

M/S. D. R. PATNAIK

Mines Owner

(A UNIT OF D.R. PATNAIK & ALTRADE GROUP)

Ref: MIOM/DRP/EC/COMP/2021-22/ 77-A

Date: 15.11.2021

The Member Secretary,

State Environment Impact Assessment Authority
Ministry of Environment, Forests & Climate Change,
Government of India,
Qr. No-5RF-2/1, Unit-IX
Bhubaneswar -751 022.
E Mail: seiaaorissa@gmail.com

Sub: Half-yearly Environmental Clearance Compliance Report of of Murgabeda Iron Ore Mining Project of Sri D.R. Patnaik for the period April-2021 to September-2021.

Ref: 1. SEIAA Clearance letter no. SEIAA/342, dt. 04.09.2010 & No. 3554/ SEIAA, dt:04.07.2015
2. MoEF&CC notification no. 4624 (Published in Gazette of India) dt. 26.11.2018
3. Additional Environmental Clearance condition of mining projects vides. OM of MoEF&CC, F.No. 22-34/2018-IA.III dated: 16.01.2020

Dear Sir,

With reference to the above-cited subject and gazette notification, we are herewith sending the six-monthly compliance report in soft copy by Email i.e. roez.bsr-mef@nic.in & seiaaorissa@gmail.com, and also uploading the same in our company website i.e. www.miom-drp.in with comprehensive data analysis reports (supporting photographs and monitoring reports) for the period **April to September 2021 in respect of Murgabeda Iron Ore Mines of Sri. D.R Patnaik.**

This for your kind information, please.

Yours sincerely,

**For Murgabeda Iron Ore Mine,
Sri. D.R. Patnaik**

Mines Manager

Encl. : As above


**Mines Manager
Murgabeda Iron Ore Mines
Ms. D. R. Patnaik**

M/S. D. R. PATNAIK

Mines Owner

(A UNIT OF D.R. PATNAIK & ALTRAD GROUP)

Copy to:

1. The Director (S), Integrated Regional Office (IRO), Ministry of Environment, Forest & Climate Change, A-31, Chandrasekharpur, Bhubaneswar, Email - roez.bsr-mef@nic.in
2. The Chairman, State Pollution Control Board, Orissa, A/118, Nilakantha Nagar, Unit - VIII, Bhubaneswar - 751012, Email - paribesh1@ospcboard.org
3. The Regional Director, Central Ground Water Board, Government of India, South Eastern Region, Bhubaneswar - 751030, Email: rdser-cgwb@nic.in

ref: 1. SBAA Clearance letter no. SBAA/342, dt 08.07.2018 & No. 3394/2018 dt 04.07.2018

2. MoEFCC notification no. 4624 (published in Gazette of India dt. 26.11.2018)

3. Additional Environmental Clearance condition of mining projects (Act. 93 of MoEFCC, dt. 27.11.2018) II dt. 01.11.2020

Dear Sir,

With reference to the above cited subject and gazette notification, we are herewith sending the six-monthly compliance report in soft copy by Email to roez.bsr-mef@nic.in and uploading the same to our company website i.e. www.mrtdr.com with comprehensive data analysis reports (supporting photographs and monitoring reports) for the period April to September 2021 in respect of Air Pollution for Ore Mines of St. D.R. Patnaik.

Yours faithfully,
D.R. Patnaik

Yours sincerely,
For Megabada Iron Ore Mine,
St. D.R. Patnaik

Mines Manager

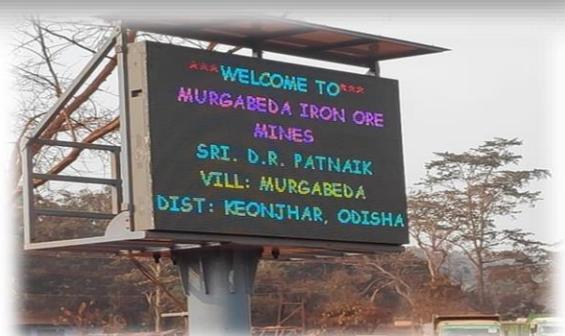
Mines Manager

Encl. - As per Megabada Iron Ore Mines
St. D.R. Patnaik

Six Monthly EC Compliance Report

Period: April-2021 to September-2021

Environment Clearance letter No.: SEIAA clearance letter No.: SEIAA/342, dated. 04.09.2010 & NO.: 3554/ SEIAA, dated. 04.07.2015



**Murgabeda Iron Ore Mines,
Sri. D.R Patnaik**

www.miom-drp.in

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

SI.No.	SPECIFIC CONDITIONS	PRESENT STATUS
1	The applicant (Project Proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, water pollution, noise pollution and land pollution including solid waste management as mentioned by him in form-I, final EIA reports and Environment management Plan (EMP) in compliance with prescribed statutory norms and standards.	<p>The project proponent has taken up adequate preventive measures for prevention and control of different environmental parameters;</p> <p>a. Air pollution Measures: Regular water sprinkling by engaging mobile water tankers, truck wheel wash system, dry fog system in mineral handling plants & plantation,</p> <p>b. Water pollution Measures: Provided settling pond, check dam with garland drains during the monsoon season, preventive and scheduled maintenance of the HEMM are being carried out at regular intervals to avoid/ mitigate any noise induced pollution, de-silting of the surface run off management structures is carried</p> <p>c. Dump Management: At present the solid waste generated i.e. OB/Wastes is very fewer and the generated amount is being utilized for internal road making and its maintenance.</p> <p>d. Environmental Monitoring: Apart from that regular environmental monitoring of different parameters are being carried out as per the MOEF&CC & SPCB guidelines for Air, Water, Noise etc. The photo of the same is enclosed as photo-1,2,3,4&5.</p>
2	The applicant will take necessary steps for socio economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities. After a detailed primary Socio-Economic survey in core zone and buffer.	The project has carried a need based assessment by engaging a consultant i.e. JANASADHANA. Based on the findings different projects has undertaken in consultation with “JANASADHANA” for the socio-economic development of the local people belongs to adjoining villages. A detailed implementation status report of the same is given in Annexure # 1.
3	The applicant will comply with the points, concerns and issues raised	We have full-filled the commitment regarding the demands raised during the

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

	by the people during public hearing on 29 th June, 2009 in accordance with the commitments made by him thereon.	public hearing and compliance are made as per the commitments. All the public hearing issues has been complied as per the commitment in phased manner like development of peripheral activities i.e. Development/renovation of the Murga Mahadev temple, guard wall all along Nallah, established environment cell, education, drinking water, road, street light, livelihood etc.						
4	The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.	Necessary statutory clearances/ approval/ permissions from the concerned authorities have been obtained such as: Consent to Operate from SPCB (Copy attached as Annexure # 02), approved mining plan from IBM(Copy attached as Annexure # 03), Forest clearance from MoEF&CC (Copy attached as Annexure # 04), etc. Wildlife Conservation Plan (Copy attached as Annexure # 05), Ground Water NOC from CGWA (Copy attached as Annexure#06)						
5	For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1 st June and 1 st December of each calendar year.	The Half yearly compliance report is being submitted herewith as per the stipulated time period. Earlier submitted details are attached as Annexure # 7 .						
6	The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be cleared indicated	Regular monitoring of AAQ in the core as well as buffer zone of the ML area being done as per the NAAQ's notification. The monitoring locations are established as per SPCB's direction are enclosed as Annexure # 8 .The project is also adopting specified methodology for analysis of the AAQ parameters.						
		<table border="1"> <thead> <tr> <th>Sl.No.</th> <th>Pollutant</th> <th>Method</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SO₂</td> <td>Ultraviolet</td> </tr> </tbody> </table>	Sl.No.	Pollutant	Method	1	SO ₂	Ultraviolet
Sl.No.	Pollutant	Method						
1	SO ₂	Ultraviolet						

