PROMINE

MINING & SURVEYING SOFTWARE

RELEASE NOTES

info@promine.com

Release Notes 2022.10

This document contains the descriptions of new commands and improvements that are included in the 2022.10 version of Promine. These are valid from the release of the version the August 22nd, 2022.

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New features

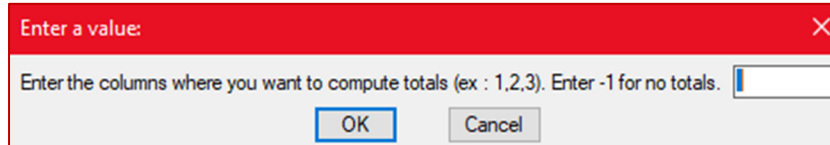## Module: Drill/Blast underground

DRIJOIN– Join Reports

A new command called DRIJOIN has been added to the Drill/Blast underground module. It can be found in the Custom Commands of the module. DRIJOIN can be used to join multiple tables made with DRIR together to a more general visualization of the data in one place.

Steps to use:
1. Click on the "Join reports" (DRIJOIN) command.
2. The command will prompt the user to select the tables to be joined together. (tables must have the same format and be in section view)
3. Then a dialog will pop up asking if the table contains totals as the last row.

You've got to make a choice (No maybe!)	✕
Does your table contain totals as the last row ?	
Yes	No
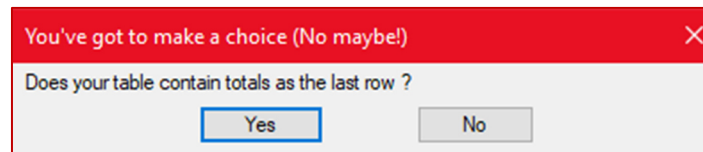
4. If the user clicks on the "Yes" button the next dialog will appear asking where (the number of the column) the totals are going to be inserted

Enter a value:	✕
Enter the columns where you want to compute totals (ex : 1,2,3). Enter -1 for no totals.	
OK	Cancel

Notes:
- the user can select multiple columns to insert the totals but they have to be separated by commas.

I.e: 3,13 (being in the example table below 3 the "length" column and 13 the "load length" column the ones calculated while the others are marked with an "X")

Drill

Hole Num	Diam.	Pivot	Longitud	Azim	Angle Dip	#Rod 1.2m	East	North	ELEV	Done by:	Ring #	Explosive (type)	Load length	Load from	Load to
3	100 MM	A	12.86	346.7	<87°	10.7	2678676.9	4667136.9	−89.8		SEC−6	EMULSION	11.9	1.0	12.9
9	100 MM	A	12.85	344.5	<87°	10.7	2678684.7	4667138.6	−90.1		SEC−7	EMULSION	9.9	1.0	10.9
10	100 MM	B	12.52	344.5	<87°	10.4	2678684.9	4667137.8	−89.8		SEC−7	EMULSION	9.5	1.0	10.5
11	100 MM	C	12.46	344.5	<87°	10.4	2678685.2	4667137.1	−89.7		SEC−7	EMULSION	9.5	1.0	10.5
6	100 MM	A	12.80	343.4	<87°	10.7	2678683.0	4667138.4	−90.0		SEC−3	EMULSION	9.8	1.0	10.8
7	100 MM	B	12.34	343.4	<87°	10.3	2678683.3	4667137.6	−89.6		SEC−3	EMULSION	9.3	1.0	10.3
8	100 MM	C	12.53	343.4	<87°	10.4	2678683.5	4667136.9	−89.8		SEC−3	EMULSION	9.5	1.0	10.5
4	100 MM	A	12.77	345.2	<85°	10.6	2678679.6	4667137.5	−89.7		SEC−1	EMULSION	9.8	1.0	10.8
5	100 MM	B	12.60	345.2	<85°	10.5	2678679.8	4667136.7	−89.6		SEC−1	EMULSION	9.6	1.0	10.6
2	100 MM	A	12.87	346.1	<86°	10.7	2678676.2	4667136.7	−89.9		SEC−5	EMULSION	9.9	1.0	10.9
1	100 MM	A	13.01	346.4	<86°	10.8	2678675.5	4667136.6	−90.0		SEC−4	EMULSION	10.0	1.0	11.0
X	X	X	139.61	X	X	X	X	X	X	X	X	X	108.70	X	X

Module: Water Tracking

A new module has been added into the Engineering 1 category. It can be used to keep track of water sources in the mine by visualizing data from a database and adding data to the same database. Now the module has 5 commands that are called: Insert Water Source (WATI), Edit Water Source (WATE), Export Water Source (WATX), Display Data (WATH) and finally, Water Tracking Options (WATO). The functionality of each command and how to use it step by step is going to be explained in the following titles.

WATI – Insert Water Source

The new command Insert Water Source (WATI) has been added to insert the different water sources along with the specifications prompted by the software about this sources.

Steps to use:
1. Click on the Insert Water Source command (WATI)
2. The next window will follow:

3. The user must fill in the fields required by the software in the "Insert Water Source" window as the name of the source, by who was the source created, the mine level, date, coordinates (also the user can pick the coordinates from existing ones in the drawing, as well as the azimuth and dip)

4. Once all the information in the "Insert Water Source" window is filled the user can click OK and the water source will be inserted.

5. The block of the Water Source will look like this:
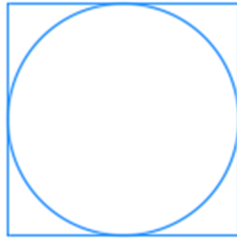
Note:
The blocks can be personalized in the options of the module under Flow Volume. Any block that has been placed into the Promine/Config/WAT folder can be used.

