Assignment 3-

Group Name-
MinTech Enthusiasts

Group Members:-

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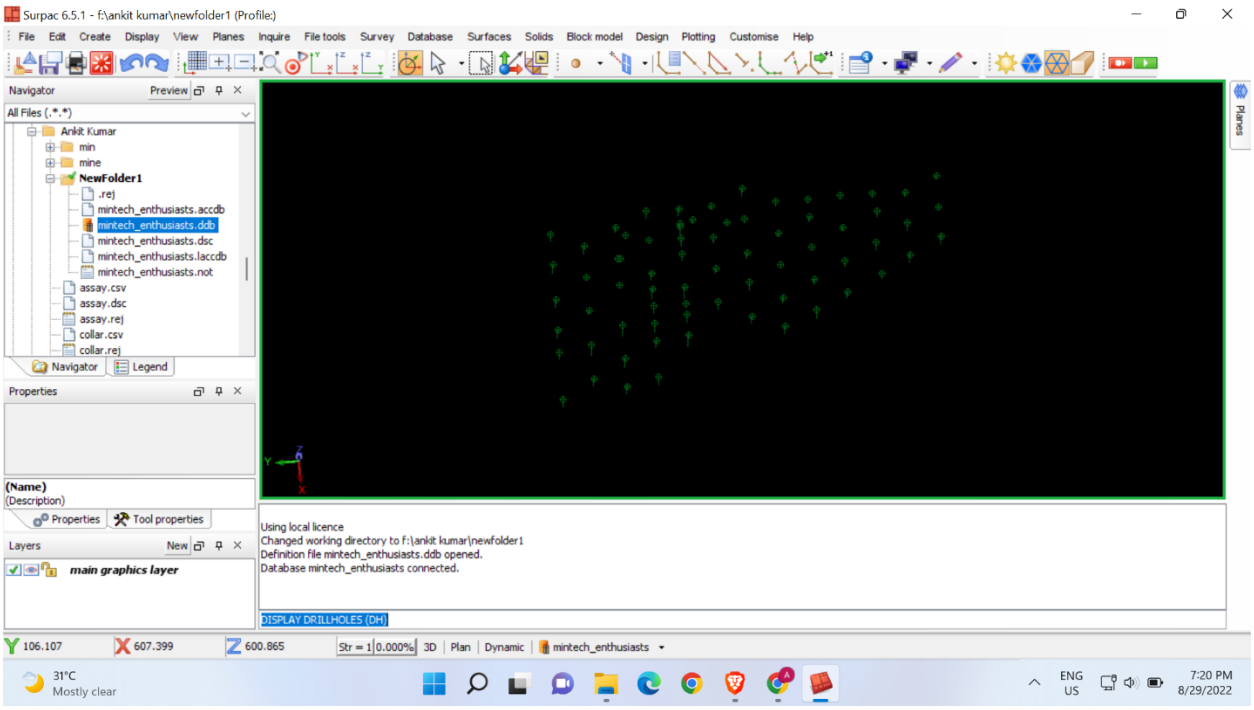
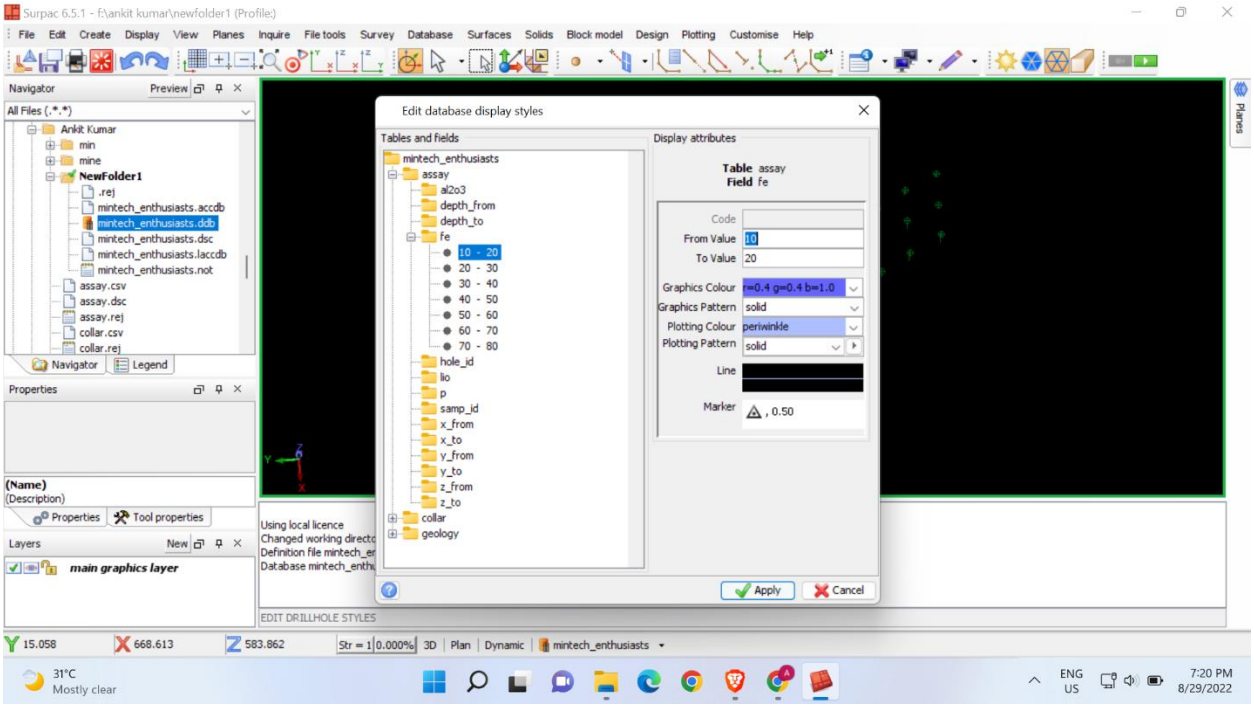
Ankit Kumar	20JE0145
Akash Chand	20JE0078