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

				Fluorescence
		2	NO ₂	Chemiluminescence
		3	SPM(PM ₁₀)	Gravimetric
		4	SPM(PM _{2.5})	Gravimetric
		5	CO	CO monitor
7	The proponent shall submit ground tooting baseline data on flora & fauna and CSR activities already carried out within three months to the SEIAA.	<p>The site specific Wild Life Conservation Plan has been approved by PCCF (Wildlife), Chief Wildlife Warden, Odisha. The project has estimated cost of Rs. 38.70 Lakhs which includes cost for both buffer zone i.e. Rs. 25.40 Lakhs and core zone i.e. Rs. 13.30 Lakhs for the conservation and management of wildlife. The copy of the same is attached as Annexure # 5.</p> <p>For CSR activities; the project has carried a need based assessment by engaging a consultant i.e. JANASADHANA. Based on the findings different projects has undertaken in consultation with “JANASADHANA” for the socio-economic development of the local people belongs to adjoining villages. A detailed implementation status report of the same is given in Annexure # 1.</p>		
8	Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.	<p>There is only one mines pit located in the mines area and the project has maintained the 7.5 m width of safety zone around the ML area and following as per the approved mining plan/scheme duly approved by the Indian Bureau of Mines (IBM), Gol.</p>		
9	Zero waste mining concept shall be implemented either by putting up palletization plant or disposal of low grade ores/fines to prospective buyers.	<p>Due to the incorporation of better & efficient machineries and latest technologies, it is ensured that zero wastes will be coming out due to the mining activity. Steps have been initiated to work out in this context.</p>		
10	The following shall be implemented viz. (a) dump run off should be diverted into setting ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone,	<p>a. Mines run off are being diverted to settling pits with proper checks before disposal to natural water bodies.</p> <p>b. The project has implemented the roof top rain water harvesting structures and settling pits cum harvesting</p>		

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	(c) attempt should be made to achieve zero water balance.	<p>structures in the mines areas towards recharge of the ground water.</p> <p>c. Steps have been taken to achieve zero water balance like implementation STP for treatment of domestic effluent and reuse of the treated water for mines dust suppression and nearby gardening purposes.</p> <p>The photo of the same is enclosed as Photo 6 &7.</p>
11	Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.	The project has black topped the transportation approach village roads along with the other projects and regular maintenance of the main approach road along with the mines haul roads are being carried out. Photo no. - 8.
12	Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA. Orissa.	We have engaged mobile water tanker for sprinkling purpose to avoid fugitive dust generation. Monitoring of AAQ was carried out in different locations of nearest human habitation in consultation with SPCB. The monitoring report is being submitted to the authorities on regular basis.
13	Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore /dust takes place.	The project has taken steps towards public roads to ensure that the trucks should not be overloaded during transportation; besides these trucks plying outside the mine is ensured to be covered with tarpaulins while transportation of the iron ore. Photo of the same is attached as Photo no. 09.
14	Rain water harvesting shall be undertaken to recharge the ground water source.	In this regard roof top rain water harvesting structures has been implemented towards augmentation of ground water in the camp area. The photo of the same is enclosed above as above photo no. – 06.
15	Monitoring of ground and surface	Monitoring of the ground water quality at

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	<p>water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to SEIAA, Orissa.</p>	<p>4locations namely, Bileipada village, Mahadev Nasa village, Deojhar village, & Village Daldir as well as monitoring of the surface water quality at 5 locations i.e. Baitarini River, SunaNadi Up-stream, SunaNadi Down-stream, MahadevNallah U/S &MahadevNallah D/S being carried out. The records were maintained and being submitted to the authorities on regular basis.The test results found to be very well within the prescribed norms of the regulatory authorities. The tests are being carried by engaging NABL accredited laboratory i.e. BS Envitech Laboratory, Hyderabad.</p>
16	<p>The proponent shall ensure that no silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.</p>	<p>The project has provided necessary precautionary measures like siltation pit towards protection of silt carry over into the nearby surface water bodies followed by retaining walls and garland drains at the toe of the dumps. Apart from that interference like guard wall all across the bank of the Nallah, a length of 380mtr and check weirs at the strategic locations are provided. The above measures have been taken up to reduce flow of sediments to the 1st order and 2ndorder streams and also other water bodies present in the buffer area. The photo regarding the same have been enclosed as photo – 04.</p>
17	<p>Trenches / garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams shall be constructed across seasonal or perennial Nallahs (if any) flowing through the ML area be arrested. De-silting at regular intervals shall be carried out.</p>	<p>We ensure that there should not be any silt materials mixed in nearby Nallah and all. To arrest silt from mines run off, a no. of catch drains and settling cum percolation pits have been constructed around the mines working areas. Nallah protection guard walls have also been constructed across the length of the Nallah. Time to time de-silting is followed before each monsoon. The photo of the same is attached as photo 04.</p>
18	<p>Provisions shall be made for the housing the labors within the site with all necessary infrastructure</p>	<p>There is no such construction activity inside the project area. The laborers are being engaged from the adjoining villages.</p>

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	<p>and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.</p>	<p>However, we have provided a base camp near to mines with provisions of STP for treatment of domestic effluents & other facilities and the treated water is being utilized for adjoining plantation & gardening purposes.</p>
<p>19</p>	<p>Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health effects on exposure to mineral dust etc. shall be carried out. The proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness program for workers on impact of mining on their health and precautionary measures like use of personal equipment's etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health center shall be established near the mine site itself.</p>	<p>Initial Medical Examination & Periodical Medical Examination of the workers engaged in the project is being undertaken periodically for permanent and outsider employees along with the pre-medical examination of persons employed, who are engaged in the process of mining & are likely exposed to dust to observe any contractions due to exposure to dust. This is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments there to. The various tests include PFT, X-Ray, and lung spirometry etc.</p> <p>Workers are provided with protective respiratory devices & time to time training on safety & health aspects is being provided.</p> <p>During the reporting period 17 Nos. of IME and 34 Nos. of PME (client and contractor) has been carried out.</p> <p>The detailed list along with a sample copy of IME/PME is attached as Annexure#09.</p>

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20	<p>Shelter belt that is wind break of 15 m width and consisting of at least five tiers around the lease facing the human habitation, school/agricultural fields etc. (if any in the vicinity) in the safety zone/backfilled and reclaimed areas, around voids and roads shall be raised. Green belt development and selection of plant species shall be as per CPCB guidelines. Density of the trees has to be around 2500 plants per hectare, herbs and shrubs shall also form a part of afforestation program besides tree plantation. Help and guidance of local DFO may be sought in the matter. Details of year wise afforestation program including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.</p>	<p>There is no such human habitation/schools etc. within the ML area. However, the safety zone of 7.5 m width around the ML boundary is being maintained and outside the ML area under CSR activity being planted. In the reporting period i.e. April-21 to Sept-21 the project has planted 450 nos. of saplings of native species inside the ML area (Safety Zone), cumulatively 20,730 numbers of saplings in and around the ML area has been planted till date in safety zone, & peripheral area of ML. Photo of the same is attached as photo no. 10.</p>
21	<p>This environmental clearance is subjected to forest clearance under the Forest (Conservation) Act, 1980.</p>	<p>The lessee has obtained forest clearance over an area of 13.904 ha forest land including 1.214 Ha of safety zone for mining & its allied activities under Forest Conservation Act 1980. Copy of the same is enclosed as Annexure # 4.</p>
22	<p>The mining operation shall be restricted to above ground water table and it should not intersect the groundwater table.</p>	<p>As such mining activity does not intersect ground water table of the area. The Ultimate working depth is 530 AMSL which is far above the ground water level and ground water level exists 510 A MSL. Therefore, intersection of ground water table of the ML area will not occur.</p>
23	<p>The top soil shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and</p>	<p>There is no generation of the top soil during mining operations due to working in the already broken up area during the reporting period. In case of top soil generation generated in future, it will be stored in an earmarked area and necessary precaution</p>

