

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

WESTERN ZONAL BENCH AT PUNE

ORIGINAL APPLICATION NO. 15 OF 2020

IN THE MATTER OF:

KRISHNA MARATHE

.....APPLICANT

Versus

UNION OF INDIA & ORS.

.....RESPONDENTS

INDEX

S. NO.	PARTICULARS	P. NO
1	Reply on behalf of Applicant No.1 to Inspection Report dated	2-14
2	<u>ANNEXURE A-11</u> A copy of the relevant extracts of said Progressive Mining Closure Plan	15-18
3	<u>ANNEXURE A-12</u> A copy of the RTI Reply by the Forest Department	19-
4	<u>ANNEXURE A-13</u> A copy of the RTI Reply by MPCB dated 12.10.2020	20 -
5	<u>ANNEXURE A-14</u> Copies of such laboratory reports from the period of 10.02.2017-23.06.2020 from the Directorate of Health Services, Environment and Pollution Control Wing, Government of Goa	21 - 54

THROUGH



RITWICK DUTTA RAHUL CHOUDHARY MAITREYA GHORPADE

ADVOCATES

Counsels for Applicants
N-71, Lower Ground Floor, Greater Kailash-I,
New Delhi- 110048
litigation.life@gmail.com
+91 9310247881

Place:- Delhi/Pune

Date: - 23.08.2021

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
WESTERN ZONAL BENCH AT PUNE
ORIGINAL APPLICATION NO. 15 OF 2020

IN THE MATTER OF:

KRISHNA MARATHE

...APPLICANT

Versus

UNION OF INDIA & ORS.

...RESPONDENTS

AFFIDAVIT-IN-REPLY ON BEHALF OF APPLICANT NO.1 IN RESPONSE TO
INSPECTION REPORT OF COMMITTEE CONSTITUTED VIDE ORDER DATED
10.07.2020

1. The instant Application has been filed under Section 14 and 15 of the National Green Tribunal Act, 2010 raising substantial issues relating to violation of conditions of Environmental Clearance ('EC') granted by Respondent No. 1 MoEFCC to Respondent No. 6 M/s New India Mining Company ('NIMCO') for mining of Iron Ore in mining lease area in respect of 32.83 Hectares in the Village of Redi, District Sindhudurg, state of Maharashtra.
2. That the Applicant has *inter alia* raised issues regarding mechanized open cast mining of iron ore being carried out by Respondent M/s NIMCO without any prior Environmental Clearance, improper disposal and stacking of top soil and mining reject at earmarked sites as well as pollution to the groundwater reserves of Redi Village and the Arabian Sea.
3. That vide order dated 10.07.2020, this Hon'ble Tribunal constituted a committee which has carried out a site visit on 20th and 21st October 2020, and accordingly submitted its report.

NO PRIOR ENVIRONMENTAL CLEARANCE AND INVALID CRZ CLEARANCE

4. That at the outset, it is submitted that the committee has observed that Respondent M/s NIMCO has failed to obtain environmental clearance ('EC') prior to carrying out mining activities in open cast iron ore mine. That the Committee Report on Pg. 73 clearly states that:

*"Respondent No. 6 informed that the mineral extraction operations continued up to May 2016 and operations discontinued since June 2016. **Respondent No. 6 company did not obtain environmental clearance under EIA Notification, 2006.** Representatives of Respondent No. 6 company informed that Respondent No. 6 believed that obtaining the Environment Clearance is not mandatory as there is no enhancement in the production/ Lease area. Respondent No. 6 also informed that they have obtained permissions including Mining Plan. **It is observed that Respondent No. 6 company had carried out the mining operations without obtaining the Environmental Clearance**".*

(emphasis supplied)

5. It is submitted that the law on the aspect of prior environmental clearance as a requisite for all mining operations has been laid down by the Hon'ble Supreme Court through various orders. That the submissions of the Respondent No. 6 that EC was not mandatory as there was no enhancement in the production/lease area is not legally tenable, as has been held by the Hon'ble Supreme Court in **M.C. Mehta v. Union of India and Ors** reported in **(2004) 12 SCC 118**, wherein the Hon'ble Supreme Court held the following:

