EXECUTIVE SUMMARY

OF

ENVIRONMENT IMPACT ASSESSMENT

(As Per EIA Notification No. S.O. 1533(E) dated 14th September 2006

FOR

PARSEONI MANGANESE ORE BLOCK

Village – Parseoni & Pallora, Taluka - Parseoni
District – Nagpur, State - Maharashtra
ProposedProposed Lease Area 44 Ha,
Production Capacity – 29,737 Tonnes / Annum

Submission for

Public Hearing

to

Maharashtra Pollution Control Board

PROJECT PROPONENT

M/s UNIVERSAL IMPEX

15, Professor Colony, New Yerkheda,
Kalmana Road, Kamptee,
Dist: Nagpur, Maharashtra – 441 002

EIA Consultant

SRUSHTI SEVA PRIVATE LIMITED

NABET Accredited
EIA Consultant Organization
Certificate No. NABET/EIA/2124/RA 0254

FEBRUARY 2024

SUMMARY OF DRAFT EIA/EMP

1.0 INTRODUCTION:

The Directorate of Geology and Mining (DGM), Government of Maharashtra, pursuant to the Mines and Minerals (Development and Regulation) Act, 1957 and the Mineral (Auction) Rules, 2015 had issued the notice dated Feb. 01, 2019 inviting tender to commence the auction process for grant of mining lease for Parseoni Block for Manganese located in Nagpur District of Maharashtra.

The e-auction process was conducted in accordance with the tender document for the said mineral block and M/s Universal Impex was declared as the 'Preferred Bidder' under Rule 9(9)(iii) of the Auction Rules.

Accordingly, Government of Maharashtra issued the Letter of Intent (LOI) vide Letter No. MMN-0719/C.R.42(Part-5)/IND-9 dated 13-09-2019 for grant of Mining Lease for Parseoni Manganese Ore Block of 44 Ha.

The LOI is valid for a period of 3 Years from the date of issue within which time all approval/permits required for opening the mine including execution of Lease Deed needs to be done. Subsequently, the Government of Maharashtra vide its Letter No MNG-1122/C.R.220/IND-9(A) dated 07.12.2023 extended the validity of the LOI for further period up to 12.09.2024.

An application for obtaining Environmental Clearance was made to State Expert Appraisal Committee (SEAC), Maharashtra in accordance with the Notification of MoEF&CC S.O. 1533 dated 14.09.2006 on 25-02-2020. Accordingly, the project proposal was initially appraised during 192-B meeting by SEAC-1 held on 23.12.2020. Subsequently it was again appraised by SEAC-1 in its 230th meeting held on 27th to 28th October 2022 and in the 255th meeting of the State Environmental Impact Assessment Authority (SEIAA) held on 14th December 2022, wherein the proposal was recommended for grant of Terms of Reference (TOR). The TOR were prescribed for undertaking EIA study vide TOR letter no. SIA/MH/MIN/51515/2020.

