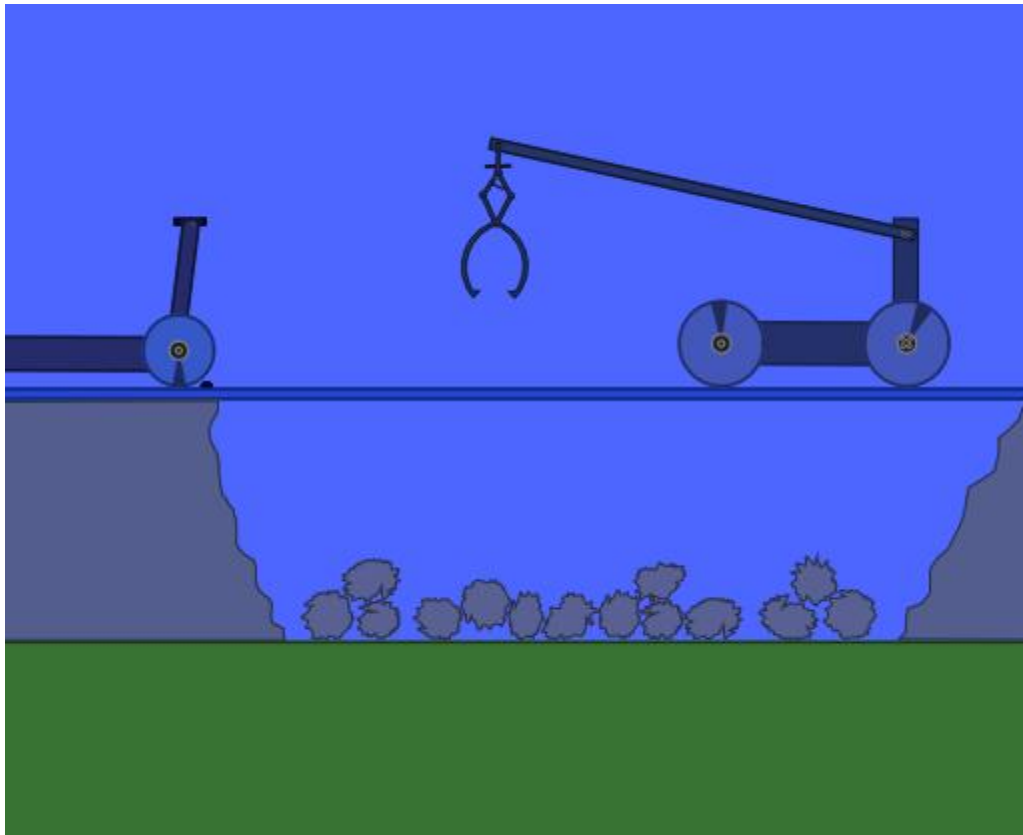


NC Department of Transportation



Quarry Map User Guide

Table of Contents

| | |
|--|------------|
| CHAPTER 1 THE QUARRY MAP APPLICATION | 1-1 |
| Purpose..... | 1-1 |
| Application Components | 1-2 |
| Quarry Map Toolbar | 1-2 |
| Active Material..... | 1-3 |
| Launching the Quarry Map Application..... | 1-4 |
| CHAPTER 2 PROCEDURES..... | 2-1 |
| Placing a Quarry | 2-1 |
| Placing a Border..... | 2-4 |
| Placing Mapping (Equal Cost Contours)..... | 2-6 |
| Removing Mapping (Equal Cost Contours)..... | 2-8 |
| Editing a Quarry | 2-9 |
| Deleting a Quarry..... | 2-10 |
| Removing a Quarry from Calculations | 2-10 |

Chapter 1 The Quarry Map Application

Purpose

The Quarry Map application is used to generate a color-coded map of the equal cost haul contours for each quarry.

You will follow the procedures in **Chapter 2** each time a new quarry map for a material is needed for the purchase requisition.

The general order of work will be to:

- Identify the quarry location
- Enter the price of the active material
- Generate a color-coded quarry map

If the quarry locations have been previously identified, the prices of the material may be changed and a new quarry map generated without having to locate the quarries again.