*"We are unable to accept the contention that the notification dated 27th January, 1994 would not apply to leases which come up for consideration for renewal after issue of the notification. **The notification mandates that the mining operation shall not be undertaken in any part of India unless environmental clearance by the Central Government has been accorded.** The clearance under the notification is valid for a period of five years. In none of the leases the requirement of notification was complied with either at the stage of initial grant of the mining lease or at the stage*

*of renewal. Some of the leases were fresh leases granted after issue of the notification. Some were cases of renewal. **No mining operation can commence without obtaining environmental impact assessment in terms of the notification.**"*

(emphasis supplied)

6. That furthermore, as per this Hon'ble Tribunal's order in *Tamil Nadu Small Mine Owners Federation v. Secretary, MoEFCC & Ors.* reported in 2020 SCC OnLine NGT 162, it has been held that:

*"77. (iv) It is also made clear that all mining leases, either major or minor, even less than 5 hectares area, **has to apply and get Environment Clearance as per the amended EIA Notification dated 15.01.2016.** This will apply to the existing mining leases as well. **Without obtaining necessary Environment Clearance irrespective of area, no mining, both minor/major, shall be permitted to operate.**"*

(emphasis supplied)

7. It is submitted that the contentions of Respondent No. 6 are untenable in light of the abovementioned orders of the Hon'ble Supreme Court and this Hon'ble Tribunal. That even if it is assumed that no mining activities have been carried out recently, the Respondent No. 6 has itself informed the Committee that mining activities took place until June 2016. That therefore, there is a blatant violation of the EIA Notification, 2006 and its subsequent amendments.
8. It is further submitted, that the CRZ Clearance obtained by Respondent No. 6 was subject to grant of other permissions, such as the Environmental Clearance, which the Respondent No. 6 was required to obtain prior to initiation of mining activities. That accordingly, the CRZ Clearance obtained vide letter bearing no. CRZ 2012/CR 55/TC 4 dated 24.07.2013 is also legally invalid as it is in violation of the conditions of grant of CRZ Clearance.
9. It is submitted that the Hon'ble Supreme Court has held that all mining done without a valid Environmental Clearance would entail compensation payable to

the amount of mining carried, as was held in the case of **Common Cause v.**

Union of India and Ors. reported in **(2017) 9 SCC 499** as follows:

*"184. There may be some overlap in the period when mining operations were conducted by the mining lease holders without an EC and/or an FC. **We make it clear that mineral extracted either without an EC or without an FC or without both would attract the provisions of Section 21(5) of the MMDR Act and 100% of the price of the illegally or unlawfully mined mineral must be compensated by the mining lease holder. To the extent of the overlap or the common period, obviously only one set of compensation is payable by the mining lease holder to the State of Odisha. We order accordingly.**"*

(emphasis supplied)

ILLEGAL DUMPING OF MINING WASTE

10. It is submitted that the Respondent No. 6 have themselves admitted to dumping outside the mining lease area as per Pg. 62 the Progressive Mining Closure Plan submitted to the IBM. That despite such submission being made by the Applicant, the committee has failed to take cognizance of such violations, and have instead relied heavily on the submissions of the Respondent No. 6 themselves. A copy of the relevant extracts of said Progressive Mining Closure Plan are annexed herewith as **ANNEXURE A-11.**
11. Furthermore, the contention that the dump sites bearing Sy. Nos. 15 and 58 belong to Forest Department, Government of Maharashtra is also patently false and misleading. The Committee states that they have observed a Board which mentions that the said Sy. Nos. 15 and 58 belong to the Forest Department, Govt. of Maharashtra. However, the Forest Department themselves have unequivocally stated that the said lands do not belong to them and that the said Board was not installed by them.
12. That the Applicant had previously approached the Forest Department, Government of Maharashtra via RTI Application seeking information on the said

dump sites Sy. Nos. 15 and 58 and the said Board installed thereon. That the Forest Department replied to such RTI Application and has clearly and unequivocally stated that the said Sy. Nos. 15 and 58 do not belong to the Forest Department, and that the said Board was not installed by them in any manner. A copy of the said RTI Reply by the Forest Department is annexed herewith as

ANNEXURE A-12.

