

# 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](mailto: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](mailto:roez.bsr-mef@nic.in) & [seiaaorissa@gmail.com](mailto:seiaaorissa@gmail.com), and also uploading the same in our company website i.e. [www.miom-drp.in](http://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  
Mrs. 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, Chandrasekharapur, 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@spcboard.org
3. The Regional Director, Central Ground Water Board, Government of India, South Eastern Region, Bhubaneswar - 751030, Email: rdser-cgwb@nic.in

Ref: 1. SBA Clearance letter no. SBA/342, dt. 08.07.2019 & No. 339/2019  
dt. 04.07.2019  
2. MoEFCC notification no. 1624 (Published in Gazette of India dt. 26.11.2018)  
3. Additional Environmental Clearance condition for mining projects (As per G.O. of MoEFCC dt. 22.11.2018) dt. 01.01.2020

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 to roez.bsr-mef@nic.in, roez.bsr-mef@nic.in, and also uploading the same to our company website i.e. www.mdm.co.in with comprehensive data sheet reports, supporting photographs and monitoring reports for the period April to September 2021 in respect of Murgabada Iron Ore Mines of M/S. D.R. Patnaik.

For further information, please

Yours sincerely,

For Murgabada Iron Ore Mine

M. D. R. Patnaik

Mines Manager

Mines Manager

Encl. - As above Murgabada Iron Ore Mines

M/S. 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](http://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**

Sl.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 &amp; 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&amp;CC &amp; SPCB guidelines for Air, Water, Noise etc.</p> <p>The photo of the same is enclosed as <b>photo-1,2,3,4&amp;5.</b></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 <b>Annexure # 1.</b>
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 <sup>th</sup> 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 <sup>st</sup> June and 1 <sup>st</sup> 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 <b>Annexure # 7</b> .						
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	<p>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 <b>Annexure # 8</b>.The project is also adopting specified methodology for analysis of the AAQ parameters.</p> <table border="1"> <thead> <tr> <th>Sl.No.</th><th>Pollutant</th><th>Method</th></tr> </thead> <tbody> <tr> <td>1</td><td>SO<sub>2</sub></td><td>Ultraviolet</td></tr> </tbody> </table>	Sl.No.	Pollutant	Method	1	SO <sub>2</sub>	Ultraviolet
Sl.No.	Pollutant	Method						
1	SO <sub>2</sub>	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**

		<table><tr><td></td><td></td><td>Fluorescence</td></tr><tr><td>2</td><td>NO<sub>2</sub></td><td>Chemiluminescence</td></tr><tr><td>3</td><td>SPM(PM<sub>10</sub>)</td><td>Gravimetric</td></tr><tr><td>4</td><td>SPM(PM<sub>2.5</sub>)</td><td>Gravimetric</td></tr><tr><td>5</td><td>CO</td><td>CO monitor</td></tr></table>			Fluorescence	2	NO <sub>2</sub>	Chemiluminescence	3	SPM(PM <sub>10</sub> )	Gravimetric	4	SPM(PM <sub>2.5</sub> )	Gravimetric	5	CO	CO monitor	
		Fluorescence																
2	NO <sub>2</sub>	Chemiluminescence																
3	SPM(PM <sub>10</sub> )	Gravimetric																
4	SPM(PM <sub>2.5</sub> )	Gravimetric																
5	CO	CO monitor																
7	<b>The proponent shall submit ground toothing baseline data on flora &amp; fauna and CSR activities already carried out within three months to the SEIAA.</b>	<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 <b>Annexure # 5</b>.</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 <b>Annexure # 1</b>.</p>																
8	<b>Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.</b>	<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	<b>Zero waste mining concept shall be implemented either by putting up palletization plant or disposal of low grade ores/fines to prospective buyers.</b>	<p>Due to the incorporation of better &amp; 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	<b>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,</b>	<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>																



**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**

	<b>(c) attempt should be made to achieve zero water balance.</b>	<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 <b>Photo 6 &amp;7.</b></p>
11	<b>Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.</b>	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. <b>Photo no. - 8.</b>
12	<b>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.</b>	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	<b>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.</b>	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 <b>Photo no. 09.</b>
14	<b>Rain water harvesting shall be undertaken to recharge the ground water source.</b>	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 <b>photo no. – 06.</b>
15	<b>Monitoring of ground and surface</b>	Monitoring of the ground water quality at

**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**

	<b>water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to SEIAA, Orissa.</b>	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.
<b>16</b>	<b>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.</b>	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 1 <sup>st</sup> order and 2 <sup>nd</sup> order streams and also other water bodies present in the buffer area. The photo regarding the same have been enclosed as <b>photo – 04.</b>
<b>17</b>	<b>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.</b>	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 <b>photo 04.</b>
<b>18</b>	<b>Provisions shall be made for the housing the labors within the site with all necessary infrastructure</b>	There is no such construction activity inside the project area. The laborers are being engaged from the adjoining villages.



