
- Provide documentation of materials clearance compliance for FHWA certification;
- Allow lab managers to track the status and costs of testing within a given Technical Material Division;
- Automate the allocation of testing costs to the various projects;
- Identify sources and materials used on projects through a referencing system to allow for easier access to materials information during construction and ongoing maintenance of the asset; and
- Support capture of data from testing performed by construction contractors, and facilitate the comparison of this test data with SHA quality assurance test results.

1.2 MMS Benefits

The benefits that MMS create for SHA are:

- The central storage and retrieval of common data elements, reduction of data entry errors caused by re-entry of data fields;
- Assurance of real-time data updates, elimination of the need for smaller systems and associated integrations;
- The provision of more robust reporting tools;
- Allowance for easily accessible data and the provision of more robust tools to aid in the management of this complex information set;
- Automation by reducing the amount of paperwork involved and the amount of time taken to transmit information between materials sections as well as between OMT and construction project sites;
- Standardization by contributing to a workforce which is both more interchangeable between projects or districts or between materials sections and a workforce which is more accountable;
- Integration of MMS with existing software applications across SHA;
- Accurate and efficient materials management process;
- Accountability by keeping an audit trail of all changes to the test results, as well as maintaining a record of the entering of test results;
- Support implementation of a knowledge-based system;
- Prevent system obsolescence; and
- Reduction of overhead created by multiple systems and lower training and maintenance costs for large numbers of smaller disparate systems.

2 Login to Material Management System

2.1 Internal User Login

The internal login procedure is applicable only if the user has a valid username and password within the SHA network, and occurs within the SHA intranet as opposed to the internet. For such users, authentication is executed automatically in the background and does not require entry of a username and password. To access the system internally, type the following URL on a web browser: https://shahanapps/mms/MMSBrowser_BC.aspx

After a successful login, users can simply create a shortcut of the application to avoid having to type in the intranet address every time. The MMS Welcome screen is displayed after a successful login (see Figure 1).

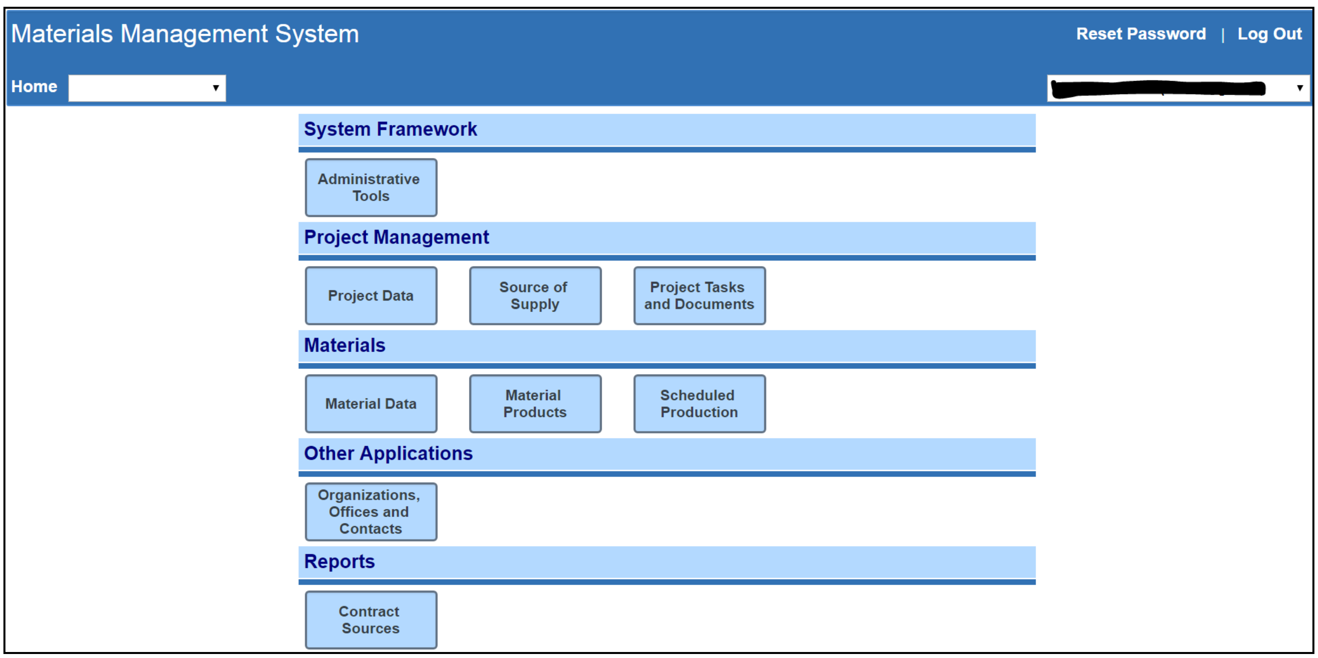
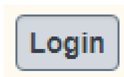


Figure 1: MMS Welcome Screen

2.2 External User Login

External user login into the MMS requires use of a username (the user's full email address) and a password. This happens when users access the system via the internet.

To login to the Material Management System externally (via the internet), perform the following steps:

1. Go to **https://mms.sha.maryland.gov** on a web browser. Users will be required to enter their username and password on the login screen. It is recommended that users write down and keep their password in a safe, readily accessible location.
2. Type in your username. Your username is your email address.
3. Enter your password and click 

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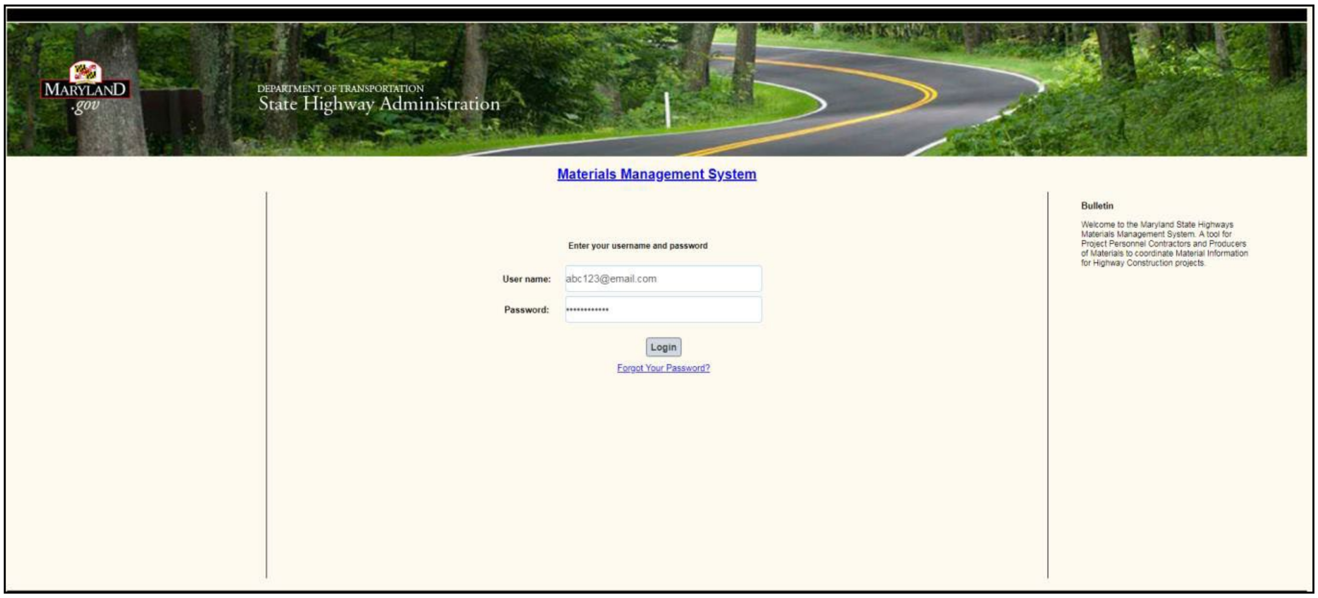