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

	plantation.	will be taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.
24	The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28°. Back filling shall be done as per approved mining plan. Back filling to start from 3 rd year onwards of the mining operation and the entire quantity of waste shall be back-filled and liquidated within five years. There shall be no external OB dumps after the 6 th year of the mining operations the backfilled area shall be afforested. Back-filling has to be done in a manner that it is restored to the normal ground level. Monitoring and management of Rehabilitated areas should continue till the vegetation is established and becomes self-generating compliance status to be reported to the appropriate authorities.	As per the approved mining plan from Indian Bureau of Mines, Bhubaneswar, no such OB dump is proposed. The OB generation is very fewer and the generated quantity is being utilized timely for road making and maintenance purposes. During the scheme period, there is no scope for reclamation/ rehabilitation.
25	The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year wise expenditure for these funds should be reported to the SEIAA, Orissa.	The funds earmarked for environmental protection are being utilized for the same. The year wise expense details are enclosed as Annexure #10 .
26	The critical parameters such as SPM, RSPM, and NO _x in the	All the critical parameters are being monitored like AAQ, Water Quality, peak

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	<p>ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closure shall be monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, pH and total suspended solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain. The circular no. J 20012/1/2006-1A.II (M) dated 27.05.2009 issued by Ministry of Environment and forest, which is available on the website of the Ministry www.envfor.nic.in shall also be refereed in this regard for its compliance.</p>	<p>particle velocity etc. and the data of the same is being displayed on an electronic display board and the same is also being updated in the company website i.e. www.miom-drp.in. Photo of e-display board attached as photo #11.</p>
27	<p>A final mine closer plan along with details of Corpus Fund shall be submitted to the SEIAA 5 years in advance of final mine closure for approval.</p>	<p>The Project has submitted a Bank guarantee of Rs. 44, 03, 400 /- for rehabilitation as a part of the management of the mines closure of the Project. It has been approved by IBM in the scheme of mining on 18.11.2020. A final mine closer plan along with detailed corpus fund will be submitted to the ministry of Environment & Forest 5 years in advance of final mine closure for approval.</p>
28	<p>The project proponent shall obtained necessary prior permission of the competent authorities for drawl of requisite quantity of water (Surface water and ground water) required for the project.</p>	<p>The project proponent has already obtained NOC for withdrawal of ground water from Central Ground Water Authority. The approved GW NOC is attached as Annexure#06.</p>
29	<p>The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the</p>	<p>We are abiding by the said conditions.</p>

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<p>conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environmental Protection (EP) Act, 1986.</p>	
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Sl. No.	The Additional Environmental Clearance condition of mining projects vide. OM of MoEF&CC, F.No. 22-34/2018-IA.III dated: 16.01.2020	Compliance
1	<p>The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.</p>	<p>We will abide by the condition. At present the mining operation is going on and the mineral is not yet exhausted at all & its also duly approved by the IBM in Mining Plan. Therefore, after ceasing of the mining operation or exhaust of minerals, we will undertake re-grassing of the disturbed land due mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. as duly approved in Mining Plan by IBM.</p>

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

ANNEXURES

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure #01: CSR details

Socio-Economic Development Activities:-

Infrastructure

- Provided materials for Street Light Connections in nearby villages.
- Repairing and black topping of Village Road connecting Road from Deojhar to Murgabeda. Repairing of interior village roads

Education

- The school at village Murgabeda got improved by providing the teaching facility with the appointment of teachers. Renovation of school building & compound wall.
- Additional teachers have been posted in the adjoining villages.
- Distribution of Uniforms, Books, slates, pencil, etc. to the school students.
- Mid-day meal is being provided at free of cost for class 9th& 10th at Deojhar High School.
- Facilitating the Independence & Republic Day functions at adjoining schools by funding the entire celebration by extending various tournaments among school children.

Health

- Health-Check-up camp covering adjoining villages and free supply of medicines.
- Extending the Dispensary along with the ambulance facility to local villages with the availability Doctor& Staff and free medicine.

Drinking Water Facility & Sanitation

- 2 No's of deep bore wells got provided at village.
- Regular & periodical supply of drinking water to the adjoining villages with the water tankers.

Other peripheral activities

- MurgaMahadev Temple renovation work (Bathing area has been tiled & guard bars, Cloth changing room, Glazed tiled Bench, etc.) already completed

Reporting Period: April-21 to September-21

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- Regular maintenance of temple housekeeping, coloring etc.
- Guard wall at the bank of Mahadev –Nalla towards its protection.
- Construction of new entrance gate of MurgaMahadev temple completed in Jan-2021.

Employment Opportunities

- Locals from adjoining villages are engaged in various activities of mines.
- Besides the above Temple maintenance staff comprises 3.No. of Lady Employees are from Local villages.
- Posting of additional teachers in schools from locality.
- Development of self-help groups for villagers is under planning.

CSR Expenditure		
Murgabeda Iron Ore Mines, Sri. D.R. Patnaik		
Sl. No.	Particulars	Expenditure for the year 2021-22 (April-21 to Sept-21)
1	Education	2.4
2	Health	3.2
3	Drinking Water Facility	0.4
4	Social welfare (Peripheral Activities)	0.6
5	Electricity	0.4
6	Water Sprinkling (Inter connecting village road etc.)	5.7
TOTAL		12.7

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Annexure – 02: Consent to Operate from SPCB



CONSENT ORDER
MURGABEDA IRON ORE MINES OF SRI D. R. PATNAIK.

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BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcbboard.org, Website: www.ospcbboard.org

CONSENT ORDER

No. 1074 / IND - I-CON- 223 Dt. 31.01.2020 /

CONSENT ORDER NO. 726

Sub: **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref: Your Online Application No. **2569545 Dated 01.04.2019, Your Letter No. MIOM-DRP/SPCB/CTO/2019-20/05 dated 4.10.2019 and online reply dated 31.12.2019**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: **MURGABEDA IRON ORE MINES OF SRI D. R. PATNAIK**

Name of the Occupier & Designation: **SRI K. K. MANDAL, MINES MANAGER**

Address: **AT/PO: DEOJHAR, DIST: KEONJHAR.**

This consent order is valid for the period up to **31.03.2024 from the date of issue of this order.**

This consent order supersedes the earlier consent order issued vide letter No. 3544 dated 05.04.2019.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	Iron Ore	2.0 MTPA

Details of Mineral Handling Plants /Units

01	Operation of mobile crushing plant of capacity 2x200 TPH
02.	Operation of mobile screening plants of capacity 2X 200 TPH

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated herein.

Reporting Period: April-21 to September-21

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure # 03: Approved of review of mining plan from IBM



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



REGD. PARCEL
Phone: 0674-2352463
TeleFax: 0674-2352490
E-mail: ro.bhubaneswar@ibm.gov.in
Plot No. 149, Pokhariput
BHUBANESWAR-751020

No. RMP/A/27-ORI/BHU/2020-21 / 2130

Date: 18.11.2020

To

Shri Dipti Ranjan Patnaik, Mine Owner,
A/6, Commercial Estate, Civil Township,
Rourkela, Odisha-769004

Sub: Approval of Review of Mining Plan of Murgabeda Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 15.378 ha in Keonjhar district of Odisha State, submitted by Shri Dipti Ranjan Patnaik under Rule 17 of Mineral Concession Rules, 2016.

Ref: - i) Your letter No. Nil dated 29.09.2020 received on 12.10.2020.
ii) This office letter of even no. dated 12.10.2020.
iii) This office letter of even no. dated 12.10.2020 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.
iv) This office letter of even no. dated 19.10.2020.
v) Your letter No. Nil dated 02.11.2020.

Sir,

In exercise of the power delegated to me vide Gazette Notification No. S.O. 1857(E) dated 18.05.2016, I hereby **Approve** the Review of Mining Plan including Progressive Mine Closure Plan of Murgabeda Iron Ore Mine over an area of 15.378 ha of Shri Dipti Ranjan Patnaik in Keonjhar district of Odisha State submitted under Rule 17 of Mineral Concession Rules, 2016. This approval is subject to the following conditions:

- I. The Review of Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
- II. The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
- III. It is clarified that the approval of aforesaid Review of Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.
- IV. Indian Bureau of Mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.

17/11/21
Dr. G. P. Patnaik

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Annexure #04: Forest Clearance



Government of India/ भारत सरकार
Ministry of Environment, Forest & Climate Change/ पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Eastern Regional Office/ पूर्वी क्षेत्रीय कार्यालय
A/3, Chandrasekharpur/ ए/३, चन्द्रसेखरपुर
Bhubaneswar - 751 023/ भुवनेश्वर - ७५१ ०२३



Telephone: 0674-2301213, 2301248, 2302452, 2302453. Fax: 0674-2302432. E-mail: roe2.bar.mef@nic.in

No.5-ORC209/2014-BHU

5th October, 2018

To

The Addl. Chief Secretary,
Forest & Environment Deptt.,
Govt. of Odisha,
Bhubaneswar.