RESTORATION AND RECLAMATION OF MINED OUT PITS

13. It is submitted that Respondent no.6 has carried out mining operations since 1952 as per their own submissions. In this context, it is submitted that every mining lease holder has certain responsibilities towards environmental conservation and protection of environment by virtue of the Rules contained in Chapter V of the the Mineral Conservation and Development Rules, 1988. The Respondent no. 6 accordingly, had a duty to protect the environment by taking all possible precautions (Rule 31), utilize top soil for restoration and rehabilitation of land (Rule 32) phased restoration, reclamation and rehabilitation of mine before the conclusion of operations (Rule 34) and prevention and reduction of discharge of toxic liquids (Rule 38), all of which have not been adhered to by Respondent No. 6.
14. That with respect to duties towards the environment with respect to Chapter V of the MCDR, 1988, the Hon'ble Supreme Court has held in M.C. Mehta (Supra) the following:

*"Rules 31 to 41 contained in Chapter V of the Mineral Conservation and Development Rules, 1988 framed under Section 18 of the MMRD Act deal with the measures required to be taken by the lessee for the protection of environment from any adverse effect of mining or irreversible consequences thereof. **These Rules, inter alia, provide that every holder of a mining lease shall take all possible precautions for the protection of environment and control of pollution while conducting mining operations in the area; shall, wherever top soil exists and is to be excavated for mining operations, remove it separately and***

*utilize for restoration or rehabilitation of the land which is no longer required for mining operations. The holder is also required to take steps so that the overburden, waste rock, rejects and fines generated during prospecting and mining operations or tailings, slims and fines produced during sizing salting and beneficiation or metallurgical operations shall be stored in separate dumps which shall be properly secured to prevent escape of material therefrom in harmful quantities which may cause degradation of environment. Wherever possible, the waste rock, overburden etc. shall be back-filled into the mines excavation with a view to restoring the land for its original use as far as possible and wherever it is not feasible during mining operation, the waste dumps shall be suitably tarraced and stabilized through vegetation or otherwise. **It is also required that the phased restoration, reclamation and rehabilitation of lands affected by mining operation shall be undertaken which work shall be completed before the conclusion of mining operations and the abandonment of mine.**"*

(emphasis supplied)

15. It is therefore evident that the Respondent No. 6 has failed to adhere to the Rules stipulated under MCDR, 1988, as well as the orders of the Hon'ble Supreme Court which mandated that phased restoration, reclamation and rehabilitation of lands shall be undertaken and completed before the conclusion of mining operations and abandonment of mine.
16. Furthermore, there are no provisions contained in the MCDR, 1988, that allow the Respondent No. 6 the liberty to use mined out areas as water reservoirs, and therefore a suo moto declaration by the Respondent no. 6 to such effect is patently illegal and devoid of any merit. The Respondent No. 6 cannot be allowed to decide the manner in which restoration and rehabilitation of the mined out pits will take place, and the Committee ought to have made certain observations with regards to the same. Such is further proof of the non-application of mind by the Committee as well as lack of detailed scrutiny of analysis.

CONTAMINATION OF GROUNDWATER

17. That with regards to the observations of the Committee on the subject of groundwater contamination, there are several errors apparent on the face of the record. Firstly, the Committee has merely replicated the findings in the Inspection Report of M/s Gogte Minerals, and has not carried out any independent assessment of the contamination being caused by Respondent 6.
18. That the authenticity of the water samples being tested in the said Report are dubious since the Respondent No. 6 had complete autonomy in submitting the said samples to the private testing facility, and the source of such water samples cannot be assumed to be truthful.
19. That the NIH Report annexed at Annexure-6 of the Committee Report has not been substantially appraised or studied by the Committee. It is submitted that the said NIH Report itself observes on pg 23 that "*Chloride is an indicator in detecting the contamination of waster or intrustion of saltwater in to ground water. The chloride concentration varies between 8.93 mg/l and 358.42 mg/l.*" It is submitted that despite such observation, the Report does not identify that the Acceptable Limits for drinking water as per the BIS Norms is 250 mg/l, and that therefore any water sample containing chloride beyond the prescribed acceptable limits is deleterious to human health.
20. Furthermore, the analysis of MPCB as annexed to the Committee Report as Annexure-8 cannot be relied on as the MPCB has not uniformly analysed the water samples. It is evident on perusal of said Annexure-8 that the MPCB has arbitrarily analysed the water samples, and there is no proper, uniform, and reliable parameters which have been analysed for all water samples. The MPCB has arbitrarily failed to analyse the amount of Chloride, Sulphates, TDS, Electrical Conductivity, Fluoride, Dissolved Oxygen, Zinc, etc. and other such toxic elements on numerous occasions, and therefore, such sample analysis cannot be relied on entirely. That such improper and incomplete analysis becomes even more dubious since the MPCB themselves have previously replied to the RTI