Figure 2: MMS Login Screen

4. If you enter an incorrect username or password, the following screen is displayed:

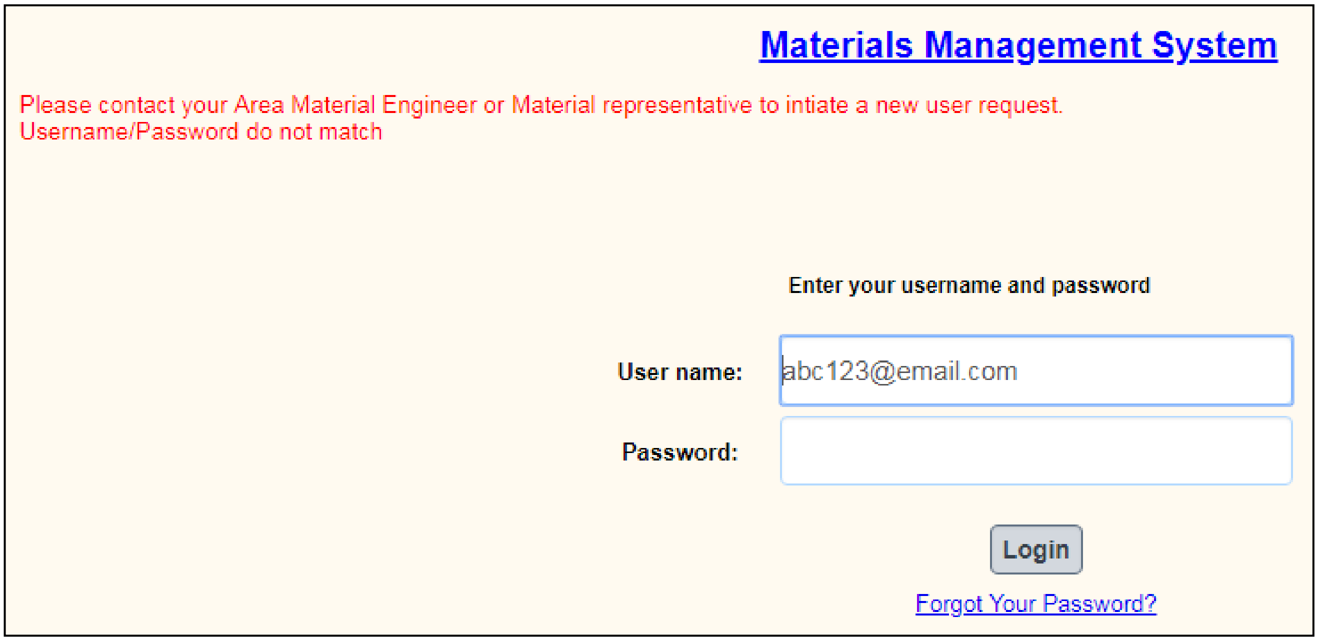

Figure 3: Username/Password Do Not Match Screen

5. Contact your MMS administrator if you forgot your password and need to change it. Alternatively, if you have not been locked for 60 days due to inactivity, you can use the forgot password option to reset your password. User account is disabled after four (4) consecutive failed login attempts while allowing a minimum of fifteen (15) minute to wait to enable self-reset of the account. Users will also be locked out after 60 days of inactivity, therefore it is recommended to login to the MMS system at least once every 60 days. Passwords must be changed every 90 days. The password creation rules are listed below.

External User Login (cont’d)

6. After initial login, users are prompted to change their passwords. The following prompt screen is displayed:

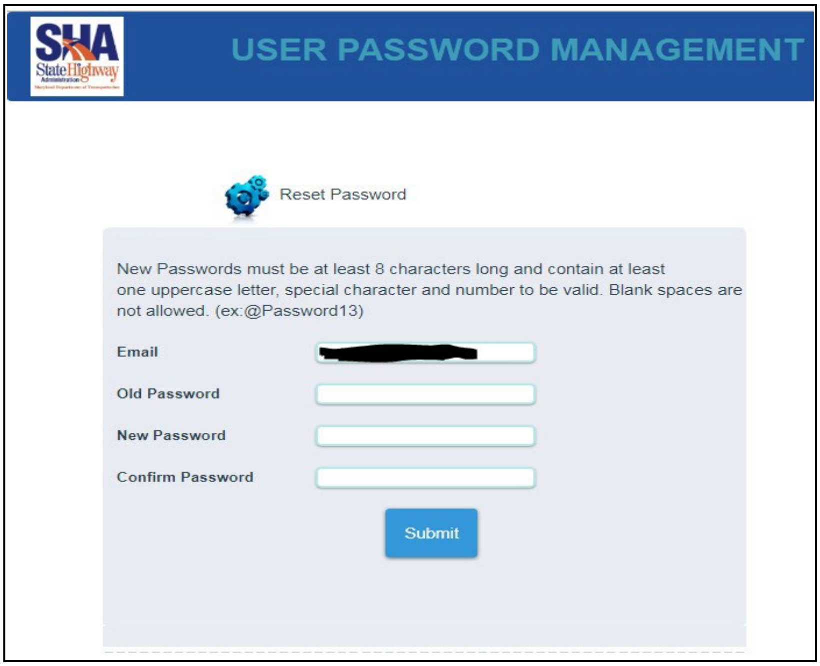

Figure 4: Password Administration Change Password Prompt Screen

7. The following minimum requirements must be met when changing a password.

1. Must be a minimum of twelve (12) characters
2. Must include at least one (1) capital letter
3. Must include at least one (1) number
4. Must include at least one (1) special character **(! “ # $ % & ‘ ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~)**
5. Blank spaces are not permitted
6. Account will be locked after 4 consecutive failed login attempts. Use the “Forgot Your Password” link to reset account
7. Prohibited from using passwords similar to previous password
8. Prohibited from using any of your previous 10 passwords. (Must be significantly different)
9. Account will be locked after 60 days of inactivity. Contact AME to reset
10. Password must be changed every 90 days after which an account will be automatically locked due to expiration. User is redirected to the self-reset page to create a new password or use the “Forgot Your Password” link.

Password Guidelines

When creating your new password, you will be required to enter your “Old Password.” The “Old Password” is the temporary password contained within this email below. Please manually type in each character and **do not copy and paste** what was sent to you. It is recommended that you login to the MMS at least once every 60 days to avoid an automatic lockout from the system. It is recommended that you write down your password and store in a secure location.

3 Source of Supply

One of the main goals of the Materials Management System is to submit sources of supply for materials that are being used on highway projects. All materials are associated with a Project Bid Item. The bid items are entered through another application that is part of Project Data, but this application may be used to add additional project-specific materials. The entire Source of Supply application requires a selection of a Contract Number.

3.1 Update Material Sources

The Material Sources tab screen allows users to associate additional materials with project bid items. This screen is also a reporting tool that enables users to review the status of a source submission.