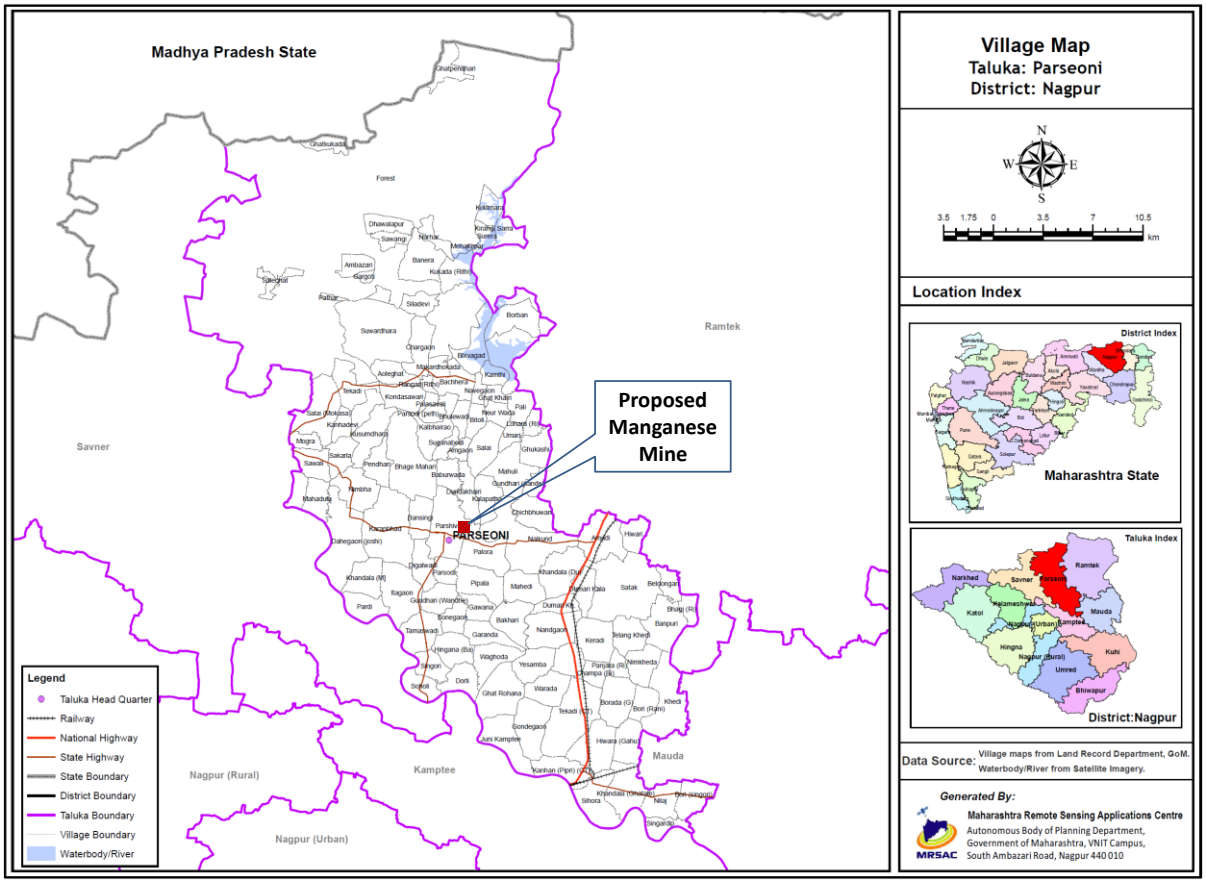
The Mining Plan for the proposed project has been approved by IBM vide Letter No. NGP/MH/MPLH-1182/NGP-2019/356, dated 16.06.2020. The Project envisages mining of Manganese Ore @ 29,737 Tonnes of Manganese Ore at Peak Production Level. The life of mine will be 7 years. The envisaged Project Capital Cost is Rs. 5.54 Crores.

This Draft EIA/EMP Report has been prepared in accordance with the ToR issued by MoEF&CC and is being submitted to Maharashtra Pollution Control Board for conduct of Public Hearing, as per the provisions of EIA Notification 2006 and amendments thereof.

2.0 PROJECT DETAILS:

The Parseoni Manganese Block is located in Village Parseoni & Pallora, Taluka – Parseoni, District – Nagpur of Maharashtra State. The Mine forms a part of Survey of India Toposheet No. 55 0/3 bounded between the coordinate: Latitudes (N): 210 22' 12.94" to 210 22' 40.86", Latitude (E): 790 09' 36.32" to 790 10' 13.94".

Accessibility: The Manganese Block is well connected. The area in Parseoni Taluka of Nagpur District is about 49 Kms from Nagpur. It is approachable by National Highway No. 7 up to Amri (37 Kms) from where a 12 Km Cement Concrete Road leads to Parseoni. From this road right turn leads a public road to Pench Project at Kamthikhari which passes through the proposed lease area near to BP-40 & BP-7. The nearest Railway station is Dumri Khurd at distance 17 Kms by road on the Nagpur – Ramtek Branch of South Central Eastern Railways. Nagpur Airport is the nearest airport situated at about distance 55 Kms by road from the lease area.



A total of 44 hectares of land is required for the project, of which 29.13 hectares is private land and 14.87 hectares is government revenue land. The private land required for the project will be in Parshivani and Pallora villages. Private land will be acquired through direct negotiation with the respective land owners. The compensation for this private land shall be in accordance with the relevant provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and its amendments and provisions applicable to the State of Maharashtra under Act No. 37 Dated 26/04/2018.