Application Components

The Quarry Map Application will be run in MicroStation.

It will contain the following:



Quarry Map Toolbar

The **Quarry Map Toolbar** contains the buttons necessary to perform all functions in the Quarry Map Application.



Place Quarry: Represents the location of a quarry within a map.



Edit Quarry: Edits the quarry information.



Place Border: Places a border around maps and quarries.



Place Map: Places the map that defines the least cost hauling areas.



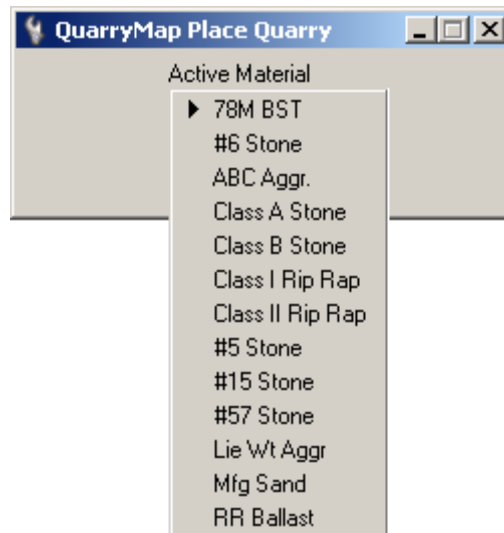
Remove Active Mapping: Removes all active maps that have been placed in the current instance of MicroStation.

Active Material

A separate color-coded quarry map will be developed for each material type. To accomplish this, you will need to set a material as the **Active Material**. Once the active material is set, any material prices entered or quarry maps generated will be for the active material only.

As the user changes the active material and enters the prices, a color-coded map may be generated showing the cost contours for the active material. The active material concept allows a quarry to be located once and then material prices entered for any or all of the materials supplied by that quarry. It also allows the same quarry locations map to be used for all materials.

This is done by drawing the quarry maps for each material on a separate design file level and then turning the level on or off depending on the active material. When the color-coded quarry map is drawn, it will be generated for the active material on the correct level. By changing the active material, a quarry map for each material may be drawn in from the same set of design files.



(Material Type Dialog)

The default material is **78M BST**. Once you have changed the active material, your selection will remain active during the current instance of **Quarry Map**.

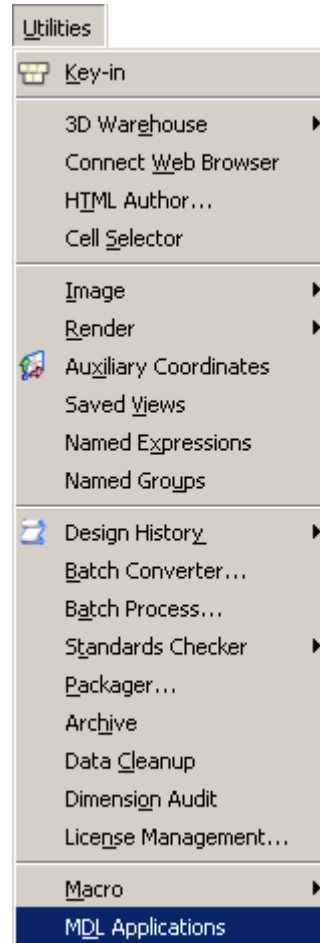
However, once you have exited and re-opened the program, the material will return to the default.

Launching the Quarry Map Application

The Quarry Map application is a MicroStation mdl application that must be run in conjunction with an open MicroStation design file.