WATE – Edit Water Source

With this new command in the Water Source Module the user can edit already existing Water Sources data.

Steps to use:
1. Click on the Edit Water Source command (WATE)
2. The next window will pop up. It is nearly the same as in the WATI command with the exception of this having grayed parts that cannot be edited as the "name" field, "by" field, etc.

3. Once the user is in this window, they can edit data like: add a new date, add an analysis type, and also a flow source.
4. Once the user clicks accept the new changes are going to be seen in the DB, as an update to the entry if a previous date was used and a new entry if a new date was used.
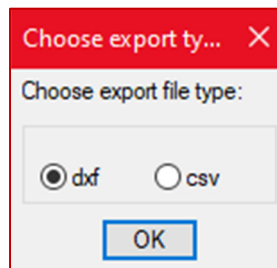
WATX – Export Water Source

The new command WATX was created to export the water sources into DXF or CSV files.

Steps to use it:
1. Click the "Export Water Source" (WATX) button
2. Select the water sources to be exported
3. The next window will appear:

4. The user can now choose between DXF or CSV file to export their water source and click OK
5. Once the user clicks OK, the next window will pop up:
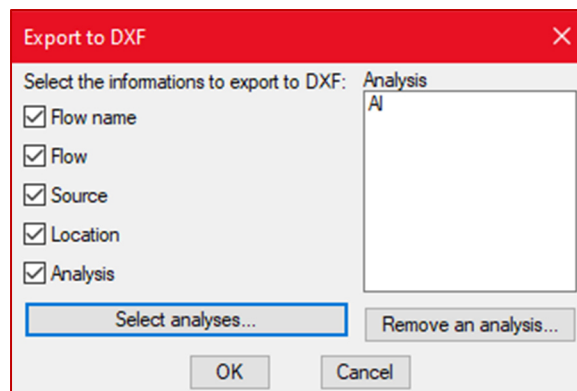
6. Now the user can select the information to export into the DXF file checking or unchecking the boxes and selecting the analyses to export.
7. Once the set up is completed and the user clicks OK the DXF file will be ready to export.

```
Gande
Support de terrain
Plancher
2022-08-26 08:58      Débit (L/min) = 0.01     Ni = 2
2022-08-26 09:02      Débit (L/min) = 0.01     Ni = 2
2022-08-26 09:03      Débit (L/min) = 0     Ni = 3
```

Note: In the case of CSV files the process of setting up which data is going to be exported will not be necessary. The software will create the CSV file right after selecting that file type option (step 3).

WATH – Display Data

The new command WATH has been created into the Water Tracking module to see the Historical Data of the water sources. The historical data to be displayed means the changes that have been made in the water sources of certain properties like flow, and also in the grades and the date and time when those modifications were made.
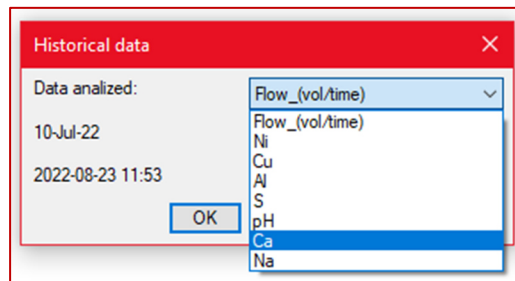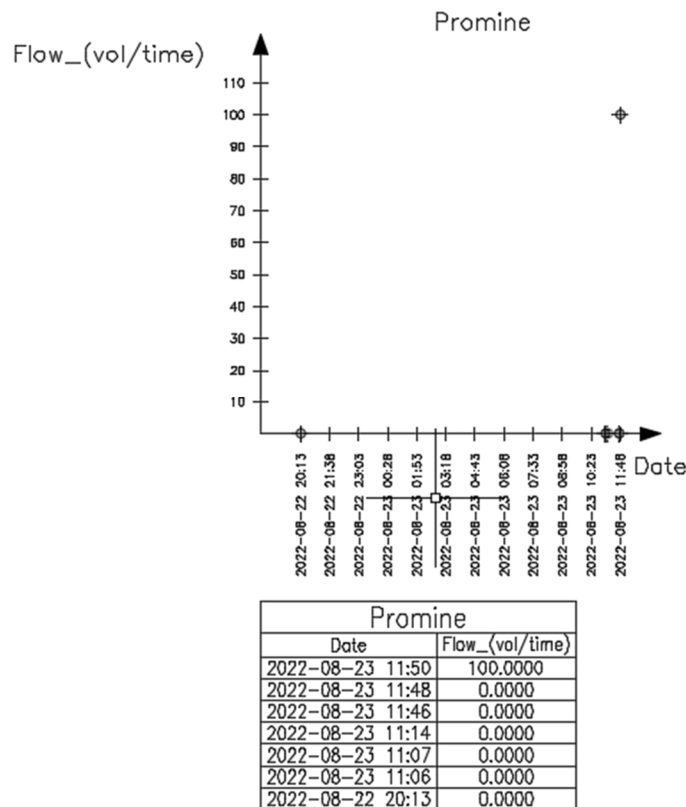

Steps to use it:
1. Click on the WATH command
2. The next window will pop up:
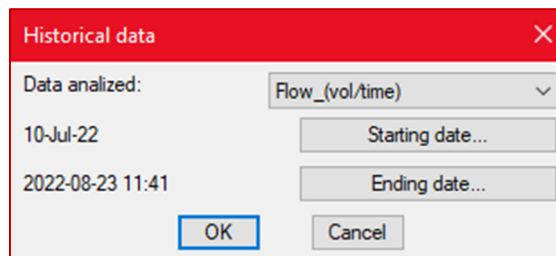
3. From the previous window the user must select the data to be analyzed, in this example we will use the flow data. Choose the starting and ending dates and click OK.