There is no human settlement within the proposed mining lease area and hence the Project does not involve shifting of villages located within the Project Area.

3.0 MINING DETAILS:

Mining Method: The mining will be carried out by conventional mechanized opencast mining methodology using drilling & blasting, excavators and tippers. The mining will be by A category mechanized operation commencing operation at Mn ore body 3 on surface exposing the ore body and subsequently descending downward forming systematic benches of six meter high and width not less than the height i.e. six meter and slope of individual bench to 600 from horizontal as shown in Development and Production Plates 6.1 to 6.5. Besides, Ore body 2 A1,A2, A5 will also be mined. The width of the working bench shall not be less than three times the maximum width of dumper plying on haul road.

OB/Waste generation will be in the form of 276 m^3 of Top Soil, 10,525 m^3 Soil Overburden and 77126 m^3 of Rock Overburden during five year period.

4.0 BASE LINE ENVIRONMENTAL STATUS:

The Base Line Environmental quality data for various components of environment viz. Air, Noise, Water, Land and Socio-Economic were generated during March to May 2023 in the Study Area covering 10 Kms around the Parseoni Manganese Ore Block. Other environmental data on Flora and Fauna, Land Use Pattern, Forest etc were also generated through field surveys and also collected from different State Government Departments.

Air Quality Monitoring was carried out at 7 Stations consisting 1 Sampling Stations within the Core Zone (Project Area) and 6 Sampling Stations in Buffer Zone (10 Kms around Core Zone). Parameters of twelve air pollutants viz. PM_{10}, $PM_{2.5}$, Sulphur Dioxide (SO_2), Oxides of Nitrogen (NO_X), Ozone (O_3), Carbon Monoxide (CO) and Heavy Metals were monitored. These parameters were included for representing baseline status of ambient air quality within the Study Area.

Results & Discussion:

On the basis of observations the parameter wise result of monitored parameters are discussed below compared with National Ambient Air Quality Standards.

- Particulate Matter (PM_{10}): The 24 hourly concentrations of PM_{10} were observed from 44.1 to 74.7 µg/m^3 which were lower than the NAAQ permissible limit of 100 µg/m^3.

- Particulate Matter ($PM_{2.5}$): The 24 hourly concentration of $PM_{2.5}$ were recorded as 20.2 to 37.4 µg/m^3 which were lower than the NAAQ permissible level of 60 µg/m^3.

- SO_2: The 24 hourly concentration of SO_2 during the study period varied from 9.2 to 22.0 µg/m^3 as against the permissible limit of 80 µg/m^3.

- NO_x: The 24 hourly concentration of NO_x were found to vary from 13.1 to 23.5 µg/m^3 and were lower than the permissible limit of 80 µg/m^3.

Noise: Baseline noise levels were measured at seven (07) locations during day time and night time and varied from 38.5 to 53.5 Leq dB (A) were well within the prescribed limits for residential area.

Water: In all 3 surface and 4 ground water sampling stations were selected in the study area and samples were collected and analysed for relevant water quality parameters. The results of analysis are in brief, are presented below.

- The pH values of all ground water samples ranged between 7.4 to 7.7 pH, whereas those of surface water samples varied between 7.6 to 8.1. These values are within the acceptable pH range of 6.5 to 8.5 as per IS 10500:2012 standards for drinking water.
- All surface water samples showed dissolved oxygen levels ranging from 5.4 to 6.2 mg/l which were in normal range for any surface water body.
- All ground water samples showed dissolved solids concentration from 368 to 472 mg/l, which are below permissible limit of 2000 mg/l as per IS 10500:2012. Whereas all surface water samples showed dissolved solids ranging from 372 to 486 mg/l which are below permissible limit of 1500 mg/l as Per IS 2296 (Class C) for surface water quality standards.
- The chloride concentrations in all ground water samples were 114 to 182 mg/l, the values are below acceptable limit of 250 mg/l as prescribed in IS 10500:2012. Chloride concentrations were 72.5 to 102.4 mg/l in surface water which are below permissible limit of 600 mg/l as Per IS 2296 (Class C) for surface water quality standards.
- The sulphate concentrations in all ground water samples were 34.2 to 62.5 mg/l, these values are below acceptable limit of 200 mg/l as prescribed in IS 10500:2012. In surface water samples sulphate concentrations were 32.6 to 42.8 mg/l which are below permissible limit of 400 mg/l as Per IS 2296 (Class C) for surface water quality standards
- All ground water samples showed hardness as 148 to 174, mg/l whereas all surface water samples showed hardness from 144 to 178 mg/l which were below the permissible limit of 600 mg/l as prescribed in IS 10500:2012. As can be seen, all water quality parameters were within the permissible limits.