Application filed by the Applicant wherein they directly stated that the MPCB has not collected any water samples from the mining lease area. Copy of the RTI Reply by MPCB dated 12.10.2020 is annexed herewith as **ANNEXURE A-13**.

21. That such improper analysis is all the more relevant in the context of the evidence of groundwater and surface water contamination being furthered by the Applicant. It is submitted that the Applicant has obtained several laboratory reports from the Directorate of Health Services, Government of Goa, wherein samples of Pit Water from Pit No. 203 and 138 as well as Reject Water and Outlet Cartridge filter water from Water Treatment Plant have been analysed from the period of 10.02.2017-23.06.2020.
22. That several such laboratory reports clearly and unequivocally state that the water samples contain excessive Total Dissolved Solids (TDS), Total Hardness, Calcium, Electrical Conductivity, Chlorides and Magnesium which make the water unfit for human consumption and are potentially toxic. Furthermore, such water also contains toxic elements which in excessive quantities can cause severe damage to land and water resources.
23. That such contaminated water is leading to local well water and tap water to be contaminated, as is evident per Directorate of Health Services Report dated 3.6.2019, 10.6.2020 and Public Health Laboratory Sindhudurg Reports dated 5.5.2018 and 19.06.2019. Copies of such laboratory reports from the period of 10.02.2017-23.06.2020 from the Directorate of Health Services, Environment and Pollution Control Wing, Government of Goa, are collectively annexed as **ANNEXURE A-14**. It is pertinent to note that all such laboratory analysis has been paid for and undertaken by the Respondent No. 6 themselves, yet the Respondent No. 6 failed to bring these reports to the attention of the Committee.
24. Furthermore, the Applicant submits that the observations of the Committee pertaining to groundwater contamination have not factored in the analysis of groundwater samples annexed to the Application as **Annexure A-10** and **Annexure A-14**. The Committee has failed to seek any justification from

Respondent No. 6 as to the reasons for observed groundwater contamination as submitted by the Applicant.

25. That notwithstanding the observations of the Committee, there is undisputable contamination of water resources that is being caused by the Respondent No. 6. That even if it is assumed that the present condition is not one where ground and surface water contamination is occurring, it is beyond doubt that the Respondent No. 6 has caused severe ground and surface water contamination in the past, for which Respondent No. 6 is liable to payment environmental compensation as per the Polluter Pays Principle regime evolved by this Hon'ble Tribunal. Section 20 of the National Green Tribunal Act, 2010, specifically states that "the Tribunal shall, while passing any order or decision or award, apply the principles of sustainable development, the precautionary principle, and the polluter pays principle".
26. Furthermore, with regards to Polluter Pays Principle, this Hon'ble Tribunal has held in **Saloni Ailawadi v. Union of India and Ors.** reported in **2019 SCC OnLine NGT 69:**

*"23. We may also observe that 'Precautionary Principle' and 'Sustainable Development' principle are part of Article 21 of the Constitution and Section 20 of the National Green Tribunal Act, 2010. 'Polluter Pays' principle does not mean polluter can pollute and pay for it. It would include environmental cost as well as direct cost to people. **Environmental cost is not restricted to those which is immediately tangible but full cost for restoration of environmental degradation"***

(emphasis supplied)

27. The Hon'ble Supreme Court has held that the compensation payable by the polluting industry should be used to restore and improve the environment as in the case of **Sterlite Industries (India) and Ors. v. Union of India and Ors.** reported in **(2013) 4 SCC 575**, wherein the Hon'ble Supreme Court held:

"42...The appellants, however, are directed to deposit within three months from today a compensation of Rs.100 crores with the