Before you are able to launch the **Quarry Map** application, you must first open **MicroStation**.

| Step | Action | Result |
|------|------------------------------|--------|
| 1 | Launch MicroStation . | N/A |



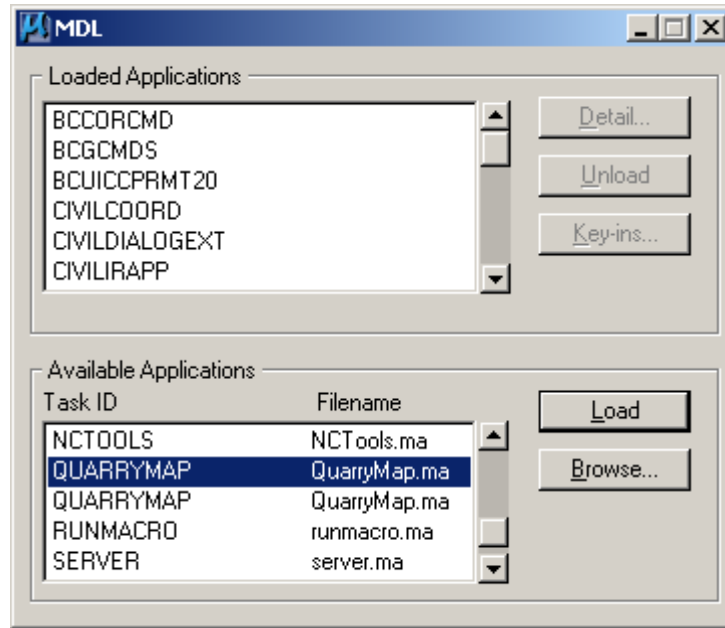
(Utilities Drop-Down Menu)

| | | |
|---|--|------------------------------------|
| 2 | Select MDL Applications from the UTILITIES drop-down menu. | The MDL dialog will appear. |
|---|--|------------------------------------|


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Launching the Quarry Map Application

(Continued)



(MDL Dialog)

| | | |
|----------|---|--|
| 3 | Select QUARRYMAP from the AVAILABLE APPLICATIONS list. | N/A |
| 4 | Click the  button. | The Quarry Map Toolbar will appear. |



(Quarry Map Toolbar)


You will also be able to launch the **Quarry Map** application by typing **MDL LOAD QUARRYMAP** in the launch field.

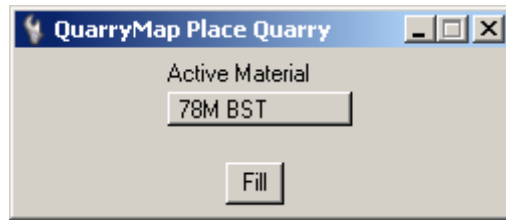
Chapter 2 Procedures

Placing a Quarry

This is the first step toward generating the color-coded quarry map.

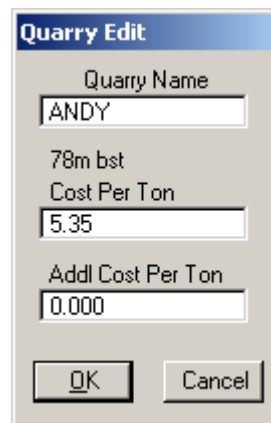
NOTE: It is extremely important that the quarry be located as accurately as possible. Incorrect location of a quarry will cause the map to compute bad equal cost contours.

| Step | Action | Result |
|------|--|---|
| 1 | Click the  PLACE QUARRY button. | The Place Quarry dialog will appear. |



(Place Quarry Dialog)

| | | |
|---|--|--|
| 2 | Select the material type from the drop-down list in the ACTIVE MATERIAL field. | N/A |
| 3 | Click on the screen where you would like to place the quarry. | The Quarry Edit dialog will appear. |