Soil: Soil samples were collected at 3 selected locations in the study area to assess the existing soil conditions around the mine. In general all soils have moderate fertility are suitable for cultivation of arable crops.

Biological Environment: The core and buffer zones included the village settlements, cultivated fields, forest areas as well as wasteland. A detailed inventory of floral and faunal assemblage of the core and buffer zone was carried out and the details of flora and fauna are provided in EIA/EMP. National Park, Wildlife sanctuary, defence installation or sensitive area are not located within 10 km radius of the mine.

Social Environment: Primary Socio economic survey on selected villages has been carried out and the details are provided in EIA/EMP. As per census 2011 demographic characteristics of the study area are represented by a number of criteria, namely population

composition, sex ratio, family structure, and age distribution pattern. Attempt has been made to compare the demographic features between the census data whenever corresponding data are available. The area selected for the study constitutes 56 inhabited villages.

The population is distributed among 15,655 households in the study area. The 56 inhabited villages have a population of 71580 comprising of 36770 males and 34810 females. As may be observed from the graph the composition of the society as far as males and their counterpart's female are concerned indicates healthy distribution.

Drainage: The Parseoni Mn Block is located close to the Parseoni Water Reservoir which is located at a distance of about 100m from the north-west corner of the Lease Area. Further, the Pench River flows from a distance of about 110m from the eastern boundary of the Lease Area. Another Water Reservoir viz. Bhagimahari is located at a distance of about 5.50 Kms in north-west direction from the Lease Area. The Kanhan River flows at a distance of about 8.35 Kms in west direction from the Lease Area.

5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on Climate:** The proposed Project is not expected to have any major irreversible impact on the climatological features like temperature, rainfall, wind speed, humidity etc.

- **Impact on Drainage:** Due to mining activities proposed on the plateau top, where rainwater is not being logged now will be prone to water logging. The run off rate will also reduce due to formation of temporary pit at the top. This will change the hydrological condition of the area especially the surface water flow following the natural drainage lines along the slopes.

- **Impact on Land Use:** The proposed opencast manganese ore will result in change of the land use pattern of the Mining Lease Area. The land degradation is expected during mining activities of excavation, overburden dumps, mineral Storage etc.

- **Impact on Soil:** Soil erosion may also get accelerated on areas where the overburden will be dumped. As there is neither a toxic effluent nor solid waste from the mines, quality of soil is not expected to be adversely affected. Impact on soil will be localized i.e. around the mine site.

- **Impact on Air Quality due to Mining:** In order to estimate the ground level concentrations, due to the emission from the proposed increase in production, EPA approved Industrial Source Complex AERMOD View Model has been employed. Predicted 24 hourly Ground Level Incremental Concentrations of PM_{10}& $PM_{2.5}$ are estimated to be 2.83 $\mu g/m^3$ and 1.96 $\mu g/m^3$ respectively. This prediction is based on various mining operations and site specific meteorological data in worst scenario.

- **Impact on Air Quality due to Transportation:** The maximum ground level concentration due to proposed transport is estimated negligible.

- **Impact on Noise Quality:** From the Noise Modelling results, it is observed that the maximum resultant noise levels near the mine lease boundary will be about 60 dB(A). The noise levels

will be further reduced and the predicted resultant noise levels at the nearest village habitation i.e. Palora village will be below 52 dB(A).