Sub:-

Diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik.

Sir,

I am directed to refer to State Govt. letter No. 10F(Cons)498/2011-9074/F&E dated 16.05.2014, and No.9422/F&E dated 22.05.2014, wherein prior approval of the Ministry of Environment, Forest & Climate Change for diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik, was sought in accordance with Section-2 of the Forest (Conservation) Act, 1980. After due consideration of the proposal by the Ministry of Environment, Forest & Climate Change and on the basis of decision of State Advisory Group meeting held on 29.05.2014, the in-principle approval for diversion of the said forest land was accorded by Ministry vide this office letter of even number dated 05.09.2014, subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested to grant final approval of the proposal.

2. In this connection, I am directed to say that on the basis of the compliance report furnished by the APCCF (Nodal), Odisha vide their letter No.17465/9F(MG)-48/2005 dated 14.08.2018 and Ad-hoc CAMPA, New Delhi letter No.1-26/2014-CAMPA dated 14.09.2018, **Stage-II/final** approval of the Ministry of Environment, Forest & Climate Change is hereby granted under Section 2 of the Forest (Conservation) Act, 1980 for diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik. in Jharsuguda district of Odisha, subject to the fulfillment of the following conditions:-

- i) Legal status of the diverted forest land shall remain unchanged.
- ii) Additional amount of NPV of the diverted forest land, if any, becoming due after finalization of the same by the Hon'ble Supreme Court of India, shall be charged by State Govt. from the user agency.
- iii) Compensatory Afforestation shall be raised over 12.69 ha of non-forest land identified in village Uparbirikala under Banspal Tahasil of Keonjhar Forest Division within a period of three years with effect from the date of issue of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department at the cost of user agency. The C.A. plots have to be demarcated by raising 4 feet high RCC pillars at a distance of 50 meter with GPS readings noted on each pillar.

Contd...2

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure # 05:Wildlife Conservation Plan

OFFICE OF THE PRINCIPAL CCF (WILDLIFE) & CHIEF WILDLIFE
WARDEN,ORISSA5TH FLOOR, B.D.A. APARTMENT, PRAKRUTI BHAWAN,
NILAKANTHA NAGAR, BHUBANESWAR- 751012.

Memo No. 1242 Dt. 15.2.10
1WL-C-FC- 533/09

To

The Chief Conservator of Forests (Nodal),
O/o the Principal CCF, Orissa, Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan for Murgabeda Iron Ore Mines
by Sri D.R. Patnaik in Keonjhar Forest Division of Keonjhar district

Sir,

I am directed to inform you that the Site Specific Wildlife Conservation Plan for
Murgabeda Iron Ore Mines by Sri D.R. Patnaik in Keonjhar Forest Division of Keonjhar
district has been approved by PCCF(WL) & Chief Wildlife Warden, Orissa with revised
financial forecast of Rs.38.70 lakhs for the following activities.

- | | |
|---|------------------------------------|
| 1. For activities to be implemented by User agency
in project area | Rs.13.30 lakhs. |
| 2. For activities to be implemented by
DFO, Keonjhar division in
project impact area. | ----- <u>Rs.25.40lakhs.</u> |
| | Total <u>Rs.38.70 lakhs</u> |

Various activities in the lease hold area will be executed by User Agency under the
guidance of DFO, Keonjhar Division. Rs.25.40 lakhs may be deposited with DFO,
Keonjhar division for implementation of various activities with-in the project impact area.


Conservator of Forests (WL)

Memo No. 1243 dt. 15.2.10

Copy forwarded to the DFO, Keonjhar Division for information & necessary action
with reference to Memo No. 3622 dt. 13.10.09 of CF, Keonjhar Circle..

Memo No. 1244 Dt. 15.2.10

Copy forwarded to CF, Rourkela Circle for information & necessary action with
reference to his Memo No.3620 dt.13.10.09.


Conservator of Forests (WL)

Memo No. 1245 dt. 15.2.10.

Copy forwarded to Sri D.R. Patnaik, Keonjhar, Orissa for information.


Conservator of Forests (WL)

*Enc. One No. appeared S.S.
WL Conservation Plan.*


Conservator of Forests (WL)

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Annexure # 06:CGWA NOC for Ground Water withdrawal



भारत सरकार
जल शक्ति विभाग
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	Murgabeda Iron Ore Mines of M/s D R Patnaik		
Project Address:	Murgabeda, Bileipada, Joda, Odisha		
Village:	Murgabeda Camp	Block:	Joda
District:	Kendujhar	State:	Odisha
Pin Code:	758034		
Communication Address:	Bonelkala, Joda, Kendujhar, Odisha - 758034		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, NH-5, Bhubaneswar, Odisha - 750001		

1. NOC No.:	CGWA/NOC/MIN/ORIG/2020/7118									
2. Application No.:	21-4/2293/OR/MIN/2019	3. Category:	Mining							
4. Project Status:	Existing Project	5. NOC Type:	New							
6. Valid from:	07/01/2020	7. Valid up to:	06/01/2022							
8. Ground Water Abstraction Permitted:										
	Fresh Water		Saline Water							
	m ³ /day	m ³ /year	m ³ /year							
	75.00	27375.00								
	Dewatering		Total							
	m ³ /day	m ³ /year	m ³ /day							
			75.00							
9. Details of ground water abstraction /Dewatering structures										
	Total Existing No.:2				Total Proposed No.:0					
	DW	DCB	BW	TW	MP	DW	DCB	BW	TW	MP
	0	0	2	0	0	0	0	0	0	0
	*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit									
10. Quantum of ground water recharge/harvesting(m ³ /year):	21360.00									
11. Number of Piezometers (Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers		Monitoring Mechanism							
	1	0	Manual	DWLR**	DWLR With Telemetry	1	0	1	0	0
	**DWLR - Digital Water Level Recorder									

(Compliance Conditions given overleaf)

Digitally signed by
NANDAKUMARAN P
Date: 2020.08.03 14:55:46 +05'30'

सदस्य (केन्द्रीय भूमि जल प्राधिकरण)
Member (CGWA)

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये
SAVE WATER - SAVE LIFE

Reporting Period: April-21 to September-21

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure #07: EC Compliance submission details

EC Compliance submission Details		
Sl. No.	Period	Date of Submission
1.	October, 2015 to March, 2016	25.05.2016
2.	April, 2016 to September, 2016	19.11.2016
3.	October, 2016 to March, 2017	26.05.2017
4.	April 2017 to September 2017	25.11.2017
5.	October 2017 to March-2018	30.05.2018
6.	April to September, 2018	02.11.2018
7.	October, 2018 to March, 2019	25.05.2019
8.	April-19 to September-19	02.11.2019
9.	October-19 to March-20	20.05.2020
10.	April-20 to September-20	24.11.2020
11.	October-20 to March-21	18.05.2021

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure #08: AAQ Monitoring Locations

M/S. D.R. PATNAIK

Mines Owner

(A UNIT OF D.R. PATNAIK & ALTRADE GROUP)

Ref. No.: MIM/SPCB/109-01

Date: 12.02.2020

The Regional Officer,
Regional Office,
State Pollution Control Board,
Keonjhar, Odisha

Sub: Establishment of AAQ monitoring station for Murgabeda Iron Ore Mines of Sri D. R. Patnaik – Reg.

Ref. SPCB Consent order no. 726 vide letter no. 1074/IND-I-CON-223 dt. 31.01.2020

Dear Sir,

With reference to the above cited subject, we would like inform you that, the project has already installed **04** numbers of ambient air quality monitoring station, out of which **02** nos. are located inside the mines lease area (Core Zone) and **02** nos. are in the buffer zone area of the project. All the ambient air quantity monitoring stations are installed based on the metrological data, topographical features and environmental sensitive targets. The monitoring parameters are PM₁₀, PM_{2.5}, SO₂, NO_x & CO. The details of the AAQ monitoring stations are as follows;

Sl. No.	Sampling Locations	Zone	Station Number
1.	Mines Office	Core Zone	AAQ 1
2.	Near Exit gate (ML Pillar no. 07)	Core Zone	AAQ 2
3.	Village Murgabeda	Buffer Zone	AAQ 3
4.	Village Bileipada	Buffer Zone	AAQ 4

The AAQ station map is enclosed as **Annexure # 01**.