**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**

	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.	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.
19	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.	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. Workers are provided with protective respiratory devices & time to time training on safety & health aspects is being provided. During the reporting period 17 Nos. of IME and 34 Nos. of PME (client and contractor) has been carried out. The detailed list along with a sample copy of IME/PME is attached as <b>Annexure#09</b> .

**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**

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, &amp; peripheral area of ML. Photo of the same is attached as <b>photo no. 10</b>.</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 &amp; its allied activities under Forest Conservation Act 1980. Copy of the same is enclosed as <b>Annexure # 4</b>.</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**

	<b>plantation.</b>	will be taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.
<b>24</b>	<b>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<sup>rd</sup> 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<sup>th</sup> 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.</b>	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.
<b>25</b>	<b>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.</b>	The funds earmarked for environmental protection are being utilized for the same. The year wise expense details are enclosed as <b>Annexure #10.</b>
<b>26</b>	<b>The critical parameters such as SPM, RSPM, and NO<sub>x</sub> in the</b>	All the critical parameters are being monitored like AAQ, Water Quality, peak

**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**

	<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 <a href="http://www.envfor.nic.in">www.envfor.nic.in</a> 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. <a href="http://www.miom-drp.in">www.miom-drp.in</a>. Photo of e-display board attached as <b>photo #11</b>.</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 &amp; 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 <b>Annexure#06</b>.</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>

**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**

	conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environmental Protection (EP) Act, 1986.	
--	---	--

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	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.	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.

**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 9<sup>th</sup>& 10<sup>th</sup> 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**

**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**

- 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

**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 – 02: Consent to Operate from SPCB**



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

Page 1 of 12

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](mailto:paribesh1@ospcbboard.org), Website: [www.ospcbboard.org](http://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: 0674-2352483  
TeleFax: 0674-2352490  
E-mail: ro.bhubaneswar@ibm.gov.in  
Plot No. 149, Pokharipul  
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.

178/11/21  
Pr-6221

**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: [roe.ebar.mef@nic.in](mailto:roe.ebar.mef@nic.in)

No.5-ORC209/2014-BHU

5<sup>th</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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, ORISSA 5<sup>TH</sup> 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<br>in project area                       | Rs.13.30 lakhs.                    |
| 2. For activities to be implemented by<br>DFO, Keonjhar division in<br>project impact area. | ----- <u>Rs.25.40lakhs.</u>        |
|   | <b>Total <u>Rs.38.70 lakhs</u></b> |

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.


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..

  
Conservator of Forests (WL)


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**



सत्यमेव जयते

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

(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, जामनगर 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**

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

**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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub> & 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