- **Impact due to Ground Vibrations & Fly Rocks:** The proposed maximum charge per blast will result in ground vibrations well below the minimum Peak Particle Velocity limit of 5 mm/s for domestic houses located in Palora village. The protective measures need to be adopted while blasting on the top benches near boundary of the mine lease area. Apart from this, additional control measures needs to be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

- **Impact on Water Regime:** The mine operation will be above water table as such there is no shallow aquifer exists in the core zone. Accordingly there will not be any adverse impact on ground water. It is expected that suspended particle in surface water during rainy season may increase. The suspended solids generated during the mining operations pose major problem for contamination of surface water.

- **Impact on Flora & Fauna:** Due to mining and associated activities, fugitive dust in the atmosphere may deposit on different parts of the plants in the surrounding area leading to the destruction of flora. During operation phase, various vehicle/ machinery movement and blasting activities would create excessive noise that may force the movement of animals from nearby forest patches. There is no Wildlife Sanctuary or National Park in 10 Km radius of the Mine. There is no reported migratory path of wildlife or bird species of threatened or protected species. The transport route of the mineral also lies away from these areas.

- **Impact on Socio-Economic Aspects:** The project is likely to create positive impacts due to creation of employment opportunities both direct and indirect. Generation of employment opportunities is important as the project region is devoid of any industrial activities and agriculture is the only main source of income.

6.0 ENVIRONMENT MANGEMENT PLAN

6.1 Air Environment:

- Internal roads will be frequently sprinkled with water for which truck mounted water tankers with sprinkler arrangement have been provided.
- Ore will be covered by tarpaulins to prevent its spread during transportation.
- Regular maintenance of vehicles and machineries will be carried out in order to control emissions.
- Green belt will be developed at suitable places.
- Personal protective devices viz ear plug, sust narjs etc. will be provided to all the workers.
- Good housekeeping and proper maintenance will be practiced to control pollution.

6.2 Water Environment:

The Mining Project shall require continuous supply of water for various purposes during mining, plantation etc. apart from drinking water supply. The main source of water pollution in opencast mining project is the surface run-off due to rainfall. There may be accumulation

of rain water during monsoon season and the accumulated water may contain fine silt. This shall be treated in Settling Tank of adequate dimensions. The treated water (overflow) will be used for plantation and dust suppression.

The mine water pumped from the mine pit, shall be collected in a Settling Tank at surface and after treatment part of it shall be utilized for water spraying in the mine, plantation and the excess balance (if any) shall be discharged to natural water course.

There is no nallah, river or any other water body passing through or existing within or near the vicinity of the lease area which can cause inundation.

In order to restrict the surface runoff from mines to control the soil erosion and wash off from dumps following measures shall be adopted;

- Garland Drains shall be provided around the mine wherever required to arrest any soil from the mine area being carried away by the rain water;
- Loose material slopes shall be covered by plantation by making contour trenches at 2 m interval to check soil erosion both due to wind and rain;
- Retaining walls (concrete or local stone) shall be provided, around the dump or wherever required to support the benches or any loose material as well as to arrest sliding of loose debris.

6.3 Noise & Vibration

- Noise shall be best abated at source by choosing proper machinery/equipment and by providing noise insulating enclosures or padding where practicable.
- Proper maintenance of vehicles will be done to keep the noise level within limits.
- At the boundary of mining lease green belt by plantation of local trees species will be developed which will act as acoustic barrier. Planting of bushy trees of rich canopy in and around the mine area will be carried out to intercept noise transmission. A 7.5 m wide belt of trees of different heights will be useful to act as noise attenuator in the mining areas.
- Delay detonators millisecond delay interval will be used in order to keep vibrations minimum.

6.4 Waste Generation and Management:

OB/Waste generation will be in the form of 276 m^3 of Top Soil, 10,525 m^3 Soil Overburden and 77126 m^3 of Rock Overburden during five year period. For stacking, a separate dump will be created for which 19000 m^2 of area has been earmarked. The waste will be dumped in two layer of ten metre each. As per the exploration done by GSI, the land chosen is non-mineralised. Further, to avoid wash off from dump, it will be provided gabion wall at toe of the dump.

There will be generation of reject due to winning of Mn Ore which will be 9043 m^3 during five year period. Reject will constitute less than 10 mm in size and also which contain less than 10% Mn in ore. This will be stacked separately.

