mineexcellence

Blast Information Management System

Contents

Introduction

Blast Information Management System is a software program for keeping records of the blasting operations, retrieving the recorded information and analyzing the information. It allows record of Blast Design Pattern, Location, Explosive, Initiators Used, Video, Fragmentation Analysis, Vibration Analysis, Accidents, Manpower and Associated Costs etc.

Executive Summary

BIMS is an integrated software package that brings convenient, automated management of maintenance activities to the computer desktop. The applications windows format and relational database simplify the process of maintenance management and provide improved control. You do not need programming expertise to become an expert applications user.

BIMS bring you the advantages of the Company's many years of Mining and Quarrying industry experience in a variety of maintenance environments, including companies where ISO 9000 standards must be met. Your company can benefit significantly by implementing BIMS to manage everything from blast hole details to Cost optimization of Blasts.

BIMS is designed to meet the Record keeping and analysis a needs of discrete mining industries such as Cement Plants, Infrastructure Development, and Coal/other minerals mines.

BIMS is designed for any level of user. Even with the applications' high level of sophistication they are easy to learn to use for such routine tasks as data entry and maintenance reporting. You can even customize your screens so users see only the information that is important to them.

BIMS as a web application

BIMS running on Web provides great power and flexibility. BIMS is software for storing, managing, retrieving and most importantly analysing drill and blast related information. Blasting operations routinely present the problem of vibrations, flyrock and correct blast design. Readily available past data in a logical format and blasting data analysis tools are the key features of BIMS. It is easy to access, and has 24 * 7 availability.

BIMS Dashboard

BIMS Dashboard consists of three fields:

- **New**: New Blast Record
- **Manage Blast**: Edit Blast Record
- **Reports**: print Blast Record
- **Blast Map:** show blast location on map

BIMS Menu

The BIMS Menu provides access to each module. This chapter gives a brief overview of each module. Later chapters of this manual describe the most commonly used modules in detail.

BIMS main screen in which records will be made and edited. Main Screen consists of several components in which various parameters can be recorded and edited. The main screen consists of several components which help during making of all the records. All these components are explained as below.

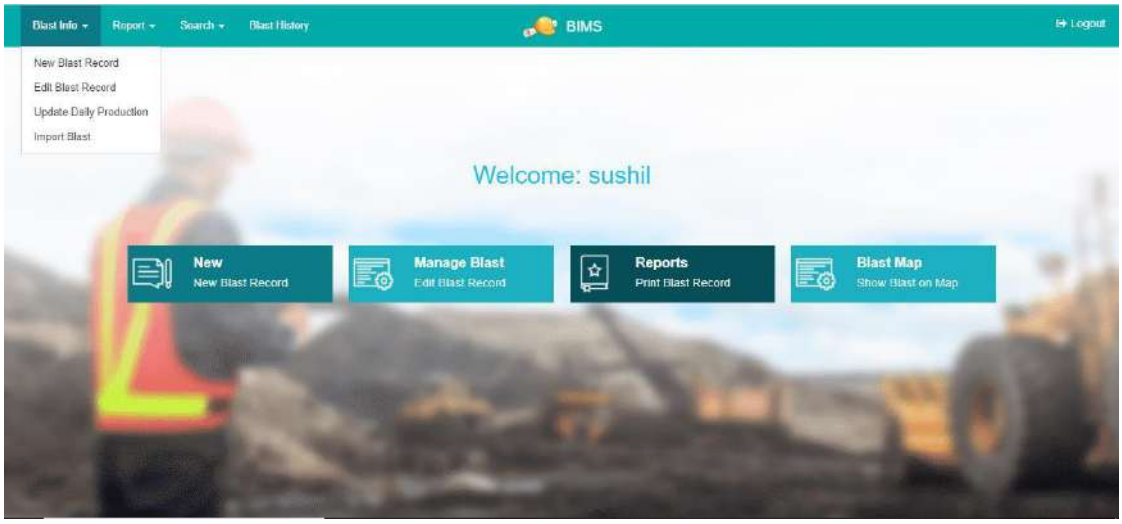
When user lands on BIMS Dashboard, he will be able to see following fields on BIMS menu:

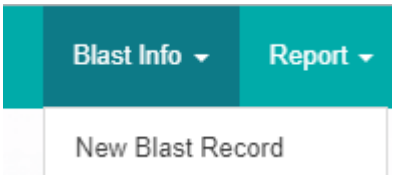
- **Blast Info**: By using this module he will be able to Add and Edit Blast Records.
- **Report**: By using this module user will be able to see and generate various Reports, which we will see in detail further.
- **Search**: By using this Module user will be able to search various parameters which we will see further wards.
- **Blast History:** By using this module user will be able to search history of records on map.
- **Logout**: User can logout by simply clicking on this button

BLAST INFORMATION

New Blast Record

Step 1 – Click on '**Blast Info'** tab in the menu bar. Select **'New Blast Record'** from the drop-down menu. You will be redirected to the '**Blast ID'** form for the filling of new record.





Step 1 – Fill all the fields as follows:

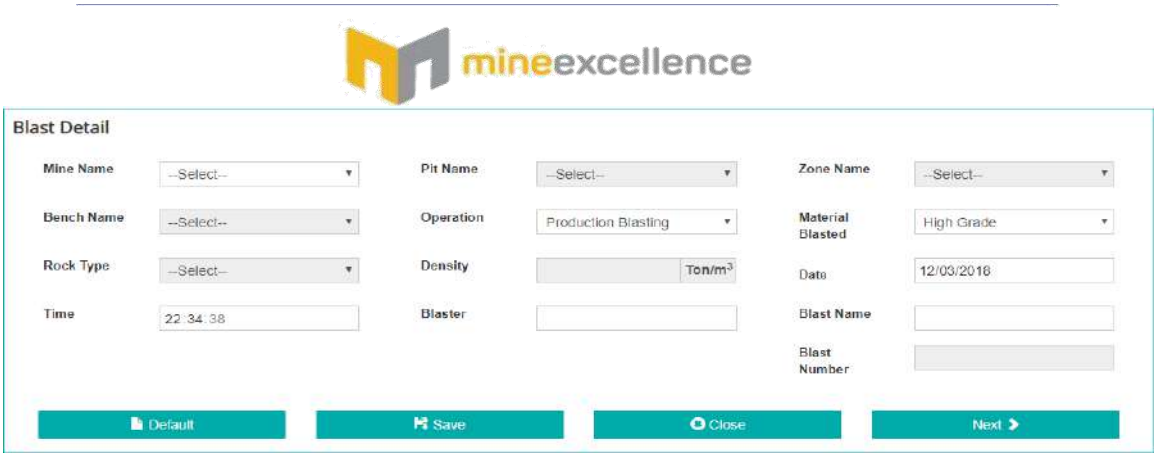


Figure 1 - Blast Details

- **Mine Name:** Select the particular mine name.
- **Pit Name:** Select the particular pit name for the selected mine.
- **Zone Name:** Select the zone for that particular pit.
- **Bench Name:** Select the bench for that particular zone.
- **Operation:** Select the type of blasting operation.
- **Material Blasted:** Select the quality of material for blasting.
- **Rock Type:** Select the type of rock.
- **Density:** It will be updated automatically according to the value of 'Rock Type'.
- **Date:** Fill the blast date.
- **Time:** Fill the blast time.
- **Blast Name:** Fill the name of the Blast name
- **Blaster:** Fill the name of the blasting person.
- **Blast Number:** It will generate automatically.

Step 2 – Click on 'Save' button to save all the blast information. A success message will be generated in a popup.

Step 3 - In order to switch to the 'Blast Design Pattern' form, click 'Next' button. In order to switch to the previous form, click 'Back' button.

Blast Design Pattern

This part gives actual records of the blast details such as hole diameter, bench height, face length, hole inclination, sub grade drilling, stemming material to be filled in by writing in the appropriate boxes. Pattern is to be chosen from the drop-down menu Average burden, Average spacing, Average Hole depth all the details could be filled into their respective boxes provided. Also, the drill plan and blast plan files can be approached and shown on the appropriate places. The water depth in indicated may be shown. Location the Blasting Face: This grid contains the Northing, Easting and R.L. of the four-edge point of the blasting area. Although these details are not mandatory, but they could be useful for future analysis. When we click on new blast details menu system will show a new form with default date & ID values.

Step 1 - In order to generate a blast design pattern, fill the provided fields. On clicking **'Default'** button, some general values filled in the fields.

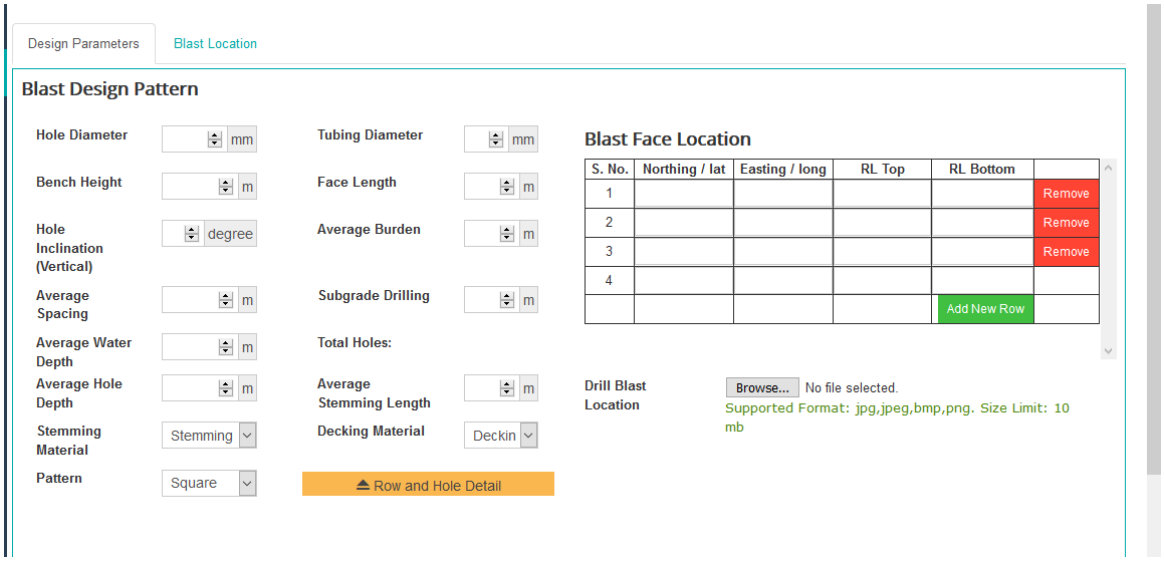


Figure 2 - Blast Design Pattern

- **Hole Diameter:** Fill the value of the diameter of the hole (in millimeters).
- **Bench Height:** Fill the height of the bench involved in the blast (in meters).
- **Face Length:** Fill the length of the zone/face involved (in meters).
- **Tubing diameter:** fill the diameter of the tubes of the explosives to be used (in millimeters).
- **Hole Inclination:** Indicate the inclination of hole (in degrees).
- **Average Burden:** Fill the value of average burden in different rows (in meters).
- **Average Spacing:** Calculate the different spacing between the holes and fill the average value of all.
- **Subgrade Drilling:** Fill the average drilled height of holes.
- **Average Hole Depth:** Calculate the depth of each hole and fill the average value (in meters).
- **Average Stemming Length:** Fill the average length of the concrete material used for stemming (in meters).
- **Stemming Material:** Select the type of stemming material.
- **Average Water Depths:** Calculate the depth of water level in each hole and fill the average value.
- **Decking Material:** Select the particular material for decking in the holes.
- **Drill Blast Location:** Upload the image of the blast location.
- **Pattern:** The drop-down menu shows pattern rectangular, square and staggered.
- **Location of the Blasting Face/Area**: it includes following information:
- **Blasting Point(s):** Coordinates of the blast location are given in this text box with the following information of the four point of the blast location.
- **Northing:** Fill the Longitude value of the specific blast coordinate.
- **Easting:** Fill the Latitude of the specific blast coordinate.
- **R.L. (Reduce Level):** The height from the Sea level is filled in this field.
- **Total Holes**: It will be calculated automatically.

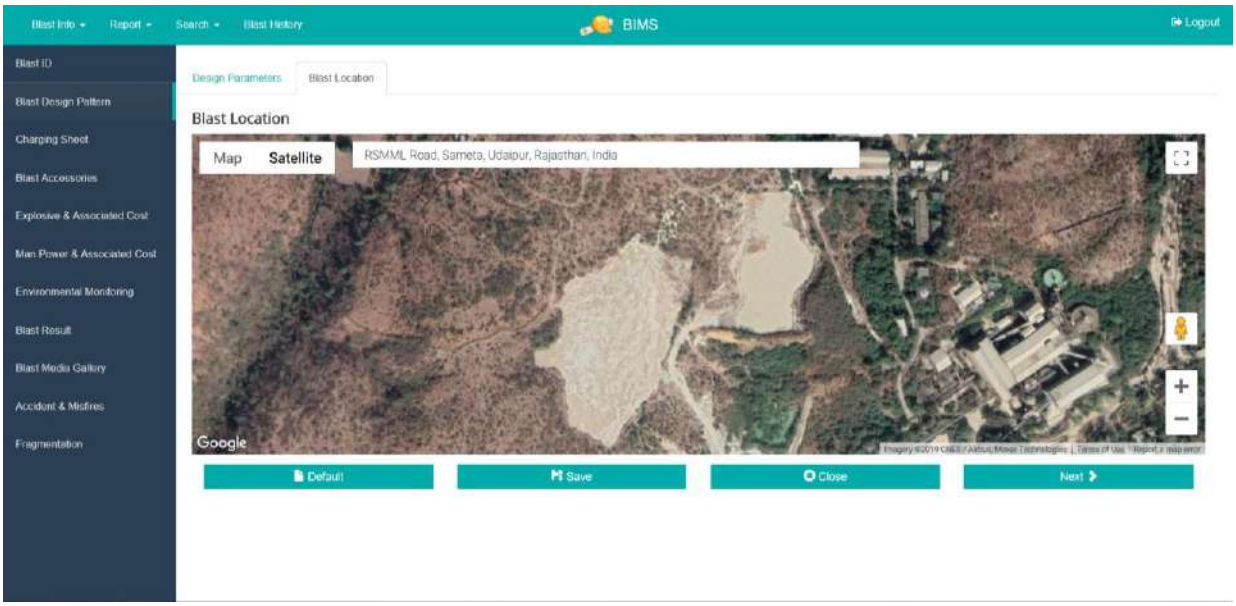


Figure 3 - Blast Location

NOTE: Blast location:** This location will show according to entered location in central mine

Step 2 - Click on 'Row and Hole Detail' button. A popup will be generated with the fields to be filled.