Promine

| Date	Flow_(vol/time)
2022-08-23 11:50	100.0000
2022-08-23 11:48	0.0000
2022-08-23 11:46	0.0000
2022-08-23 11:14	0.0000
2022-08-23 11:07	0.0000
2022-08-23 11:06	0.0000
2022-08-22 20:13	0.0000

In the example in the image above we can see no changes during different hours of the day but a change in the volume was made at 11:50 during the 2022-08-23.

✅ WATO – Water Tracking Options

The command WATO has been added to the Water Tracking module as the options of the module. With this command the user can modify most of the parameters used in Water Tracking as adding a Database and configure it. It can modify the graphic scale, texts scales and add items to the different lists.

Steps to use it:
1. Click on the WATO command
2. The next window will pop up:
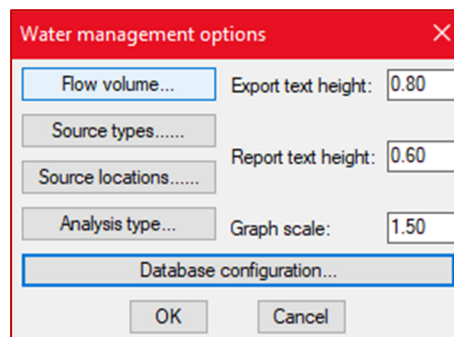
3. The user can now set up the different parameters as it fits best for them as changing the graphic scale or the different text sizes. The user can also configure the Database at this point and edit the flow volumes, source types and other parameters.
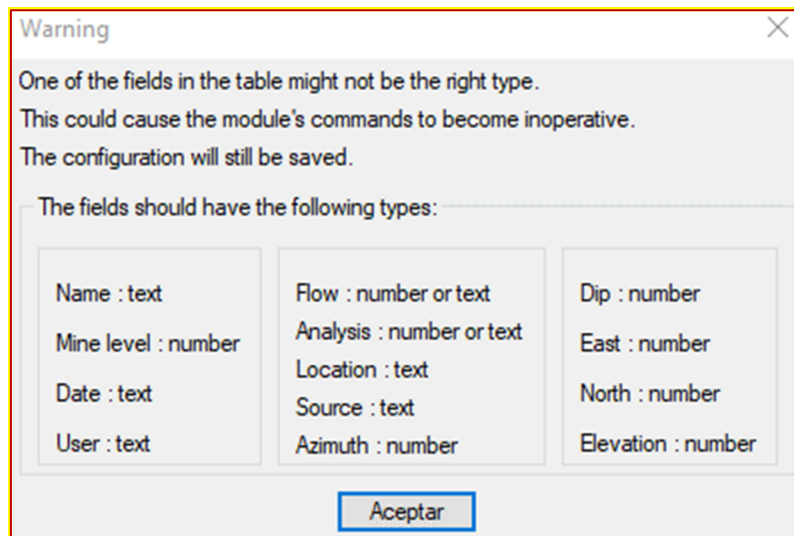
<div align="center">Steps to configure the DB</div>

1. Click on the "Database configuration" button
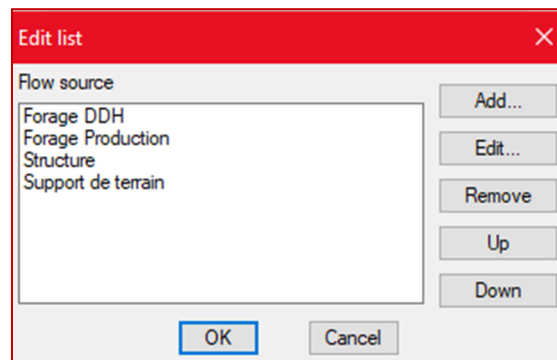2. The next window will pop up
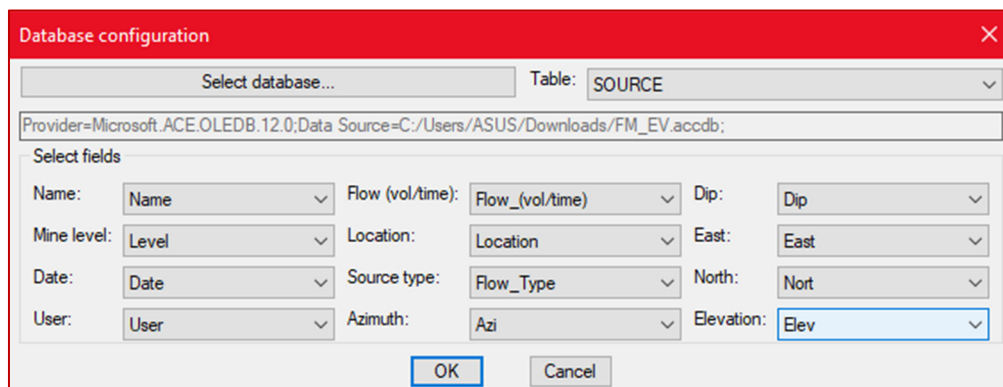
3. In the select database button the user can select the database to use (make sure it has as many of the parameters required by the software as possible
4. Select a table from the database clicking the drop down list
5. Configure the fields in the database to match with the items required by the software
6. Once the Database is configured the user can click OK to save the changes

Note : If the setup of the database has field types that are unexpected the following warning will be displayed:

Steps to configure the lists

1. In the "Water management options" click any of the options to add, edit or remove items from those lists.
2. Click any of the options (flow volumes, source types, etc.) and a window like the following will pop up and the user will be able to add, edit or remove items from the different lists

3. If the user clicks on the "add" button the next window will appear to add an item to the list:
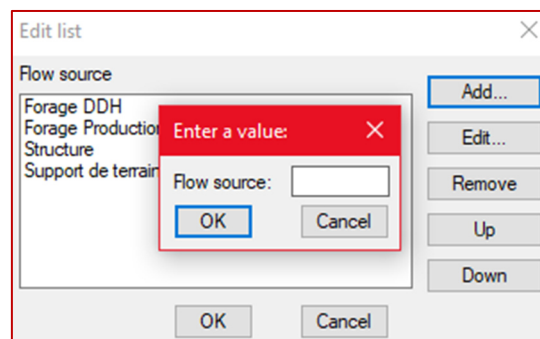
4. It is the same in almost all buttons with the exception of the "Flow Volume" button that needs more information to add flow volumes to the list:
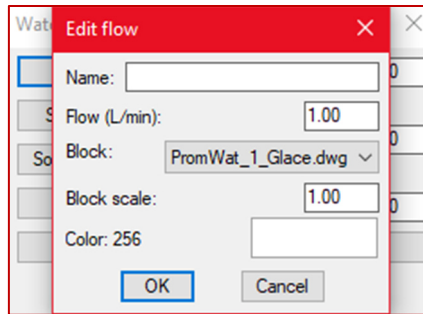
Here the block that will be inserted for the specific flow volume can be selected, as well as its scale and color. To use a block is has to be placed into the Promine/Config/WAT folder.

Module: Rock Mechanic

RKMRMR – Calculate RMR

A new command called "Calculate RMR" (RKMRMR) has been added to the Rock Mechanic Module. This new command can be used to calculate the Rock Mass Rating (RMR) in a drawing according to the users input.

Steps to use RKMRMR:
1. Click on the "Calculate RMR" (RKMRMR) command
2. Click the place in the drawing to insert the final block
3. The next window will pop up:

4. In this window there are different tabs as "Rock resistance value", "Modified Recovery Index Values", "Joints Spacing", etc.
5. The user must go tab by tab and click on the numbers in the "Factors" columns based on their rock values
6. Then, in the final tab (the "RMR" tab), the user can see the result of the RMR calculation and a "Rock Massif" indicator. There is also a checkbox to insert the class table and their meaning into the drawing.

7. Once the user presses OK the point is going to be added to the drawing with the "Total RMR" number and color (in this case orange, that represents poor quality) and the class

table with the legend:

40

Classes of rock masses according to RMR		
Class Rocky Massif	Description	RMR
I	Rock massif of excellent quality	81-100
II	Good quality rock massif	61-80
III	Regular quality rock massif	41-60
IV	Poor quality rock mass	21-40
V	Rock massif of very poor quality	0-21

Module: Drift Drilling and Blasting

DDBTI – Insert Template

There is a new command called DDBT that was made for the user to create their own templates and then be able to insert them in their drawings. This new improvement was made to speed up the user's processes.
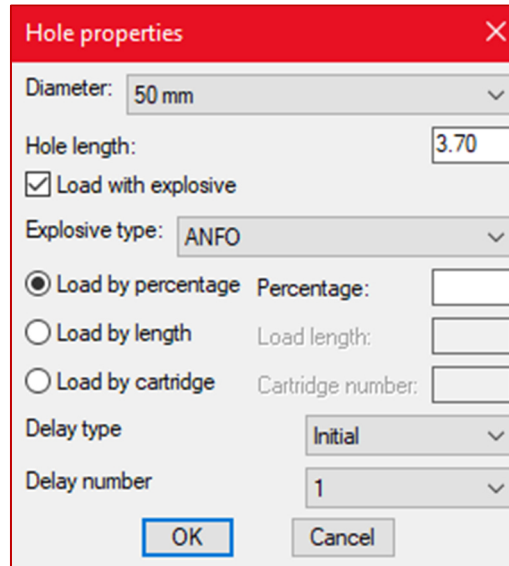
Steps to create DDB templates:
1. It is necessary to have a drilling contour and holes already inserted for the user to save this as the template.
2. Go to the Drift Drilling and Blasting Options (DDBO)
3. There is a new column called "Drift drilling template"

4. To add a new template to the list, click on the "Add" button.
5. The software will prompt the user to select the objects (holes and drift contour)
6. Once the objects are selected the user will be prompted to select the insertion point of

the template. After doing it the next window will pop up:

7. The user will enter the data as they consider and then click OK. During this step the user can enter the explosives in a general way to all the holes, also add delays and modify the hole length and diameter.
8. The next window will pop up after making the set-up of the hole's properties and clicking OK:
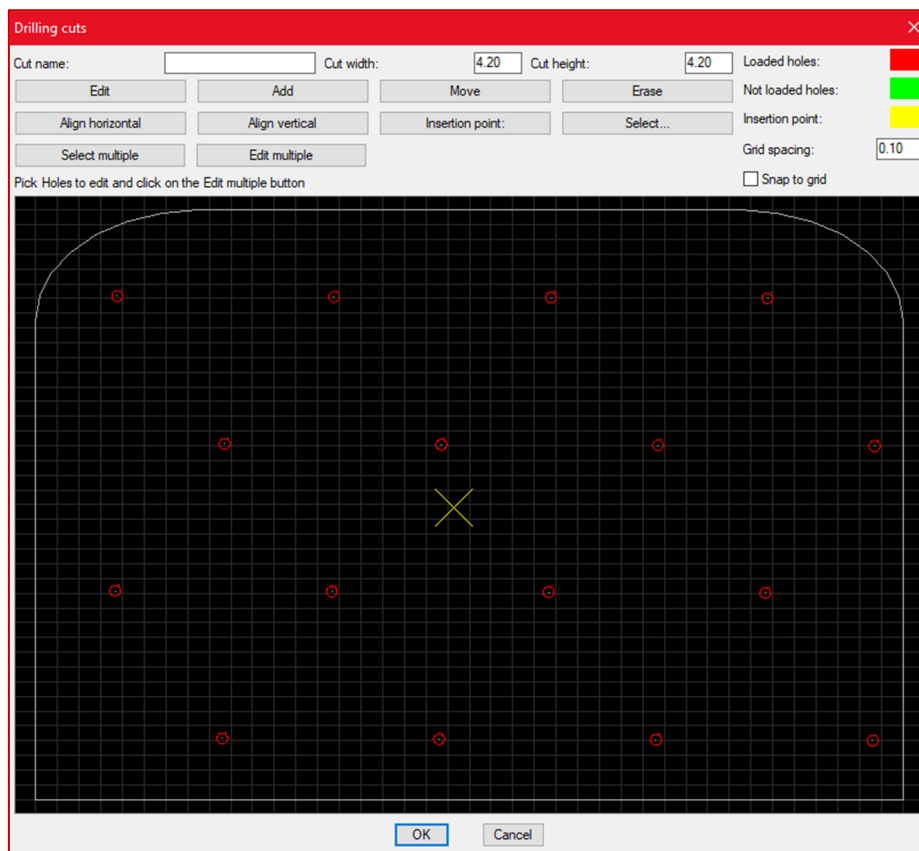
9. With this new window the user can edit the holes as needed:
   - The user can add a "Cut name" to the template
   - The user can modify the cut width and the cut height.
   - In the first row of buttons there are the basic buttons: Edit, Add, Move or erase the holes.
   - In the second row there are buttons to align the holes in a horizontal or vertical way and to change the position of the insertion point (represented by the yellow cross) and select.
   - The previous "Select" and "Edit" buttons are to edit just one hole at a time so there are 2 additional buttons to select multiple holes and also edit multiple holes.
   - The user can also modify the grid spacing and check the box to snap to the grid.
10. Once the template is set up the user can click OK and the template is going to be added to the Drift Drilling Templates list.

Note: When the user adds a new template they must select the holes with the drift, like the following. This will open the hole properties form where the holes are defined.
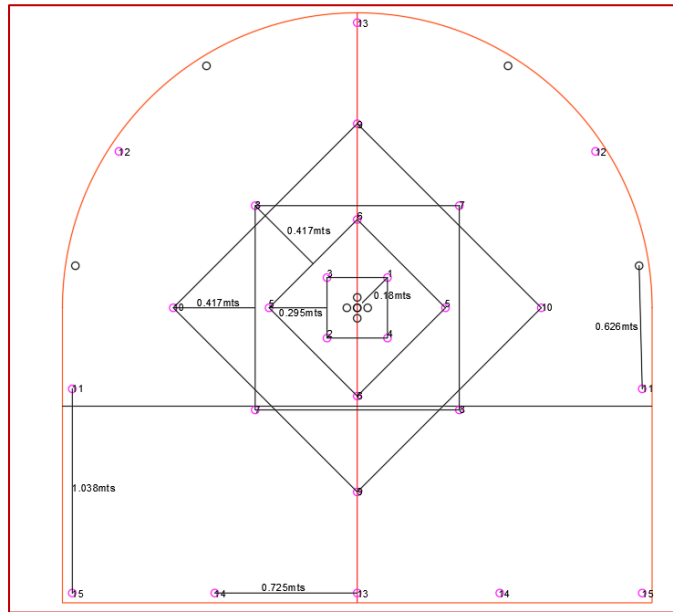
Steps to insert DDB templates

1. Once the templates are created the user can insert them by going to the "Insert" Button (DDBI) and then click on the "Insert template" button (DDBTI) or directly typing DDBTI into the command line
2. The next window will pop up:

3. Once the user set the specifications as they prefer, they can click OK and select a drift outline.
4. The template is then attached to the cursor at the insertion point and can be moved to the ideal position.

Improvements

## Module: 3D Drift

3DDC – Construct 3D Drift

An improvement was made in the 3DDC command to create better 3D drifts using polylines it is now possible to create drift with curves and not just straight segments. For this to work, the user has to insert a polyline that defines the modeling direction.