*Collector of Thoothukudi District, which will be kept in a fixed deposit in a Nationalized Bank for a minimum of five years, renewable as and when it expires, and the interest therefrom **will be spent on suitable measures for improvement of the environment, including water and soil**, of the vicinity of the plant of the appellants after consultation with TNPCB and approval of the Secretary, Environment, Government of Tamil Nadu."*

(emphasis supplied)

28. The Applicant further submits that re-analysis of groundwater and surface water ought to be carried out in dry seasons as the heavy monsoons in the coastal areas dilute the test results and do not provide an accurate description of the groundwater contamination.
29. It is thus submitted that the Committee Inspection Report does not provide an accurate description of violations with regards to failure to ensure dumping of waste within mining area as well as reclamation and rehabilitation of mined out pits. The Committee has merely accepted the submissions of Respondent no. 6 regarding such without any independent application of mind.
30. That the Applicant was not a party to the inspection carried out on 20th and 21st October 2020, and thus, the veracity of the claims made by the Committee comprising of members of the Respondent No. 1, Respondent No.2 and Respondent No.3 are disputed. That the Committee ought to have carried out their inspection in a free and transparent manner, but such has not been done.
31. It is therefore submitted before this Hon'ble Tribunal that a fresh inspection be carried out by the Committee. In the alternative, it is submitted that specific response on the above mentioned issues, be sought from the Committee as the Inspection Report submitted by them does not sufficiently address these issues, and the silence of the Committee has the effect of misleading this Hon'ble Tribunal.

Pass any such Order deemed fit by this Hon'ble Tribunal in the facts and circumstances of the case.



APPLICANT

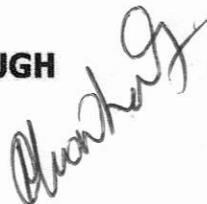


RITWICK DUTTA

RAHUL CHOUDHARY

MAITREYA GHORPADE

THROUGH



COUNSEL FOR THE APPLICANT

N-71, Lower Ground Floor,

Greater Kailash-I, New Delhi - 110048

Email: litigation.life@gmail.com

Ph: 93124 07881

VERIFICATION

I, Krishna Marathe, r/o H. No. 1204, At Post Redi Kanyal, Taluka Vengurla, Sidhudurg – 416570 do hereby solemnly affirm and state as under:

1. That I am the Applicant in the above titled Application and I am conversant with the facts and the circumstances of the case and competent to swear this affidavit.
2. That that the contents of the present *Reply* are true to my knowledge and/ or based on information, and/or the contents are based on the legal submission and/or inferences of facts, which I believe to be true.

Date: -

Place:

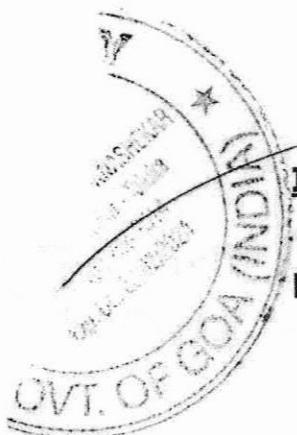


APPLICANT



WESTERN ZONAL BENCH AT PUNE

ORIGINAL APPLICATION NO. 15 OF 2020

**IN THE MATTER OF:**

Krishna Marathe

...APPLICANT

VERSUS

Union of India and Ors.

...RESPONDENTS

AFFIDAVIT

I, Krishna Marathe, r/o H. No. 1204, At Post Redi Kanyal, Taluka Vengurla, Sidhudurg – 416570 do hereby solemnly affirm and state as under:

1. That I am the Applicant in the above titled Application and am conversant with the facts and circumstances described in the present case and as such, I am competent to swear this affidavit.
2. That the contents of the accompanying *reply* are true and correct and nothing material has been concealed therefrom.

A handwritten signature in black ink, appearing to read "Krishna Marathe", written over a horizontal line.

DEPONENT**VERIFICATION**

Verified on this 19 of August 2021 that the contents of the above mentioned affidavit are true and correct and nothing material has been concealed therefrom.

A handwritten signature in black ink, appearing to read "Krishna Marathe", written over a horizontal line.