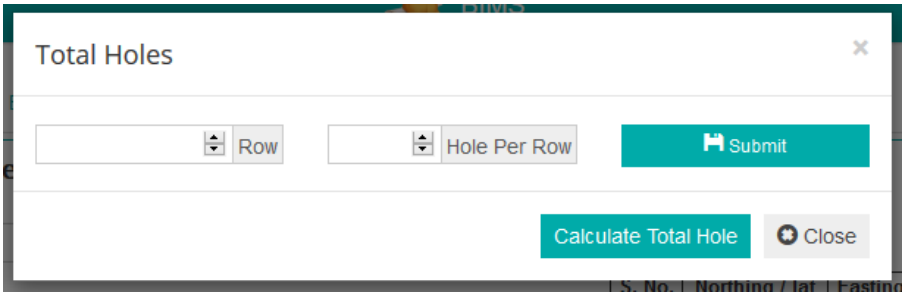


Figure 4 - Pattern Details

- **Rows:** Number of rows in the blast may be indicated.
- **Holes Per Row**: Number of holes per row may be specified and 'Total Holes'.

In order to do editing in any of the values, click 'Edit' link in each row of the table respective of the 'Total Holes' value.

User can edit each row information by click on edit button.

- Click on edit button
- Update the hole information
- Click on update

Step 4 – Click 'Calculate Total Hole' to generate 'Total Holes' value. After that, click 'Close' button to close the popup.

Step 5 – Click 'Save' button to save the blast record. A success message will be generated.

Charging Sheet

Step 1 – Click on 'Charging Sheet' tab in the side menu to switch to Charge Sheet form.

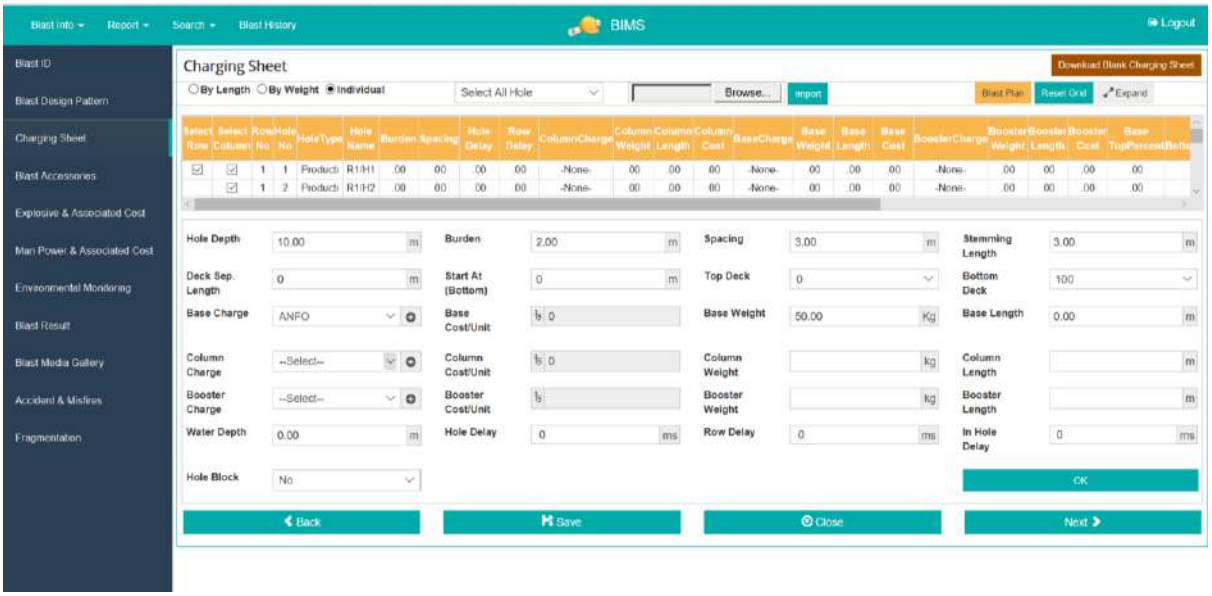
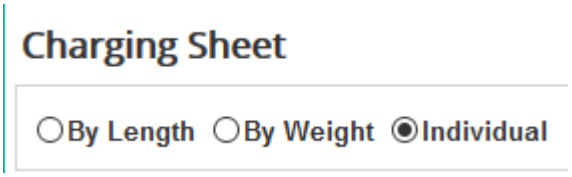


Figure 5 - Charging Sheet



- **By Length**: Select this option if you want to fill the results according to the filled length of the explosive in the hole.
- **By Weight**: Select this option if you want to fill the results according to the weight of the explosive filled in the hole.
- **Individual:** Select this option for the results according to the individual hole.

Step 3 – Fill the details as follows:

- **Hole Depth**: It will be updated automatically according to the previous 'Hole Depth' value.
- **Burden**: It will be updated automatically according to the previous 'Average Burden' value.
- **Spacing**: It will be updated automatically according to the previous 'Average Spacing' value.
- **Water Depth**: It will be updated automatically according to the previous 'Average Water Depth' value.
- **Stemming Length:** It will be updated automatically according to the previous 'Stemming Length' value.
- **Start At**: Fill the starting time value.
- **Base Charge**: Select the base charge name.
- **Base Length:** Fill the value which denotes the length of the base in metres.
- **Base Weight:** Fill the weight of the used charge in kilograms.
- **Base Cost/Unit:** It will be updated according to the value of 'Base Charge'.
- **Top Deck:** Fill the amount of decking material which is poured over the hole. The value is some percent part of the hole.
- **Bottom Deck:** Fill the amount of decking material which is poured at the bottom of the hole. The value is some percent part of the hole.
- **Column Charge**: Select the column charge name.
- **Booster Charge**: Select the Booster Charge name.
- **Column Length:** Fill the value which denotes the length of the column in metres.
- **Column Weight:** Fill the weight of the used charge in kilograms.
- **Column Cost/Unit**: It will be updated according to the value of 'Column Charge'.
- **Deck Separator Length**: Fill the value of the distance between 'Base Charge' and 'Column Charge' in meters.
- **Booster Cost/Unit:** It will be updated according to the value of 'Booster Charge'.
- **Booster Weight:** Fill the weight of the used charge in kilograms.
- **Column Length:** Fill the value which denotes the length of the column in metres.
- **Hole Delay:** Fill the delay value between the holes in terms of milliseconds.
- **Row Delay:** Fill the delay value between the rows in terms of milliseconds.

Step 4 – Click 'OK' button. On its click, the values will be shown in the table.

Step 5 – Click ‘Save’ button to save the filled data.

Step 6 – Click ‘Blast Plan’ button. A popup will open showing the blast plan.

Step 7: A blast plan will appear on the screen .

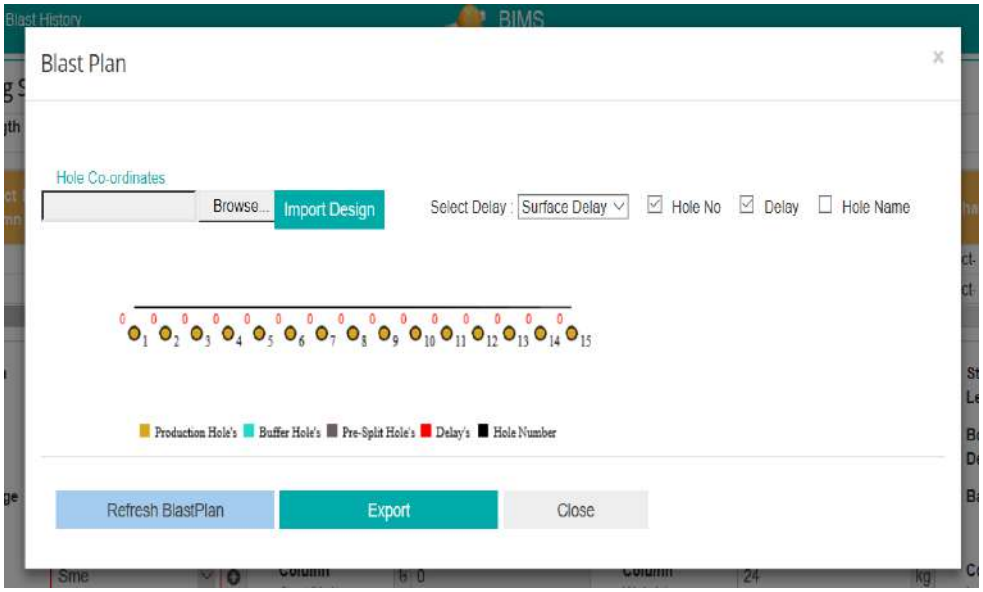
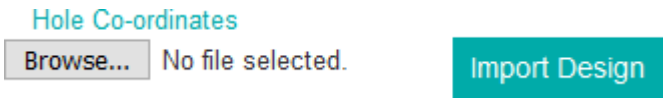


Figure 6 - Blast Plan

Browse/import : You can import a file by clicking on browse and then selecting the respective file to be imported.



Step 8 – Click ‘Export Design’ button to export the blast plan data into a .csv file. Click ‘Save Changes’ to save any edited data.

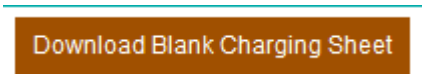
In order to close the popup, click ‘Close’ button.

Step 9 – Click ‘Close’ button to the Blast Plan popup.

Step 10 – Click ‘Next’ button to switch to the ‘Blast Accessories’ form. In order to switch to the previous form, click ‘Back’ button.

Note**: **Filling of Charging Sheet in a different manner(optional)**:

Step 1 – Click ‘Download Blank Charging Sheet’ button. An .xlsx file will be downloaded into your



local system.

Step 2 – Fill the blank excel sheet with all the data values for charging.

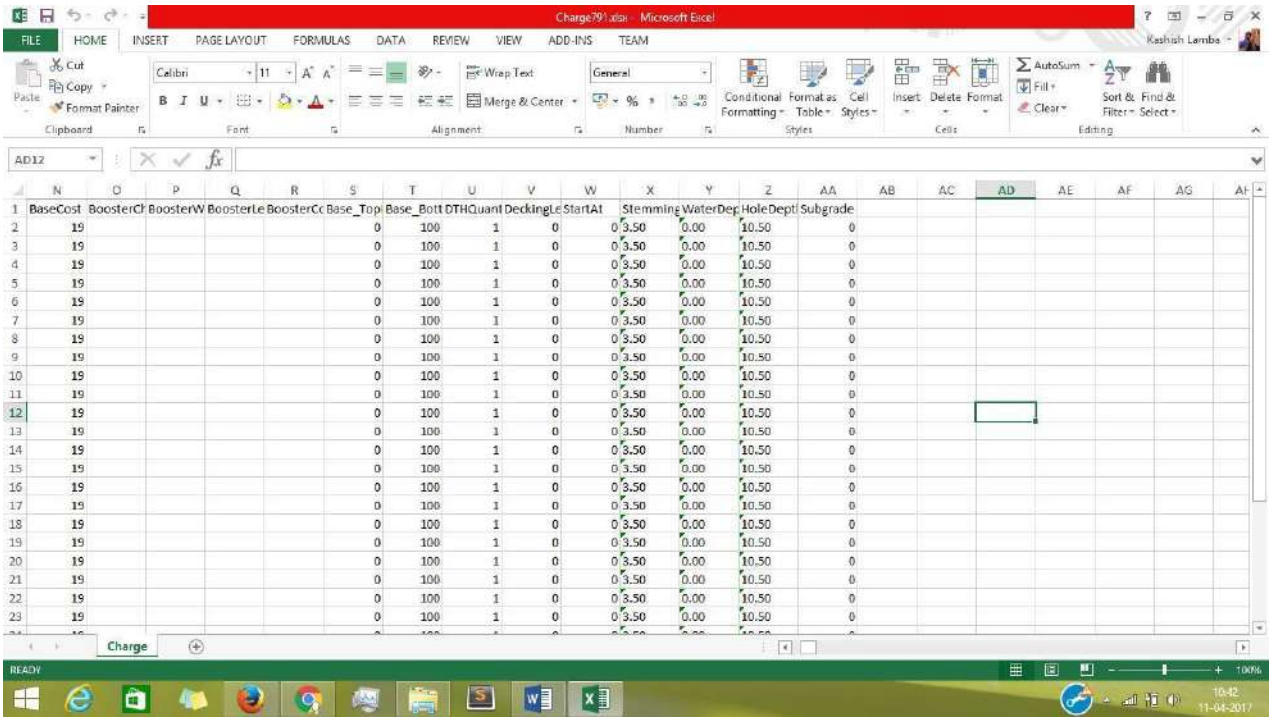


Figure 7 - Charging Sheet Excel

Step 3 – Save the file to the local system.

Step 4 – Click ‘Browse’ button to select the excel file. Click ‘Import’ to import the charging data excel

file.

Step 5 - Click ‘Save’ button to save the filled data.

Step 6 - Click ‘Next’ button to switch to the ‘Blast Accessories’ form. In order to switch to the previous form, click ‘Back’ button.

Reset Grid – This button is use to reset the charging sheet.

Reset Grid

Expand - This button is use to view the charging sheet on whole page.

Blast Accessories

Step 1 – Click on the 'Blast Accessories' tab in the side menu.