Steps to use the improvement:
1. Having the proper polylines for modeling (walls, roof elevations, floor elevations) previously inserted.
2. Draw a modeling polyline following more or less the middle of the drift. In the image above the red polyline would be the modeling polyline
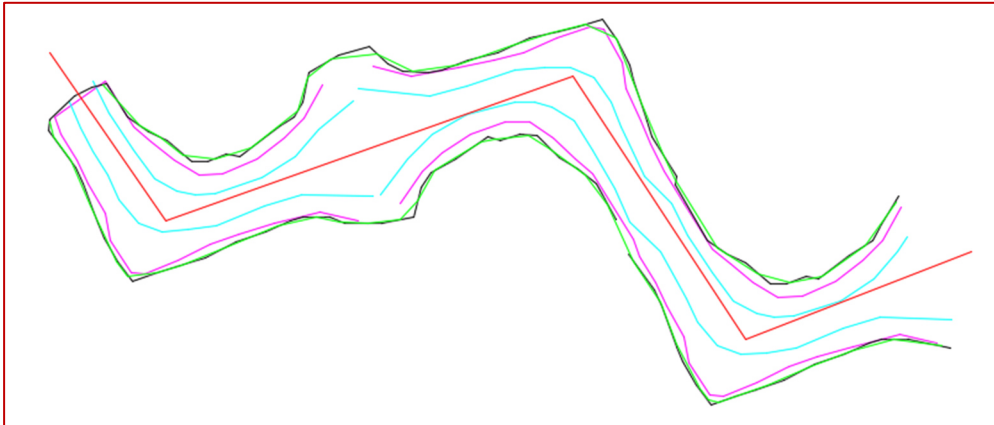
3. The software will prompt the user to select the surveyed polylines first
4. Then to select the modeling polyline
5. Finally, the user must confirm the minimum number of points to have a drift segment created:
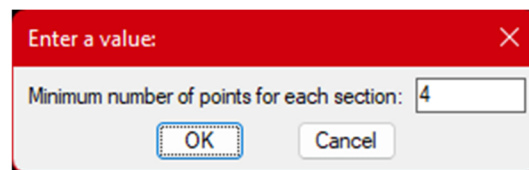
6. The result will be the following:
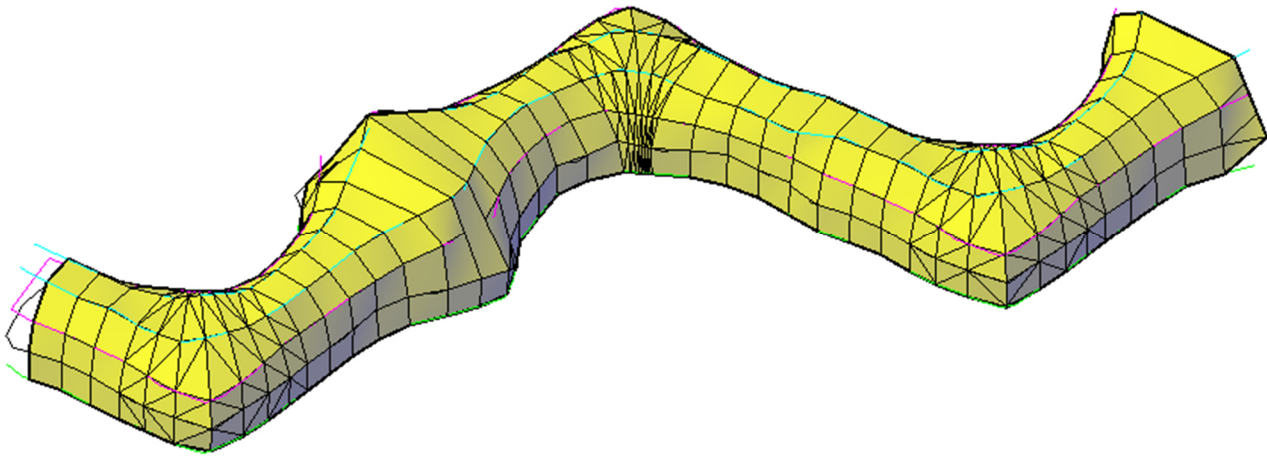
Notes:

- The drift in the image above can be done in a single operation thanks to this new improvement
- The modeling polyline can also be selected as one of the drift polylines, but if it was drawn on elevation 0 the result will include the drop to that elevation.
- There are parameters in the settings that can alter the command functionality
  - The drift will look different depending if the software is set to create meshes or 3D solids, 3D solids are the suggested option for better results. The meshes can be fixed if needed with the MESHPIN command to fix the triangles orientation.
  - The search width for points will set how far from the path polyline the points are kept as valid. This is to prevent modeling errors when the polylines are coming back onto themselves.
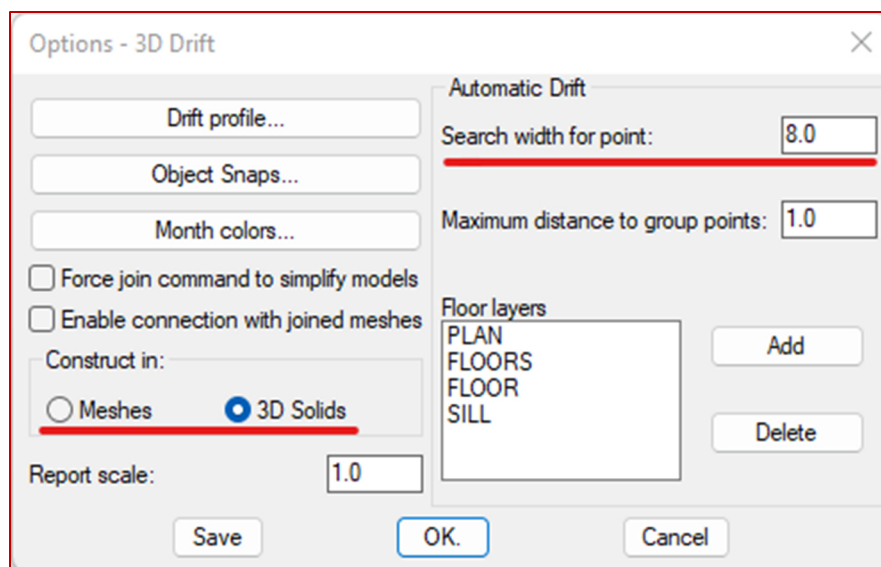
Module: 3D Raise