This is for your kind information, please.

Yours Faithfully
For, Sri. D. R. Patnaik


Mines Manager

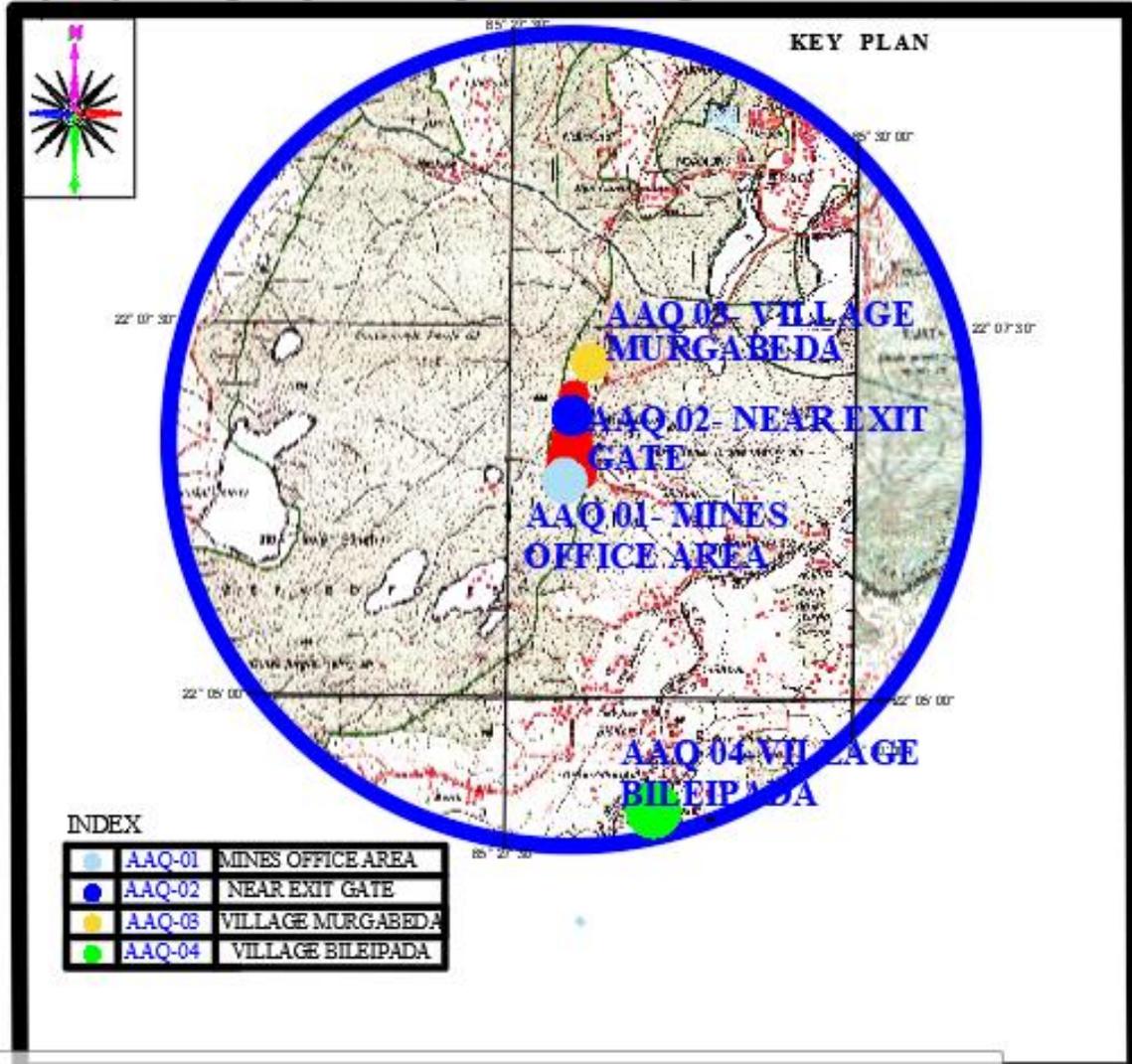
Enclosed : As above

Copy to: The Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII ,Bhubaneswar – 751012

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Topomap showing AAQ Monitoring Stations of Murgabeda Iron ore Mines, Sri D.R.Patnaik



STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Annexure # 09: List of IME Carried out & Sample IME/PME test report

Category of Employees	IME		PME	
	Contractor	Owner	Contractor	Owner
Workers	7	0	22	0
Staff	9	0	12	0
Executive / Managers	0	1	0	0
TOTAL	16	1	34	0

FORM O
[See Rule 29 F (2) and 29 L]
Report of Medical Examination Under Rule 29 B
(To be issued in Triplicate)**

CERTIFICATE No. 10000251

Certified that Sri/Smt. employed as Deputy in Iron Ore mine.

form B No. 130 has been examined for an initial/periodical * medical examination. He/she* appears to be 35 years of age.

The findings if the examination authority are given in the attached sheet, it is considered that Sri/Smt. Satyajit Nayak Thakur

(a)* is medically fit for any employment in mines
 (b)* is suffering from None and is medically unfit for
 (i) any employment in mine, or
 (ii) any employment below ground, or
 (iii) any employment or work
 (c)* is suffering from None and should get this disability* None
 cured/controlled and should be again examined within a period of 12 months.
 He/She* will appear for re-examined with the result of test of None and the opinion of None specialist from None He/She* may be permitted / not* permitted to carry on his/her duties during this period.



Dr. Rabi Narayan Kar
Reg. No. 6220 M.S.S.S.
Sr. Medical Officer
Thakurani Earthmovers (P) Ltd

Signature of the Examining Authority
Dr. Rabi Narayan Kar
Regd. No. 6220 M.S.S.S.
Sr. Medical Officer
Thakurani Earthmovers (P) Ltd
Name and Designation in Block Letters

Place : **HI-TECH DIAGNOSTIC CENTRE JODA**
Date : 18/09/2021

* Delete whatever not applicable
 ** Original - To be kept with Examining Authority.
 Pink Copy - To be handed over to Person Concerned.
 Yellow Copy - To be sent to the concerned Manager of the Mine.

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Annexure#10:Environmental Expenses

Environmental Expenditure of Murgabeda Iron Ore Mining Project of Sri. D.R Patnaik, District, Keonjhar,		
		Cost, Rs. In Lakhs
Sl. No.	Activity	2021-22
		(April-21 to Sept-21)
1	Dry-fog system installed & maintenance	0.8
2	Water tankers two no's for water sprinkling	4
3	Environmental Monitoring	4.9
4	Plantation and maintainance	1.9
5	Purchasing Env. Instrument, calibration& environment monitoring etc.	0
6	Rain water harvesting structures maintenance including desilting of settling ponds	1.5
7	Site specific sewage treatment plant with maintenance	0.2
8	Service Centre cum ETP & its maintenance	0.1
9	Construction of Wheel washing system	6.8
Total amount incurred		20.2

Reporting Period: April-21 to September-21

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

PHOTOGRAPHS

Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA



Photo#01: Mobile water Tanker engaged for dust suppression



Photo#02: Truck wheel washing system installed at mines main gate



Photo#03: Mineral handling plant with dust suppression arrangement



Photo#04: Guard wall, garland drain, settling pond and its de-silting



Reporting Period: April-21 to September-21

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA



Photo#05: Environmental monitoring and sampling



Photo#06: Roof top rain water harvesting structure



Photo#07: Sewage Treatment plant (Ultra filtration unit)at Staff campus



Photo#08: Black Topped road adjoining to the mining lease



Photo#09: Vehicle with Tarpaulin cover

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA



Photo#10: Safety Zone Plantation



Photo#11: E-Display board at entrance of Mines

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

ENVIRONMENTAL MONITORING REPORTS

Reporting Period: April-21 to September-21

MURGABEDA MINES

AAQ REPORT

SEPTEMBER-2021



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality					
Location		: Mines Office			
Month		: September -2021			
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	81	27	10.6	11.5	0.67
2	07/09/2021	72	23	9.8	10.5	0.34
3	10/09/2021	68	21	12.1	13.7	0.46
4	14/09/2021	71	28	10.5	11.4	0.52
5	17/09/2021	80	26	11.3	12.4	0.29
6	21/09/2021	81	32	10.1	11.5	0.41
7	24/09/2021	79	28	9.7	10.6	0.57
8	28/09/2021	75	28	10.3	11.4	0.72
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend:PM₁₀-Particulate Matter(Size Less than 10µm)

PM_{2.5}-Particulate Matter(Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- NitrogenDioxide


Authorized Signatory


*Complaints Register is available at Laboratory.