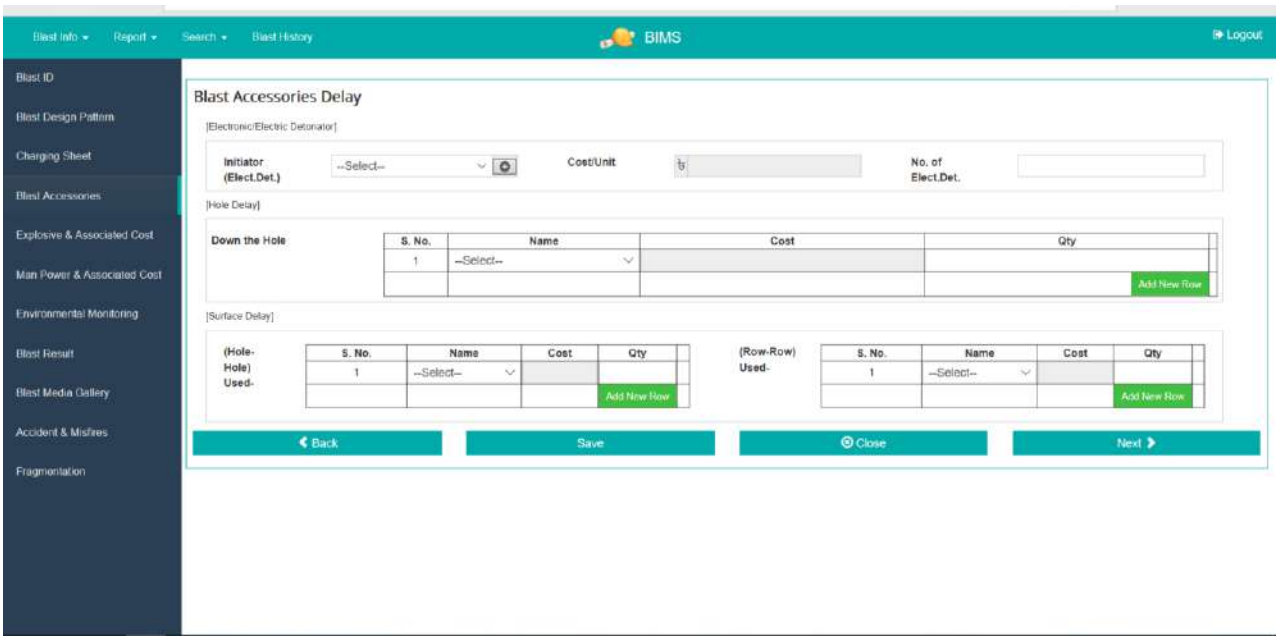


Figure 8 - Blast Accessories

Step 2 – Fill the 'Electronic Detonator' details as follows:

- **Initiator (Elect. Det.):** Select the type of detonator.
- **Cost/Unit**: It will be updated according to the value of 'Initiator'.
- **No. of Elect. Det.**: Fill the total no. of detonators used.

Step 3 - Fill the 'Hole Delay' details as follows:

- **Down the Hole Used**: Select the name from the 'Name' list field. The '**Cost**' field will be updated automatically after the selection of **'Name'**. Fill the quantity in **'Qty'** field.

Step 4 - Fill the 'Surface Delay' details as follows:

- Fill the details for **'(Hole-Hole) Used'** table. Select a value of connecting delay material from 'Name' list. The 'Cost' will be updated according to the 'Name' field. Fill the quantity of connecting material in 'Qty' field.
- Fill the details for **'(Row-Row) Used'** table. Select a value of connecting delay material from 'Name' list. The 'Cost' will be updated according to the 'Name' field. Fill the quantity of

connecting material in ‘Qty’ field.

Note: In order to add a new row, click ‘Add New Row’ button in the particular table.

Step 5 - Click ‘**Save**’ button to save the filled data.

Step 6 - Click **‘Next’** button to switch to the ‘**Explosive and Associated Cost’** form. In order to switch to the previous form, click **‘Back’** button.

Explosive and Associated Cost

Based on the actual blast parameters, the menu automatically gives the quantity and cost of each component of the explosive consumed and also gives the total cost of explosives and initiators used. Gives values or un- editable as they only reflect the values selected in the previous window i.e. ‘Charging Sheet’.

Explosive Consumed: This grid shows the costs of all the explosives used and as shown in the charging sheet.

Initiator (DTH) Consumed: This grid shows the costs of all the Initiator (DTH) used and as shown in the charging sheet.

Initiator (ED) Consumed: This grid shows the costs of all the Initiator (ED) used and as shown in the charging sheet.

TLD Device Consumed: This grid shows the costs of all the TLD Device used and as shown in the charging sheet.

TLD Consumed: This grid shows the costs of all the TLD used and as shown in the charging sheet.

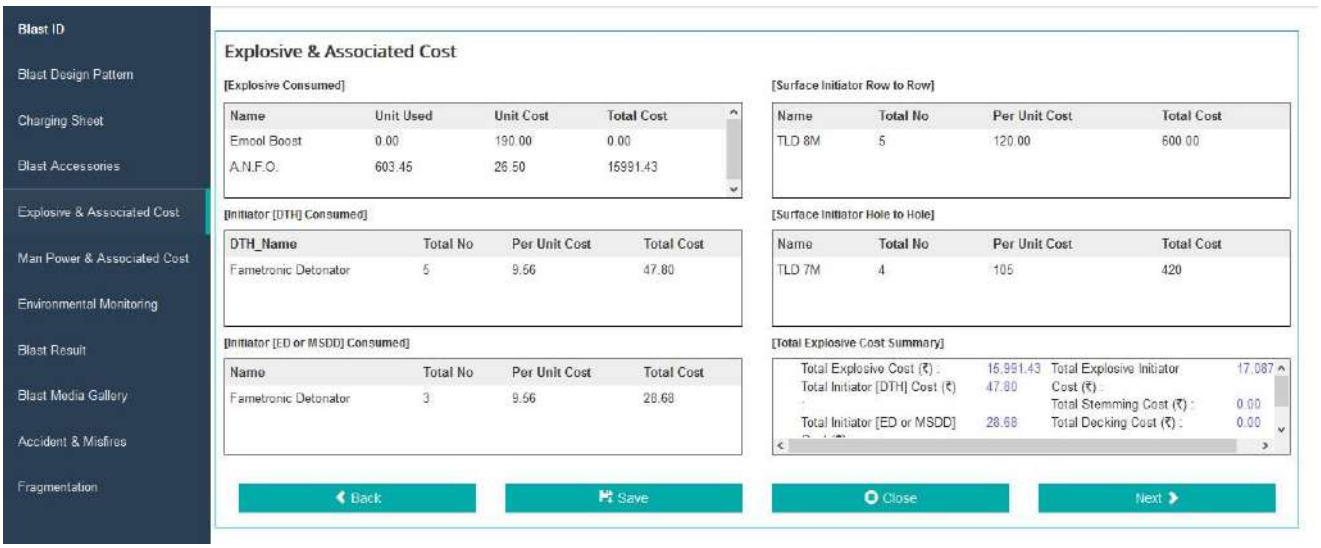


Figure 9 - Explosive & Associated Cost

Step 1 – Click on the **'Explosive & Associated Cost'** tab in the side menu.

Step 2 – Click '**Save**' to save all the information. A success message will be generated in a popup.

Manpower and associated cost

Associated cost of drilling, insurance, vehicle hiring, blast vibration monitoring and local government permit charges etc. All these can be edited, deleted and additional information can be provided.

Step 1 – Click '**Manpower & Associated Cost'** tab in the side menu.

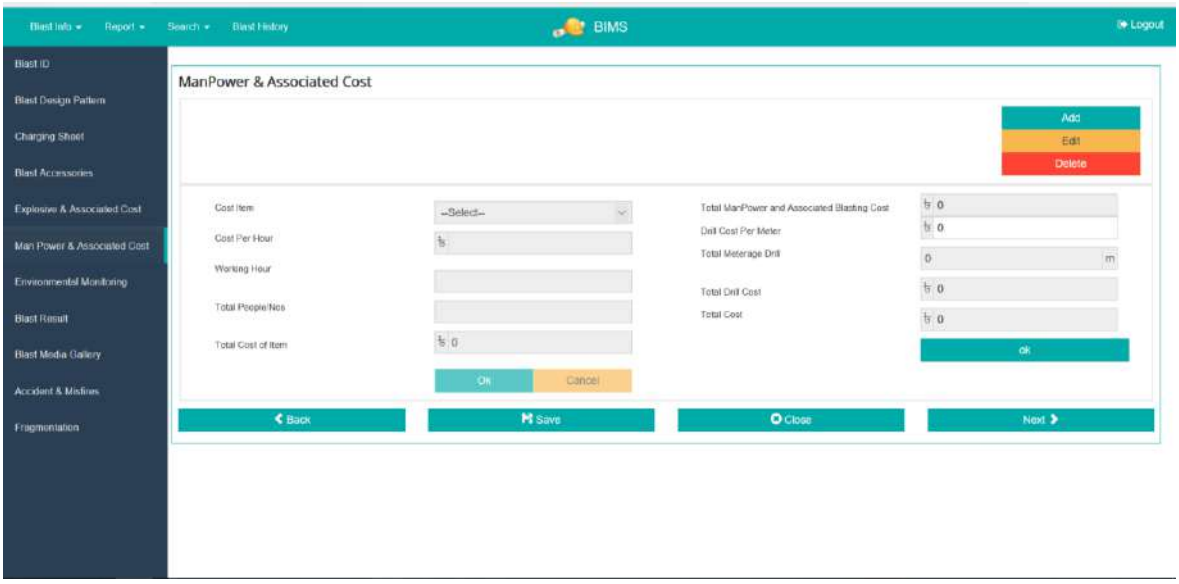


Figure 10 - Manpower & Associated Cost

Step 2 – In order to add Manpower & associated cost details, click 'Add' button.

Step 3 – Fill the fields as per following:

- **Cost Item**: It is possible to add additional designation in the manpower to indicate the additional cost. Also, it is possible to add any additional cost i.e. vehicle hiring, insurance etc.
- **Cost per Hour**: Automatically updated according to the value of 'Cost Item'.
- **Working Hour**: Can be entered working hours of manpower or other associated items.
- **Total Nos**.: Entered here total quantity of item.

Step 4 – In order to generate the value of 'Total Cost of Item', click the **'OK'** button which is highlighted in Red color.

Step 5 – Fill the value for 'Drill Cost per meter' field.

- **Drill Cost per meter**: Fill the cost per meter value.

Step 6 – Click ‘OK’ button which is highlighted in Blue color.

- **Total Manpower and Associated Blasting Cost**: Calculated automatically.
- **Total Meterage Drill**: Calculated automatically.
- **Total Drill Cost**: Calculated automatically.
- **Total Cost**: Calculated automatically.

Step 7 – Click ‘Save’ button to save all the information. A success message is generated in a popup.

Step 8 – Click ‘Next’ button to switch to the ‘Environmental Monitoring’ form. In order to switch to the previous form, click ‘Back’ button.

Editing Details

Step 1 – Click on ‘Edit’ button. Select the specific row from the table in which you want the changes to be done. Make the changes in the fields, if required.

Step 2 – Click ‘OK’ button to save the changes.

Delete Process

Step 1 – Select the specific row from the table to be delete.

Step 2 – Click ‘Delete’ button. A confirmation popup will be generated. Click ‘OK’ to delete.

Environmental monitoring

This form gives details of the weather related and station related in format.

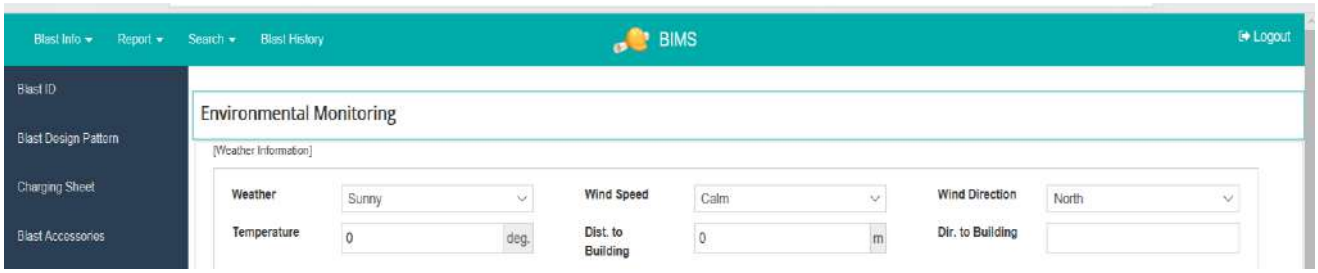


Figure 11 - Environmental Monitoring

Step 1 – Fill the ‘Weather Information’.

- **Weather:** Select the type of weather at the time of blast.
- **Wind Speed:** Select the type of wind speed at the location.
- **Wind Direction:** Select the direction of wind.
- **Temperature:** Fill the value of temperature in terms of degrees.

Dist. to Building: Fill the value of distance from the building in terms of metres.

Dir. To Building: Specify the direction of the blast in context of the building.

Step 2 – In order to add a vibration information:

Click 'Add' button and Fill the following fields:

- **Station:** Fill the name of the place where the vibration affects.
- **Northing:** Fill the value of the Latitude.
- **Easting:** Fill the value of the Longitude.
- **Reduce Level:** fill the R.L. value for the blast in terms of meters.
- **Distance:** Fill the value of distance up to which the vibration affects.
- **Air Blast:** Fill the value of blast intensity in terms of decibels.
- **Vibration File:** Upload an image file of the vibration.
- **Instrument:** Select the specific instrument which you have used for the vibration detection.
- **Coupling:** Select the coupling material.
- **Longitudinal:** Fill the value in millimeter per second.
- **Traverse:** Fill the value in millimeter per second.
- **Vertical:** Fill the value in millimeter per second.
- **ZC Frequency:** Fill the frequency of vibrations detected in terms of hertz.
- **Peck Vector Sum:** Fill the value in meter per second.
- **Max PPV:** Fill the value in meter per second.
- **Max Inst. Charge:** Fill the value of the maximum value of charge in terms kilograms.
- **PSPL:** Fill the value of pressure in terms of Pascal.
- **Operator:** Fill the name of Operator of that blast.
- **Analyst:** Fill the name of the analysis person for that blast

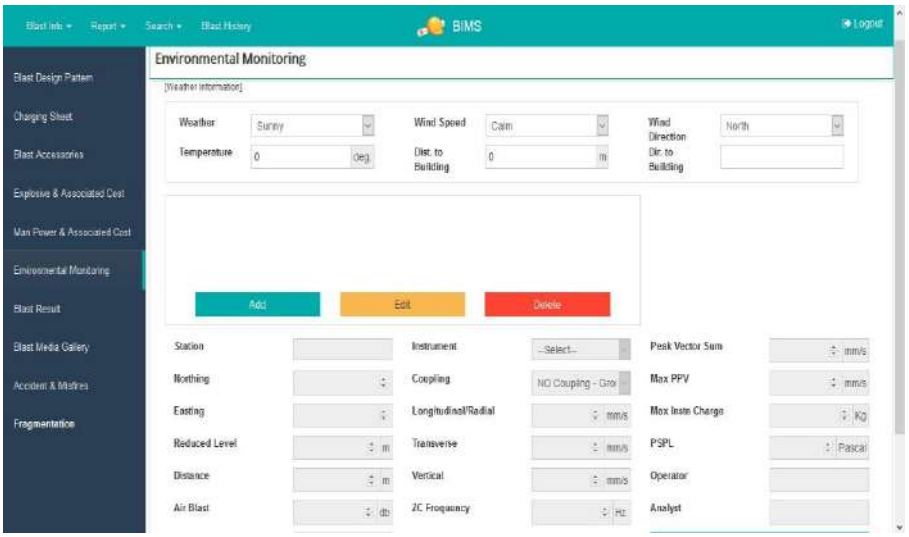


Figure 12 - Vibration Input

Step 3 – Click 'OK' button to insert all the information. A table will be generated showing the values inserted.