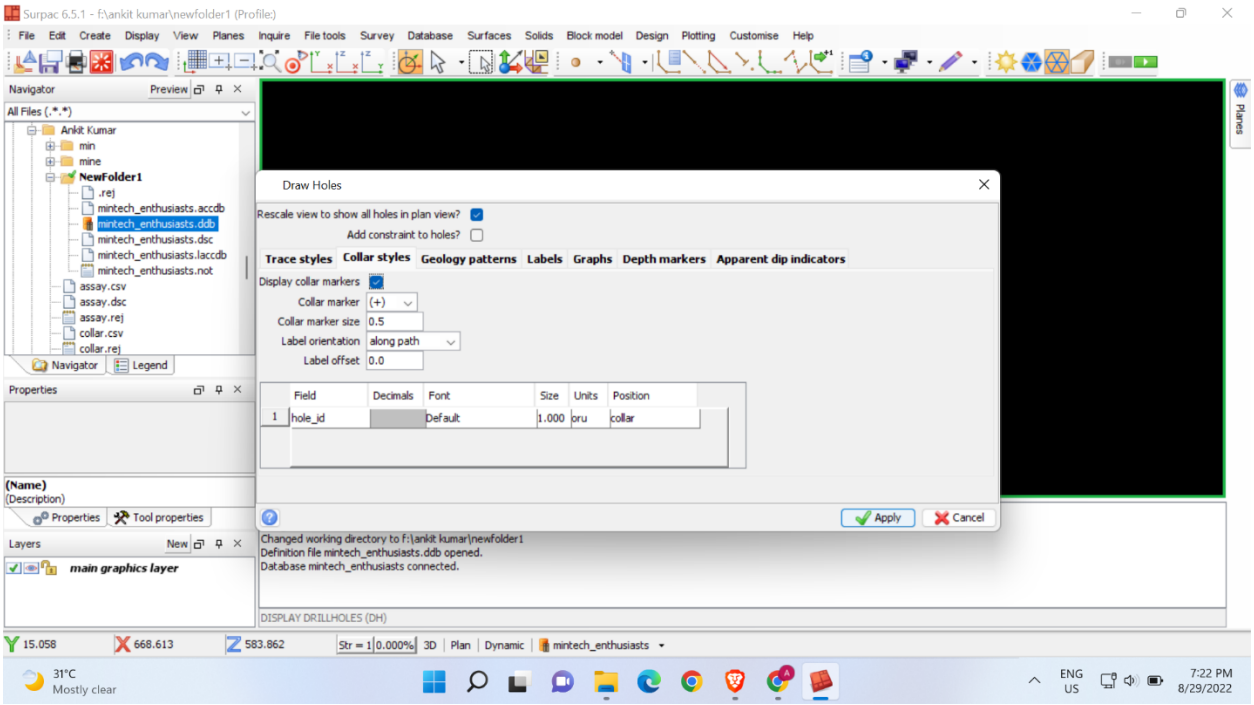
1. Visualize the data and attach pictures of the drill holes:

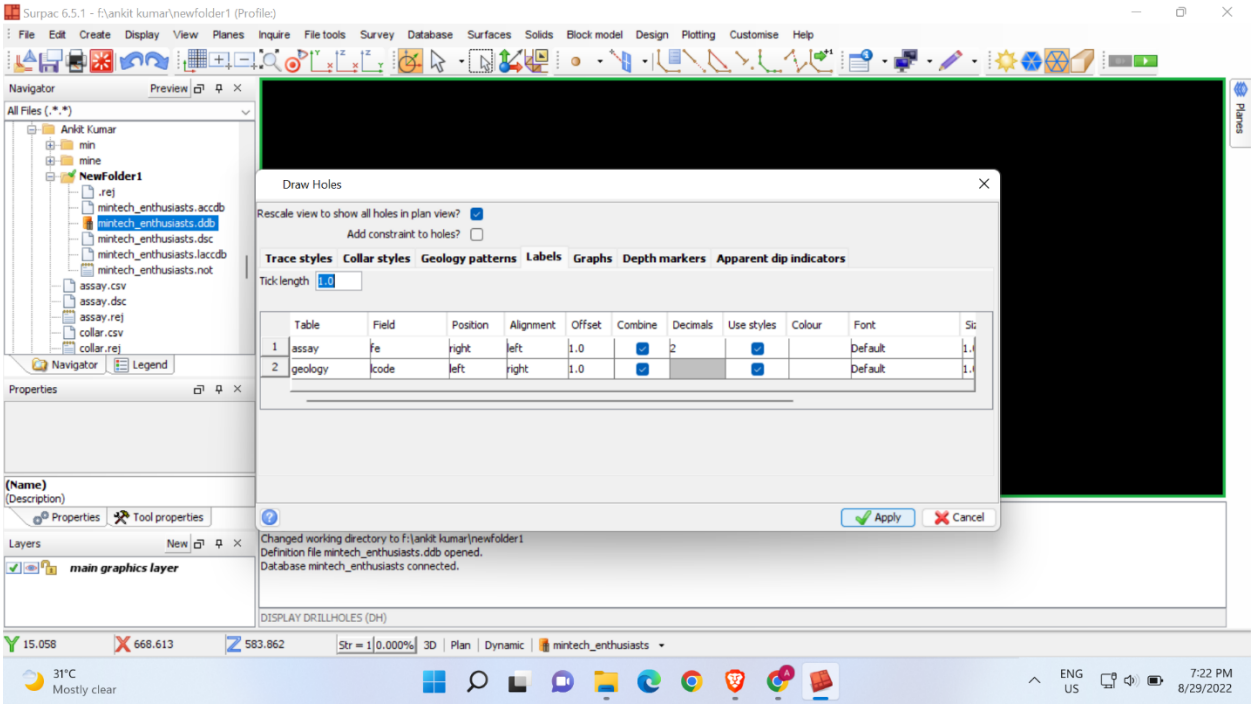
a. Display drill holes using assay table and Fe field:



b. Setting up the drill hole display styles for fe:




Surpac 6.5.1 - f:\ankit kumar\newfolder1 (Profile)
File Edit Create Display View Planes Inquire File tools Survey Database Surfaces Solids Block model Design Plotting Customise Help
Navigator
Preview
All Files (*.*)
Ankit Kumar
min
mine
NewFolder1
.rej
mintech_enthusiasts.accdb
mintech_enthusiasts.ddb
mintech_enthusiasts.dsc
mintech_enthusiasts.laccdb
mintech_enthusiasts.not
assay.csv
assay.dsc
assay.rej
collar.csv
collar.rej
Navigator
Legend
Properties
(Name)
(Description)
Properties
Tool properties
Layers
New
main graphics layer
Draw Holes
Rescale view to show all holes in plan view?
Add constraint to holes?
Trace styles
Collar styles
Geology patterns
Labels
Graphs
Depth markers
Apparent dip indicators
Display collar markers
Collar marker
(+)
Collar marker size
0.5
Label orientation
along path
Label offset
0.0
Field
Decimals
Font
Size
Units
Position
1
hole_id
Default
1.000
oru
collar
Apply
Cancel
Changed working directory to f:\ankit kumar\newfolder1
Definition file mintech_enthusiasts.ddb opened.
Database mintech_enthusiasts connected.
DISPLAY DRILLHOLES (DH)
Planes
15.058
668.613
583.862
Str = 1 0.000%
3D
Plan
Dynamic
mintech_enthusiasts
31°C
Mostly clear
ENG
US
7:22 PM
8/29/2022