4th Floor, 'AMITY VILLE', 12-13-1270/71/73,
St. Ann's Road, Tarnaka,
Secunderabad - 500017,
Telangana, India

Phone : +91 40 49783062 / 27016806 Fax : +91 40 49783063
Email : lab@bsenvitech.com, info@bsenvitech.com
Website : www.bsenvitech.com
CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality					
Location	: Exit Gate				
Month	: September-2021				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	83	32	10.7	12.1	0.43
2	07/09/2021	81	30	11.1	12.5	0.51
3	10/09/2021	76	28	10.7	12.1	0.35
4	14/09/2021	74	18	11.2	12.5	0.48
5	17/09/2021	65	18	10.6	11.8	0.59
6	21/09/2021	83	28	10.7	11.9	0.68
7	24/09/2021	75	23	11.0	12.2	0.57
8	28/09/2021	80	28	10.4	11.5	0.62
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory

*Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality Location : Murgabeda Village Month : September-2021 Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	67	18	11.0	12.6	0.41
2	07/09/2021	69	17	9.2	10.7	0.78
3	10/09/2021	62	14	10.4	12.0	0.34
4	14/09/2021	57	11	9.9	11.1	0.47
5	17/09/2021	63	15	10.3	11.5	0.61
6	21/09/2021	74	24	10.9	12.2	0.44
7	24/09/2021	65	15	11.2	12.8	0.51
8	28/09/2021	61	24	10.5	11.7	0.64
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)
PM_{2.5}-Particulate Matter (Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- Nitrogen Dioxide


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Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality Location : Bileipada Village Month : September-2021 Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	60	11	12.0	13.7	0.48
2	07/09/2021	61	17	11.1	11.7	0.66
3	10/09/2021	57	10	10.3	12.4	0.71
4	14/09/2021	59	11	11.3	12.5	0.52
5	17/09/2021	64	20	10.9	12.1	0.71
6	21/09/2021	72	30	11.4	13.1	0.52
7	24/09/2021	60	13	12.0	13.9	0.49
8	28/09/2021	59	21	12.2	14.0	0.54
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)
PM_{2.5}-Particulate Matter (Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- Nitrogen Dioxide



Authorized Signatory

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B.S. ENVI - TECH PVT. LTD.

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TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality Location : Deojhar Village Month : September -2021 Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	69	18	10.8	12.3	0.66
2	07/09/2021	59	10	10.5	11.5	0.50
3	10/09/2021	62	18	9.9	10.7	0.39
4	14/09/2021	63	22	10.2	11.5	0.42
5	17/09/2021	70	28	10.9	12.1	0.46
6	21/09/2021	65	23	11.0	12.6	0.38
7	24/09/2021	69	24	10.6	12.1	0.47
8	28/09/2021	59	15	11.1	12.4	0.52
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide



Authorized Signatory

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B.S. ENVI - TECH PVT. LTD.

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TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:	
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021		
Sample Description: Ambient Air Quality					
Location	: Mahadevnasa Village				
Month	: September -2021				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2021	58	11	11.5	12.9	0.46
2	07/09/2021	62	14	10.8	11.9	0.52
3	10/09/2021	63	17	10.1	12.5	0.32
4	14/09/2021	55	10	10.7	11.9	0.21
5	17/09/2021	59	10	11.0	12.3	0.64
6	21/09/2021	60	21	10.8	12.0	0.58
7	24/09/2021	64	13	11.3	12.7	0.75
8	28/09/2021	63	22	10.5	11.8	0.39
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide



[Signature]
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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

SEPTEMBER-2021



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021	
Sample Description: Fugitive Dust Monitoring				M/s D.R.PATNAIK.,
Location	: Mines Face/Haulage Road			
Month	: September -2021			
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2021	416	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2021	527	
3	10/09/2021	544	
4	14/09/2021	421	
5	17/09/2021	469	
6	21/09/2021	502	
7	24/09/2021	473	
8	28/09/2021	411	

Legend: SPM-Suspended Particulate Matter


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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to:
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021	
Sample Description: Fugitive Dust Monitoring				
Location	: Crusher Plant			
Month	: September -2021			
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2021	513	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2021	549	
3	10/09/2021	526	
4	14/09/2021	472	
5	17/09/2021	418	
6	21/09/2021	443	
7	24/09/2021	406	
8	28/09/2021	442	

Legend: SPM-Suspended Particulate Matter



Authorized Signatory

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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2021/AAQ/2021-09				Issued to: Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Reporting Date	30.09.2021	Analysis Starting on	29.09.2021	
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021	
Sample Description: Fugitive Dust Monitoring				
Location	: Loading/Unloading Point			
Month	: September -2021			
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2021	564	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2021	439	
3	10/09/2021	472	
4	14/09/2021	518	
5	17/09/2021	447	
6	21/09/2021	413	
7	24/09/2021	406	
8	28/09/2021	467	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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MURGABEDA MINES

ETP WATER REPORT

SEPTEMBER-2021



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2021/WW-03938	
Sample Description: Waste Water Sample		Lab Code No : 210656209	Issue Date : 18.09.2021
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)		Your Ref : Letter Dated 09.09.2021	Date of Receipt : 09.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	09.09.2021	
Test Required : As given below	Date of commencement of testing	09.09.2021	
	Date of completion of testing	18.09.2021	
	Sample condition at receipt	Found ok	
	Sample tested as received		
Sampling Details			
Date of Sampling: 07.09.2021		Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: ETP Water inside ML Area		General Environment conditions: Ok	
Page No: 1 of 1			

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1	pH	---	IS:3025- Part-11	6.65	5.5 – 9.0
2	Total Suspended Solids	mg/l	IS:3025- Part-17	90	100
3	Total Dissolved Solids@105°C	mg/l	IS:3025 - Part-16	850	2100
4	Oil & Grease	mg/l	IS:3025- Part-39	7	10
5	COD	mg/l	IS:3025 - Part-58	145	250
6	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	15	30
7	Chloride as Cl,	mg/l	IS:3025 -Part-32	70	1000
8	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.46	3
9	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	0.35	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

*** End of the Report ***

*Complaints Register is available at Laboratory.

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Recognized by MoEF & CC, Gol: Valid upto August, 2022

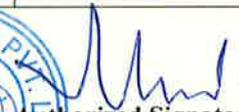
TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WW-03947	
	Lab Code No : 210655309	
	Issue Date : 28.09.2021	
	Your Ref : Letter Dated 20.09.2021	
Sample Description: Waste Water Sample	Date of Receipt : 20.09.2021	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration	20.09.2021
	Date of commencement of testing	20.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of completion of testing	28.09.2021
	Sample condition at receipt	Found ok
Test Required : As given below	Sample tested as received	
Sampling Details		
Date of Sampling: 17.09.2021	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: ETP Water inside ML Area	General Environment conditions: Ok	
Page No: 1 of 1		

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1	pH	---	IS:3025- Part-11	6.75	5.5 – 9.0
2	Total Suspended Solids	mg/l	IS:3025- Part-17	120	100
3	Total Dissolved Solids@105°C	mg/l	IS:3025 - Part-16	910	2100
4	Oil & Grease	mg/l	IS:3025- Part-39	12	10
5	COD	mg/l	IS:3025 - Part-58	175	250
6	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	21	30
7	Chloride as Cl,	mg/l	IS:3025 -Part-32	80	1000
8	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.42	3
9	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	0.36	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

*** End of the Report ***

*Complaints Register is available at Laboratory.