Step 4 – Click 'Save' button to save all the information. A success message will be generated in a popup.

Step 5 – Click '**Next'** button to switch to the '**Blast Result'** form.

Blast result

Step 1 – Click on the 'Blast Result' tab in the side menu.

Step 2 – Fill the following details:

- **Actual Production (Tonnage)**: Fill the value of tonnage recovered from face in terms of ton.

***Note**: All the other fields will be updated automatically according to the calculations.*

Step 3 – Click 'OK' button. On its click, the **'Actual Powder Factor'** value will be updated according to

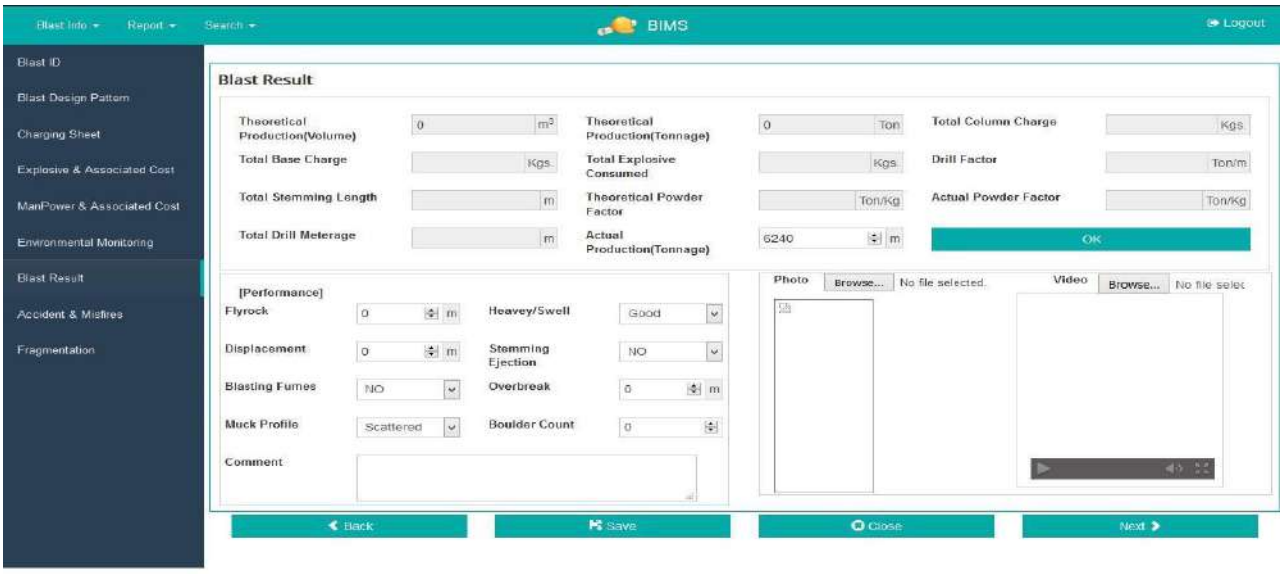


Figure 13 - Blast Result

the calculations

Step 4 – Fill the 'Performance' section details as follows:

- **Fly rock:** Fill the distance of the fly rock in terms of meters.
- **Displacement**: Displacement of the fly rock.
- **Muck Profile:** Select the specific muck profile from the list.
- **Comment:** Fill any other details about the blast.
- **Heavy/Swell:** Select the type of heavy/Swell value.
- **Stemming Ejection:** Select if it is yes or no.
- **Overbreak:** Fill the value of largest
- **Boulder Count**: Total no. of big rocks.
- **Photo:** Upload an image of the blast.
- **Video:** Upload a video showing the blast.

Step 5 – Click '**Save'** button to save all the information. A success message will be generated in a popup.

Step 6 – Click **'Next'** to switch to the '**Accident & Misfires'** form. In order to switch to the previous form, click **'Back'** button.

Accident and misfires

Step 1 – Click on 'Accident & Misfires' tab in the side menu.

Step 2 – Fill all the fields as required.

- **Accident Type**: Select the type of accident.
- **Details**: Fill the details of any mis happenings.
- **Photo**: Upload an image showing the accident. The image will be displayed in the upper left image box.
- **Misfire Hole**: Fill the value for the count of misfired holes.
- **Details**: Fill the details for misfired holes.
- **Photo:** Upload an image of the misfired holes. The image will be displayed in the upper right image box.

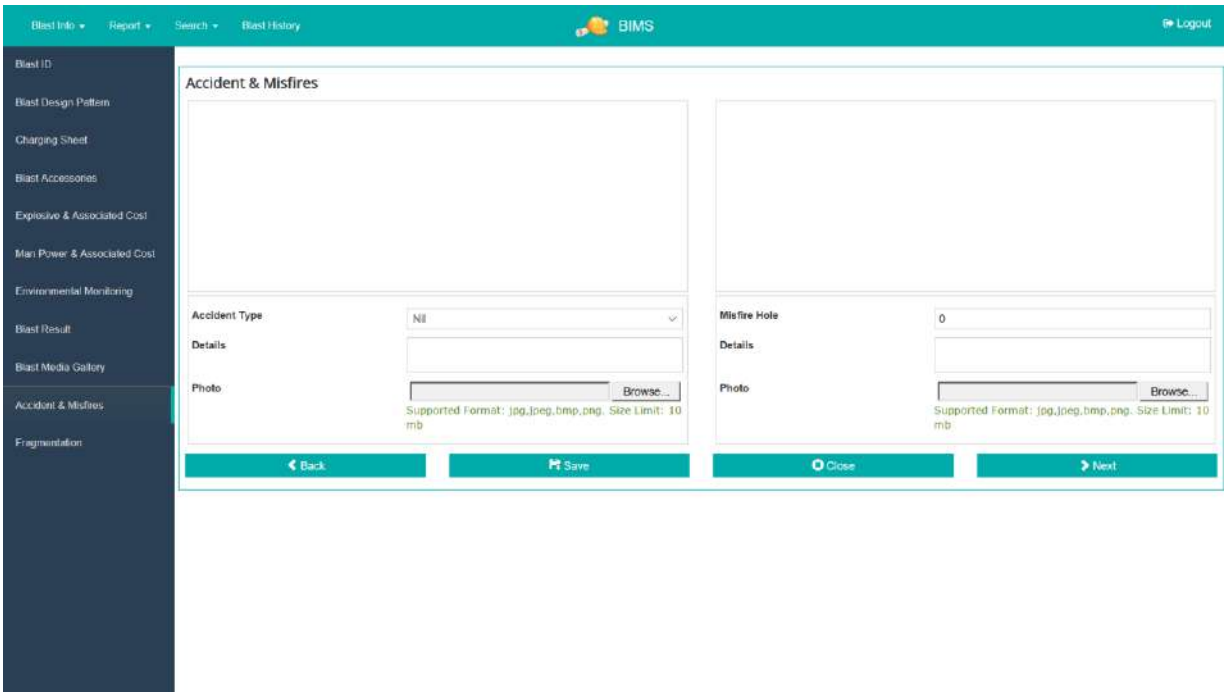


Figure 14 - Accident & Misfire

Step 3 – Click **'Save'** button to save all the information. A success message will be generated in a popup.

Step 4 – Click **'Next'** button to switch to the **'Fragmentation'** form. In order to switch to the previous

form, click **'Back'** button.

Fragmentation

Step 1 – Click on '**Fragmentation**' tab in the side menu.

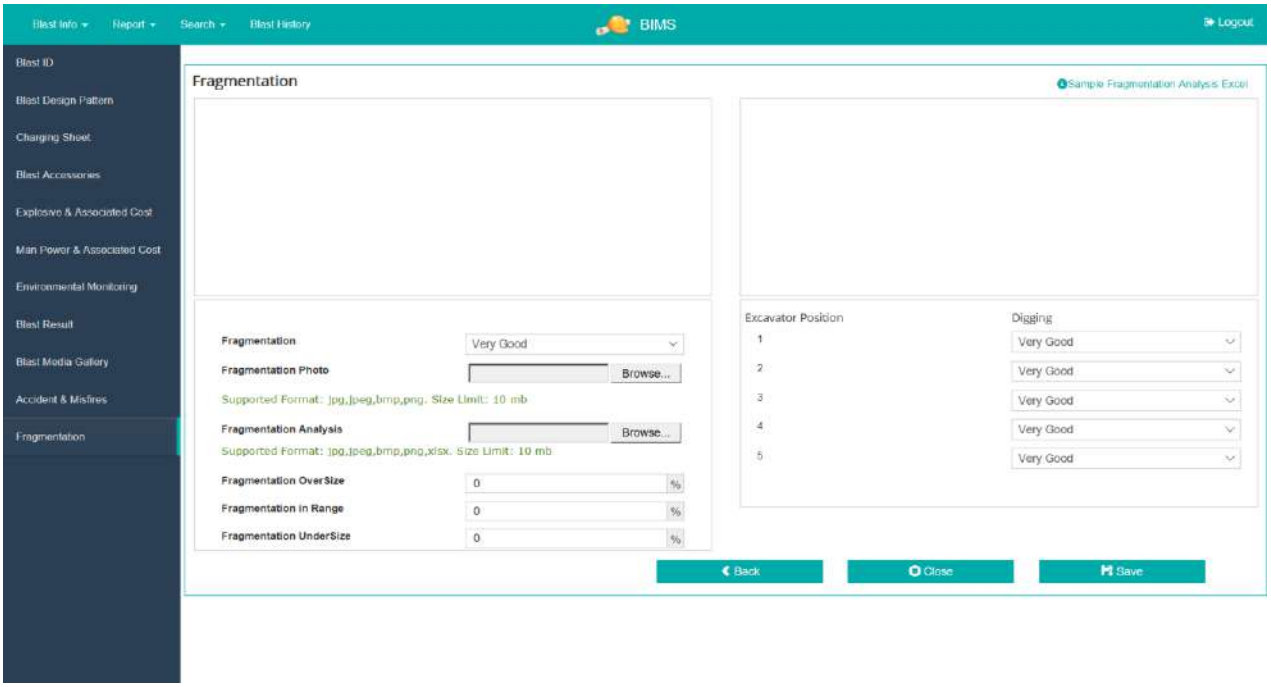
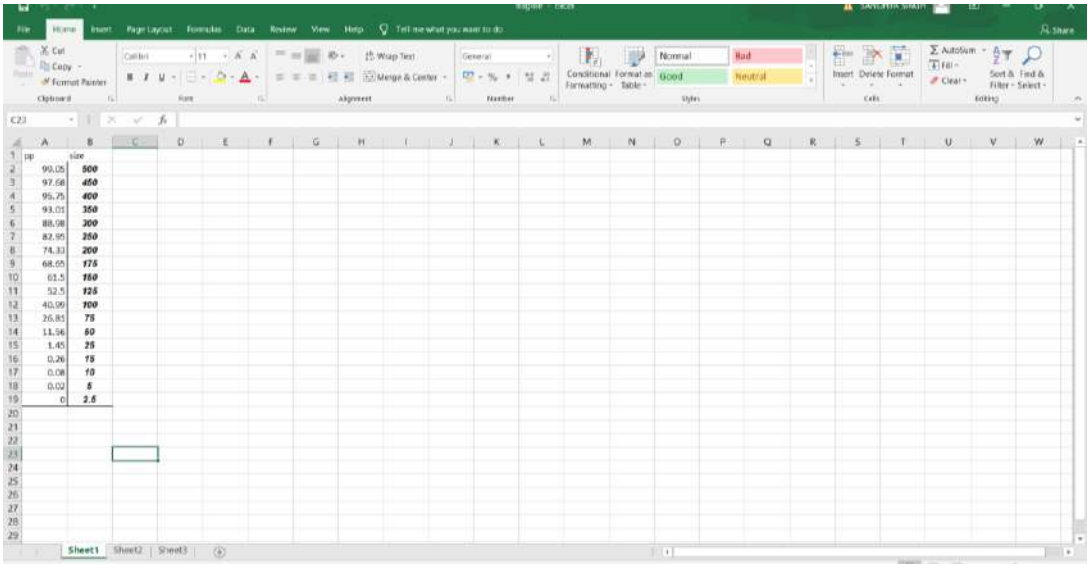


Figure 15 - Fragmentation

Step 2 – Fill the following details:

- **Fragmentation:** Select the quality type of fragmentation.
- **Fragmentation Photo:** Upload an image of fragmentation. It will be updated in the upper left image box. The photo format can be jpg, jpeg, bmp, png.
- **Fragmentation Analysis Photo:** Upload an image of the analysis of the fragmentation. It will be updated in the upper right image box. This analysis format can be jpg, jpeg, bmp, png, xlsx.
- **Fragmentation oversize:** here you can give the percentage of oversize rock broken.
- **Fragmentation in range:** you can give the percentage of rock broken in range**.**
- **Fragmentation undersize:** give the percentage of fragmentation that is undersize.
- **Digging :** click on the drop down to select the type of digging in result at the respective excavators positions.
- **Sample Fragmentation Analysis Excel:** you can download a sample excel file that gives the fragmentation analysis.