6.5 Top Soil Preservation:

There is a fertile top soil of about fifteen centimetre thick and below that there is two meter thick non fertile soil. Top soil will be scraped and stacked at its designated place. Non fertile soil will be removed separately by forming two meter high bench and stacked to its designated place. The overburden being hard, it will be drilled and blasted. The bench height in OB will be maintained six meter. The top soil wherever available, shall be scrapped separately and shall be used for spreading in Safety Zone Area of 7.5 m all along the leasehold boundary to facilitate plantation. Further, the requirement of water for dust suppression and plantation shall be met from the accumulated pit water.

6.6 Plantation:

Plantation will be carried out in the non-mineralized area on regular basis. It is proposed to select the local tree species with the help of forest department having 3 tier arrangements for plantation all along the mining lease in order to control dispersion of fugitive dust from the mining lease are. Around 2000 trees/ha will be planted till the end of life of mine at different locations i.e. safety zone, around the quarry edge, along the roads, office, workshop etc. At the conceptual stage, out of the total mining lease area (of 44 ha), the total under plantation would be 5.1544 ha, and area under pits would be 3.5509 ha. The pits will be used as water reservoir with prior permission from IBM.

The mitigation measures suggested above shall be implemented so as to mitigate/minimize the impact on environment due to operations of proposed mining activities. In order to facilitate easy implementation, mitigation measures are phased as per the priority implementation. A separate budget allocation is made for the environmental protection measures. The monitoring of the pollution to know the effectiveness of the applied control measures will be carried out at regular interval. A budgetary provision of Rs. 5 lakhs as annual recurring expenditure beside 52.0 lakhs capital expenditure is made in the management.

6.7 Land Acquisition and Compensation:

The acquisition of private land of these villages falling in the ML area shall be done. The compensation for the land shall be in accordance with the relevant provisions of the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 and amendments thereof and also as applicable to Maharashtra State under provision of Act No. 37, dated 26.04.2018.

6.8 Employment Potential:

About 42 persons (staff and workers) will be required initially for this mine. It is proposed to have a Mines Manager to supervise. He will be a qualified and experienced person who will be responsible for dealing with environmental issues also. Preference will be gives to local people meeting the eligibility criteria required for the job under consideration.

6.9 Corporate Social Responsibility (CSR)

Universal Impex proposes to undertake a number of activities under the Corporate Social Responsibility Initiative during the operation of Parseoni Manganese Mine Project. The capital CSR budget has been worked out as per the expressed felt needs of villagers during Rapid Rural Appraisal. The proposed total budget is to the extent Rs 40 lakhs and will be spent in nearby villages of study area, out of which Rs 15 lakhs under capital cost for CSR activities shall be spent in the first five years. About Rs 5 lakhs would be spent as recurring expenditure for CSR activities in the first five years.

6.10 Corporate Environment Responsibility (CER)

In addition to the CSR, company proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of mining project. A budgetary provision @1.5% of the Capital Cost, of Rs. 90 lakhs is proposed to be allocated and utilized for the implementation of issues raised during the Public Hearing.

7.0 PROJECT BENEFITS:

The primary benefits to the Government (State as well as Central) from any mining project are generation of additional revenues in terms of receipt of royalties and other statutory levies against the manganese mined. The secondary benefits to the Government are socio-political benefits in terms of enhanced economic activities and employment opportunities in the Project Area resulting into overall development of the area.

The Project shall have positive impacts in the Project Area and surrounding villages in terms of development of infrastructure facilities like roads and communication, transport, schools as well as basic amenities viz. drinking water, sanitation, hospitals, health care, and overall socio economic development.

The Company shall initiate necessary steps to create above facilities which will ultimately help in uplifting the living standards of local communities.

The direct requirement of manpower for Parseoni Manganese Mine has been assessed at 42 along with further generation of indirect manpower.

The Project shall offer creation of Secondary & Tertiary Business Opportunities for the local people in the form of Service Industry resulting in development of ancillary & allied services like Security, Canteen & Mess, Transport, Civil Repair & Maintenance, HEMM Repair and Maintenance etc.

APPEAL

In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment and Forests (MoEF). The suggestions/recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the local residents, community based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed mining of Parseoni Manganese Ore Block. M/s. Universal Impex is committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.