DEPONENT

executed before me by Shri. Krishna Purushottam Marathe
identified on the basis of Aadhar Card No. 4680 9161 6565



Rupali

Adv. Rupali G. Panashekar
Notary
Bicholim Taluka State of Goa (India)
Notary Reg. No. 296/14
Reg. No.: 4458/AT/2021
dated: 19/8/2021

Annexure A-1)

SCHEME OF MINING
(Including Progressive Mine Closure Plan)



Of

MAULI IRON ORE MINE

Registration No: IBM/5364/2011

(UNDER RULE 12(2) OF MCDR 1988)

**REDI VILLAGE, VENGURLA TALUKA, SINDHUDURG DISTRICT,
MAHARASHTRA STATE**

OVER AN EXTENT OF 32.83 Ha

(NON-FOREST AREA, PRIVATE LAND: 32.83 Ha)

LESSEE

**M/s. NEW INDIA MINING CORPORATION
PRIVATE LIMITED**

'NIRMAL', 16 TH FLOOR, NARIMAN POINT, MUMBAI-400021

**TYPE: CATEGORY "A", FULL MECHANIZED MINE
PERIOD : 2014-2015 to 2018-2019**

PREPARED BY

**A.S.CHAUHAN,
H.No.2-2-1130/25A/1,
Shivam Road, New Nallakunta,
Hyderabad - 500 044,
ANDHRA PRADESH
RQP/ HYD/ 232/2004/A
Phone: 098491 79720**

Table showing the year wise generation of waste management

Year	Waste in MT	Place of dumping	LXW In m	Area covered	Step and angle
2014-2015	7,18,740	Outside lease	-	-	-
2015-2016	4,06,000	Outside lease	-	-	-
2016-2017	7,45,100	Within Lease	290x133	3.83	2 / 30 o
2017-2018	3,44,340	Within Lease	308 x 50 x 30	1.72	1 / 30 o
2018-2019	2,06,000	Within lease	310x 50 x 30	1.55	1 / 30 o
Total	24,20,180				

- 5.55 ha will be reclaimed and 1.55 ha will be bund.

6.1.1 Physical and Chemical Characteristics of waste:

Physical characteristic; The waste mainly consists of Intercalated Phyllitic clay, Manganeferrous clay and lateritic clay. The clays are very soft in nature.

Chemical Characteristics: The samples of Phyllitic clay, Laterite and Manganiferous clay were analyzed in NABL accredited Lab and the analysis is as follows the. The analysis report is enclosed as annexure I -L

Type of material	Fe %	SiO2%	Al2O3%
Phyllite	9.05	44.70	10.27
Laterite	25.13	15.72	21.81
Manganiferous clay	38.08	13.74	9.78

Built up of Dumps:

Table showing the year wise waste management

Year	Waste in MT	Total waste including Swell factor 10%	Area required In Ha	Location of dump
2014-2015	7,18,740	7,90,614	2.798	Outside the lease
2015-2016	4,06,000	4,46,600	2.592	Outside the lease
2016-2017	7,45,100	8,01,108	3.83	Within the lease 38P- 36 P.
2017-2018	3,44,340	3,78,774	1.72	do
2018-2019	2,06,000	2,26,600	1.55	Around 28 P- 28P1
Total	24,20,180	26,62,110	11.321	

The lessee will not carry out dumping of waste outside lease area without permissions from the concerned authority. All permissions are obtained the lessee will dump the waste between N 450- N 560 & E 330, 340 - E 470 co-ordinates. 47
 Izom, Margao will be initiated as soon as permissions for dumping outside lease area are obtained. 47