Surpac 6.5.1 - f:\ankit kumar\newfolder1 (Profile)
File Edit Create Display View Planes Inquire File tools Survey Database Surfaces Solids Block model Design Plotting Customise Help
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Navigator
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Properties
(Name)
(Description)
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main graphics layer
Draw Holes
Rescale view to show all holes in plan view?
Add constraint to holes?
Trace styles
Collar styles
Geology patterns
Labels
Graphs
Depth markers
Apparent dip indicators
Tick length
1.0
Table
Field
Position
Alignment
Offset
Combine
Decimals
Use styles
Colour
Font
1
assay
fe
right
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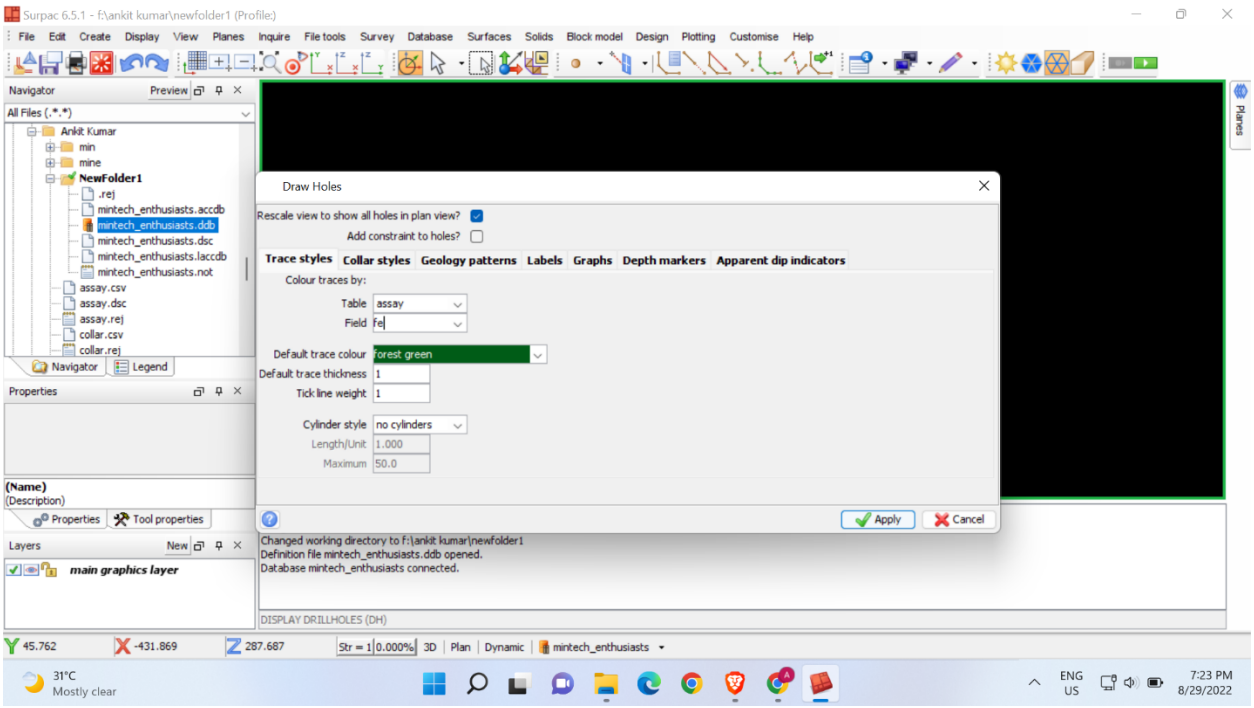
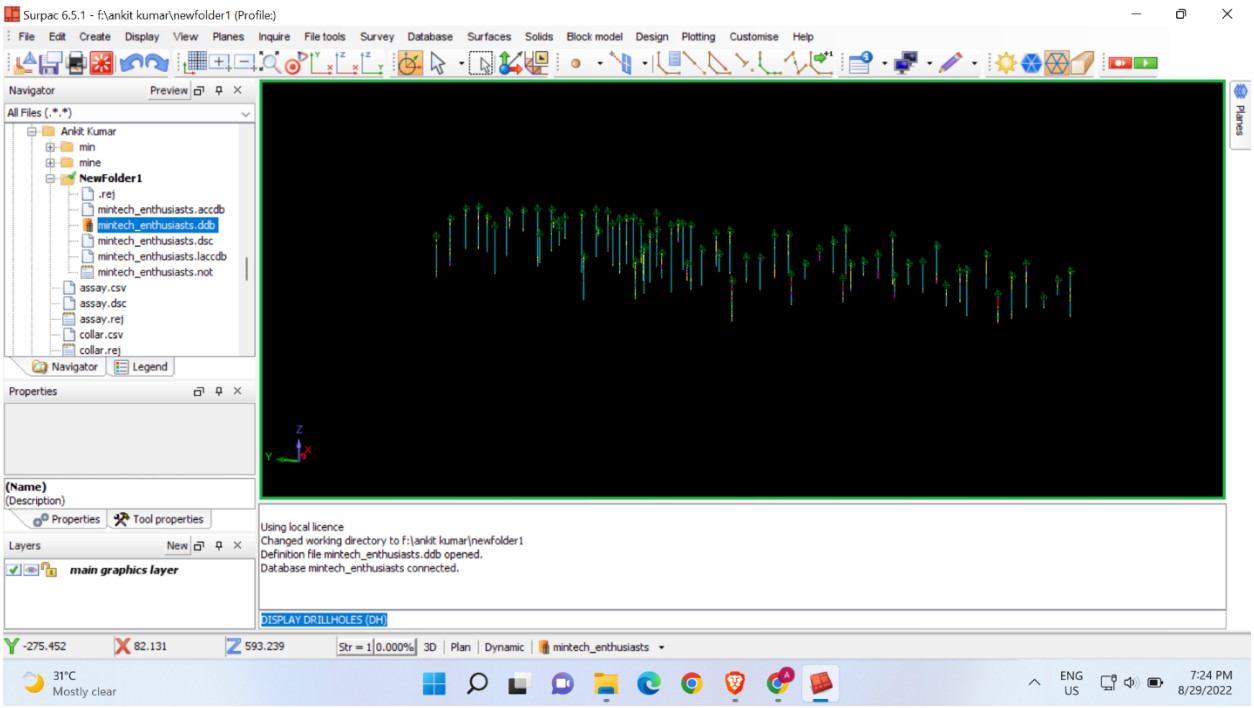
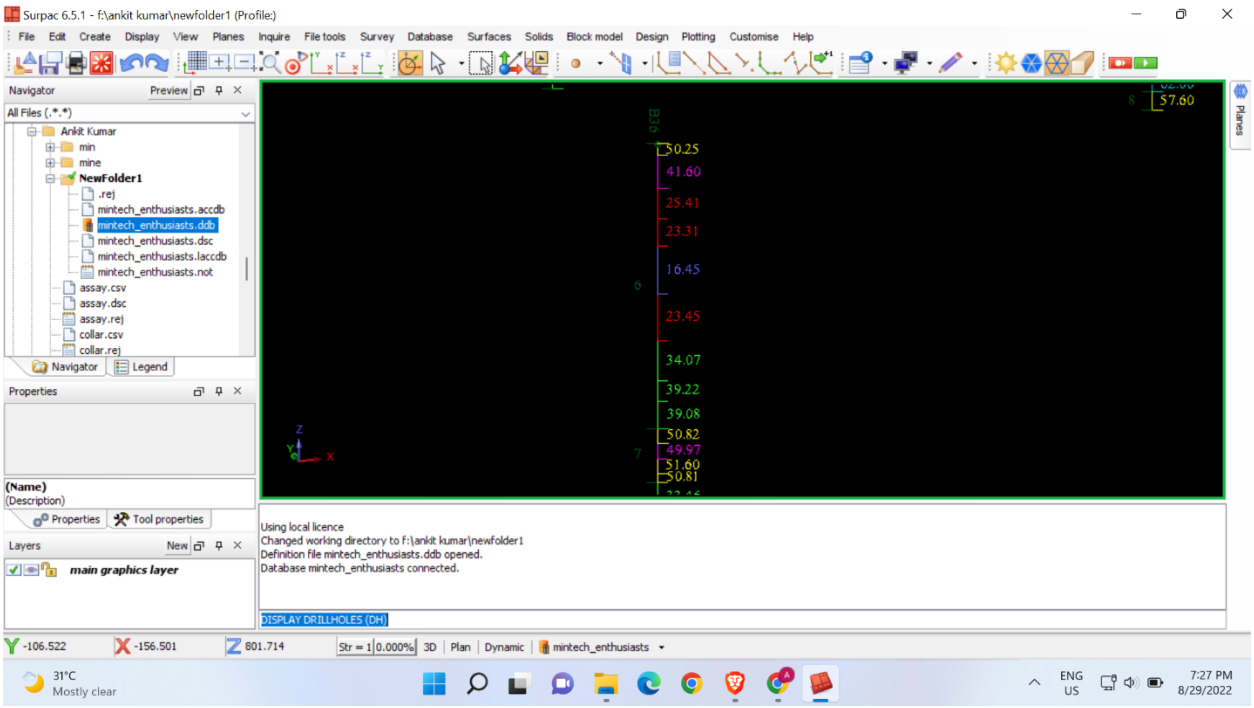
2
Default
2
geology
lcode
left
right
1.0
Default
Apply
Cancel
Changed working directory to f:\ankit kumar\newfolder1
Definition file mintech_enthusiasts.ddb opened.
Database mintech_enthusiasts connected.
DISPLAY DRILLHOLES (DH)
Planes
15.058
668.613
583.862
Str = 1 0.000%
3D
Plan
Dynamic
mintech_enthusiasts
31°C
Mostly clear
ENG
US
7:22 PM
8/29/2022

c. After applying drill hole display styles for Fe:

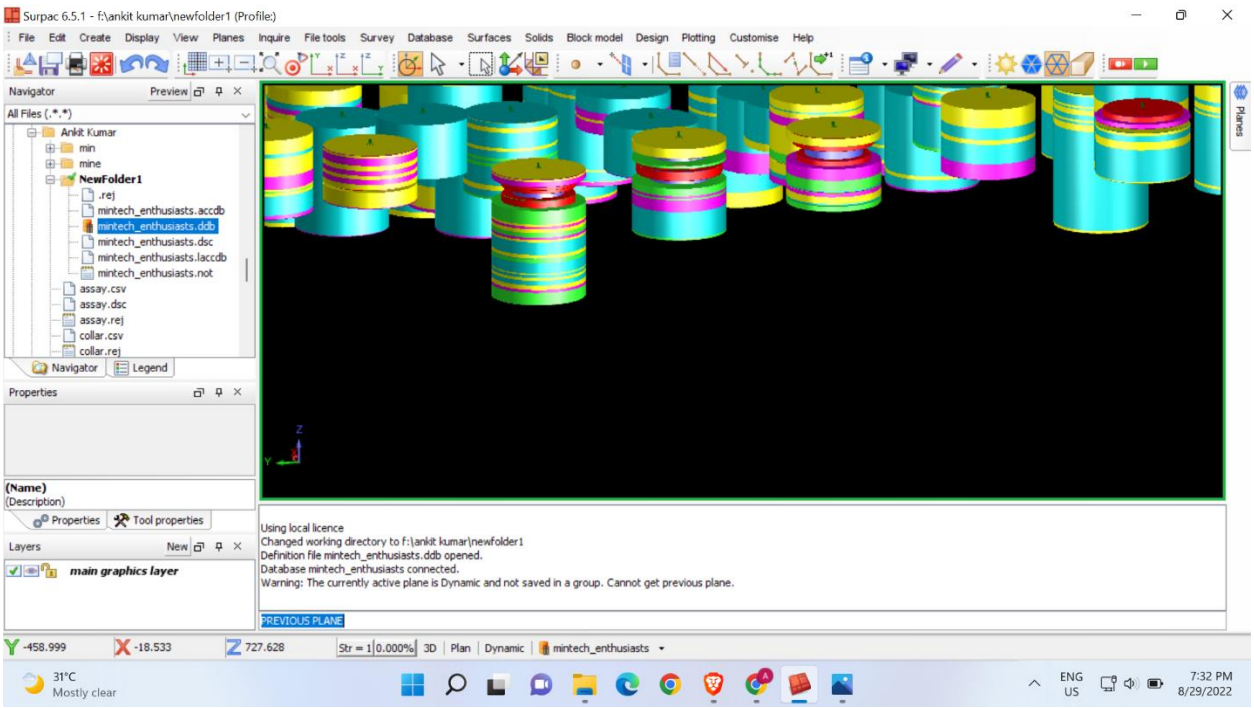


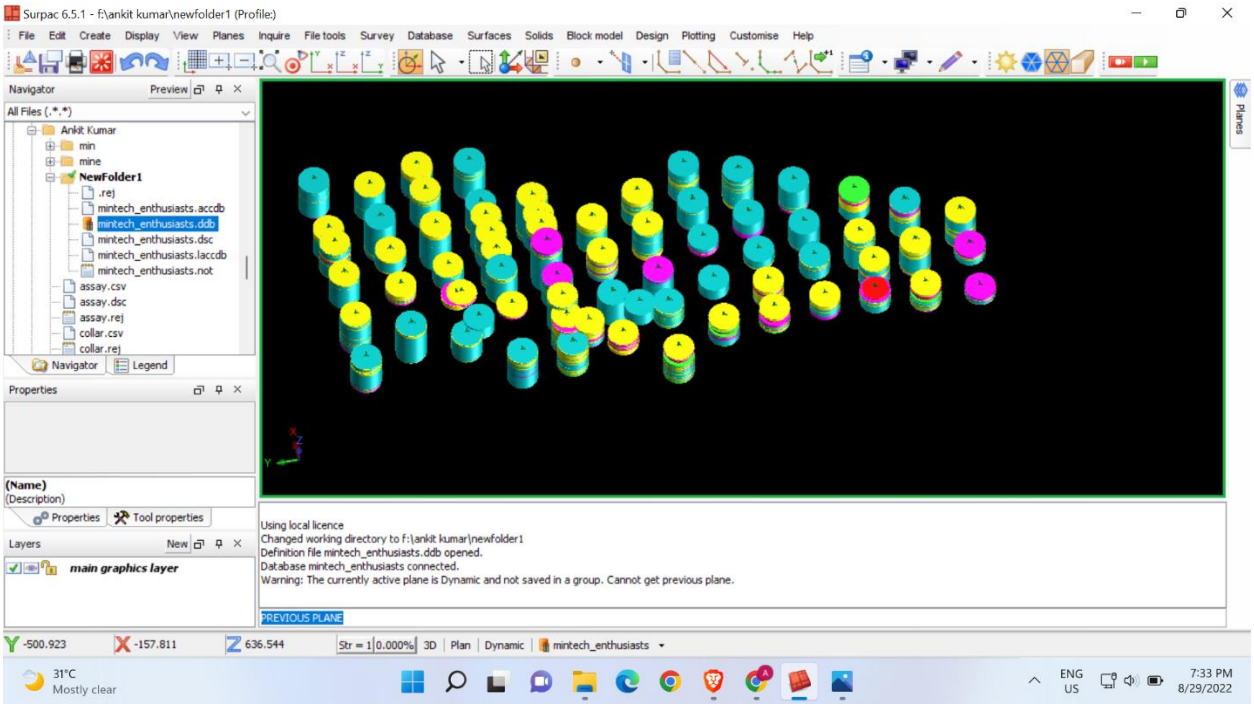


d. Display drill hole id, grade value and litho code:

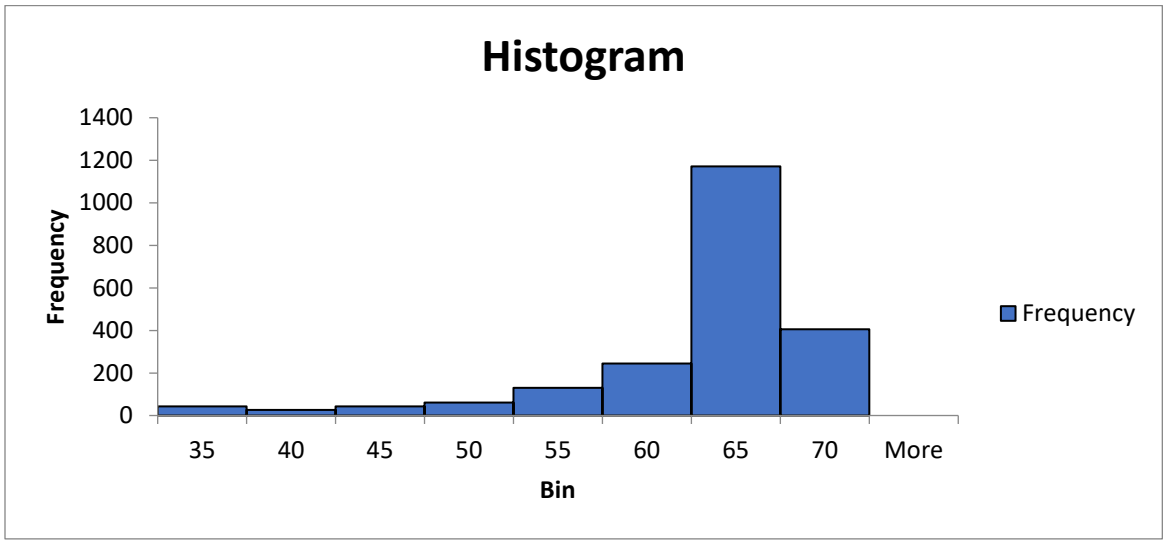


e. Visualization of drillholes using variable width



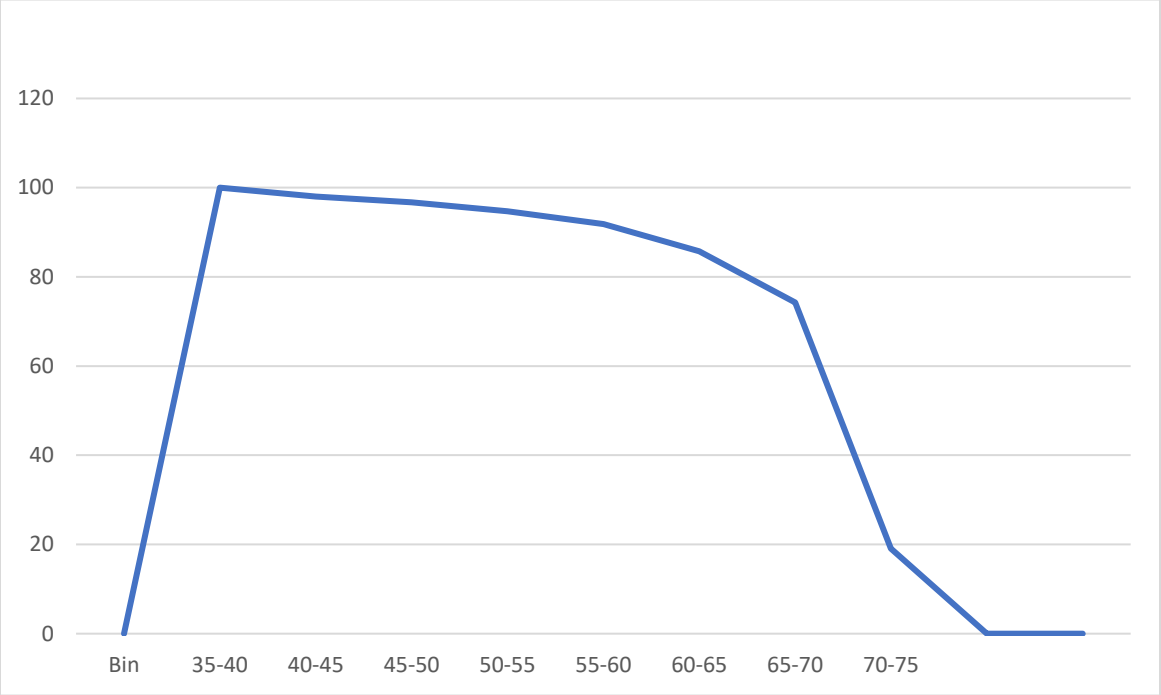

Surpac 6.5.1 - f:\ankit kumar\newfolder1 (Profile:)
File Edit Create Display View Planes Inquire File tools Survey Database Surfaces Solids Block model Design Plotting Customise Help
Navigator
Preview
All Files (.*.*)
Ankit Kumar
min
mine
NewFolder1
.rej
mintech_enthusiasts.accdb
mintech_enthusiasts.ddb
mintech_enthusiasts.dsc
mintech_enthusiasts.laccdb
mintech_enthusiasts.not
assay.csv
assay.dsc
assay.rej
collar.csv
collar.rej
Navigator
Legend
Properties
(Name)
(Description)
Properties
Tool properties
Layers
New
main graphics layer
Planes
Using local licence
Changed working directory to f:\ankit kumar\newfolder1
Definition file mintech_enthusiasts.ddb opened.
Database mintech_enthusiasts connected.
Warning: The currently active plane is Dynamic and not saved in a group. Cannot get previous plane.
PREVIOUS PLANE
-500.923
-157.811
636.544
Str = 1 0.000%
3D
Plan
Dynamic
mintech_enthusiasts
31°C
Mostly clear
ENG
US
7:33 PM
8/29/2022