MURGABEDA MINES

STP WATER REPORT

SEPTEMBER-2021



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

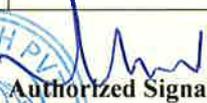
TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WW-03939	
	Lab Code No : 210656109	
	Issue Date : 18.09.2021	
	Your Ref : Letter Dated 09.09.2021	
Sample Description: Waste Water Sample	Date of Receipt : 09.09.2021	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals)	Date of Registration	09.09.2021
	Date of commencement of testing	09.09.2021
1 No x 250 ml Sample (Microbiology)	Date of completion of testing	18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Sample condition at receipt	Found ok
Test Required : As given below	Sample tested as received	
Sampling Details		
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: STP Water At Camp	General Environment conditions: Ok	
Page No: 1 of 1		

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1	pH	---	IS:3025- Part-11	6.78	5.5 – 9.0
2	Oil & Grease	mg/l	IS:3025- Part-39	5	10
3	Total Suspended Solids	mg/l	IS:3025- Part-17	95	100
4	Total Dissolved Solids@105°C	mg/l	IS:3025 - Part-16	812	2100
5	COD	mg/l	IS:3025 - Part-58	80	250
6	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	14	30
7	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.72	3
8	Fecal Coliform	MPN/100ml	APHA 23 rd Edition	250	230

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

*** End of the Report ***

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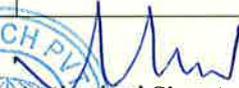
TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WW-03948
Sample Description: Waste Water Sample	Lab Code No : 210655209
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 28.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 20.09.2021
Test Required : As given below	Date of Receipt : 20.09.2021
Sampling Details	
Date of Sampling: 17.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: STP Water At Camp	General Environment conditions: Ok
Page No: 1 of 1	

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1	pH	---	IS:3025- Part-11	6.76	5.5 – 9.0
2	Oil & Grease	mg/l	IS:3025- Part-39	9	10
3	Total Suspended Solids	mg/l	IS:3025- Part-17	85	100
4	Total Dissolved Solids@105°C	mg/l	IS:3025 - Part-16	815	2100
5	COD	mg/l	IS:3025 - Part-58	108	250
6	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	26	30
7	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.87	3
8	Fecal Coliform	MPN/100ml	APHA 23 rd Edition	325	230

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G. Chandra Mouli)
Environmental Scientist

*** End of the Report ***

*Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358

MURGABEDA MINES

SURFACE WATER QUALITY REPORT

SEPTEMBER-2021



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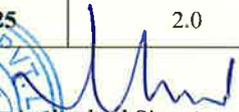
TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03940
Sample Description: Surface Water Sample	Lab Code No : 210656009
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
	Date of Registration : 09.09.2021
	Date of commencement of testing : 09.09.2021
	Date of completion of testing : 18.09.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Suna nadi river Upstream	General Environment conditions: Ok
	Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.70	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	55	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	165	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	10	30
6.	COD	mg/l	IS:3025 - Part-58	52	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	7.1	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	8.2	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	18	-
12.	Colour	Hazen Units	IS:3025 -Part-4	6	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.20	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.25	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

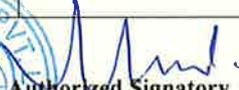
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03940	
Sample Description: Surface Water Sample	Lab Code No : 210656009	
	Issue Date : 18.09.2021	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Your Ref : Letter Dated 09.09.2021	
	Date of Receipt : 09.09.2021	
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	09.09.2021
	Date of commencement of testing	09.09.2021
Test Required : As given below	Date of completion of testing	18.09.2021
	Sample condition at receipt	Found ok
Sample tested as received		
Sampling Details		
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Suna nadi river Upstream	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.3	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	38	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	-	-

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

*** End of the Report***

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03941
Sample Description: Surface Water Sample	Lab Code No : 210655909
	Issue Date : 18.09.2021
	Your Ref : Letter Dated 09.09.2021
	Date of Receipt : 09.09.2021
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 09.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing 09.09.2021
Test Required : As given below	Date of completion of testing 18.09.2021
	Sample condition at receipt Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Suna nadi river Downstream	General Environment conditions: Ok
	Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.82	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	90	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	156	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	19	30
6.	COD	mg/l	IS:3025 - Part-58	81	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	13.5	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	9.6	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	28	-
12.	Colour	Hazen Units	IS:3025 -Part-4	12	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.25	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.34	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

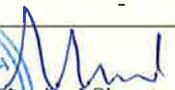
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03941
Sample Description: Surface Water Sample	Lab Code No : 210655909
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
	Date of Registration : 09.09.2021
	Date of commencement of testing : 09.09.2021
	Date of completion of testing : 18.09.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Suna nadi river Downstream	General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.0	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	49	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	105	-

Interpretation of results: Nil, Deviation from test method: Nil

105

Authorized Signatory
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Environmental Scientist

... End of the Report...

*Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

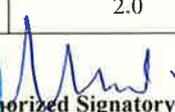
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03942
Sample Description: Surface Water Sample	Lab Code No : 210655809
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
	Date of Registration : 09.09.2021
	Date of commencement of testing : 09.09.2021
	Date of completion of testing : 18.09.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Baitarani River	General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.70	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	45	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	160	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	7	30
6.	COD	mg/l	IS:3025 - Part-58	42	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	8.3	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	7.0	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	15	-
12.	Colour	Hazen Units	IS:3025 -Part-4	12	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.12	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.26	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
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Environmental Scientist

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TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03942	
Sample Description: Surface Water Sample	Lab Code No : 210655809	
	Issue Date : 18.09.2021	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Your Ref : Letter Dated 09.09.2021	
	Date of Receipt : 09.09.2021	
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	09.09.2021
	Date of commencement of testing	09.09.2021
Test Required : As given below	Date of completion of testing	18.09.2021
	Sample condition at receipt	Found ok
Sample tested as received		
Sampling Details		
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Baitarani River	General Environment conditions: Ok	

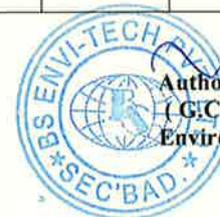
Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.9	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	36	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	80	-

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G. Chandra Mouli)
Environmental Scientist



... End of the Report...

*Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358



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Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

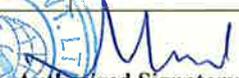
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03943
Sample Description: Surface Water Sample	Lab Code No : 210655709
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
	Date of Registration 09.09.2021
	Date of commencement of testing 09.09.2021
	Date of completion of testing 18.09.2021
	Sample condition at receipt Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Mahadev Nala Upstream	General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.65	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	70	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	175	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	15	30
6.	COD	mg/l	IS:3025 - Part-58	82	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	10.1	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	9.6	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	25	-
12.	Colour	Hazen Units	IS:3025 -Part-4	4	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.29	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.42	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G. Chandra Mouli)
Environmental Scientist

*Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358



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Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03943	
Sample Description: Surface Water Sample	Lab Code No : 210655709	
	Issue Date : 18.09.2021	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Your Ref : Letter Dated 09.09.2021	
	Date of Receipt : 09.09.2021	
	Date of Registration	09.09.2021
	Date of commencement of testing	09.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of completion of testing	18.09.2021
	Sample condition at receipt	Found ok
Test Required : As given below	Sample tested as received	
Sampling Details		
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Mahadev Nala Upstream	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	49	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	95	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...