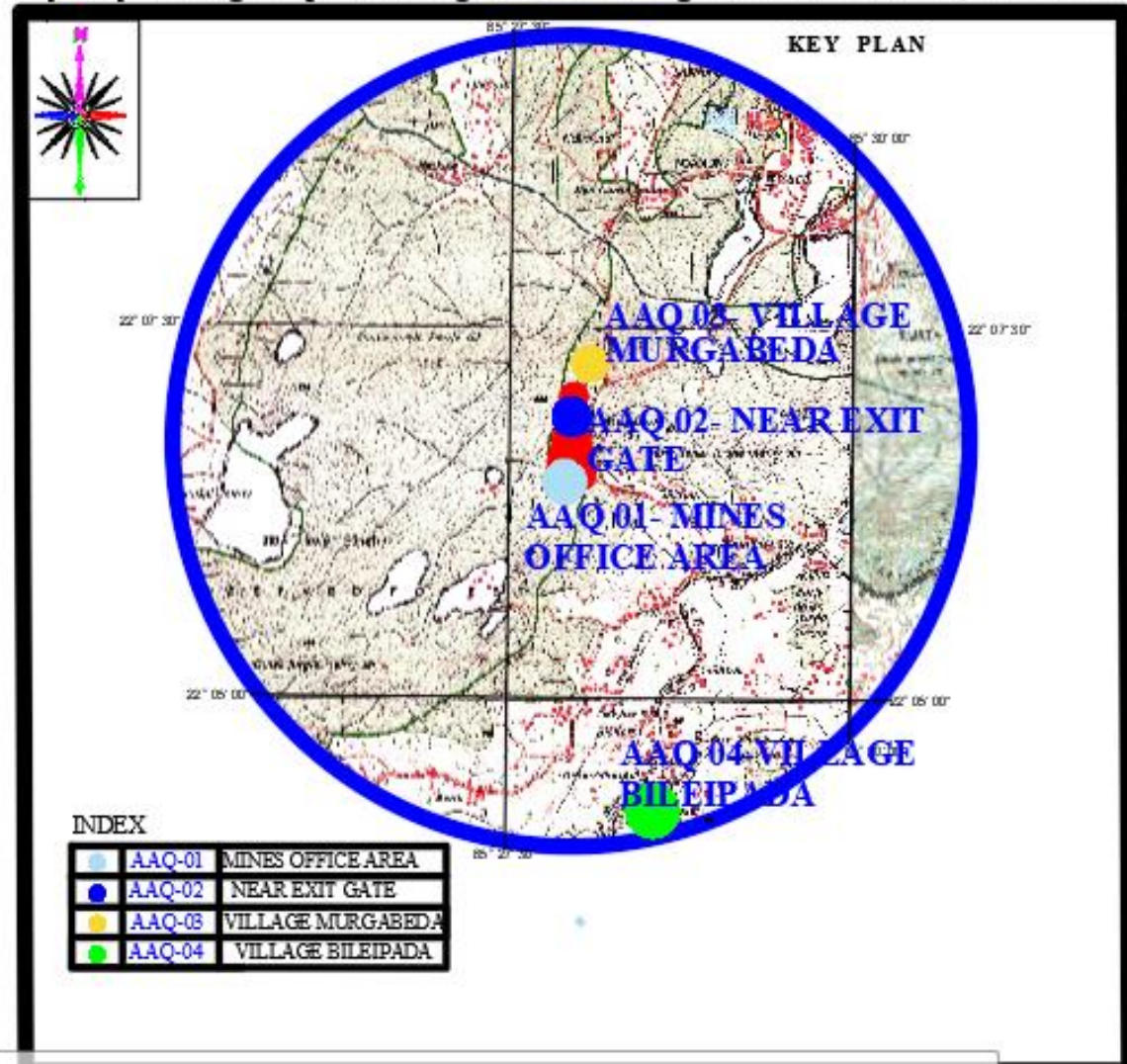
**Copy to:** The Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118,  
Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012

**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
<b>TOTAL</b>	<b>16</b>	<b>1</b>	<b>34</b>	<b>0</b>

**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. 9d 10000255

Certified that Sri/Smt\* employed as Deputy Tender in Thakurani 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\* Satya Narayan Thakur

(a)\* is medically fit for any employment in mines.  
(b)\* is suffering from 10000255 and is medically unfit for  
(i) any employment in mine, or  
(ii) any employment below ground, or  
(iii) any employment or work 10000255  
(c)\* is suffering from 10000255 and should get this disability\* 10000255  
cured/controlled and should be again examined within a period of 10000255 months.  
He/She\* will appear for re-examined with the result of test of 10000255 and the opinion of 10000255 specialist from 10000255 He/She\* may  
be permitted / not\* permitted to carry on his/her duties during this period.



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

**Dr. Rabi Narayan Kar**  
Regd. No. 6220 A.S.S.S.  
Sr. Medical Officer  
Thakurani Earthmovers (P) Ltd.

Place : **HI-TECH DIAGNOSTIC CENTRE JODA**  
Date : 18/9/2021

\* 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**

<b>Environmental Expenditure of Murgabeda Iron Ore Mining Project of Sri. D.R Patnaik, District, Keonjhar,</b>		
		<b>Cost, Rs. In Lakhs</b>
<b>Sl. No.</b>	<b>Activity</b>	<b>2021-22</b>
		<b>(April-21 to Sept-21)</b>
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
<b>Total amount incurred</b>		<b>20.2</b>

**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

**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#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

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

S.NO	DATE	PM <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend:** PM<sub>10</sub>-Particulate Matter(Size Less than 10µm)  
PM<sub>2.5</sub>-Particulate Matter(Size Less than 2.5µm)  
SO<sub>2</sub>-Sulphur Dioxide  
NO<sub>2</sub>- NitrogenDioxide

  
**Authorized Signatory**  


\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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 <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend: PM<sub>10</sub>-Particulate Matter (Size Less than 10µm)**

**PM<sub>2.5</sub>-Particulate Matter (Size Less than 2.5µm)**

**SO<sub>2</sub>-Sulphur Dioxide**

**NO<sub>2</sub>- Nitrogen Dioxide**

  
**Authorized Signatory**



\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

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

S.NO	DATE	PM <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend: PM<sub>10</sub>-Particulate Matter (Size Less than 10µm)**

**PM<sub>2.5</sub>-Particulate Matter (Size Less than 2.5µm)**

**SO<sub>2</sub>-Sulphur Dioxide**

**NO<sub>2</sub>- Nitrogen Dioxide**

  
**Authorized Signatory**

\*Complaints Register is available at Laboratory.





