VOCATIONAL TRAINING REPORT
KEDLA MINES, CCL

A Project Report Submitted

For the partial fulfillment of the requirements for the award of

BACHELOR OF TECHNOLOGY
IN
MINING ENGINEERING

Submitted By
NAME OF STUDENT
(ENROLMENT NO)

SESSION (20XX-20XX)

JHARKHAND RAI UNIVERSITY
RANCHI
DEPARTMENT OF MINING ENGINEERING

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JHARKHAND RAI UNIVERSITY
RANCHI

CERTIFICATE

This is to certify that this project report "**Vocational Training Report of Kedla Mines, CCL**" is a bonafide work of **NAME OF STUDENT (ENROLMENT NO.)** who carried out authentic project work under supervision and guidance of guide. This is to further certify to the best of my knowledge that this project has not been carried out earlier in this University.

To the best of my knowledge, the matter embodied in this project has not been submitted to any other University/Institute for the award of any Degree or Diploma.

Date:

Internal Examiner(s) **External Examiner(s)** **Head of the Department**
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ACKNOWLEDGEMENT

The Vocational Training in itself is an acknowledged to the inspiration, drive, technical assistance contributed to it by many individuals. This training work would have never been completed without the guidance and assistance that I received from time to time from mines during the whole training process.

It is my great pleasure to place a record of sincere thanks and gratitude to Mr. XYZ (Mines manager), Mr. XYZ (safety officer) of XYZ MINES, Dhanbad.

I express my sincere gratitude and indebtedness **to Dr. Piyush Ranjan (Registrar)** and my internal guide **Prof. D.P. PANDEY (H.O.D. Department of Mining Engineering), Jharkhand Rai University, Ranchi** for giving me an opportunity to enhance my skill in the field of Mining Technology.

Last but not the least we also thank all my friends and other people who provided us with an atmosphere conductive to optimum learning during this project.

NAME OF STUDENT

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CONTENTS
(For Underground Coal / Metalliferous mines)

1. Introduction of Mine.
2. Location & Communication of Mine.
3. Geology of Mine.
4. Transport System (Vertical & Horizontal).
5. Method of working
    a. Mine opening.
    b. Status of working seam.
    c. Status of seams present.
    d. Drilling & Blasting.
    e. Explosive & Accessories.
    f. Haulage Details.
    g. Underground Machinery.
    h. Cycle of operation.
    i. Stowing /Filling
    j. Layout of Colliery (if provided).
6. Ventilation.
7. Pumping.
8. Supports.
9. Lamp House & Magazine details.
10. Lighting Arrangements.
11. Accident Analysis (Fire, Inundation etc.)
12. Safety Equipments & Provisions.
13. Workshop.
14. Power Supply system.
15. Mineral Handling Arrangement.
16. Surface Transportation system.
17. Production & Productivity.
18. Conclusion.

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CONTENTS

(For Opencast Coal / Metalliferous Project)

1. Introduction of Mine.
2. Location & Communication of Mine.
3. Geology of Mine.
4. Method of working
    a. Status of working seam.
    b. Status of seams present.
    c. Bench Geometry for Mineral bed & O/B bed
    d. Drilling & Blasting / Coal Cutting
    e. Explosive & Accessories.
    f. Dumping for Mineral/ OB
5. Opencast Machinery in Mineral / OB.
6. Pumping.
7. Magazine details.
8. Lighting Arrangements.
9. Accident Analysis
10. Safety Provisions.
11. Workshop.
12. Power Supply System.
13. Mineral Handling Arrangement.
14. Surface Transportation system.
15. Production & Productivity.
16. Land Reclamation.
17. Conclusion.

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DESCRIPTION OF CONTENTS
(For Underground Coal / Metalliferous mines)

1. **Introduction of Mine.**
   - Name of company
   - General Manager
   - Owner
   - Agent
   - Safety officer
   - Manager
   - Engineer
   - Surveyor
   - Details of company
   - Name of the mine Area
   - Project Officer
   - Colliery Engineer
   - Survey Officer
   - Details of mines
   - Depth
   - Ore reserves
   - Minerals, access to mineral deposit,
   - Name of the mine
   - Mining lease area
   - Name of seam presently worked
   - Nature of the roof
   - Degree of gassiness
   - Main surface feature
   - Mine boundary

2. **Location & Communication of Mine.**
   - Location of mines from all four directions
   - Nearest city, railway station
   - Distance from nearby city
   - Accessibility

3. **Geology of Mine.**
   - Geology of the rock

Ore Body, country rock
Geological disturbances such as fault, joints, dykes etc.

4. **U/G Transportation system.**
   Type of transport mode
   Skip/Cage winding
5. **Method of working**

Mine opening

Entrance/ access to the deposit
Dimension of shaft, incline, and adit
Length of incline, adit
Depth of Shaft

Status of working seam

Details of seam in which mining is done
Thickness
Degree of gassiness
Height of seam
Nature of the roof
Method of working

(a) Development

(b) Depillaring

Inclination

Status of seams present

Details of all seams available
Seams under development or depillaring
Seams which are worked out

Drilling & Blasting

Drilling method
Blasting pattern
Diameter of hole
Diameter of drill rod
Type of Drill bit
Drilling machines
Number of drilling machine

Specification of drilling machine
Blasting techniques
Number of holes

Explosive & Accessories.