Sample fragmentation analysis file:

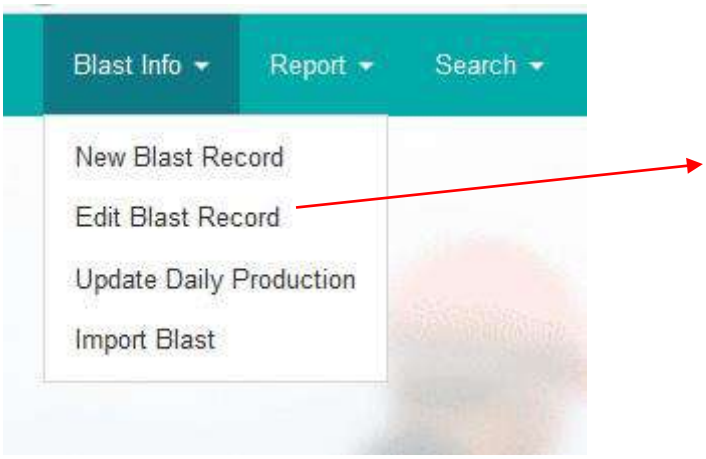


Step 3- Click 'save' button to save all the information. A success message will be generated in a popup.

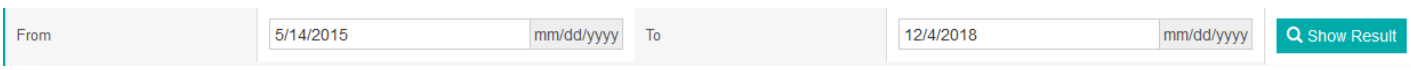
Step 4 – Click on **'Close'** button. A confirmation message will be generated. After clicking **'OK'**, you will be redirected to the home page. In order to switch to the previous form, click **'Back'** button.

EDIT Blast Record

Step 1 – Click on '**Edit Blast Record'** form the drop-down menu from the '**Blast Info'** menu tab.



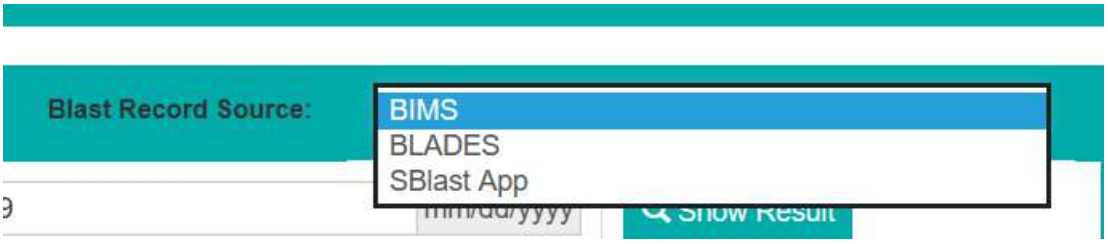
Step 2 – Specify the date range for the date-wise results. Select the starting date in the '**From'** field and ending date in the **'To**' field. By default, the range will be set since last 30 days till the current date.



Step 3 – Click '**Show Result'**. It will generate the list of the blasts done in that date range.

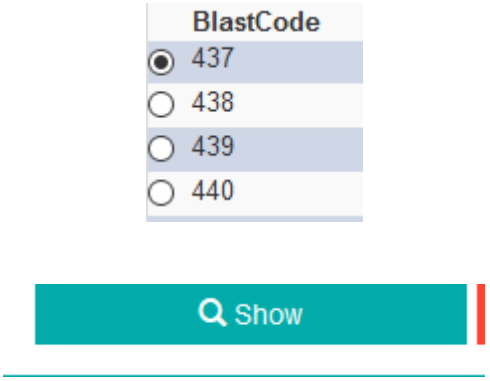
Blast record source

This is to select the the source of the blast record . By default BIMS is the blast record source .



Here the drop down button shows the option of all BIMS/BLADES and SBast App these options can be selected if we want to search a synced a file either from BLADES or SBlast App.

Step 4 – Select the radio button of the particular blast record. You will be redirected to the 'Blast ID' form of the selected blast record.



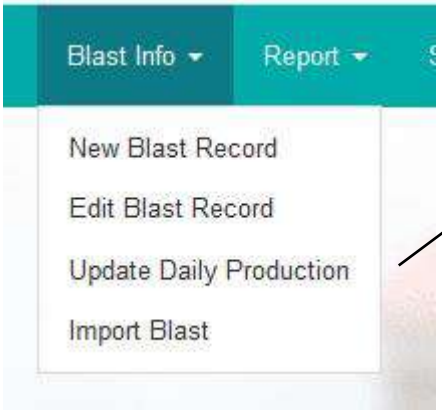
Deleting a record

Step 1 – Click on radio button. Click on 'Delete' button.

Step 2 – A confirmation message will be generated. In order to delete, click 'OK'.

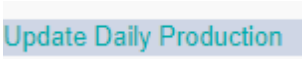
Update Daily Production

In this module is user for update the daily production. This updated daily production will show in report section.



Search the record by selecting the date range.

Click on update daily production



	Blast Code	Blast No.	Mine	Pit	Bench	Zone	Blast Date	Blast Time	Production Ton	Tonnege Recover	Powder Factor
Update Daily Production	6821	BIR_20181002_630	Limestone Mine	Pit 2(Western)	Bench 1	1003	02/10/2018	11:56:30	0.00	0.00	0.00
Update Daily Production	6863	JK 1010201823341	Limestone Mine	Pit 3	Bench 2	1002	10/10/2018	02:03:34	39092.64	0.00	0.00
Update Daily Production	6909	AVR17102018131840609	AvR Australia Mine	South East Pit	Flat-Head	300/32	17/10/2018	13:18:00	6440.00	0.00	0.00
Update Daily Production	6911	AVR17102018131840609	AvR Australia Mine	South East Pit	Flat-Head	300/32	17/10/2018	13:18:00	6440.00	0.00	0.00
Update Daily Production	6910	BUL1710201810473792	Limestone Mine	Pit 2(Western)	Bench 1	1003	17/10/2018	10:47:00	0.00	0.00	0.00
Update Daily Production	6915	TEL1018201812343	AvR Gold Mine WA	AvR - Main Pit	3-53XX TEST BENCH	Stage 3	18/10/2018	00:53:34	377434.70	0.00	0.00
Update Daily Production	6929	NUV_20181022_520	Limestone Mine	Pit 2(Western)	Bench 1	1003	22/10/2018	03:25:20	0.00	0.00	0.00
Update Daily Production	6931	NUV_20181022_051	Limestone Mine	Pit 2(Western)	Bench 1	1003	22/10/2018	04:20:51	0.00	0.00	0.00
Update Daily Production	6925	NUV_20181022_704	Limestone Mine	Pit 3	Bench 2	1002	22/10/2018	12:07:04	4130.00	0.00	4.00
Update Daily Production	6927	NUV_20181022_247	Limestone Mine	Pit 3	Bench 2	1002	22/10/2018	12:52:47	0.00	0.00	0.00

1 2

To enter daily production value user need to follow following steps: **Step 1**: Click On Add new

Production entry.

Step 2: Enter the production in ton.

Step 3: Enter the date.

Add

Close

If user wants to change in the entry then it can be done by clicking on Close button.

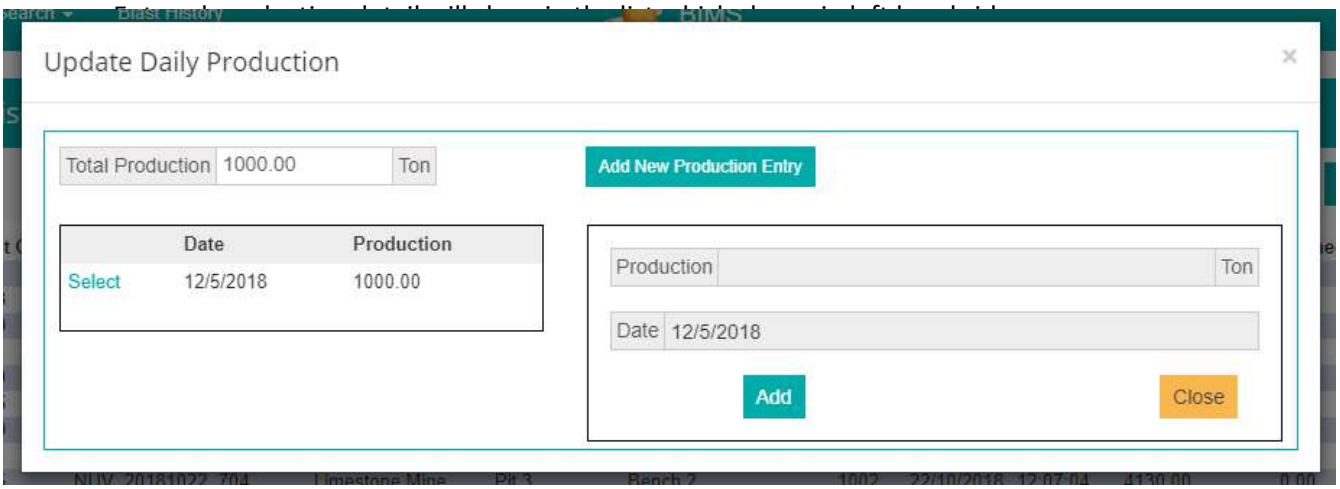
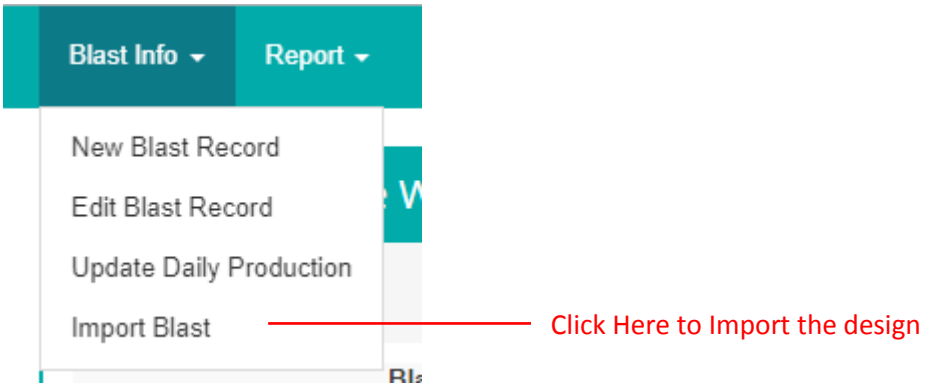


Figure 16 - Update Daily Production

Import Blast

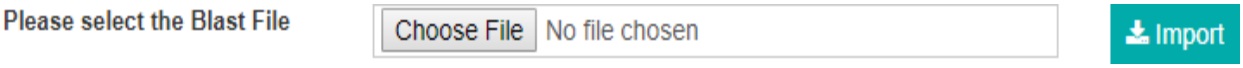
This module will use to import the design.



Follow the below steps to import the file

Step1: Click on Download sample file.

Step 2 – Select the file to import



Step 3: Enter the all basic info

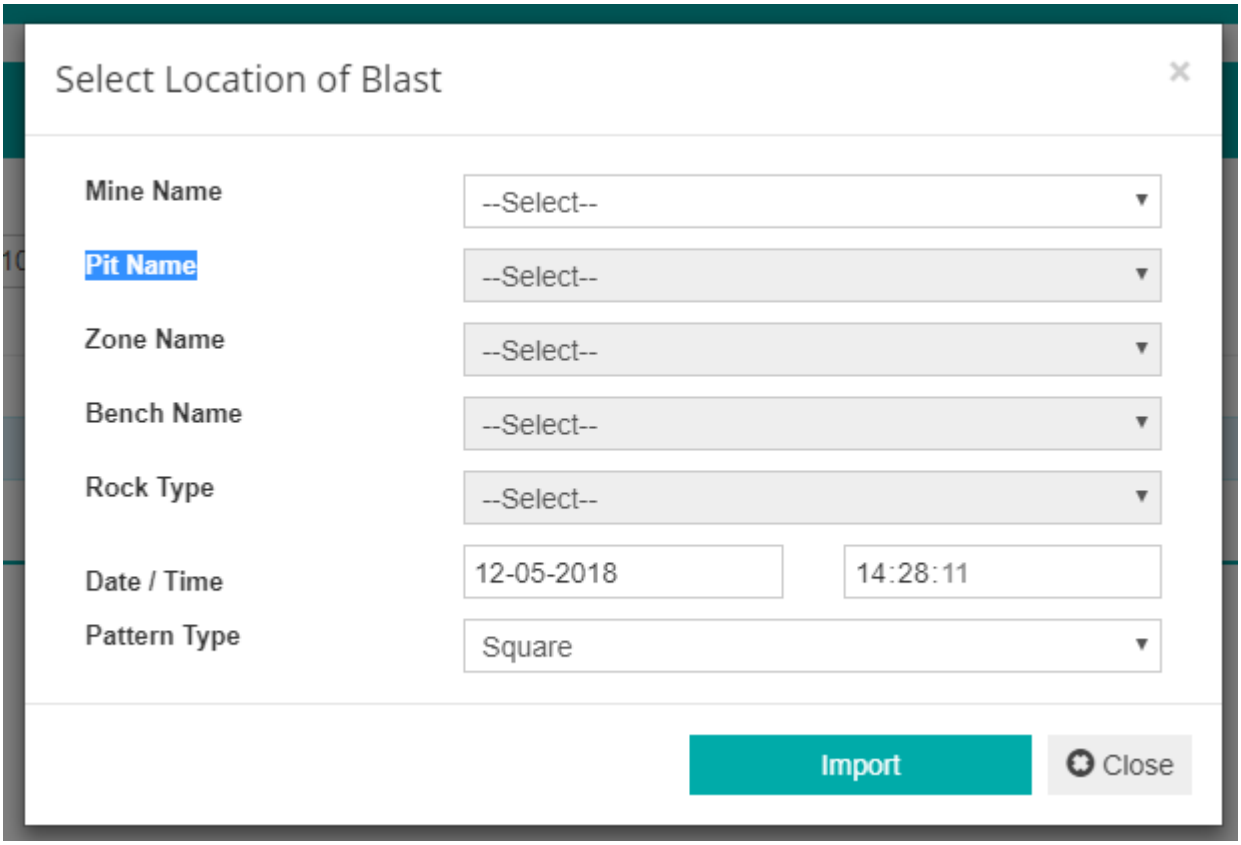


Figure 17 - Basic Info

- **Mine Name:** Enter the mine name in which mine user wants to import the design
- **Pit Name:** Enter the pit name in which pit user wants to import the design
- **Zone Name:** Enter the Zone name in which zone user wants to import the design.
- **Bench Name:** Enter the Bench name in which bench user wants to import the design.
- **Rock Type:** Select the rock type form the list.
- **Date / Time:** Enter date and time.
- **Pattern Type:** Select the pattern type.