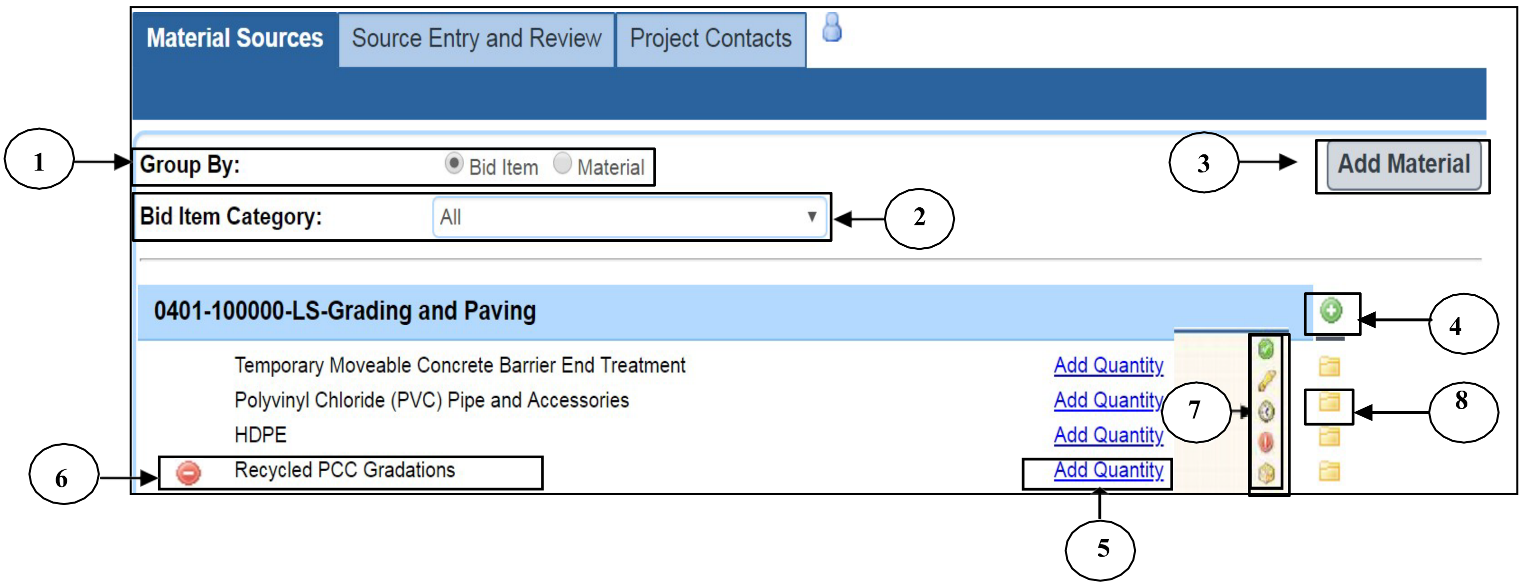

Figure 5: Update Material Sources

To update data in the "Material Sources" screen, perform the following steps:

1. Click on "Bid Item" or "Material" to display results either by Bid Items or by Sourced Materials.
2. When the "Bid Item" "Group By" radio button is selected, the "Bid Item Category" drop-down box will be displayed. Its purpose is to filter the list of bid items presented. If the Grouping is shown by "Materials," this drop-down list filters or limits page-displayed results to materials of bid items per selected project (contract).
3. When the user clicks on the "Add Material" button, a popup window will appear and will prompt the user to select a bid item and its sourced material. (See Figure 6)

Update Material Sources (cont'd)

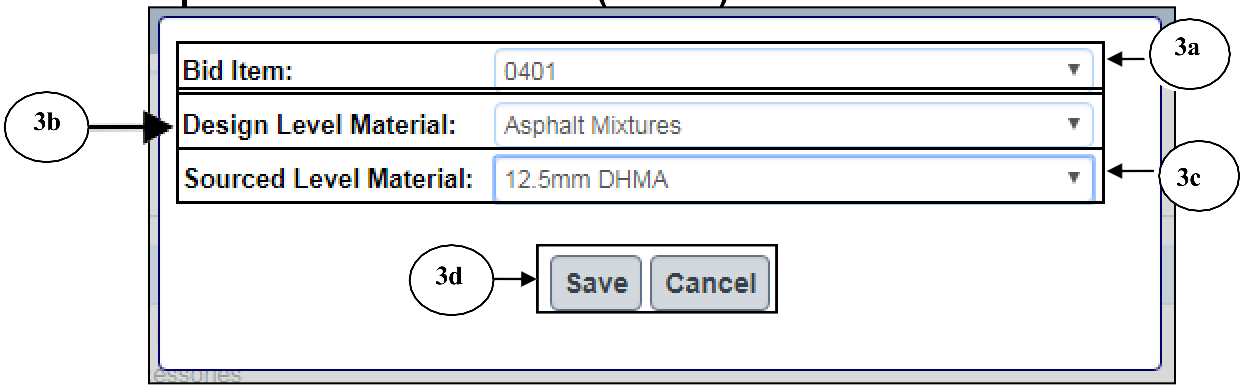

Figure 6: Update Bid Item

Update Material Sources (cont'd)

To link a material with a bid item, perform the following steps.

3a. Select a bid item for the project in selection.

3b. Select a design level material for the project in selection.

3c. Select a sourced level material.

3d. Click the Save button to save or Cancel to exit.

4. Clicking on the "Add Material" icon (on a specific bid item) opens the same popup window as above, but with the bid item number already preselected. The user is prompted to select a sourced level material for the bid item.
5. Click on the link to input quantity on the material you associated with the bid item (see Figure 7).

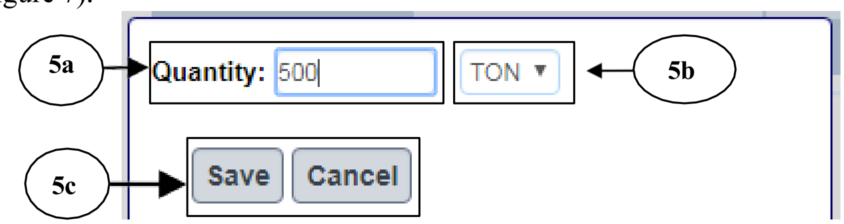

Figure 7: Enter Bid Quantity

To enter a quantity, perform the following steps.

5a. Enter the quantity of the Sourced Material being sourced in the "Quantity" field.

5b. Select the unit of measure of the Sourced material in the unit of measure drop-down box.

5c. Click Save to save or Cancel to exit the pop-up box.

6. Deletes the displayed source material from its displayed bid item.
7. Click on any of the following icons to navigate to Source Entry and Review tab screen. Each Icon implies a different submission status as given below.
    - ( ) No Material has been submitted and submission is not created.
    - ( ) A Source Supply submission is created but not submitted.
    - ( ) There is presently a source submission review underway.
    - ( ) There is an approved source of supply.
    - ( ) The Source of Supply was rejected.
8. Clicking on the "Source of Supply History" icon will open a pop-out window to show the entire source submission history and review outcomes for the given bid item and material relation. (See Figure 8)

