

EXECUTIVE SUMMARY

INTRODUCTION

Pratappur Iron Ore Mine of M/s Anand Mining Corporation is situated in the Pratappur Village in Sihora Tehsil of Jabalpur District in Madhya Pradesh State, covering an area of 11.578 ha. The mining was earlier approved Rule-24A of MCR 1960 for five years period Of 1911-2000 to 2003-04. The scheme of mining was prepared and approved vide latter No. MP/Jabal/Iron/M. Scheme-03/06-07 dated 18.08.06 for five year period w.e.f. 2004-05 to 2008-09. The date of expiry of mining lease is 20/07/2018.

No litigation regarding of lease area is pending in any court of law

The targated production in the approved Scheme of mining was about 1.50 iac t. per annum. The lessee explored the lese area during last two years and intends to enhance the production upto 1 million t. per annum.

Location

The mine lease area is located in the Pratappur Village in Sihora Tehsil of Jabalpur District , state Madhya Pradesh. The mining lease area is a part of the Survey of India toposheet no. 64 A /3. Geographically the ML area falls under following co-ordinates:

Latitude : 23⁰ 23' 16" to 23⁰ 23' 37"
Longitude : 80⁰ 11' 43" to 80⁰ 11' 56"

PROJECT DESCRIPTION

Topography & Drainage

The mine lease area is hilly having general slope towards west. The highest elevation of the lease area is 412m.A.M.S.L. towards east direction and the lowest elevation is 398m. A.M.S.L in north. The lease area is drained by southerly flowing non-perennial nallas confluencing in Barne river situated at about 8 km in direction which is perennial river confluencing in Hiran river

Salient Features of Mining

- Mining is proposed by other than fully mechanized opencast method.
- Estimated Mineable Reserves:
Proved geological reserve of Hard Iron Ore : 4,02,921 t.
Proved geological reserve of Soft Iron Ore : 56,78,250 t.
- Maximum rate of production will be around 10,00,000 tonnes/annum.
- Anticipated life of mine is 10 years.
- Blasting is proposed for heaving purpose.
- 1500 Million cum of Soil and 44334 Million cum of OB/mine waste will be generated during life of mine.
- All the mineral transportation from mine head to the destination will be done by trucks. Trucks will be hired by the consumers from local transporters of Jabalpur.
- About 40 people will be engaged as direct employment including managerial staff.

DESCRIPTION OF THE ENVIRONMENT

Meteorology (Summer - 2008)

Sl. No.	Parameters	Data
1	Maximum temperature (⁰ C)	43.2
2	Minimum temperature (⁰ C)	16.0
3	Maximum Relative Humidity (%)	91.0
4	Minimum Relative Humidity (%)	3.0
5	Total Rainfall (mm)	Nil
6	Predominant wind direction	From West

Ambient Air Quality

The ambient air quality with respect to the study zone of 10 km radius around mine area forms the baseline information. The summary of Ambient Air Quality test results are given below.

Summary of ambient air quality (98th percentile values, Units: µg/m3)

Name of sampling location	SPM	RPM	SO2	NOX
Mine Lease Area	153	47	9.5	13.6
Pratappur	133	40	8.1	11.5
Tighra	149	46	9.2	13.2
Dhangawan	134	41	8.2	11.6
Selwara	137	42	8.4	11.0
*NAAQ Standard for industrial area Annual Average / 24 Hrs	360/500	120/150	80/120	80/120
**NAAQ Standard for residential area Annual Average / 24 Hrs	140/200	60/100	60/80	60/80

Noise Level

A survey was at 5 locations i.e. one locations in mine lease area and four locations in buffer zone. Summary of noise level data of different locations are given below.

Noise Levels during Study Period [Units:dB(A)]

Locations	N-1	N-2	N-3	N-4	N-5
L _{min}	52.9	52.4	51.7	51.9	51.4
L _{Max}	70.5	71.0	66.8	67.3	67.0
L _d	64.6	64.9	62.7	63.4	63.0
Standard	75	75	55	55	55
L _n	54.0	54.2	52.8	54.0	54.2
Standard	70	70	45	45	45
L _{min}	Minimum Noise Level Recorded				
L _{Max}	Maximum Noise Level Recorded				
L _d	Day Equivalentents				
L _n	Night Equivalentents				

The ambient noise level in and around the existing mine area is well within the statutory limits.

WATER ENVIRONMENT

Water Resources

Surface Water

There is a pratappur reservoir, surface water source within ML area, it is a tributary of hagni river. Pratappur reservoir as perennial water bodies of the study area towards NE direction and about 2 km away from the mine lease area. Other one is Marai reservoir situated in SW direction towards mine lease area. .

Ground Water

The study area essentially comprises of Soft iron ore at shallow depth and hard iron ore comparatively at lower depth. In the study area ground water is available both under confined and un-confined conditions. The ground water table in the lease area varies from 379m RL to 382m RL. Mining will be done 3m below ground level

Water Quality

Two surface water and five ground water samples were collected and tested to know the water quality of study area. Summary of the water quality test results are given below.

Summary of Water Quality Test Results

S. No.	Parameter	Unit	Surface Water	Ground Water	Desirable limits as per IS: 10500
1	pH	-	7.21 -7.84	7.1 -7.9	6.5 – 8.5
2	Total Dissolved Solids	mg/l	119 -50	205 -293	500
3	Total Hardness as CaCO ₃	mg/l	45 -57	89 -109	300
4	Chloride as Cl	mg/l	32 -40	55 -78	250
5	Fluoride as F	mg/l	0.10 -0.30	0.15 -0.55	1.0
6	Turbidity	NTU	49 -58	6 -17	5

Physio-chemical characteristic of the samples analyzed were well within the desirable limits

LAND ENVIRONMENT

Land Use

The entire lease area 11.578 ha. is under possession of Mr. Anand (The Lessee). Land use of mining lease area and study area are given below.