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CIN No. : U74210TG1999PTC032358



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TEST REPORT

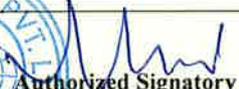
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2021/WS-03944	
Sample Description: Surface Water Sample		Lab Code No : 210655609	Issue Date : 18.09.2021
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)		Your Ref : Letter Dated 09.09.2021	Date of Receipt : 09.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Test Required : As given below	Date of Registration	09.09.2021
		Date of commencement of testing	09.09.2021
		Date of completion of testing	18.09.2021
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 07.09.2021 Location of Sampling: Mahadev Nala Downstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.65	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	90	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	215	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	22	30
6.	COD	mg/l	IS:3025 - Part-58	125	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	18.6	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	15	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	40	-
12.	Colour	Hazen Units	IS:3025 -Part-4	15	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.26	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.38	2.0

Interpretation of results: Nil, Deviation from test method: Nil


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TEST REPORT

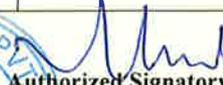
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03944 Lab Code No : 210655609 Issue Date : 18.09.2021 Your Ref : Letter Dated 09.09.2021 Date of Receipt : 09.09.2021
Sample Description: Surface Water Sample	Date of Registration : 09.09.2021 Date of commencement of testing : 09.09.2021 Date of completion of testing : 18.09.2021 Sample condition at receipt : Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing : Plastic Bottles& Pre-Sterilized Bottle	
Test Required : As given below	
Sampling Details	
Date of Sampling: 07.09.2021 Location of Sampling: Mahadev Nala Downstream	Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.2	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	46	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	125	-

Interpretation of results: Nil, Deviation from test method: Nil


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... End of the Report...

MURGABEDA MINES

SURFACE RUNOFF WATER QUALITY REPORT

SEPTEMBER-2021



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TEST REPORT

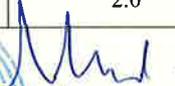
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03945
Sample Description: Surface Water Sample	Lab Code No : 210655509
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Shutting Pond Near Gate No.02	General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.74	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	36	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	150	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	8	30
6.	COD	mg/l	IS:3025 - Part-58	56	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	11.5	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	9.4	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	18	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.10	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.20	2.0

Interpretation of results: Nil, Deviation from test method: Nil


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CIN No. : U74210TG1999PTC032358



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TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03945
Sample Description: Surface Water Sample	Lab Code No : 210655509
	Issue Date : 18.09.2021
	Your Ref : Letter Dated 09.09.2021
	Date of Receipt : 09.09.2021
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration : 09.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing : 09.09.2021
Test Required : As given below	Date of completion of testing : 18.09.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Shutting Pond Near Gate No.02	General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.6	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	29	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	45	-

Interpretation of results: Nil, Deviation from test method: Nil

*** End of the Report***



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TEST REPORT

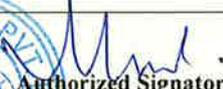
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-03946
Sample Description: Surface Water Sample	Lab Code No : 210655409
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 18.09.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.09.2021
Test Required : As given below	Date of Receipt : 09.09.2021
	Date of Registration : 09.09.2021
	Date of commencement of testing : 09.09.2021
	Date of completion of testing : 18.09.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 07.09.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: Shutting Pond Near Camp	General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.63	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	38	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	140	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	12	30
6.	COD	mg/l	IS:3025 - Part-58	65	250
7.	Chloride as Cl ₁ ,	mg/l	IS:3025 -Part-32	15.6	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	13	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	16	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.12	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.19	2.0

Interpretation of results: Nil, Deviation from test method: Nil


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CIN No. : U74210TG1999PTC032358



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TEST REPORT

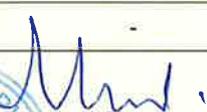
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2021/WS-03946		
Sample Description: Surface Water Sample		Lab Code No : 210655409		
		Issue Date : 18.09.2021		
		Your Ref : Letter Dated 09.09.2021		
		Date of Receipt : 09.09.2021		
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of Registration		09.09.2021
		Date of commencement of testing		09.09.2021
Test Required : As given below		Date of completion of testing		18.09.2021
		Sample condition at receipt		Found ok
		Sample tested as received		
Date of Sampling: 07.09.2021		Sampling Method/Procedure: IS 3025 Part 1		
Location of Sampling: Shutting Pond Near Camp		General Environment conditions: Ok		

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	40.6	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	28	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	65	-

Interpretation of results: Nil, Deviation from test method: Nil


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... End of the Report...

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CIN No. : U74210TG1999PTC032358

MURGABEDA MINES

DRINKING WATER QUALITY REPORT

JULY-2021



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02094
	Lab Code No : 210840607
	Issue Date : 19.07.2021
	Your Ref : Letter Dated 09.07.2021
Sample Description: Drinking Water Sample	Date of Receipt : 09.07.2021
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration : 09.07.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing : 09.07.2021
Test Required : As given below	Date of completion of testing : 19.07.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 06.07.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: At Mines for Portable test	General Environment conditions: Ok
Page No: 1 of 2	

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.75	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	76	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.08	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	45	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	198	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	24	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	3.9	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	27	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	12	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.36	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	48	200	600

Interpretation of results: Nil, Deviation from test method: Nil


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CIN No. : U74210TG1999PTC032358



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TEST REPORT

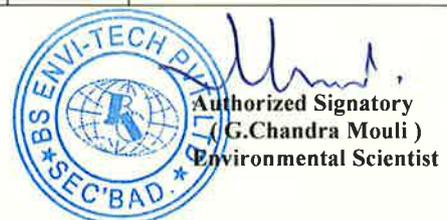
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02094
Sample Description: Drinking Water Sample	Lab Code No : 210840607
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 19.07.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.07.2021
Test Required : As given below	Date of Receipt : 09.07.2021
	Date of Registration : 09.07.2021
	Date of commencement of testing : 09.07.2021
	Date of completion of testing : 19.07.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Date of Sampling: 06.07.2021 Location of Sampling: At Mines for Portable test	Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil



*** End of the Report***

*Complaints Register is available at Laboratory.

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TEST REPORT

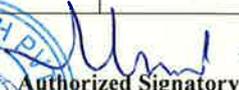
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02095
Sample Description: Drinking Water Sample	Lab Code No : 210840507
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 19.07.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.07.2021
Test Required : As given below	Date of Receipt : 09.07.2021
	Date of Registration : 09.07.2021
	Date of commencement of testing : 09.07.2021
	Date of completion of testing : 19.07.2021
	Sample condition at receipt : Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 06.07.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: At Camp Inlet Water	General Environment conditions: Ok

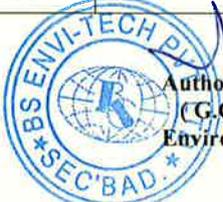
Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.67	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	62	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.08	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	39	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	152	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	20	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	2.9	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	18	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	11	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.39	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	36	200	600

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G. Chandra Mouli)
Environmental Scientist



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Website : www.bsenvitech.com
CIN No. : U74210TG1999PTC032358



TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02095
Sample Description: Drinking Water Sample	Lab Code No : 210840507
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 19.07.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.07.2021
Test Required : As given below	Date of Receipt : 09.07.2021
	Date of Registration 09.07.2021
	Date of commencement of testing 09.07.2021
	Date of completion of testing 19.07.2021
	Sample condition at receipt Found ok
	Sample tested as received
Sampling Details	
Date of Sampling: 06.07.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: At Camp Inlet Water	General Environment conditions: Ok
	Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



... End of the Report...

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TEST REPORT

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02096
Sample Description: Drinking Water Sample	Lab Code No : 210840407
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 19.07.2021
Packing : Plastic Bottles & Pre-Sterilized Bottle	Your Ref : Letter Dated 09.07.2021
Test Required : As given below	Date of Receipt : 09.07.2021
Sampling Details	
Date of Sampling: 06.07.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: At Camp Outlet Water (Pantry)	General Environment conditions: Ok
Page No: 1 of 2	

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.65	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	138	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.08	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	75	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	356	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	44	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	6.8	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	52	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	29	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.45	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	90	200	600

Interpretation of results: Nil, Deviation from test method: Nil


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CIN No. : U74210TG1999PTC032358



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TEST REPORT

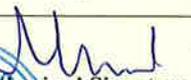
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2021/WS-02096
Sample Description: Drinking Water Sample	Lab Code No : 210840407
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Issue Date : 19.07.2021
Packing : Plastic Bottles& Pre-Sterilized Bottle	Your Ref : Letter Dated 09.07.2021
Test Required : As given below	Date of Receipt : 09.07.2021
Sampling Details	
Date of Sampling: 06.07.2021	Sampling Method/Procedure: IS 3025 Part 1
Location of Sampling: At Camp Outlet Water (Pantry)	General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil


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... End of the Report...

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