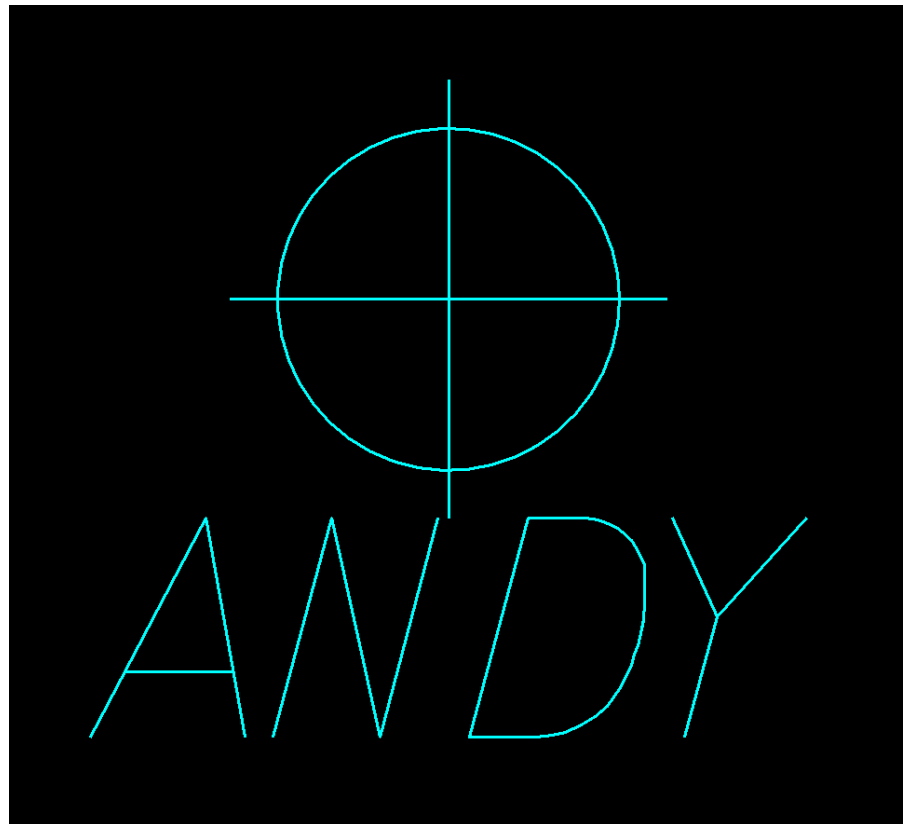
(Quarry Edit Dialog)

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Placing a Quarry

(Continued)

| | | |
|---|--|---|
| 4 | Type the name of the quarry in the QUARRY NAME field. 📁 NOTE: The value you type in this field must be unique. | N/A |
| 5 | Type the cost per ton in the COST PER TON field. | N/A |
| 6 | Type the additional cost per ton in the ADDL COST PER TON field. | N/A |
| 7 | Click the  button. | The quarry will appear in the area where you clicked. |




(Placed Quarry)

Continued on Following Page

Placing a Quarry

(Continued)

 **NOTE:** Add additional quarries by repeating **steps 2-7**.

When a quarry location is identified, the application makes allowances to store the price of all the various material types, even though only the active material price is entered. All other materials are stored with \$0.00 prices.


You can edit the quarry information (using the **Editing a Quarry** procedure on page **2-9**) to enter prices for materials stored with a \$0.00 value. This allows the application to keep track of the quarry, its location, and the price of each material.

Placing a Border

This procedure will:

- Determine the point at which the equal cost contours will end
- Determine which quarries will be evaluated.

When an equal cost contour intersects the border, the program will stop the contour line. If an attempt is made to generate equal cost haul contours without having placed a border in the design file, an error message will appear.

| Step | Action | Result |
|------|--|---|
| 1 | Click the  PLACE BORDER button. | N/A |
| 2 | Click and drag the area around the selected quarries where you would like the border to be. | When you are finished adding a border, the area can then be mapped. |





(Quarries with Border)

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Placing a Border


(Continued)

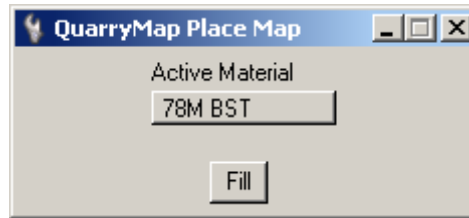
 **NOTE:** If you fail to designate a border before attempting to generate equal cost haul contours or requesting a plot, you will receive an error message.

 **NOTE:** If there is an existing border in the design file, it will be automatically deleted and replaced by the new border.