Fe grade histogram



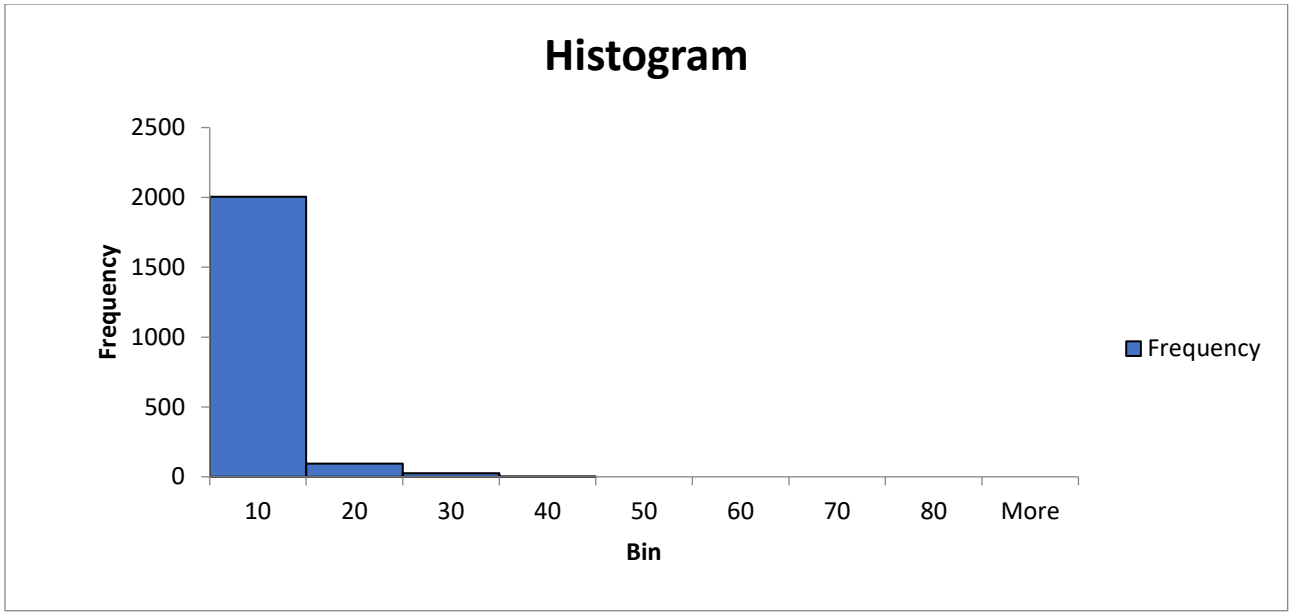
Mean	60.57234713
Standard Error	0.166817443
Median	63.37
Mode	64
Standard Deviation	7.691713334
Sample Variance	59.16245402
Kurtosis	10.27657625
Skewness	2.873670532
Range	65
Minimum	3.2
Maximum	68.2
Sum	128776.81
Count	2126

Cumulative frequency % vs Fe grade plot



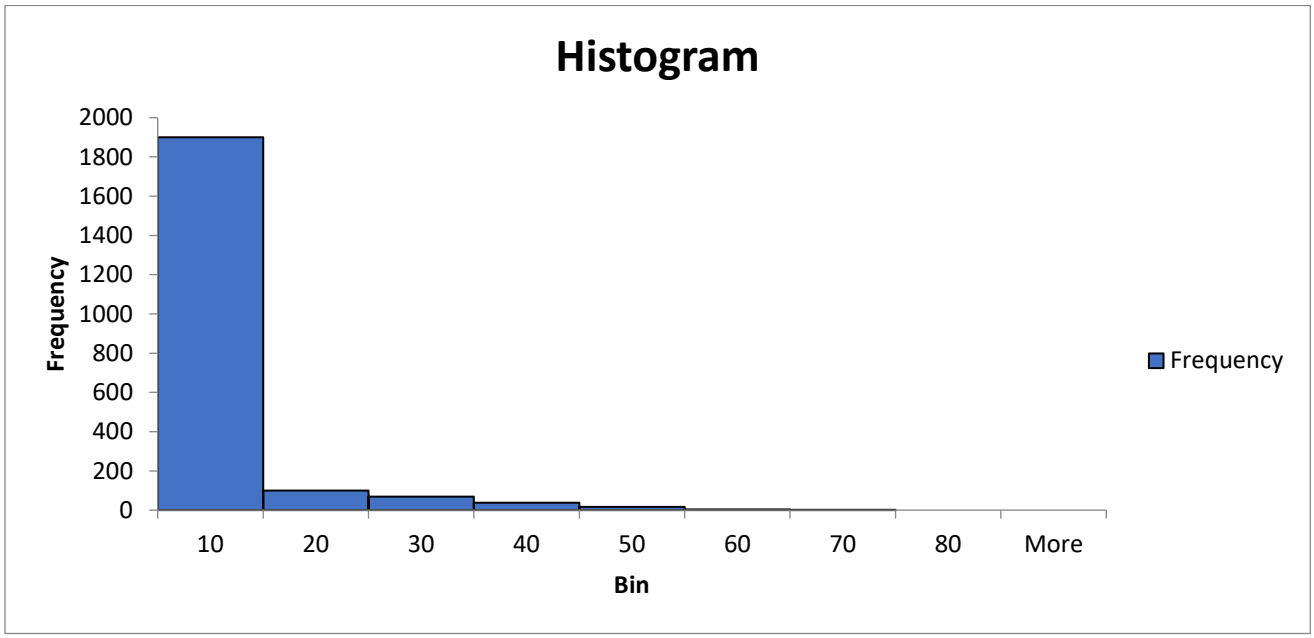
More than 74% of the grade lies between (65-75) grade value. By visualizing the histogram we can see that this is negatively skewed which means most of the grade is lying towards higher grade value. So from this it can be inferred that this is a high grade ore.