[Signature]
 12/10/19

The table shows the Environment Parameters commitments & compliances



Proposals as per Approved Scheme of mining	Quantities	Achieved	Reasons for shortfall	Proposal for the next Scheme period (2014-15 to 2018-2019)
Top soil storage preservation and utilization	No top soil was proposed to be generated	No top soil was generated	Nil	No top soil will be generated
Land Reclamation	2.50 ha of mined out area was proposed to be reclaimed	6.07 ha of area was reclaimed	Nil	It is proposed to reclaim 5.55 ha in the Eastern part of the mined out area.
Waste dump Management	30, 74,439 MT was proposed to be handled. The waste was proposed to be used in the backfilling of NW corner and formation of 2 bunds	24, 23,565 MT of waste was handled during the last 5 years and was used for the formation of bund and backfilling of the area in NW part.	There was a short fall of about 6, 50,874 MT. The main reason for the shortfall is heavy rainfall in the area resulting in less work being carried out.	During the ensuing scheme period it is estimated that about 24, 20,180 MT of waste will be generated. Waste will be dumped outside the lease area for the first 2 years and then the area will be back filled by the waste generated during the next 3 years.
Afforestation	It was proposed to plant 14,150 trees in an area of 3 ha	9,549 trees were planted in an area of 3.5 Ha	4,601 trees were shortfall and the main reason is that there was no place to plant as the entire mine was under operation and there was no place.	During the Scheme period 5,000 trees will be planted in the back filled area covering an area of 2.5 ha.
Air Quality Monitoring	The air quality shall be monitored regularly and it order to proposed to control dust by taking following	All the proposed activities were carried out and the quality of air was monitored	No shortfalls	Air quality will be monitored regularly and all measures will be undertaken to control the air quality.

Annexure-6

A RECLAMATION AND REHABILITATION:

The reclamation of mined out area will commence from the third year i.e. 2016-2017 and total reclamation of the land will be undertaken upon exhaustion of mineral and the commencement of rehabilitation may begin in 2019-2020. A part of the pit is proposed to be used as a water reservoir. The water thus stored can be used for plantation and agricultural purposes. It will also act as ground water recharge pits. After the mine is abandoned the pit will be secured by fencing. However, with regards to the following will begin in the 2014-2015.

- 1) Afforestation of backfilled area in the western side.
- 2) Securing the boundary of the area to check unauthorized entry.
- 3) Placing of caution sign boards
- 4) Basic infrastructure is provided at the mine site
- 5) Arrangement of Medical facilities

**B RECLAMATION PLAN:**

Reclamation of the mined out area by backfilling of waste generated from the mine is proposed in the area. An area of 6.07 ha in the Western part of the area is already backfilled and of which 2.5 ha will be rehabilitated by planting fruit growing trees in the ensuing scheme period of five years. An area of about 5.55 ha will be backfilled in the Eastern part of the area and reclamation of the dump will start in the year 2019-2020, after the dump becomes dead. The balance part of the mined out area will be used as a water reservoir. The water thus stored can be used for plantation and agricultural purposes. It will also act as ground water recharge pits. After the mine is abandoned the pit will be secured by fencings. The area will be temporarily used for screening purpose.

Reclamation Plan

Year	Part of the area	Area in ha	Remarks
2014-2015	-	-	-
2015-2015	-	-	-
2016-2017	Eastern part	3.83	Backfilling of the area
2017-2018	Eastern part	1.73	Backfilling of the area
2018-2019	Bund	1.55	Temporary bund for storing water.

4.2 WATER AND AIR QUALITY MANAGEMENT

The water and air quality will be managed and the quality will be maintained by taking the following measures.

- a) Drains will be made at various places to divert the rain water into the pit
- b) Pumped water will pass through series of settling tanks. This will help in the settling of the particles in the tank, some quantity of lime will be added to hasten the process.
- c) Stone wall will be constructed at various places to control the flow of water
- d) Monitoring of water sample will be done regularly.

T. c.

①

Logo

Annexure A-12

Telephone No.02362/221196

Email ID: rfokudal@gmail.com

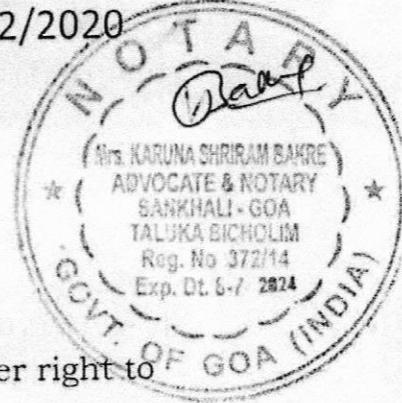
Maharashtra Government

Forest Department, Office of
Forest Range Officer (Regional) Kudal
Postal Address Kudal, Tal. Kudal District
Sindhudurg-41652220

Out No.B/M.A./298/2020/21

Kudal Date: 10/12/2020

To,
Shri.Krishna Purushottam Marathe
H.NO. 1204, Redi-Kanyal,
Tal. Vengurle, Dist. Sindhudurga



Sub: Regarding information supplied under right to
Information Act 2005

- Ref: 1. Respected sub forest guard Sawantwadi out No.
B/Block -3/S.M.A./application -84/414/20-21
Dated: 04/12/2020.
2. Your application under Right to Information Act
Dated: 25/11/2020.