# 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		: Bileipada Village		
Month		: September-2021		
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend: PM<sub>10</sub>-Particulate Matter (Size Less than 10µm)**

**PM<sub>2.5</sub>-Particulate Matter (Size Less than 2.5µm)**

**SO<sub>2</sub>-Sulphur Dioxide**

**NO<sub>2</sub>- Nitrogen Dioxide**



**Authorized Signatory**

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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		: Deojhar Village		
Month		: September -2021		
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend: PM<sub>10</sub>-Particulate Matter (Size Less than 10µm)**

**PM<sub>2.5</sub>-Particulate Matter (Size Less than 2.5µm)**

**SO<sub>2</sub>-Sulphur Dioxide**

**NO<sub>2</sub>- Nitrogen Dioxide**



**Authorized Signatory**

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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 : Mahadevnasa Village				
Month : September -2021				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM <sub>10</sub> [µg/m <sup>3</sup> ]	PM <sub>2.5</sub> [µg/m <sup>3</sup> ]	SO <sub>2</sub> [µg/m <sup>3</sup> ]	NO <sub>2</sub> [µg/m <sup>3</sup> ]	CO [mg/m <sup>3</sup> ]
	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
<b>NAAQ Standards (24 hourly standard)</b>		<b>100</b> [µg/m <sup>3</sup> ]	<b>60</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>80</b> [µg/m <sup>3</sup> ]	<b>02</b> [mg/m <sup>3</sup> ] (8 hourly)

**Legend: PM<sub>10</sub>-Particulate Matter (Size Less than 10µm)**

**PM<sub>2.5</sub>-Particulate Matter (Size Less than 2.5µm)**

**SO<sub>2</sub>-Sulphur Dioxide**

**NO<sub>2</sub>- Nitrogen Dioxide**

  
**Authorized Signatory**

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

# **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  M/s D.R.PATNAIK.,
Sample Received on	29.09.2021	Analysis Completed on	30.09.2021	
Sample Description: Fugitive Dust Monitoring				
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	<b>1200</b> [ $\mu\text{g}/\text{m}^3$ ]
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**

  
**Authorized Signatory**

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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: 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	<b>1200</b> [ $\mu\text{g}/\text{m}^3$ ]
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**



\*Complaints Register is available at Laboratory.





# 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	M/s D.R.PATNAIK.,
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	<b>1200</b> [ $\mu\text{g}/\text{m}^3$ ]
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**

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

# **MURGABEDA MINES**

## **ETP WATER REPORT**

**SEPTEMBER-2021**



# B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Govt. Valid upto August, 2022


## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WW-03938		
<b>Sample Description:</b> Waste Water Sample	<b>Lab Code No</b>	: 210656209	
	<b>Issue Date</b>	: 18.09.2021	
	<b>Your Ref</b>	: Letter Dated 09.09.2021	
	<b>Date of Receipt</b>	: 09.09.2021	
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	
<b>Packing</b>	: Plastic Bottles & Pre-Sterilized Bottle	<b>Date of Registration</b>	: 09.09.2021
<b>Test Required</b> : As given below		<b>Date of commencement of testing</b>	: 09.09.2021
		<b>Date of completion of testing</b>	: 18.09.2021
		<b>Sample condition at receipt</b>	: Found ok
		<b>Sample tested as received</b>	
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 07.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> ETP Water inside ML Area		<b>General Environment conditions:</b> Ok	
<b>Page No:</b> 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 <sup>rd</sup> Edition 2017	0.46	3
9	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> 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.