Click on "Import" .

Report Menu

Blast Detail and Result

Step 1 – Click on '**Report**' tab in the menu bar. Select '**Blast Detail and Result'** from the drop-down menu

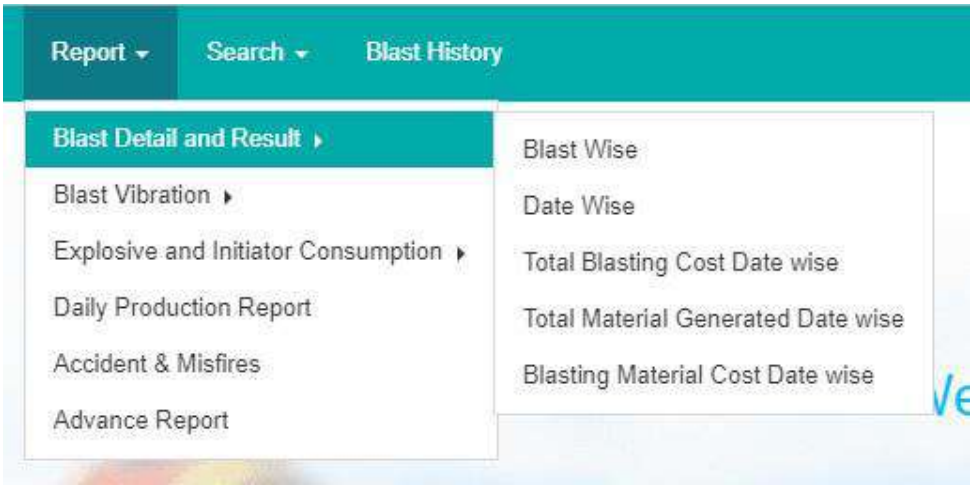
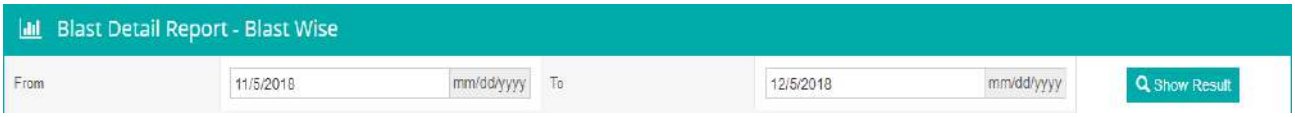


Figure 18 - Report Menu

Step 2– You can select the type in which you want to see the details and results.

Step 3– Select a specific date range. Select starting date in the '**From'** field and ending date in '**To**' field. Click on '**Show Result'** button.



Step 4 – Click on radio button

Step 5 – Click on show button

Step 6 – Select the particular blast record for which you have to generate the report.

Step 7 – Click 'Show' button. On its click, the report for that particular blast data will be downloaded to the local system

Blast No: LIM1242018110908 **Blast Date:** 03/12/2018 **Blast Time:** 22:39

Mine Name:	Limestone Mine	**Operation:**	Production Blasting
Pit Name:	Pit 2(Western)	**Rock Type:**	OVER BURDEN
Bench Name:	Bench 1	**Material Blasted:**	High Grade
Zone/Face Name:	1003		

FACE DETAILS

Hole Diameter:	115.00	mm
Face Length:	12.00	m
Hole Angle:	1.00	degree
Sub Grade Drilled:	0.00	m
Hole Depth:	6.50	m

BLAST PATTERN

Pattern:	Square	
Rows No:	5	
Total Holes:	27.00	
Burden:	4.50	m
Spacing:	5.50	m

BLAST RESULT

Volume Broken:	4,343.63	Cu.m
Tonnage Recovered:	0.00	ton
Explosive:	603.45	kgs.
Powder Factor:	0.00	ton/kg.
Drill Factor:	123.75	ton/m
Blast Fumes:	No	
VIBRATION		
Max PPV:	-	mm/s
Station Distance:	-	m
ZC Frequency:	-	Hz
Air Blast:	-	db
PVS:	-	mm/s

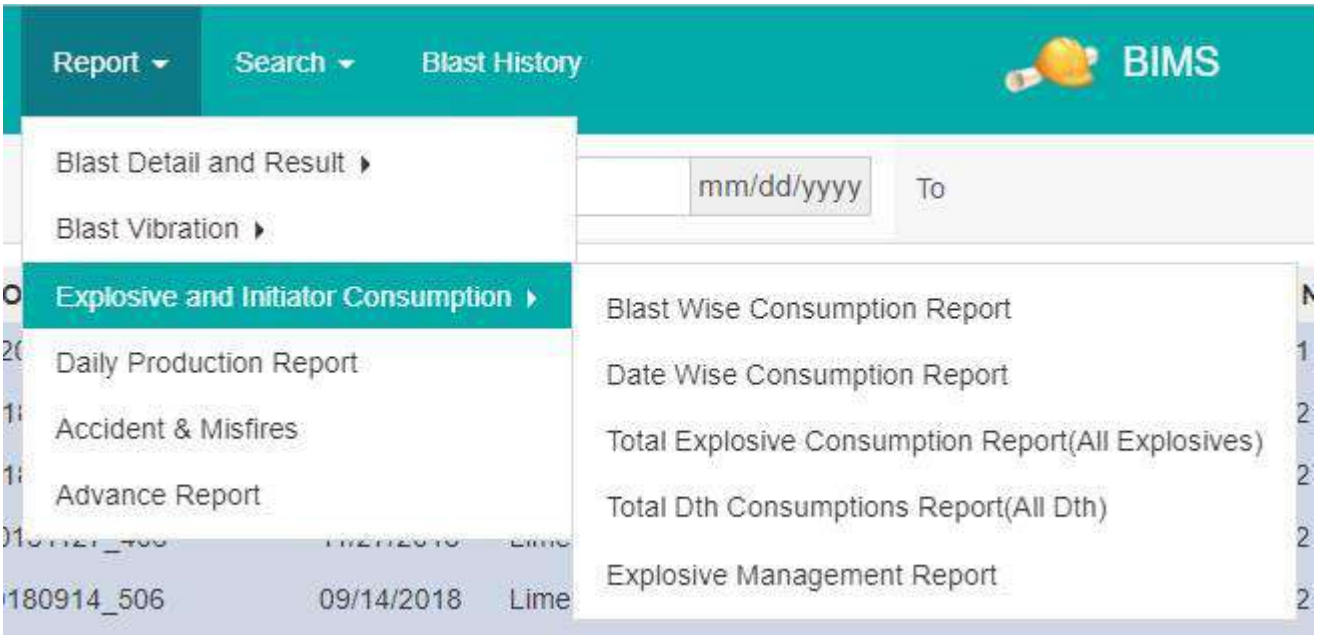
POST BLAST EVALUATION

Fly Rock:	0.00	m
Boulder Count:	0.00	nos
Over Break:	0.00	m
Heavy/Swell:	Good	
Muck:	Scattered Muckpile	
Stemming Ejection:	No	
Fragmentation:		
Comment:		

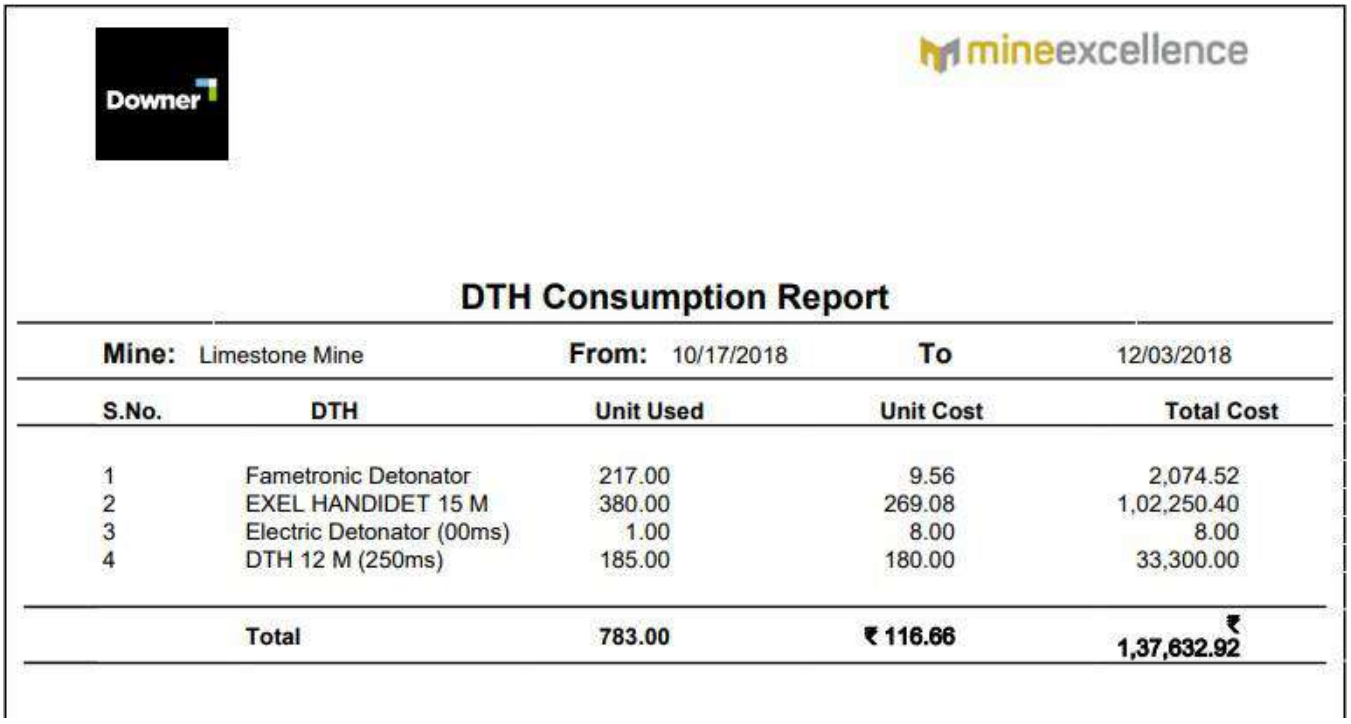
Figure 19 - Blast Result Report

Explosive and Initiator Consumption

Step 1 - Click on '**Report'** tab in the menu bar. Select '**Explosive and Initiator Consumption'** from the drop-down menu.



Step 2 - You can select the type in which you want the report either '**Consumption Report'** or '**Date Wise'**.



Downer

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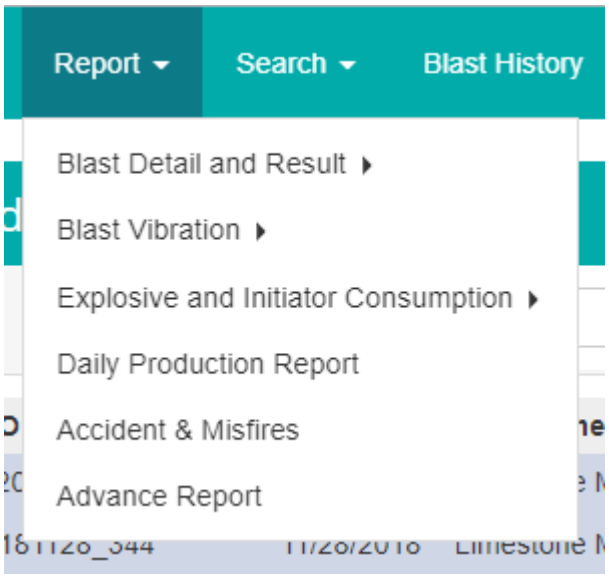
DTH Consumption Report

Mine: Limestone Mine **From:** 10/17/2018 **To** 12/03/2018

S.No.	DTH	Unit Used	Unit Cost	Total Cost
1	Fametronic Detonator	217.00	9.56	2,074.52
2	EXEL HANDIDET 15 M	380.00	269.08	1,02,250.40
3	Electric Detonator (00ms)	1.00	8.00	8.00
4	DTH 12 M (250ms)	185.00	180.00	33,300.00
	Total	**783.00**	**₹ 116.66**	**₹ 1,37,632.92**

Step 3 - Click '**Close'** button. You will be redirected to the home page.

Accident and Misfires



Step 1 – Click on **'Report'** tab in the menu bar. Select '**Explosive and Initiator Consumption'** from the drop-down menu.

Step 2 – Select a specific date range. Select starting date in the 'From' field and ending date in 'To' field. Click on 'Show Result' button.

Step 3 - Select the particular blast record for which you have to generate the report.

Step 4 - Click 'Show' button. On its click, the report for that particular blast data will be downloaded to the local system.

Step 5 - Click 'Close' button. You will be redirected to the home page.