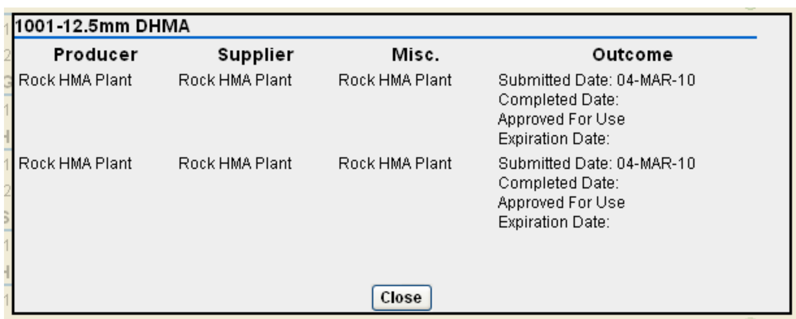

Figure 8: Source of Supply Submission History Pop-up Box

3.2 Update Submission Tasks

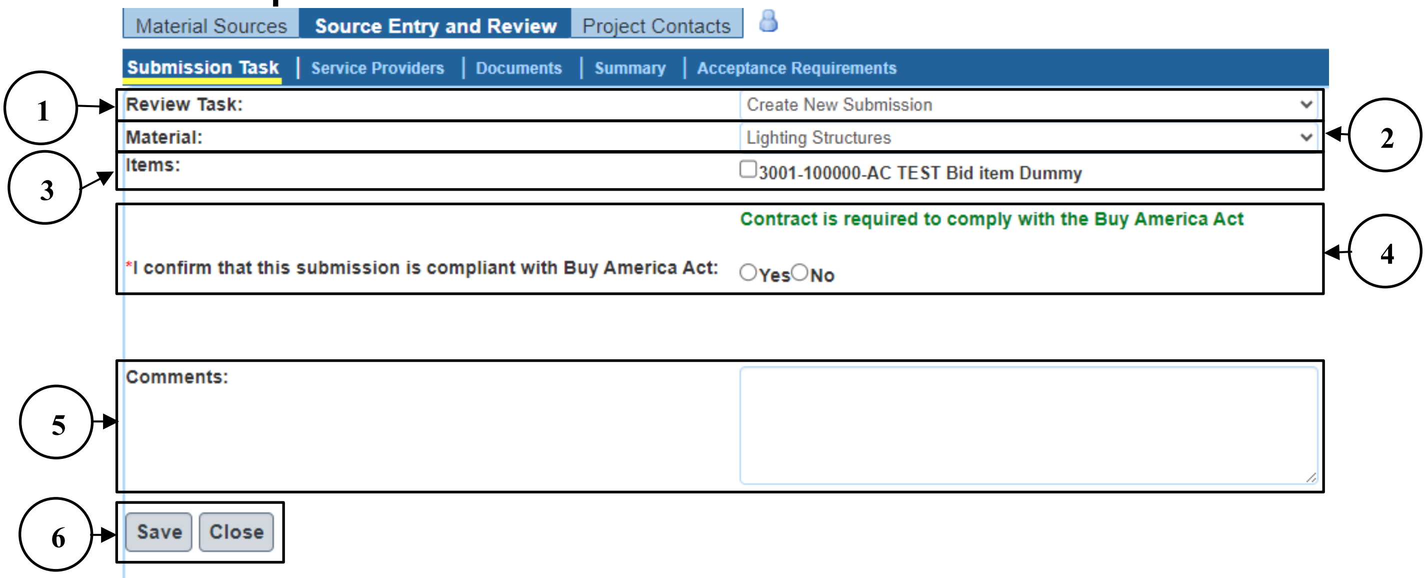

Figure 9: Update Submission Tasks

To update data in the "Source Entry and Review" "Submission Task" screen, perform the following steps:

1. Click on the "Review Task" drop-down box. The "Review Task" drop-down box enables the user to select a source submission or to create a new submission.
2. Select the "Material" drop-down box to show which material is associated with the project being sourced.
3. Select one or multiple bid items. The "Items" list box enables the user to select the bid item to which the source of submission refers.
4. Click the "Yes" or "No" radio button to confirm if the submission is compliant with Buy America Act.
5. Add comments regarding the submission underway in the "Comments" field.
6. Click Save to update data or Close to close the screen.

3.3 Update/Add Service Providers

The Service Providers screen enables the user to define which contractors are supplying and/or manufacturing materials for a given source of supply submission.

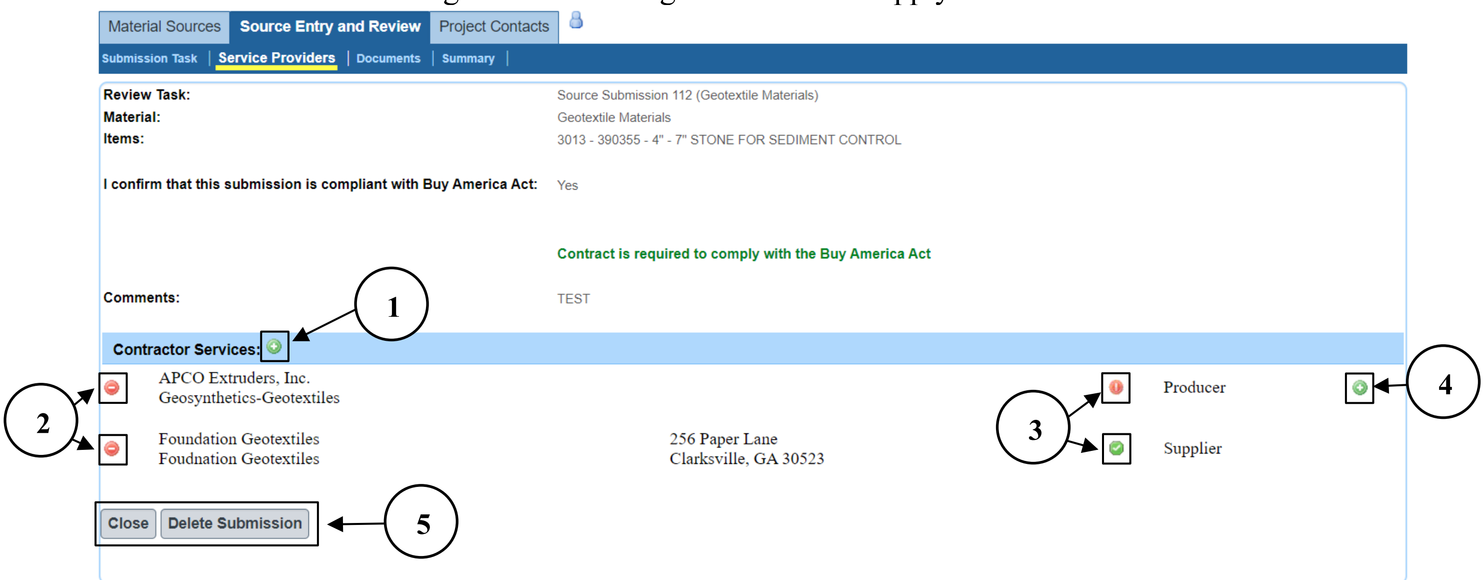

Figure 10: Update Service Providers

To update data in the "Source Entry and Review" "Service Providers" screen, perform the following steps:

1. Click on the add Contractor Services icon ( ) to initiate a pop-up box in which service providers are entered for the specific source submission underway.
2. Click on the delete icon to delete the Service Provider shown.
3. The icon indicates the selected service provider is **not** qualified for sourcing on state projects. The icon indicates the selected service provider is qualified sourcing on state projects.
4. Click on this icon to open the pop-up window that will prompt the user to select a product that is approved and produced by the corresponding service provider (only applicable if a product is required for source approval).

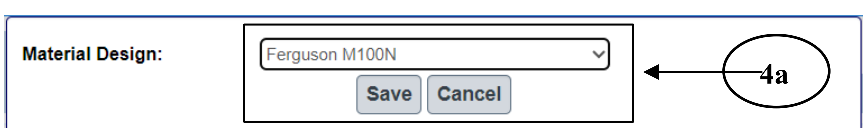

Figure 11: Product Selection

4a. Select the product you intend to source from the selected Service Provider.

Click Save to confirm the selection or Cancel to exit.

5. Click Close to close the "Service Providers" screen or Delete Submission to delete the submission.

3.3.1 Update/Add Service Providers – Filtered Input

The "Service Provider" pop-up screen allows users to select a service provider that has been already processed in the past or to manually input a service provider. The following screen allows users to manually input a service provider.