4<sup>th</sup> 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

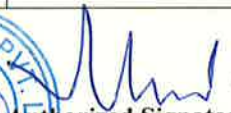
## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WW-03947		
<b>Sample Description:</b> Waste Water Sample	<b>Lab Code No</b>	: 210655309	
	<b>Issue Date</b>	: 28.09.2021	
	<b>Your Ref</b>	: Letter Dated 20.09.2021	
	<b>Date of Receipt</b>	: 20.09.2021	
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
<b>Packing</b>	: Plastic Bottles& Pre-Sterilized Bottle	<b>Date of Registration</b>	20.09.2021
<b>Test Required</b> : As given below		<b>Date of commencement of testing</b>	20.09.2021
		<b>Date of completion of testing</b>	28.09.2021
		<b>Sample condition at receipt</b>	Found ok
		<b>Sample tested as received</b>	
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 17.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> ETP Water inside ML Area		<b>General Environment conditions:</b> Ok	
<b>Page No:</b> 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 <sup>rd</sup> Edition 2017	0.42	3
9	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WW-03939		
<b>Sample Description:</b> Waste Water Sample	<b>Lab Code No</b>	: 210656109	
	<b>Issue Date</b>	: 18.09.2021	
	<b>Your Ref</b>	: Letter Dated 09.09.2021	
	<b>Date of Receipt</b>	: 09.09.2021	
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
<b>Packing</b>	: Plastic Bottles& Pre-Sterilized Bottle	<b>Date of Registration</b>	09.09.2021
<b>Test Required</b> : As given below		<b>Date of commencement of testing</b>	09.09.2021
		<b>Date of completion of testing</b>	18.09.2021
		<b>Sample condition at receipt</b>	Found ok
		<b>Sample tested as received</b>	
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 07.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> STP Water At Camp		<b>General Environment conditions:</b> Ok	
<b>Page No:</b> 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 <sup>rd</sup> Edition 2017	0.72	3
8	Fecal Coliform	MPN/100ml	APHA 23 <sup>rd</sup> Edition	250	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.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WW-03948	
<b>Sample Description:</b> Waste Water Sample	<b>Lab Code No</b>	: 210655209
	<b>Issue Date</b>	: 28.09.2021
	<b>Your Ref</b>	: Letter Dated 20.09.2021
	<b>Date of Receipt</b>	: 20.09.2021
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)
<b>Packing</b>	: Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b> 20.09.2021
<b>Test Required</b>	: As given below	<b>Date of completion of testing</b> 28.09.2021
		<b>Sample condition at receipt</b> Found ok
		<b>Sample tested as received</b>
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 17.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1
<b>Location of Sampling:</b> STP Water At Camp		<b>General Environment conditions:</b> 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 <sup>rd</sup> Edition 2017	0.87	3
8	Fecal Coliform	MPN/100ml	APHA 23 <sup>rd</sup> Edition	325	230

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

\*\*\* End of the Report \*\*\*

Authorized Signatory  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

# **MURGABEDA MINES**

## **SURFACE WATER QUALITY REPORT**

**SEPTEMBER-2021**



# B.S. ENVI - TECH PVT. LTD.

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

## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03940	
		<b>Lab Code No</b> : 210656009	
		<b>Issue Date</b> : 18.09.2021	
		<b>Your Ref</b> : Letter Dated 09.09.2021	
<b>Sample Description:</b> Surface Water Sample		<b>Date of Receipt</b> : 09.09.2021	
<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle <b>Test Required</b> : As given below	<b>Date of Registration</b>		09.09.2021
	<b>Date of commencement of testing</b>		09.09.2021
	<b>Date of completion of testing</b>		18.09.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Suna nadi river Upstream		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.20	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.25	2.0

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

Authorized Signatory  
( G.Chandra Mouli )  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

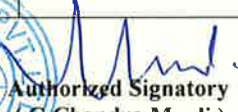
<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03940	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210656009	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt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

### 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	75	-

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

... End of the Report...

  
Authorized Signatory  
(G. Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

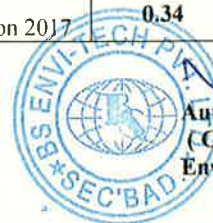
<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03941	
		<b>Lab Code No :</b> 210655909	
		<b>Issue Date :</b> 18.09.2021	
		<b>Your Ref :</b> Letter Dated 09.09.2021	
<b>Sample Description:</b> Surface Water Sample		<b>Date of Receipt :</b> 09.09.2021	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing :</b> Plastic Bottles& Pre-Sterilized Bottle <b>Test Required :</b> As given below	<b>Date of Registration</b>		09.09.2021
	<b>Date of commencement of testing</b>		09.09.2021
	<b>Date of completion of testing</b>		18.09.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Sampling Details</b> <b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Suna nadi river Downstream <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.25	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.34	2.0

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



Authorized Signatory  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03941	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210655909	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt</b> : 09.09.2021	
	<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.09.2021
<b>Test Required</b> : As given below	<b>Date of completion of testing</b>	18.09.2021
	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 07.09.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Suna nadi river Downstream	<b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	105	-

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

... End of the Report...