Al2O3 grade histogram



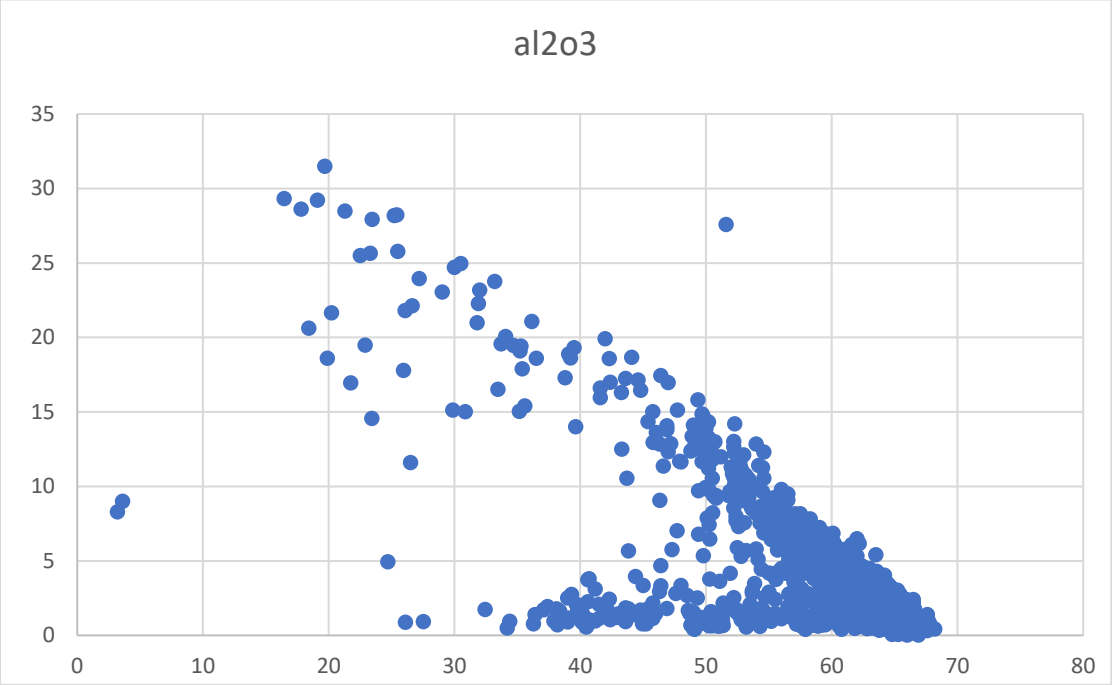
Mean	3.092163688
Standard Error	0.086376588
Median	1.72
Mode	1
Standard Deviation	3.982700736
Sample Variance	15.86190515
Kurtosis	13.73973011
Skewness	3.376788944
Range	31.48
Minimum	0.02
Maximum	31.5
Sum	6573.94
Count	2126

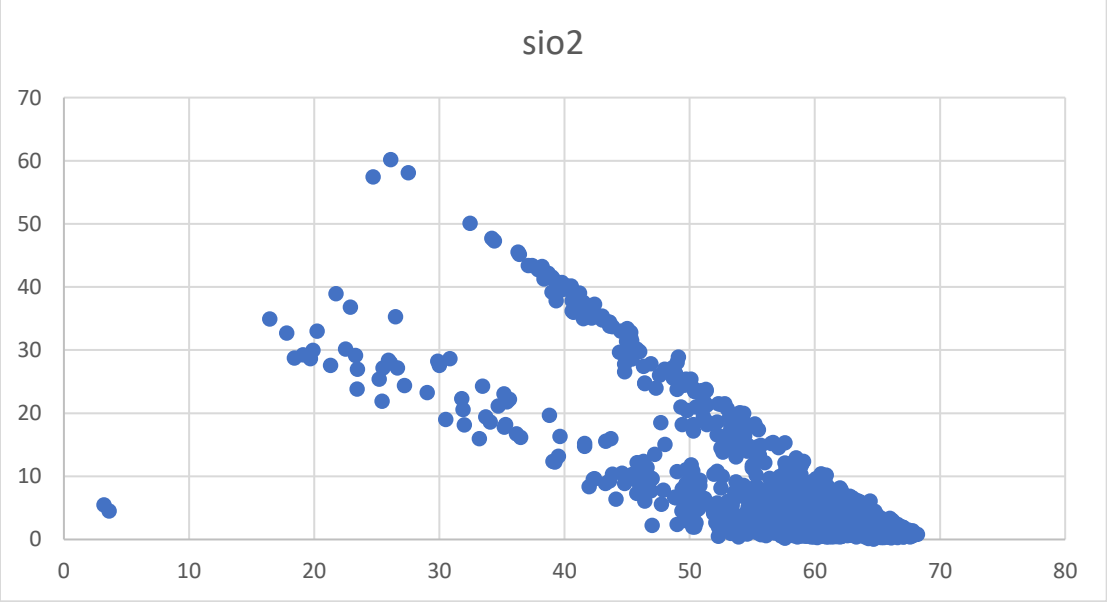
SiO2 grade histogram



Mean	4.48841016
Standard Error	0.169705853
Median	1.66
Mode	1
Standard Deviation	7.824893797
Sample Variance	61.22896293
Kurtosis	12.04296357
Skewness	3.349969224
Range	60.12
Minimum	0.08
Maximum	60.2
Sum	9542.36
Count	2126

Some more visualization





By plotting pair plot between Fe grade composites, Al2O3 grade composites and Sio2 grade composites we can see that most of the drillholes have high ore content (i.e. Fe) and less gangue content (i.e. Al2O3 and SiO2). So overall we can say that this is a high-grade Fe ore reserve.