Present Land use of ML area

Sr. No	Particulars	Present
1.	Area excavated	4.55
2.	Overburden dump	2.00
3.	Mineral Storage	0.25
4.	Roads	0.10
5.	Green Belt/Plantation	0.01
6.	Others	
	Site Services	0.05
	Water Reservoir	-
7.	Undisturbed Area	4.618
	Total lease area	11.578

Land use in the Study area

Land use	Percentage (%)
Forest land	16
Irrigated land	16
Un irrigated land	40
Culturable waste land	20
Area N/A for cultivation	7
Total	100

Soil Quality

Soil samples were collected from five locations from the core and buffer zone to evaluate the soil quality in the study area. All the samples are showing moderately fertile nature.

BIOLOGICAL ENVIRONMENT

Floral

The area has mixed forest, mostly spread over the Kaimur plateau. Teak and Bamboo can be seen in this plateau. The observed flora of the study area is typically Dry Deciduous type. Saja, Dhao, Salai, Tendu and Khair are the common trees present in the study area. The

forest density of the study area ranges between 0.3 and 0.4. It is observed that diversity of vegetation in the study area is not very high due to intense biotic pressure.

Fauna

Faunal population did not show any special feature. Concentration of animals is sparse. Avi-faunal population was also not rich in the forest areas. There is no Schedule I animal in the ML area. Predominant wild life mammals of the study area include wild goat, rabbit, jackal, fox, etc. Several types of avi-fauna are found in the forests on the hill slopes, including egret, pigeon, dove, cuckoo, koel, owl, woodpecker, sparrow, mayna, etc.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact on Ambient Air Quality & Mitigation

The proposed expansion activity will lead to marginal increase in SPM concentration. Based on ISC-AERMOD model the maximum predicted concentrations of SPM during pick operation of mining will be <172µg/m³ within ML area and <150 µg/m³ within study area.

Impact on Noise Level & Mitigation

.The anticipated noise level of working area is <35 dB (A), which is less than the prescribed limits for industrial area. No additional noise can be anticipated due to drilling activity at nearest habitat (about 60 m from ML boundary) of Pratappur village.

Control Measure of Water Pollution

- Total water requirement is 40 m³/day
- There is no waste water generation from the mine, hence contamination of surface and ground water quality is not possible.
- The ground water table in the lease area varies from 379m RL to 382m RL. Mining will be done 3m below ground level.
- Excavated pit will work as water harvesting pit

Water Conservation Measure

To conserve the water following measures are adopted :

- The excavated pit will be available for rain water infiltration
- Water sprinkler will be used for dust suppression

Impact on Land & Mitigation

Land use of the ML area

Sl. No.	Particulars	Land Use (in ha.)		
		Present	During Plan Period	Post Mining Land Use
1.	Area excavated	4.55	5.30	-
2.	Overburden dump	2.00	2.10	-
3.	Mineral Storage	0.25	0.25	-
4.	Roads	0.10	0.10	0.10
5.	Green Belt/Plantation	0.01	0.06	6.278
6.	Others			
	Site Services	0.05	0.05	0.05
	Water Reservoir	-	-	5.15
7.	Undisturbed Area	4.618	3.718	-
	Total lease area	11.578	11.578	11.578

Proposed Mitigation Measures on Flora & Fauna

The area is thinly vegetated and with no thick vegetation on the plateau top. Sparse growth of vegetation can be seen on the Kaymur plateau area. No wildlife are found in this area. The mining activity of the proposed project does not change the community structure of the vegetation.

Proposed Mitigation Measures on Socio-Economy

This project provides the local populace with employment and business entrepreneurial opportunity. Unskilled manual labour will be employed from the local community and they also will have a big opportunity to enter into transport business. The local skilled labour will have additional opportunity to enter into automobile maintenance profession to cater to the needs of the transport trucks.

ENVIRONMENTAL MONITORING PROGRAMME

Routine monitoring of all the environmental parameters viz. air, water, noise and soil as per the formulated program based on CPCB and MOEF guidelines every year in order to detect any changes from the baseline status. Monitoring program will be followed till the mining

operations continue. For implementation of Environment Management Plan a small unit will be formed under the control of the Mines Manager. The job of this unit will be regular environmental monitoring, preparation and submission of environmental report, green belt development, etc.

The budget for environmental protection has been formulated and given as below.

.Budget for Environmental Protection

Particulars	Capital Cost (Rs.)	Recurring Cost (Rs.)
Pollution Control		
Dust suppression	20,00,000	1,00,000
Gully plugs (5 Nos), 2 Check Dam, 1 Retaining Wall, etc	7,00,000	2,00,000
Pollution Monitoring		2,00,000
Occupational Health		
For routine checkup		4,00,000
Medical aid as per ESI Scheme		1,00,000
Training		1,00,000
Infrastruchure & PPE/ Accident & injury	5,00,000	2,00,000
Green belt/ Plantation		1,00,000
Others (Environmental study, Social Development Plan, etc.)	17,00,000	11,00,000
Total	44,00,000	25,00,000

CONCLUSION

Based on the EIA study it is observed that there will be an increase in the dust pollution, which will be controlled by sprinkling of water and transportation of ore in closed trucks. There will be an insignificant impact on ambient environment and ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area. Monitoring program will be followed till the mining operations continue. Around Rs.44.0 lakhs and Rs 25.0 lakhs as capital and recurring budget for environmental protection have been formulated to achieve the environmental quality as desired. Hence, it can be summarized that the development of the mine will have a positive impact on the socio-economic of the area and lead to sustainable development of the region.