Authorized Signatory  
(G. Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03942	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210655809	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt</b> : 09.09.2021	
	<b>Date of Registration</b>	09.09.2021
<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of commencement of testing</b>	09.09.2021
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of completion of testing</b>	18.09.2021
<b>Test Required</b> : As given below	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 07.09.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Baitarani River	<b>General Environment conditions:</b> Ok	
	<b>Page No:</b> 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.12	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.26	2.0

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

Authorized Signatory  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03942	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210655809	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt</b> : 09.09.2021	
	<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.09.2021
<b>Test Required</b> : As given below	<b>Date of completion of testing</b>	18.09.2021
	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 07.09.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Baitarani River	<b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> 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.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03943 <b>Lab Code No :</b> 210655709 <b>Issue Date :</b> 18.09.2021 <b>Your Ref :</b> Letter Dated 09.09.2021 <b>Date of Receipt :</b> 09.09.2021	
<b>Sample Description:</b> Surface Water Sample			
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>	09.09.2021	
<b>Packing :</b> Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.09.2021	
<b>Test Required :</b> As given below	<b>Date of completion of testing</b>	18.09.2021	
	<b>Sample condition at receipt</b>	Found ok	
	<b>Sample tested as received</b>		
<b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Mahadev Nala Upstream		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.29	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> 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.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03943	
		<b>Lab Code No</b> : 210655709	
		<b>Issue Date</b> : 18.09.2021	
		<b>Your Ref</b> : Letter Dated 09.09.2021	
<b>Sample Description:</b> Surface Water Sample		<b>Date of Receipt</b> : 09.09.2021	
<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle <b>Test Required</b> : As given below	<b>Date of Registration</b>		09.09.2021
	<b>Date of commencement of testing</b>		09.09.2021
	<b>Date of completion of testing</b>		18.09.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Mahadev Nala Upstream		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	95	-

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

... End of the Report...



Authorized Signatory  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03944	
		<b>Lab Code No :</b> 210655609	
		<b>Issue Date :</b> 18.09.2021	
		<b>Your Ref :</b> Letter Dated 09.09.2021	
<b>Sample Description:</b> Surface Water Sample		<b>Date of Receipt :</b> 09.09.2021	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing :</b> Plastic Bottles& Pre-Sterilized Bottle <b>Test Required :</b> As given below	<b>Date of Registration</b>		09.09.2021
	<b>Date of commencement of testing</b>		09.09.2021
	<b>Date of completion of testing</b>		18.09.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Mahadev Nala Downstream		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.26	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.38	2.0

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

Authorized Signatory  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03944	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210655609	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt</b> : 09.09.2021	
	<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.09.2021
<b>Test Required</b> : As given below	<b>Date of completion of testing</b>	18.09.2021
	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 07.09.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Mahadev Nala Downstream	<b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	125	-

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.

4<sup>th</sup> 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

# **MURGABEDA MINES**

## **SURFACE RUNOFF WATER QUALITY REPORT**

**SEPTEMBER-2021**



# B.S. ENVI - TECH PVT. LTD.

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

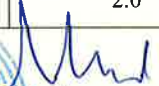
## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03945	
<b>Sample Description:</b> Surface Water Sample		<b>Lab Code No :</b> 210655509	
		<b>Issue Date :</b> 18.09.2021	
		<b>Your Ref :</b> Letter Dated 09.09.2021	
		<b>Date of Receipt :</b> 09.09.2021	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing :</b> Plastic Bottles & Pre-Sterilized Bottle <b>Test Required :</b> As given below	<b>Date of Registration</b>		09.09.2021
	<b>Date of commencement of testing</b>		09.09.2021
	<b>Date of completion of testing</b>		18.09.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 07.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Shutting Pond Near Gate No.02		<b>General Environment conditions:</b> Ok	
<b>Page No: 1 of 2</b>			

### 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 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.10	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.20	2.0

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

  
 Authorized Signatory  
 (G. Chandra Mouli)  
 Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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


<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03945		
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b>	: 210655509	
	<b>Issue Date</b>	: 18.09.2021	
	<b>Your Ref</b>	: Letter Dated 09.09.2021	
	<b>Date of Receipt</b>	: 09.09.2021	
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	
<b>Packing</b>	: Plastic Bottles & Pre-Sterilized Bottle	<b>Date of Registration</b>	09.09.2021
<b>Test Required</b> : As given below		<b>Date of commencement of testing</b>	09.09.2021
		<b>Date of completion of testing</b>	18.09.2021
		<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>		
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 07.09.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Shutting Pond Near Gate No.02		<b>General Environment conditions:</b> Ok	
<b>Page No: 2 of 2</b>			


### 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	45	-

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

... End of the Report...