Downer

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Accident Detail Report

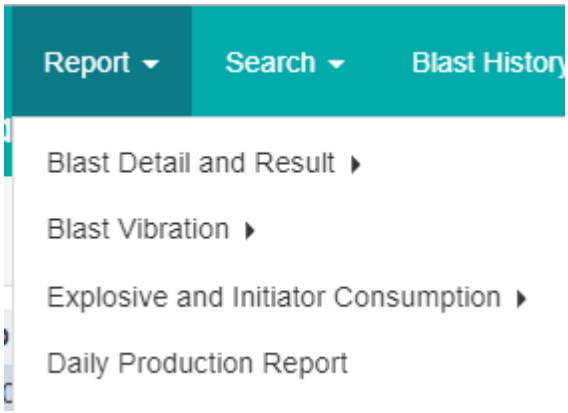
Blast No: LIM1242018110908 **Blast Date:** 03/12/2018 **Blast Time:** 22:39

Mine Name:	Limestone Mine	**Operation:**	Production Blasting
Pit Name:	Pit 2(Western)	**Rock Type:**	OVER BURDEN
Bench Name:	Bench 1	**Material Blasted:**	High Grade
Zone/Face Name:	1003		

Accident Type	Accident Detail	Accident Photo
Nil		

Daily production

This report is use to see daily production report

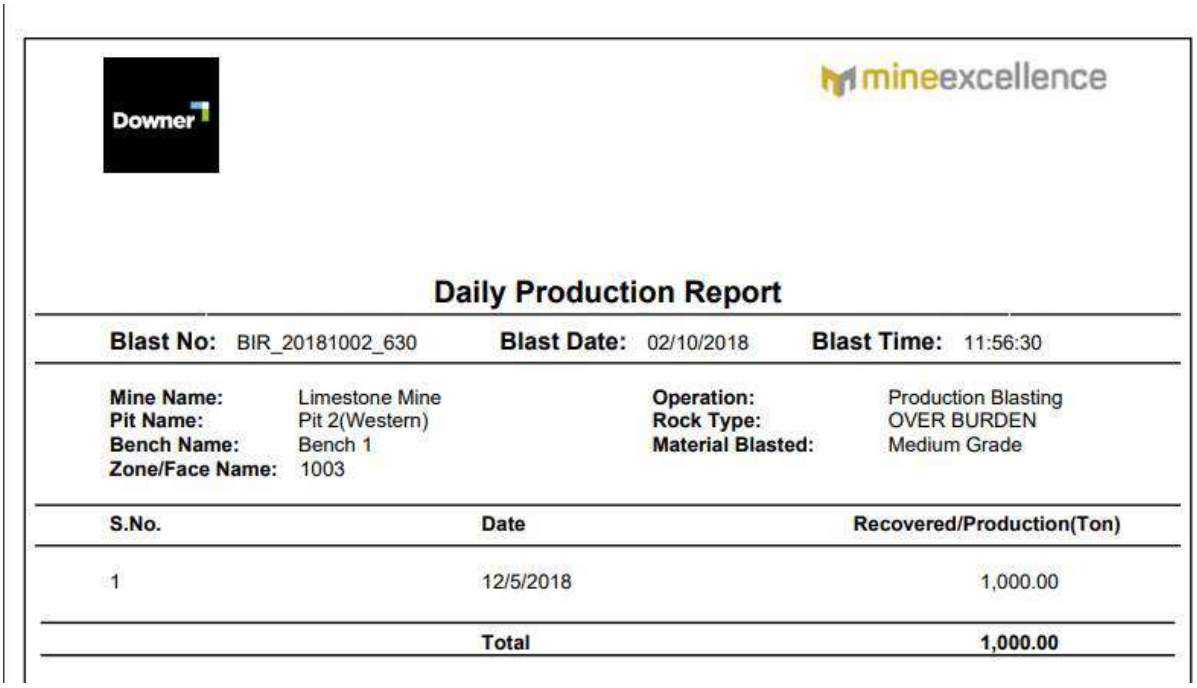


Step 1: click on daily production report

Step2: enter the from and to date

Step 3: click on radio button

Step 4: Click on Show button.



Daily Production Report

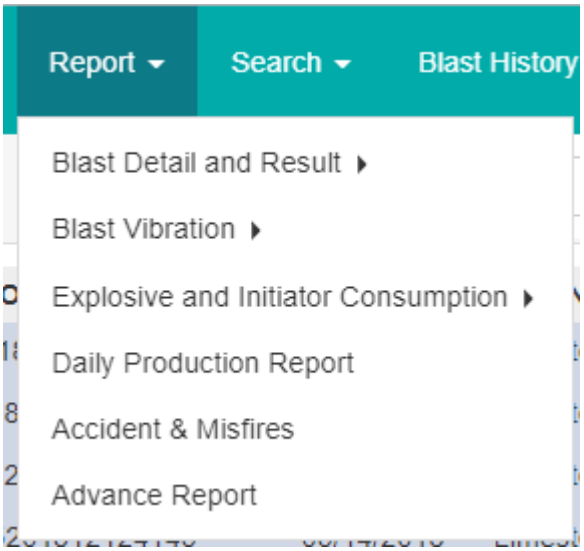
Blast No: BIR_20181002_630 **Blast Date:** 02/10/2018 **Blast Time:** 11:56:30

Mine Name:	Limestone Mine	**Operation:**	Production Blasting
Pit Name:	Pit 2(Western)	**Rock Type:**	OVER BURDEN
Bench Name:	Bench 1	**Material Blasted:**	Medium Grade
Zone/Face Name:	1003		

S.No.	Date	Recovered/Production(Ton)
1	12/5/2018	1,000.00
	Total	**1,000.00**

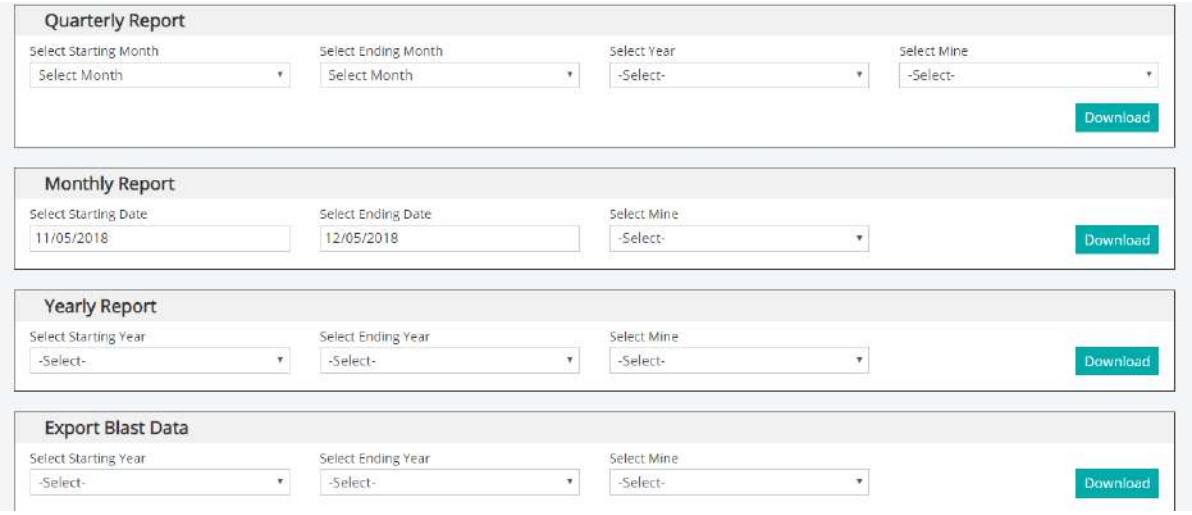
Advance report

In this report user can see the report quarterly, monthly, yearly and export blast wise.



Step1: Click on Advance report

Step2: Search the report by entering date and month



Step 3: Click on Download

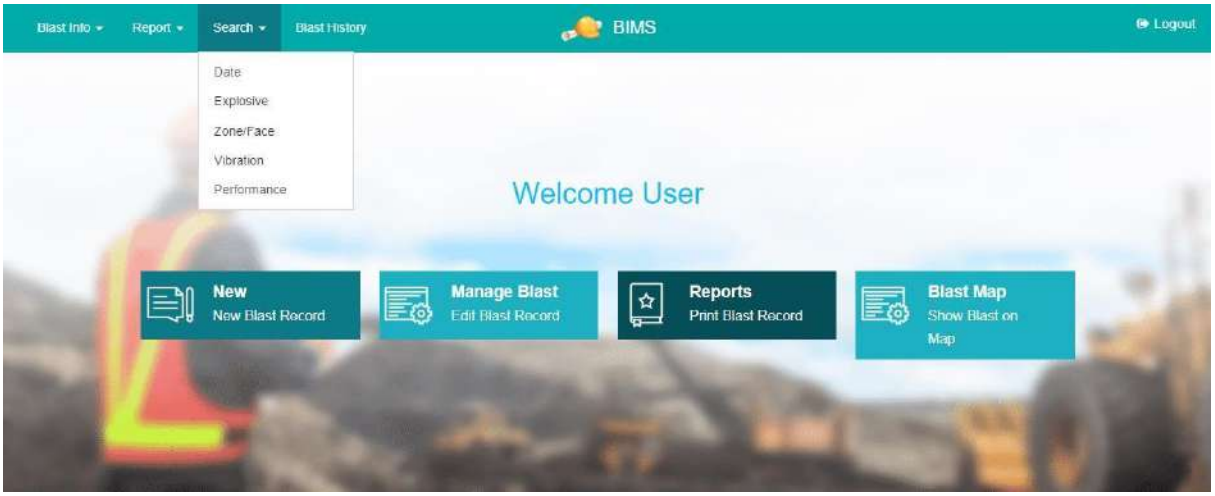
Limestone Mine												
Report Duration		11/5/2018	To	12/5/2018	List Of Blast				No of Blast			4
Blast No.	Date of Blast	Location of Blast	Hole Dia	Hole Depth	No. Of Holes	Avg Burden	Avg Spacing	Avg Stem Length	Avg Charge Hole	Total Charge	Ton Recover	Powder Factor
NAR_2018	27/11/2018	Pit 3 and Bench 2	110.00	10.00	61	4.00	4.00	3.00	58.08	3542.88	0.00	0.00
IRO_20181	28/11/2018	Pit 3 and Bench 2	150.00	12.00	8	5.00	6.00	4.00	126.69	1013.52	0.00	0.00
IRO_20181	28/11/2018	Pit 3 and Bench 2	110.00	10.00	15	3.00	4.00	2.00	62.57	938.55	0.00	0.00
LIM124201	03/12/2018	Pit 2(Western) an	115.00	6.50	27	4.50	5.50	5.50	22.35	603.45	0.00	0.00

Report: Monthly report

Search Menu

Date

Step 1 – Click on ‘Search’ tab in the menu bar. Select ‘Date’ from the drop down menu.



Step 2 - Select a specific date range. Select starting date in the ‘From’ field and ending date in ‘To’ field. Click on ‘Show Result’ button.

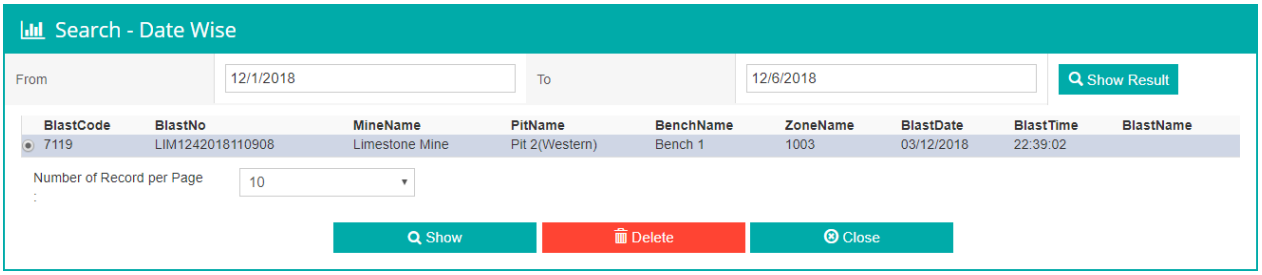


Figure 20 - Search By Date

Step 3: Click on Show button

Zone / Face

Step 1 – Click on ‘**Search’** tab in the menu bar. Select ‘**Zone/Face’** from the drop-down menu.

Step 2 – Select mine name from **‘Mine’** field. Select pit from the ‘**Pit**’ field. Select zone from **‘Zone’** field.

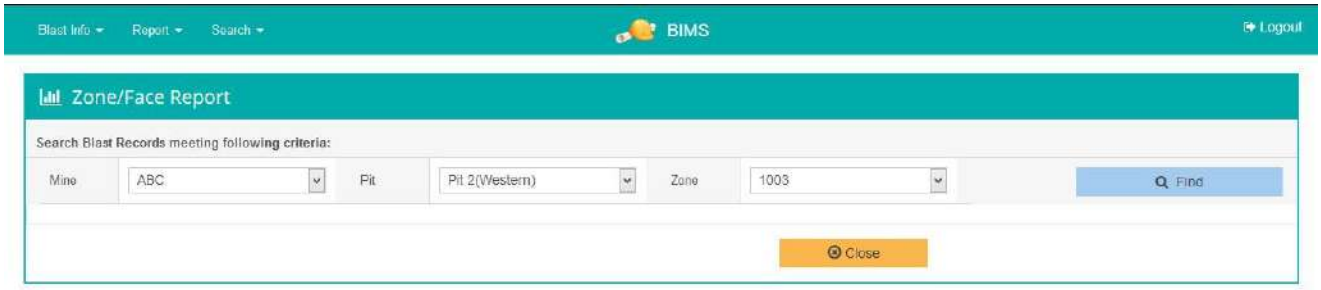
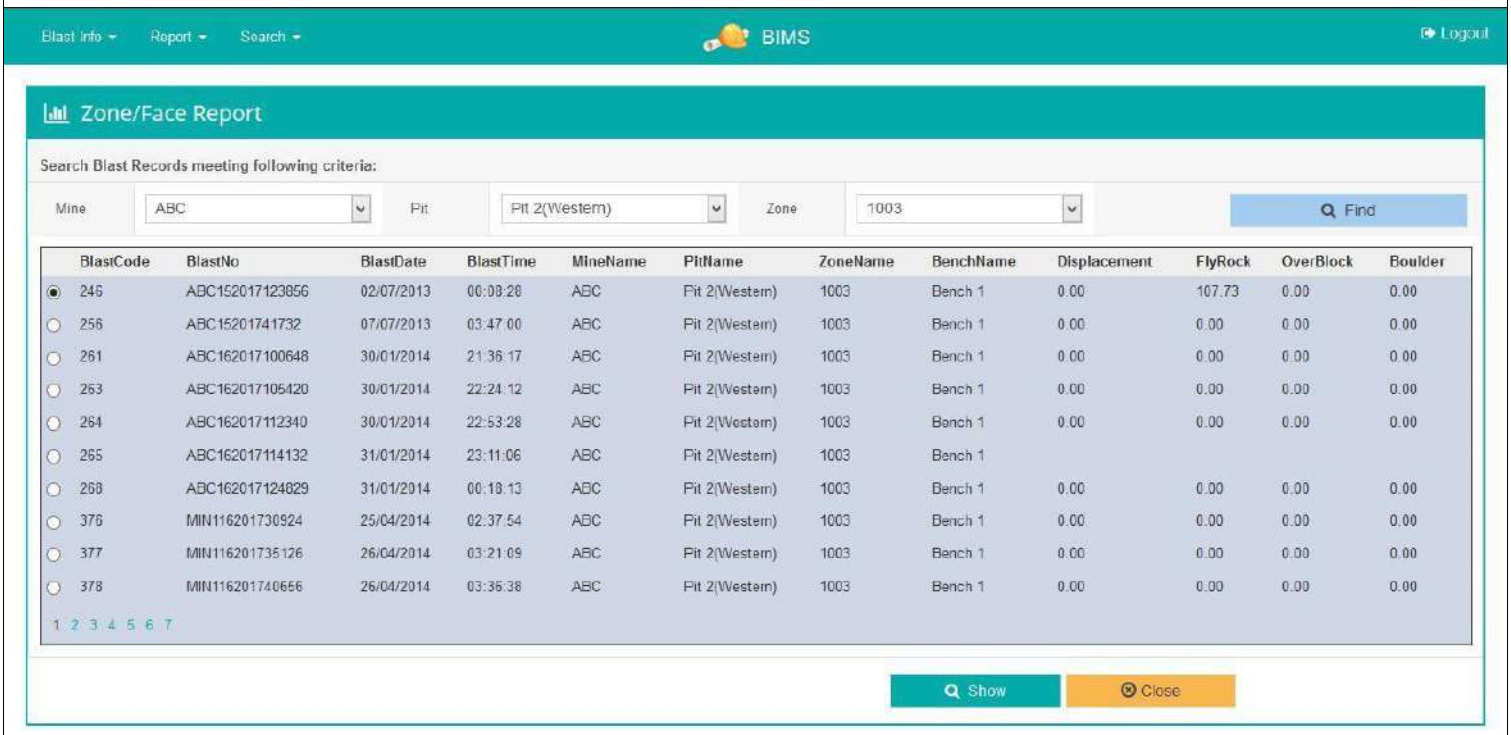


Figure 21 - Search by Zone/Face



Step 3 – Click on **'Find'** button. It will generate a list of blast records related to the selected zone. Select the particular blast record for which you have to generate the report.