Placing Mapping (Equal Cost Contours)

Once the quarries are located, the prices for a material entered for each quarry bid, and a border placed, the user is ready to generate the equal cost contours (color-coded map)

| Step | Action | Result |
|------|---|--|
| 1 | Click the  PLACE MAP button. | The Material Type dialog will appear. |



(Material Type Dialog)

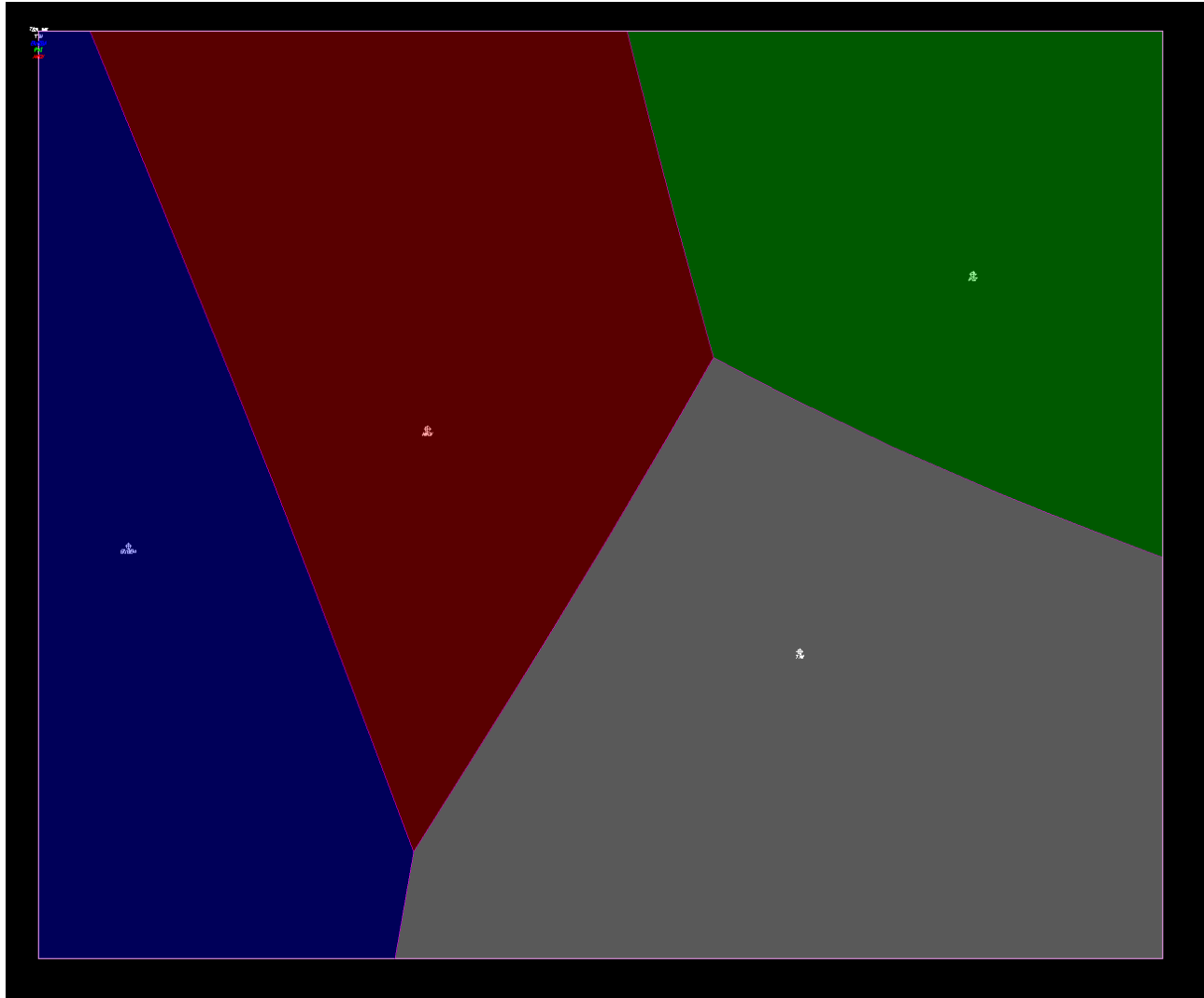
| | | |
|---|--|---|
| 2 | Select the material type from the drop-down list in the ACTIVE MATERIAL field. | The MicroStation prompt (Status bar at bottom of screen) will now read PLACE MAP>SELECT VIEW. |
| 3 | Click on the screen in the area where you would like to place the map data point. | N/A |

NOTE: By placing a data point in the view, the mdl program will generate the equal cost haul contours. If there are existing equal cost contours for this material type, they will be overwritten by the new selections. This may take a minute or so.