  
Authorized Signatory  
(G. Chandra Mouli)  
Environmental Scientist



\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

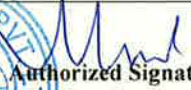
## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-03946	
<b>Sample Description:</b> Surface Water Sample	<b>Lab Code No</b> : 210655409	
	<b>Issue Date</b> : 18.09.2021	
	<b>Your Ref</b> : Letter Dated 09.09.2021	
	<b>Date of Receipt</b> : 09.09.2021	
	<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.09.2021
<b>Test Required</b> : As given below	<b>Date of completion of testing</b>	18.09.2021
	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 07.09.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> Shutting Pond Near Camp	<b>General Environment conditions:</b> Ok	
	<b>Page No:</b> 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 <sub>1</sub> ,	mg/l	IS:3025 -Part-32	15.6	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 <sup>rd</sup> Edition 2017	< 0.10	5.0
9.	Sulphide as S <sup>2-</sup>	mg/l	4500 S <sup>2-</sup> , D APHA 23 <sup>rd</sup> Edition 2017	< 0.10	2.0
10.	Sulphates as SO <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, 23 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	0.12	3
15.	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.19	2.0

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

  
Authorized Signatory  
(G. Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.



# B.S. ENVI - TECH PVT. LTD.

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

## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-03946	
<b>Sample Description:</b> Surface Water Sample		<b>Lab Code No :</b> 210655409	
		<b>Issue Date :</b> 18.09.2021	
		<b>Your Ref :</b> Letter Dated 09.09.2021	
		<b>Date of Receipt :</b> 09.09.2021	
		<b>Date of Registration :</b> 09.09.2021	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)		<b>Date of commencement of testing :</b> 09.09.2021	
<b>Packing :</b> Plastic Bottles& Pre-Sterilized Bottle		<b>Date of completion of testing :</b> 18.09.2021	
<b>Test Required :</b> As given below		<b>Sample condition at receipt :</b> Found ok	
		<b>Sample tested as received</b>	
<b>Date of Sampling:</b> 07.09.2021 <b>Location of Sampling:</b> Shutting Pond Near Camp		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 <sup>rd</sup> Edition 2017	65	-

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

... End of the Report...

**Authorized Signatory**  
(G.Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

# **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


<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-02094  <b>Lab Code No :</b> 210840607  <b>Issue Date :</b> 19.07.2021  <b>Your Ref :</b> Letter Dated 09.07.2021  <b>Date of Receipt :</b> 09.07.2021	
<b>Sample Description:</b> Drinking Water Sample		<b>Date of Registration</b> : 09.07.2021 <b>Date of commencement of testing</b> : 09.07.2021 <b>Date of completion of testing</b> : 19.07.2021 <b>Sample condition at receipt</b> : Found ok <b>Sample tested as received</b> :	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing :</b> Plastic Bottles & Pre-Sterilized Bottle <b>Test Required :</b> As given below		<b>Sampling Details</b> <b>Date of Sampling:</b> 06.07.2021 <b>Location of Sampling:</b> At Mines for Portable test <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sub>3</sub>	mg/l	IS:3025 -Part-21	76	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 <sup>rd</sup> 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 <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, APHA 23 <sup>rd</sup> Edition 2017	27	200	400
12	Nitrate as NO <sub>3</sub>	mg/l	4500-NO <sub>3</sub> B Ultraviolet Spectrophotometric Screening Method	12	45	No Relaxation
13	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.36	1	1.5
14	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS:3025 -Part-23	48	200	600

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

  
 Authorized Signatory  
 (G. Chandra Mouli)  
 Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

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

### 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of A0PHA 23 <sup>rd</sup> 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...

\*Complaints Register is available at Laboratory.





# B.S. ENVI - TECH PVT. LTD.

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

## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-02095	
<b>Sample Description:</b> Drinking Water Sample	<b>Lab Code No</b> : 210840507	
	<b>Issue Date</b> : 19.07.2021	
	<b>Your Ref</b> : Letter Dated 09.07.2021	
	<b>Date of Receipt</b> : 09.07.2021	
	<b>Quantity</b> : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	<b>Date of Registration</b>
<b>Packing</b> : Plastic Bottles& Pre-Sterilized Bottle	<b>Date of commencement of testing</b>	09.07.2021
<b>Test Required</b> : As given below	<b>Date of completion of testing</b>	19.07.2021
	<b>Sample condition at receipt</b>	Found ok
	<b>Sample tested as received</b>	
<b>Sampling Details</b>		
<b>Date of Sampling:</b> 06.07.2021	<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> At Camp Inlet Water	<b>General Environment conditions:</b> Ok	
	<b>Page No:</b> 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 <sub>3</sub>	mg/l	IS:3025 -Part-21	62	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 <sup>rd</sup> 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 <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, APHA 23 <sup>rd</sup> Edition 2017	18	200	400
12	Nitrate as NO <sub>3</sub>	mg/l	4500-NO <sub>3</sub> B Ultraviolet Spectrophotometric Screening Method	11	45	No Relaxation
13	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.39	1	1.5
14	Total Alkalinity as CaCO <sub>3</sub>	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

\*Complaints Register is available at Laboratory.