3DRC – Construct Raise

The command 3DRC has now a third option of raise to create a round raise boring shape. It will create a mesh around a polyline with the desired radius. To use it, a new button was added in the first dialog opened by the command.
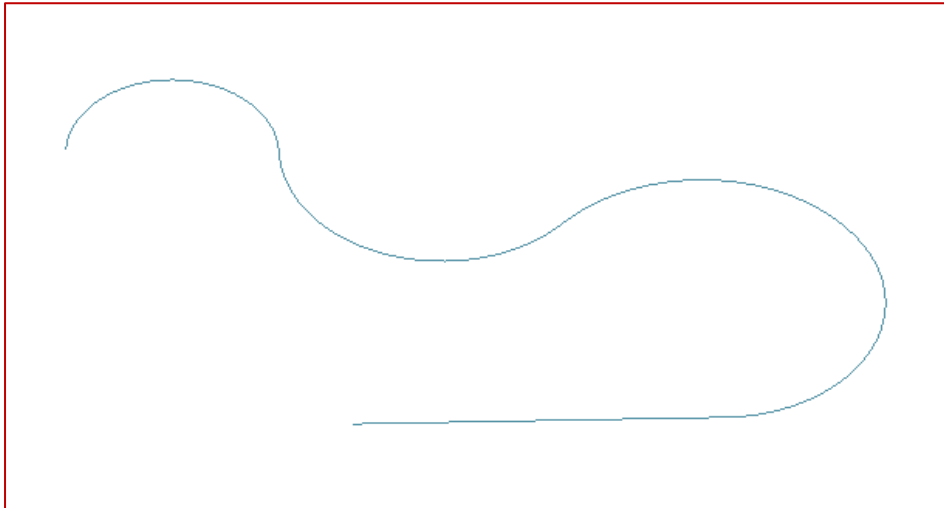
Steps to use:

1. Click on the Construct Raise (3DRC) command.
2. The next window will pop up with the new button "The polyline will be interpreted as the center of the hole".
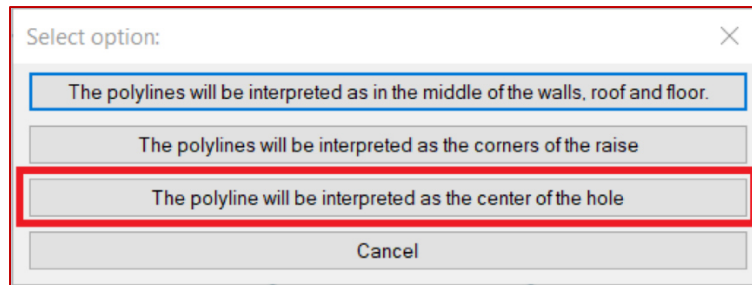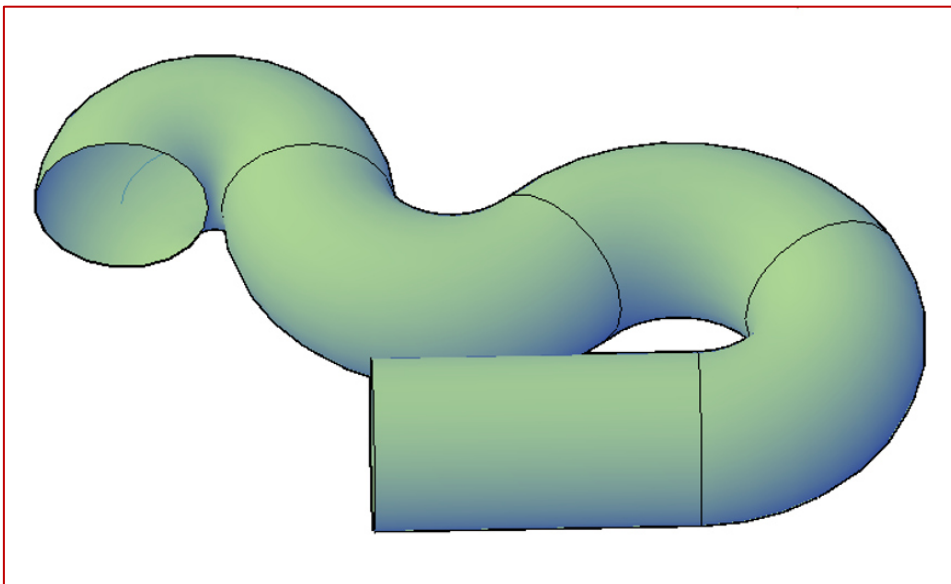