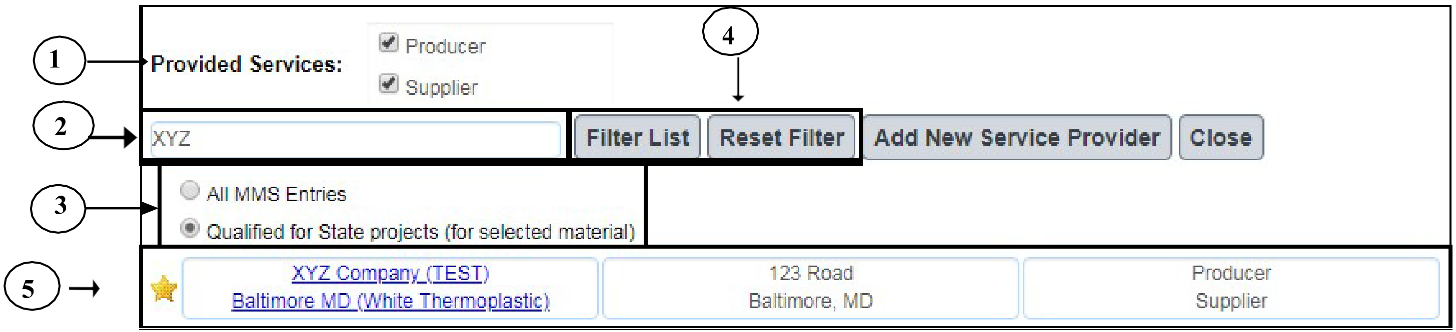

Figure 12: Update Service Providers – Filtered Input

To update data in the "Source Entry and Review" "Service Providers" pop-up screen, perform the following steps:

1. Select all applicable "Provided Services" of the facility being selected.
2. If you know the name or address of the service provider you would like to source, enter it in the text box. Partial names or addresses work best. In this example, we can enter "XYZ" or "Balt." The entries are not case sensitive.
3. Select a radio button to choose whether you would like to filter the list of service providers that are qualified for state use or all MMS entries.

   Note: The "All MMS Entries" option will include both (qualified and not qualified for state use) service providers. Selection of not qualified service providers may lead to rejection of the source submission.

4. Click Filter List to display a list based on the radio button criteria you have selected.

   Clicking Reset Filter will clear the text box.

5. Service providers that match your selected criteria will display in this list. The gold star indicates the service provider is qualified for sourcing on state projects. Click on the service provider's blue link to select them as a source. (see Figure 12**)**

3.3.2 Update Service Providers – Manual Input

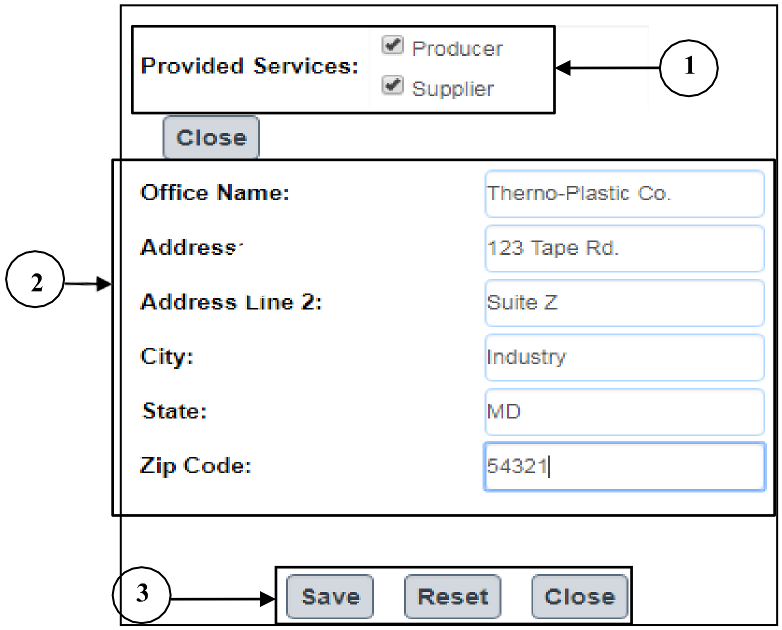

Figure 13: Update Service Providers – Manual Input

To manually add-in/update a service provider's data in the "Source Provider Manual Entry" pop-up box, perform the following steps:

1. Select all applicable "Provided Services" of the facility being entered.
2. Enter the basic information of facility you would like to enter manually.
3. Click Save to save the facility information you entered, Reset to reset the values, or Close to close the form. This information will automatically be submitted to the Office of Materials Technology for review. Depending on the status of the facility you entered (qualified or not qualified), your source submission may be approved or rejected.

3.4 Add Source Entry and Review Documents

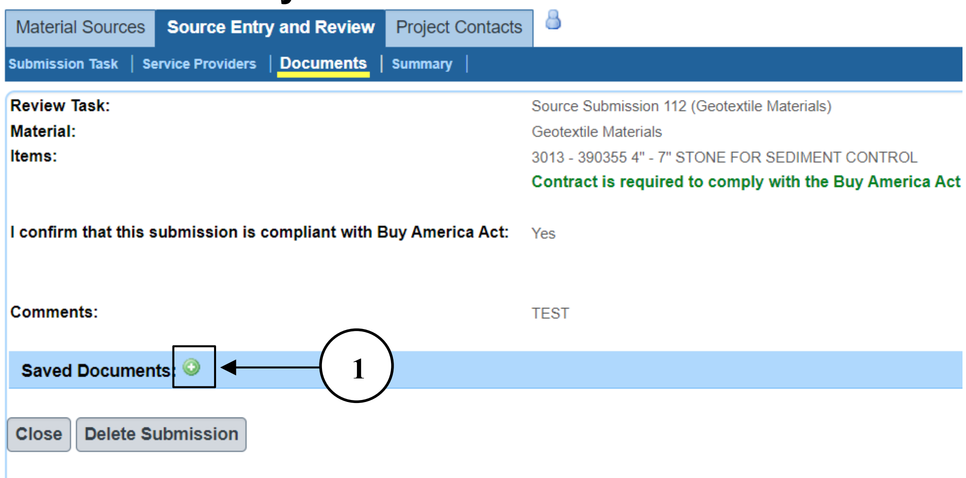

Figure 14: Add Review Documents

To upload supportive documentation to the source submission, perform the following steps:

1. Click on the upload documents icon ( ) to initiate a pop-up box in which supportive documentation can be added to the source submission.
2. Enter all pertinent information:

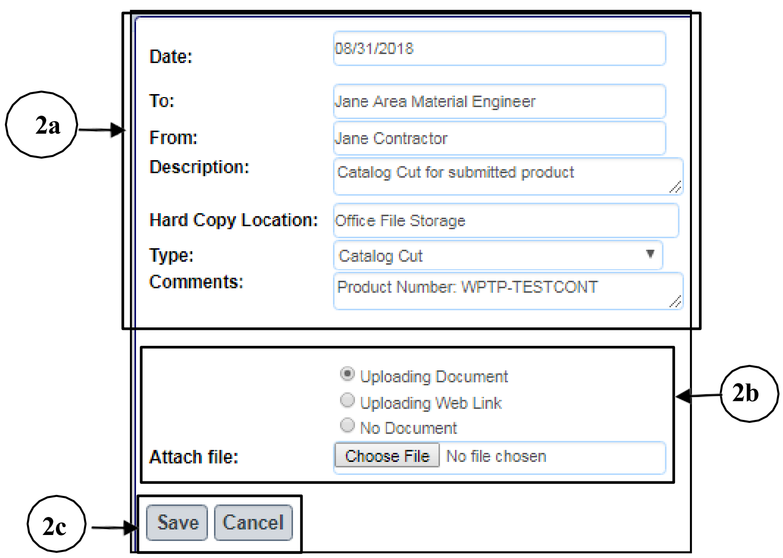

Figure 15: Enter Supportive Documentation Information

2a. Enter basic information on the facility you would like to enter manually.
2b. Select if you are uploading a document, web link, or no document at all.
Click on Choose File to open the dialogue and browse to the file's location. Selecting the "Uploading Web Link" radio button will allow you to enter a URL link to the supportive documentation.
2c. Click Save to upload the document or Cancel to exit without uploading.