Types of explosive
Weight of each cartridge
Diameter of each cartridge
Length of each cartridge
Explosives used per hole
Exploder
Explosive accessories
Detonator
Connection of explosives
Company of explosive
Stemming material

Haulage Details.

Types of haulage
Rope diameter
Safety devices
Length of haulage
Capacity
Power and make of haulage
Number of haulage system

Underground Machinery.

Type of machinery
Name of machinery used in underground mine
Capacity
Quantity of machinery
Make and power of machinery
Specification of machinery

Cycle of operation.

Drilling
Charging and Steaming

Blasting
Dressing
Supporting
Loading by LHD on belt conveyor/Haulage system
Transporting by conveyor
Unloading
Stowing process

Layout of Colliery.

Layout of mines area- diagram

6. **Ventilation.**

Type of fan
Number of main mechanical fan
Location of each fan
Capacity of each fan
Power and other specification of fan
Booster fan
Auxiliary fan

7. **Pumping.**

Type of pump
Capacity
Power required
Number of pumps
Location of pump
Voltage required
Make of pump

8. **Supports.**

Type of support system used
Details of each support
Location of support
Roof bolt – Diameter of rod, length of rod, diameter of hole.
Wooden cogs
Steel prop
Chock support

9. Lamp house & Magazine details.

Lamp capacity
Safety lamp
Charge capacity
No. of self rescuer
Charging voltage required
Life of cap lamp
Check time internal of self rescue
Input voltage of the charger
Output voltage
Time taken to full charging
Discharging time
Capacity of magazine

Location of magazine

10. Lighting Arrangements

Surface lighting
Underground Lighting

11. Accident Analysis (Fire, Inundation etc.)

If any accident occurs due to fire, roof fall, inundation, explosion.
Accident statistics

12. Safety Equipments & Provisions.

Safety apparatus used in mines
Quantity of safety apparatus
Safety training conducted in mines
Provisions

13. Workshop

14. Power Supply system.

Power supplied to mines
Location/ grid from which power is supplied
Transformer

15.Mineral handling arrangement.

Method of handling ore/coal

Crusher

16.Surface Transportation system.

Details of transport system used in surface for mineral

17.Production & Productivity

Production per month

Production per day

Production per shift

Manpower per shift

Manpower per day

Output per man shift (OMS)

18.Conclusion.

The learning and outcomes of this training for the students

DESCRIPTION OF CONTENTS
(For Opencast Coal / Metalliferous Project)

1. **Introduction of Mine.**
   - Name of company
   - General Manager
   - Owner
   - Agent
   - Safety officer
   - Manager
   - Engineer
   - Surveyor
   - Details of company
   - Name of the mine Area
   - Project Officer
   - Colliery Engineer
   - Survey Officer
   - Details of mines
   - Depth
   - Ore reserves
   - Minerals, access to mineral deposit,
   - Name of the mine
   - Mining lease area
   - Name of seam presently worked
   - Main surface feature
   - Mine boundary

2. **Location & Communication of Mine.**
   - Location of mines from all four directions
   - Nearest city, railway station
   - Distance from nearby city
   - Accessibility

3. **Geology of Mine.**
   - Geology of the rock
   - Ore Body, country rock
   - Geological disturbances such as fault, joints, dike etc.

4. **Method of working**

Status of working seam

Details of seam in which mining is done
Thickness
Height of seam
Inclination

Status of seams present

Details of all seams available
Seams under development or depillaring
Seams which are worked out

Bench Geometry for Mineral/OB

Height of Bench
Width of Bench
Length of Bench
Slope of bench
Thickness of OB

Drilling & Blasting

Drilling method
Blasting pattern
Diameter of hole
Diameter of drill rod
Type of Drill bit
Drilling machines
Number of drilling machine
Specification of drilling machine
Blasting techniques
Number of holes

Explosive & Accessories.

Types of explosive
Weight of each cartridge
Diameter of each cartridge

Length of each cartridge
Explosives used per hole
Exploder
Explosive accessories
Detonator
Connection of explosives
Company of explosive
Stemming material
Dumping for Mineral and OB

5. **Opencast Machinery for Mineral & OB.**

Type of machinery
Name of machinery used for mineral & OB
Capacity
Quantity of machinery
Make and power of machinery
Specification of machinery

6. **Pumping.**

Type of pump
Capacity
Power required
Number of pumps
Location of pump
Voltage required
Make of pump

7. **Magazine details.**

Capacity of magazine
Location of magazine

8. **Lighting Arrangements**

Surface lighting
Bench lighting

9. **Accident Analysis**

If any accident occurs due to slope fall, blasting.

Accident statistics

10. **Safety Equipments & Provisions.**
    - Safety apparatus used in mines
    - Quantity of safety apparatus
    - Safety training conducted in mines
    - Provisions

11. **Workshop**
12. **Power Supply system.**
    - Power supplied to mines
    - Location/ grid from which power is supplied
    - Transformer

13. **Mineral handling arrangement.**
    - Method of handling ore/coal
    - Crusher

14. **Surface Transportation system.**
    - Details of transport system used in surface for mineral

15. **Production & Productivity**
    - Production per month
    - Production per day
    - Production per shift
    - Manpower per shift
    - Manpower per day
    - Output per man shift (OMS)
16. **Land Reclamation**
    - Method of reclamation
    - Machinery used
17. **Conclusion.**
    - The learning and outcomes of this training for the students