3. After clicking on that button, the next dialog will pop up for the user to define the radius of the raise.
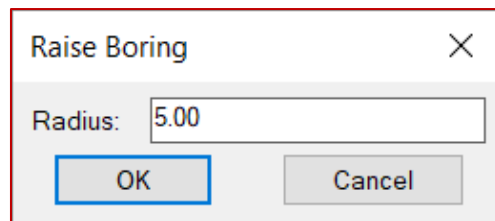
4. The last step is to select the polyline that defines the path of the raise.
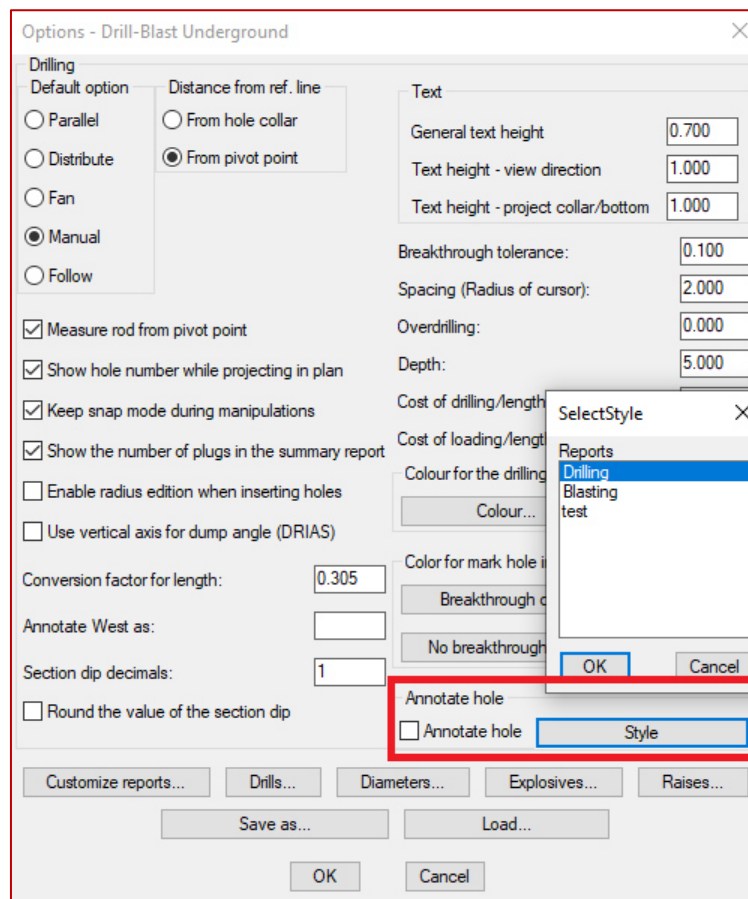
5. The result will be the following:

Module: Drill/Blast underground

DRIH– Insert Holes

A new improvement has been added in the DRIH command. Users now can annotate holes and pivot points while inserting holes.

Steps to use it:

1. To use this improvement, the user needs to choose the "Annotate hole" checkbox from DRIPREF dialog box
2. Then select a report for style (hole and pivot annotations will follow that annotation style of the selected report).

3. If the annotate hole option is checked then, after inserting the holes using DRIH command, a dialog box will appear for user to choose number/letter of first hole, hole numbers prefix, and number/letter of pivot.
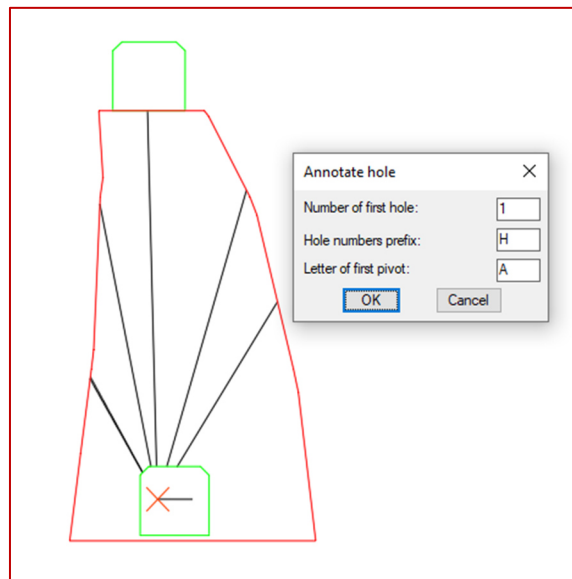
4. The result will be the following:
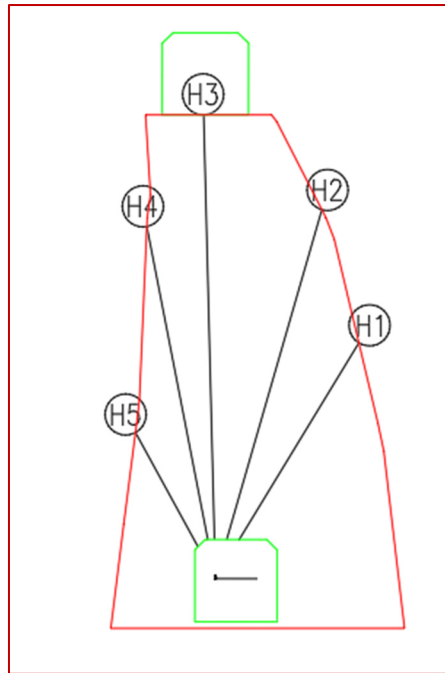
Module: Drift Design

PLAME – Drift report

The PLAME command has been improved to include more data and options. The user can now export the report to a CSV file with the parameters selected by them.

Steps to use it:

1. Go to the custom commands(PLAME)
2. Select the centerline
3. The next window will pop up

4. The user will be able to visualize the report in the drawing and also save the CSV file

This will be the result for the report:

Drift	Drift name	Start date	Final date	Length	Volume	Tonnage
			Drift Report (PLAME)			
1	DMEO3	2022/07/24	2023/04/07	514.65	20486.12	56336.82
2	DEMO2	2022/07/04	2023/04/24	588.40	23424.88	64418.42
3	DEMO1	2022/07/03	2023/07/24	772.55	30757.24	84582.40
Total	X	X	X	1875.59	74668.24	205337.65

This will be the result for the file:

Drift	Drift name	Start date	Final date	Length	Volume	Tonnage
1	DMEO3	2022-07-24	2023-04-07	514.65	20486.12	56336.82
2	DEMO2	2022-07-04	2023-04-24	588.4	23424.88	64418.42
3	DEMO1	2022-07-03	2023-07-24	772.55	30757.24	84582.4
Total	X	X	X	1875.59	74668.24	205337.7

Notes:
- To compute volume and tonnage, the user will need to choose a density in the options and generate a mesh with the command PL3D.
- Since the centerlines and meshes were never connected before, the user will need to regenerate the meshes for older drawings.
- The old PLAME command has also been renamed to PLALR in case the user wants to use the old command.