3.5 Submit Entry for Review

The "Source Entry and Review" "Summary" screen summarizes information on the source submission process that is yet to be completed. The screen will only be editable to users with certain permission rights.

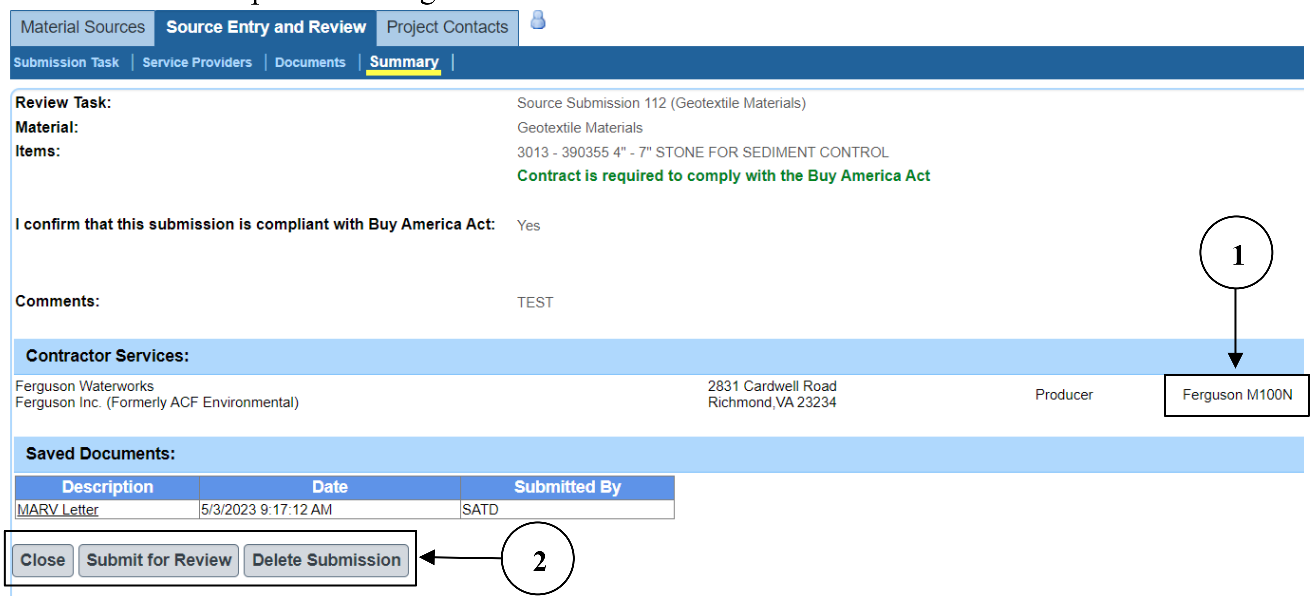

Figure 16: Submit Entry for Review

To update data in the "Source Entry and Review" "Summary" screen, perform the following:

1. Note that the product you selected in the "Service Providers" tab appears in the summary as well.

2. Click on the Close button to close the screen, Submit for Review to submit the source for review by the Office of Materials Technology, or Delete Submission to delete the submission.

3.6 Update Acceptance Requirements

The "Source Entry and Review-Acceptance Requirements" screen will only be available for source submissions that have already been carried out and are under review. This screen will only be accessed by users with certain permissions.

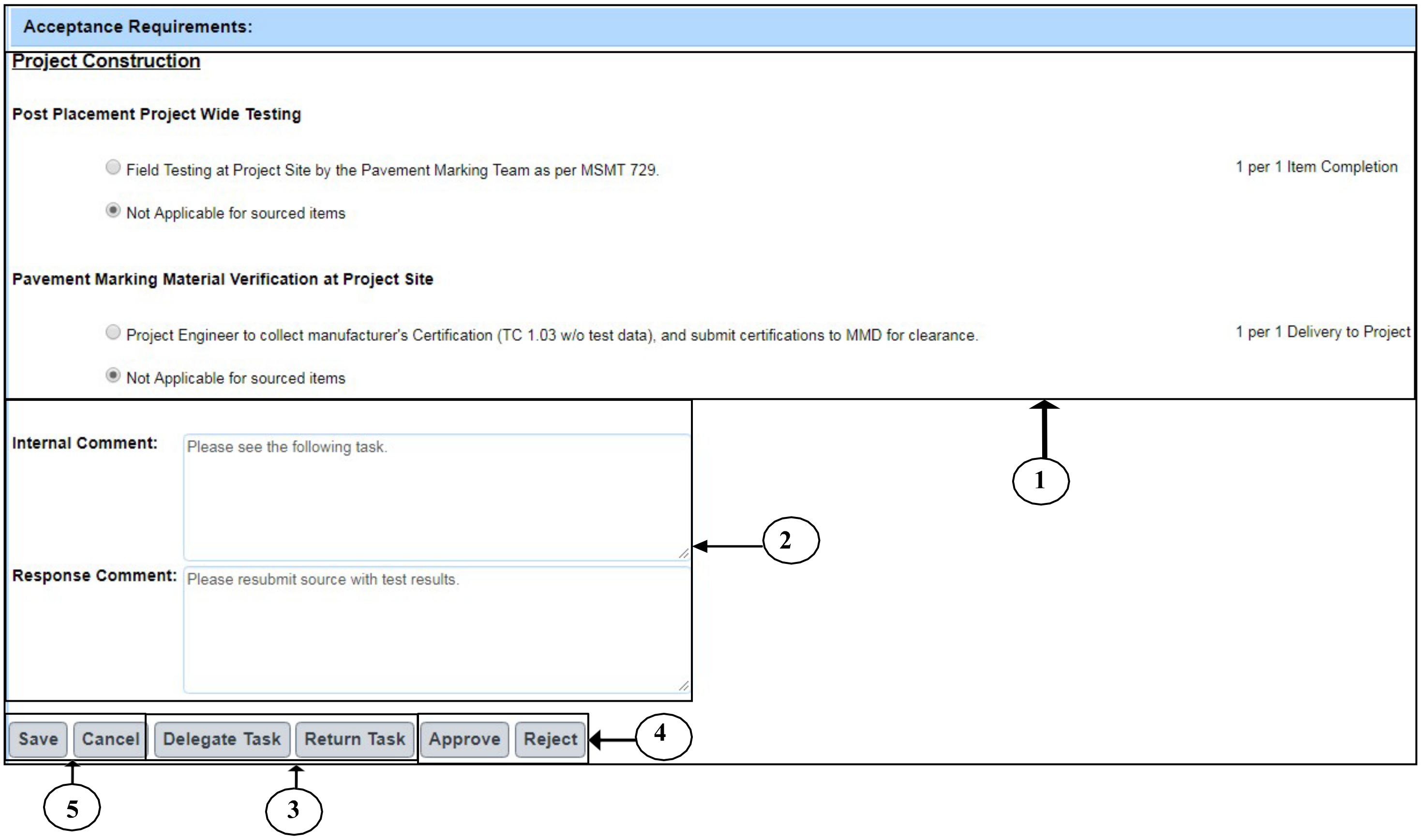

Figure 17: Update Acceptance Requirements

To update data in the "Acceptance Requirements" screen, perform the following steps:

1. Click on the appropriate source "Acceptance Requirements" radio buttons. Selections are dependent on the Material being sourced. Listed on the right are the frequencies at which each task needs to be completed. In this example, these tasks are completed during the Project Construction Phase. Only users with certain privileges will have access to this part of the application.
2. Enter initial comments regarding the source submission.
3. Click Delegate Task to delegate the task of reviewing/inputting information on the source submission or click Return Task to return the delegated task back (see Figure 17).