Continued on Following Page

Placing Mapping (Equal Cost Contours)

(Continued)





(Color-Coded Equal Cost Contours)

As the contours are being drawn, a text file is created that contains the mileage calculations used in generating the contours. The first mileage list contains the distance between the two quarries and its equal cost distance. The following list of mileage and equal cost distances are incremented based on the size of the border placed around the quarry map(s). This mileage list may be printed using any text editor. The printed output should be attached to the material requisition along with the color-coded map.

Removing Mapping (Equal Cost Contours)


If you would like to delete the equal cost contours for a material type from the design file:

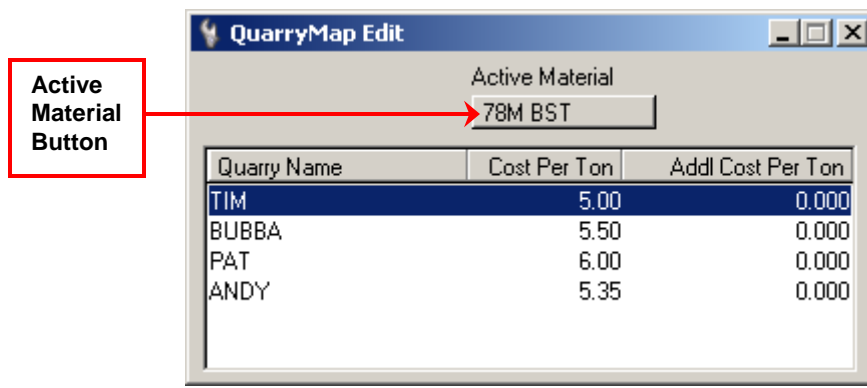
| Step | Action | Result |
|------|--|---|
| 1 | Click the  REMOVE MAP button. | This will remove the equal cost contours for the active material. |

 **NOTE:** This procedure can be undone by selecting **UNDO** from the **EDIT** drop-down menu in MicroStation.

Editing a Quarry

Once a quarry has been identified and located, it may be necessary to change the quarry name and edit or add a material price. All changes or additions to the quarry information can be accomplished through the following procedure.

| Step | Action | Result |
|------|--|---|
| 1 | Click the  EDIT QUARRY button. | The Edit Quarry dialog will appear |



(Edit Quarry Dialog)

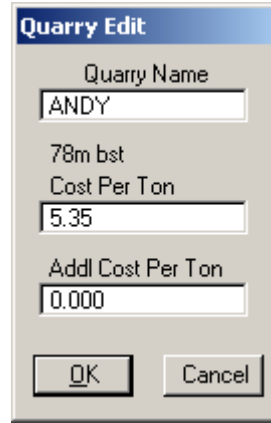
The **Edit Quarry** dialog will contain all previously located quarries and the prices entered for each. At the top of this dialog is the **ACTIVE MATERIAL** button. If you need to change the active material in order to make your edits, you can click the button to select another material from the drop-down list.

| | | |
|---|---|--|
| 2 | Double-click the line containing the quarry you wish to edit. | The Quarry Name dialog will appear. |
|---|---|--|


Continued on Following Page


Editing a Quarry

(Continued)



(Quarry Name Dialog)

| | | |
|---|--|---|
| 3 | Edit the applicable information in this dialog. | N/A |
| 4 | Click the  button. | The quarry information has been edited. |

 **NOTE:** Edit additional quarries by repeating this procedure.

Deleting a Quarry

If you wish to delete a quarry, use the MicroStation **DELETE ELEMENT** command to delete the quarry cell

Removing a Quarry from Calculations

If you wish to remove a quarry from the equal cost contour calculations, set the price of the active material for the quarry to **\$0.00**. Any quarry with a \$0.00 price will not be used in equal cost contour calculations.