# B.S. ENVI - TECH PVT. LTD.

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

## TEST REPORT

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.	<b>Test Report No. :</b> BSET/2021/WS-02095		
<b>Sample Description:</b> Drinking Water Sample	<b>Lab Code No</b>	: 210840507	
	<b>Issue Date</b>	: 19.07.2021	
	<b>Your Ref</b>	: Letter Dated 09.07.2021	
	<b>Date of Receipt</b>	: 09.07.2021	
	<b>Quantity</b>	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
<b>Packing</b>	: Plastic Bottles& Pre-Sterilized Bottle	<b>Date of Registration</b>	09.07.2021
<b>Test Required</b> : As given below		<b>Date of commencement of testing</b>	09.07.2021
		<b>Date of completion of testing</b>	19.07.2021
		<b>Sample condition at receipt</b>	Found ok
		<b>Sample tested as received</b>	
<b>Date of Sampling:</b> 06.07.2021 <b>Location of Sampling:</b> At Camp Inlet Water		<b>Sampling Details</b> <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> Ok	
		<b>Page No:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 <sup>rd</sup> 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...

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-02096	
		<b>Lab Code No :</b> 210840407	
		<b>Issue Date :</b> 19.07.2021	
		<b>Your Ref :</b> Letter Dated 09.07.2021	
<b>Sample Description:</b> Drinking Water Sample		<b>Date of Receipt :</b> 09.07.2021	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) <b>Packing :</b> Plastic Bottles & Pre-Sterilized Bottle <b>Test Required :</b> As given below	<b>Date of Registration</b>		09.07.2021
	<b>Date of commencement of testing</b>		09.07.2021
	<b>Date of completion of testing</b>		19.07.2021
	<b>Sample condition at receipt</b>		Found ok
	<b>Sample tested as received</b>		
<b>Sampling Details</b> <b>Date of Sampling:</b> 06.07.2021 <b>Location of Sampling:</b> At Camp Outlet Water ( Pantry ) <b>Sampling Method/Procedure:</b> IS 3025 Part 1 <b>General Environment conditions:</b> 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 <sub>3</sub>	mg/l	IS:3025 -Part-21	138	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 <sup>rd</sup> 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 <sub>4</sub>	mg/l	4500-SO <sub>4</sub> E, Turbidity Method, APHA 23 <sup>rd</sup> Edition 2017	52	200	400
12	Nitrate as NO <sub>3</sub>	mg/l	4500-NO <sub>3</sub> B Ultraviolet Spectrophotometric Screening Method	29	45	No Relaxation
13	Fluoride as F <sup>-</sup>	mg/l	4500-F D, APHA 23 <sup>rd</sup> Edition 2017	0.45	1	1.5
14	Total Alkalinity as CaCO <sub>3</sub>	mg/l	IS:3025 -Part-23	90	200	600

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

  
 Authorized Signatory  
 (G. Chandra Mouli)  
 Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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

<b>Name &amp; Address of the Customer :</b> M/s D.R.Patnaik Murgabeda Iron Ore Mines.		<b>Test Report No. :</b> BSET/2021/WS-02096	
<b>Sample Description:</b> Drinking Water Sample		<b>Lab Code No :</b> 210840407	
<b>Quantity :</b> 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)		<b>Issue Date :</b> 19.07.2021	
<b>Packing :</b> Plastic Bottles& Pre-Sterilized Bottle		<b>Your Ref :</b> Letter Dated 09.07.2021	
<b>Test Required :</b> As given below		<b>Date of Receipt :</b> 09.07.2021	
		<b>Date of Registration</b>	09.07.2021
		<b>Date of commencement of testing</b>	09.07.2021
		<b>Date of completion of testing</b>	19.07.2021
		<b>Sample condition at receipt</b>	Found ok
		<b>Sample tested as received</b>	
<b>Sampling Details</b>			
<b>Date of Sampling:</b> 06.07.2021		<b>Sampling Method/Procedure:</b> IS 3025 Part 1	
<b>Location of Sampling:</b> At Camp Outlet Water ( Pantry )		<b>General Environment conditions:</b> 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 <sup>rd</sup> 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 <sup>rd</sup> Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 <sup>rd</sup> Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 <sup>rd</sup> Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 <sup>rd</sup> 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...

Authorized Signatory  
(G. Chandra Mouli)  
Environmental Scientist

\*Complaints Register is available at Laboratory.

4<sup>th</sup> 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