Update Acceptance Requirements (cont'd)

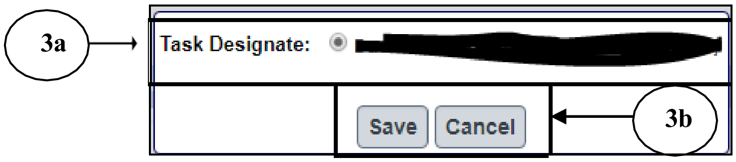

Figure 18: Select a Task Designee

3a. Select the Source Review Task Designee from the "Task Designate" drop-down box.

3b. Click Save to save or Cancel to close the "Task Designate" pop-up box.

4. Click Approve to approve or Reject to reject the source submission.
5. Click Save to save the data changes or Cancel to cancel changes and exit the "Acceptance Requirements" screen.

4 Project Tasks and Documents

The Project Tasks and Documents module is a means to report various tasks and documents of a specific Project.

4.1 View User Tasks

The “User Tasks” screen is a tool to show any user what tasks he has assigned to him and what other tasks are available for him to work on and does not require selection of a contract.

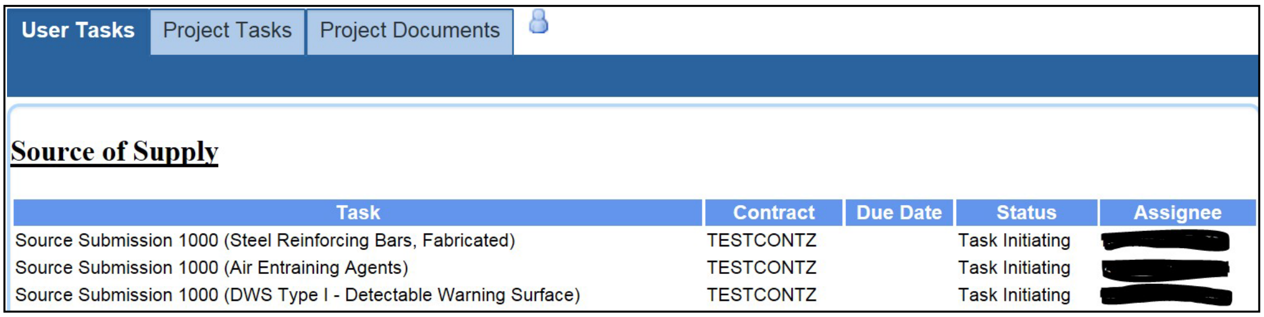

Figure 19: View User Tasks

4.2 View Project Tasks

The “Project Tasks” screen is a tool to provide a hierarchical view of all tasks that are being worked on for a given project. The user must select contract number for this application to function properly.

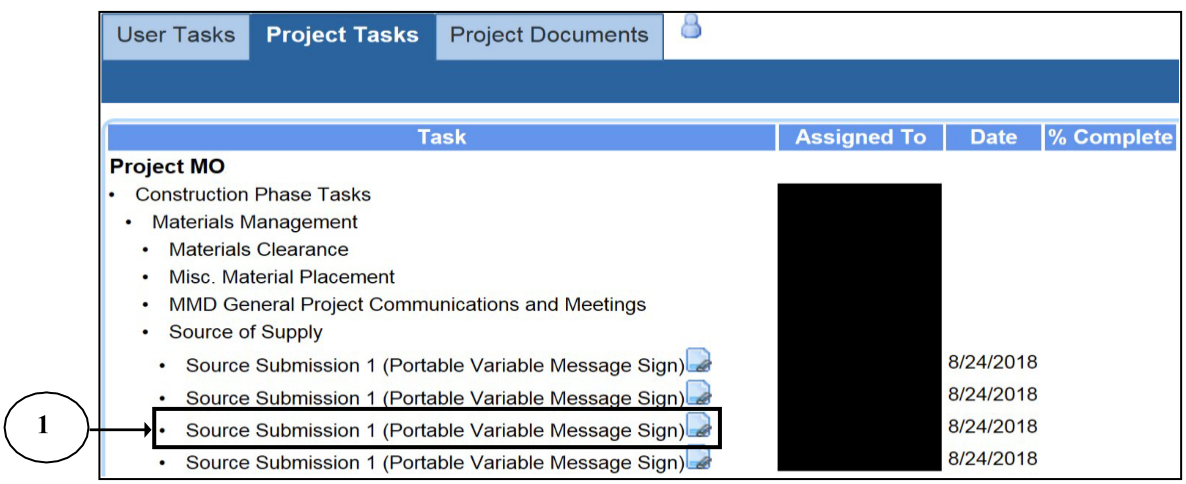

Figure 20: View Project Tasks

Number	Description
1	**Source Submission Number:** Shows source submissions that have attached documents on file.

4.3 View Project Documents

The “Project Documents” screen lists all documents that are associated with a given project. It is a list of documents grouped by document type and ordered by date. The user must select a contract number for this application to function properly.

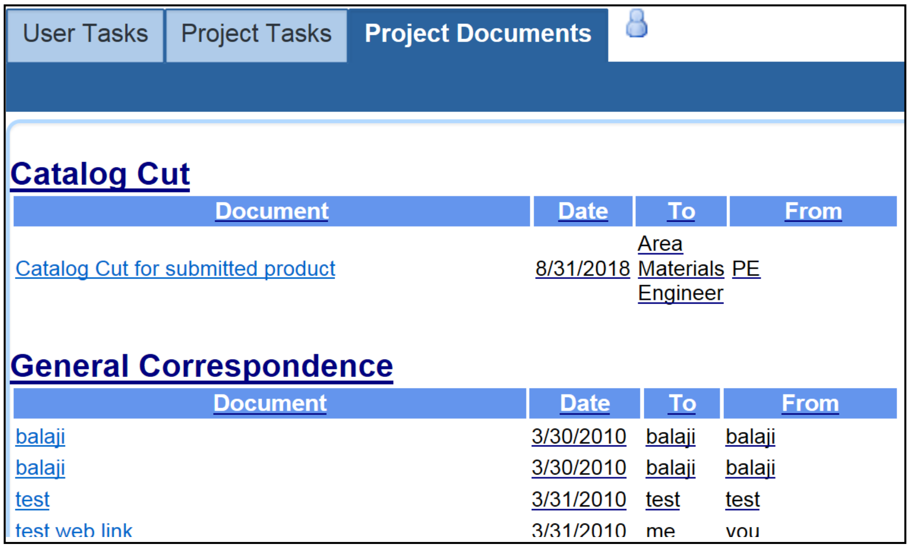

Figure 21: View Project Documents

5 Material Products Application

The Material Products application enables users to define specific material products that are used on state projects. This tool describes materials that are produced and provided for the state use on MDOT-SHA roadway projects. Specific OMT users can enter, update and validate product information and submit their specific product information. This module of the MMS may not be accessible by all users of the MMS.