Vibration

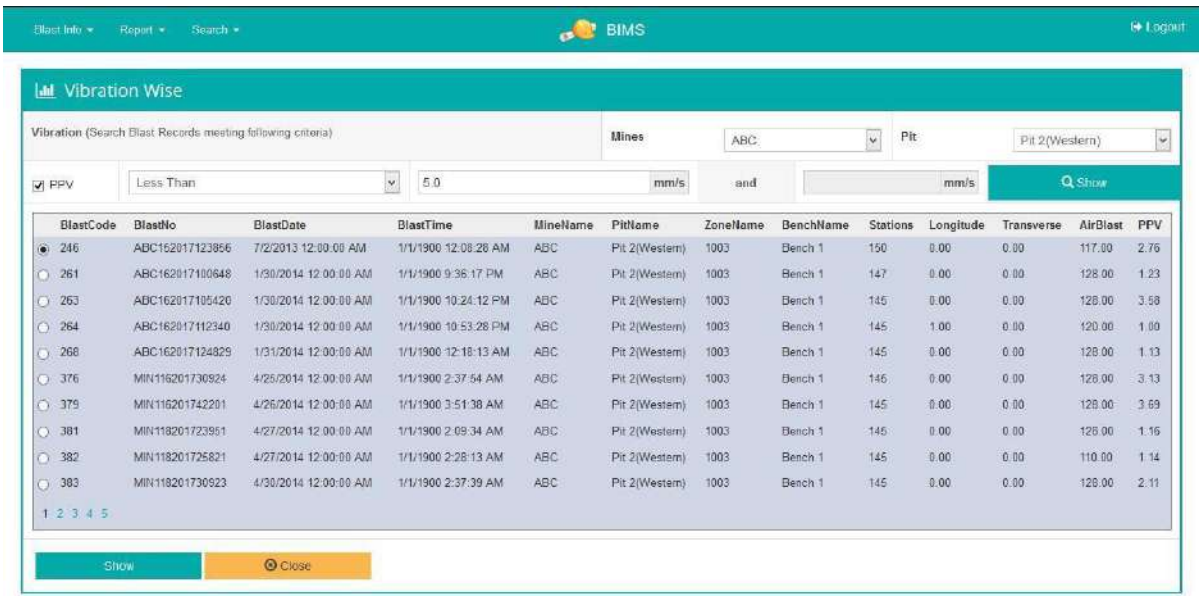
Step 1 – Click on **'Search'** tab in the menu bar. Select '**Vibration**' from the drop-down menu.

Step 2 – Select a mine from the **'Mines'** list field. It will generate the list of pits in the selected mine. Select a pit from the **'Pit'** list field.

Step 3 – Tick PPV checkbox. It will enable the range filter. Select the type of range format in the list field.

Figure 22 - Search by Vibration Value

Fill the value for the range in terms of millimeters per second. Click on '**Show**' button.



Step 5 - Click 'Show' button. It will redirect to the 'Blast ID' form page of the selected blast record.

Flyrock

- Tick the **'Fly rock'** check box. Set the range format in the list field. Fill the value of range in terms of meters.
- Tick the '**Overbreak**' check box. Set the range format in the list field. Fill the value of range in terms of meters.
- Tick the '**Boulder**' check box. Set the range format in the list field. Fill the value of range in terms of meters.

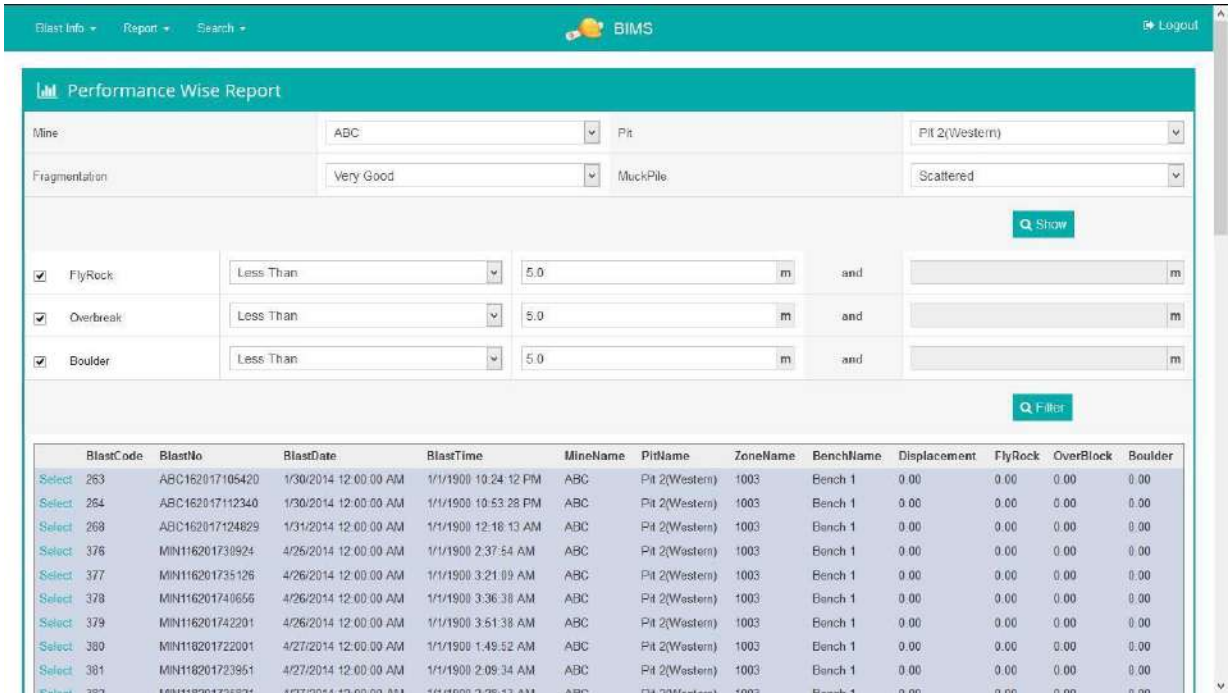
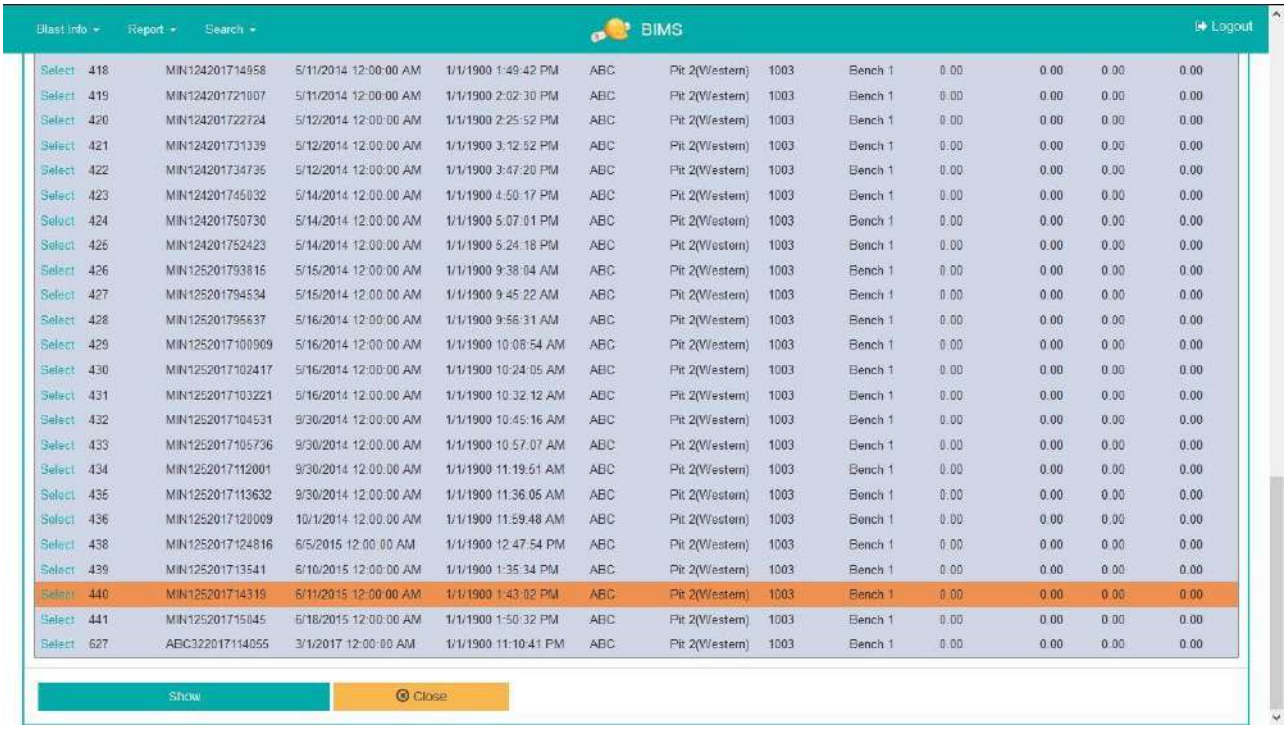


Figure 23 - Search by Flyrock

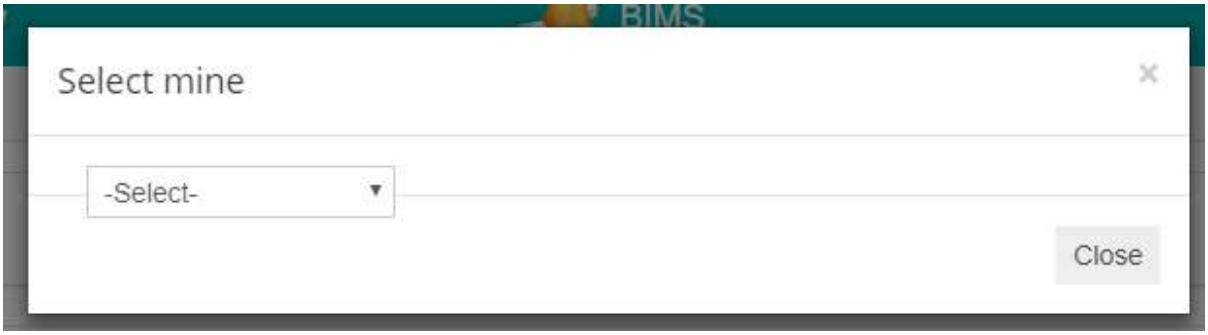
Step 5 – Click 'Filter' button. It will filter the list according to the range parameters as shown in the image below.



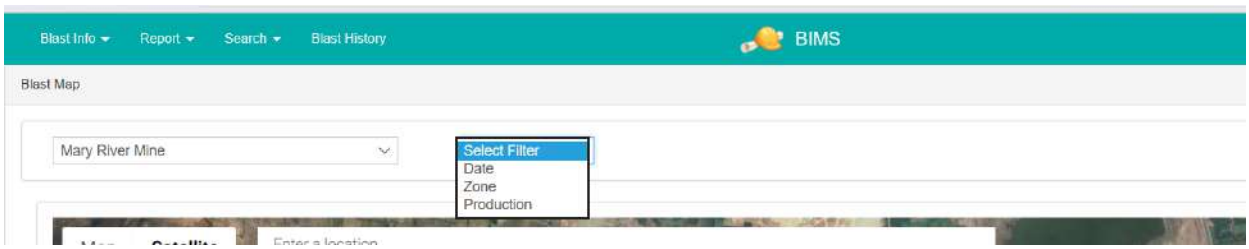
Step 6– Click 'Show' button. It will redirect to the 'Blast ID' form page of the selected blast record. This module is use to see the whole blast on one map in map wise

Blast Hisory

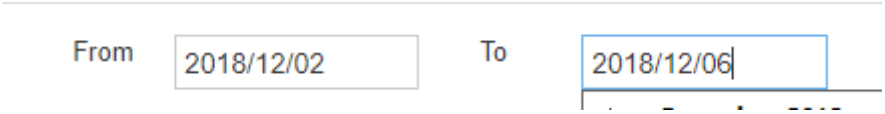
Step1: Select the mine from the drop down list



Step 2: Select the filter option to constraint your search



Step 3 E.g. DATE: Enter from and to date



Step 4: Enter the location of mine