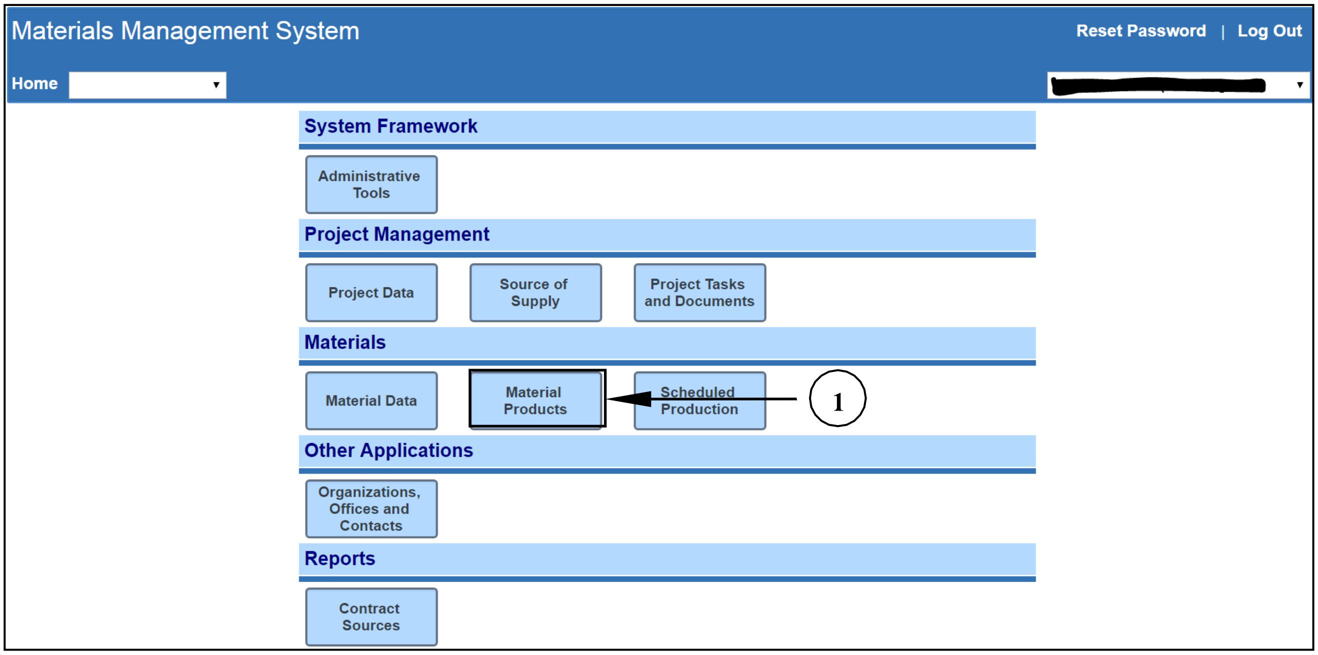

Figure 22: Materia Products Link

Number	Description
1	**Material Products Link:** From the MMS Welcome screen, click on the Material Products link to open the Search for Material Products screen (see Figure 22).

5.1 Search for Material Products

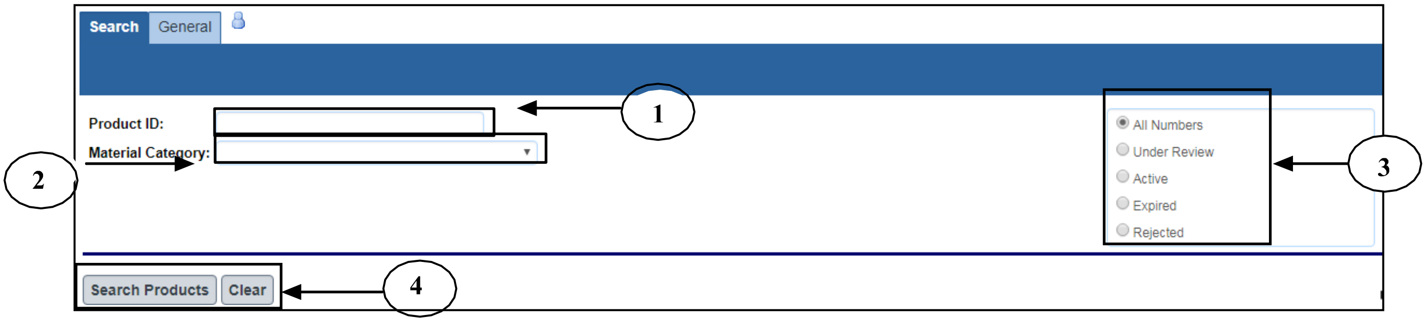

Figure 23: Search for Material Products

To search for material products, perform the following steps:

1. To search for a particular product, enter the Product ID in the “Product ID” field.
2. Click on the “Material Category” drop-down box and select a material category. The “Material Category” drop-down displays the type of material the product is satisfying. This list is populated with sourced level materials only.
3. To search for materials for a current project, check the Materials for Project checkbox and click the appropriate radio button selection. Choices are “All Numbers,” “Under Review,” “Active,” or “Expired.”
4. Click the Search Products button to perform a search of a material product or Clear to clear the screen. The results of the search are displayed (see Figure 24).

TIP: The quickest way to search for all material products is by clicking on the Search Products button after the default blank screen is displayed.

5.2 View Material Products Details

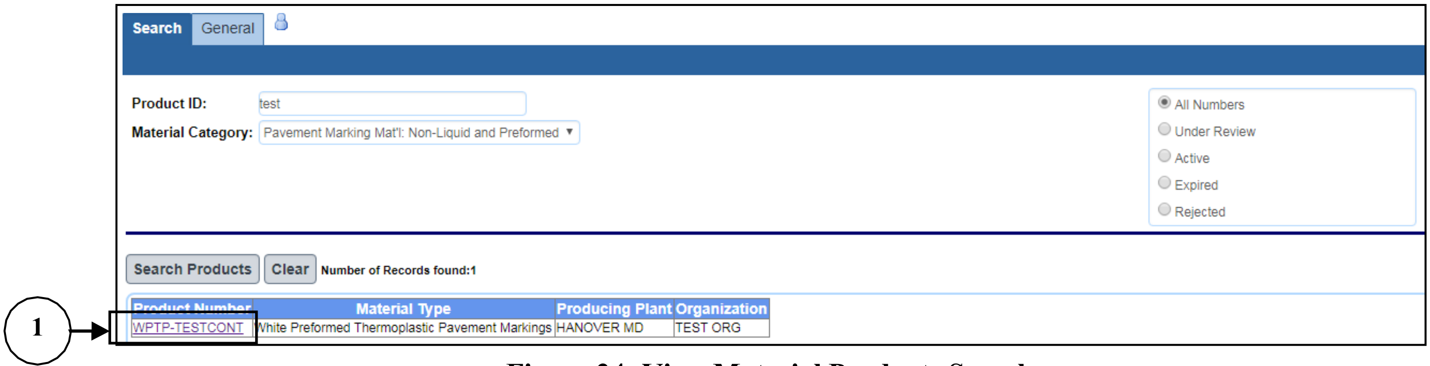

Figure 24: View Material Products Search

To search for a material product, perform the following steps:

1. Click on the Material Product link to view details of the product.

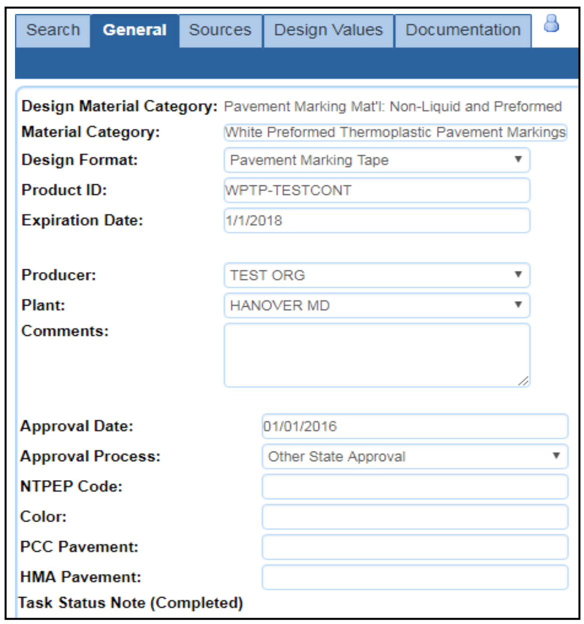

Figure 25: Material Product Detail - General Tab