On the above referred Subject of your above referred application
(Reference No.2) information is sought out and after the inspections of office
record regarding specifications mentioned in the application of Village Redi -
Kanyal, Taluka Vengurla, in Survey No. 15 and Survey No. 58 there is no office
record of the said board installed by Forest department.

Hence your application dated:25/11/2020 is said to be disposed.

Sd/-
(A.P.Shinde)
Information Officer
AND
Forest Range Officer, Kudal

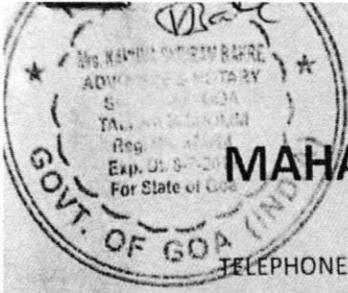
Copy to -Information officer and Officer Incharge, Forest department
Sawantwadi for information purpose.

THIS IS CERTIFIED TO BE THE TRUE TRANSLATION OF THE LETTER
DATED 10/12/2020 FROM MARATHI TO ENGLISH DONE BY ADVOCATE
SHARMILA PAI KUCHELKAR AND NOTARISED BY NOTARY SMT. KARUNA
SHRIRAM BAKRE. IN THE OFFICE OF NOTARY AT SANKHALI, TALUKA
BICHOLIM -GOA, ON THIS 01 ST DAY OF JANUARY 2021. IT BEARS
NOTARIAL STAMPS OF RS.30/- , REGISTRATION NO. 21/2021.



T.C.
(PA)

Annexure A-13



MAHARASHTRA POLLUTION CONTROL BOARD

SUB-DIVISIONAL OFFICE, RATNAGIRI

TELEPHONE NO. (02352)220813

logo

Central Administrative Building

-2, second floor

Office of the collectorate, Ratnagiri

District Ratnagiri pincode: 415612

FAX NO.(02352)220813

E-mail sroratnagiri@mpcb.gov.in

Date: 12/10/2020

O. No. : MPC/SDOR/2009/7FTSO/04

To,
Shri. Krishna Purushottam Marathe,
R/o Post Redi-Kanyal, Tal. Vengurla
District Sindhudurg

Sub:-Application under Right to Information Act, 2005.
Ref: - your Application dated 17/09/2020 under Right to
Information Act, 2005 by this Office.

Sir,

Above referred your letter Application under Right to Information Act, 2005 is received in this office as per said application for information sought by you, with respect to documents available in this office point wise information is given to you as follows.

Point No.	Information Sought	Details of Information
1	Information if your Office has taken samples of water for last 5 years from villages in District Sindhudurg and Ratnagiri District of their coastal belts if said samples contain more than 500mg/l chloride (Date on which the samples from villages were taken etc.)	Nil

Address of First Appellate Authority, regarding said information:- First Appellate Authority cum Divisional Authority MPC Board Kolhapur, Udyog Bhavan, Ground Floor, Near Office of Collector, District Kolhapur.

Yours faithfully

sd/-

Enclosed: As above

Information Officer cum
Sub divisional Authority, Ratnagiri

Copy forwarded for kind information to
First Appellate Authority cum Divisional Authority, MPC Board, Kolhapur.

THIS IS CERTIFIED TO BE THE TRUE TRANSLATION OF THE MARATHI DOCUMENT TO ENGLISH DONE BY ADVOCATE SHARMILA PAI KUCHELKAR AND NOTARISED BY NOTARY SMT. KARUNA SHRIRAM BAKRE. IN THE OFFICE OF NOTARY AT SANKHALI, TALUKA BICHOLIM -GOA, ON THIS 22ND DAY OF OCTOBER 2020. IT BEARS NOTARIAL STAMPS OF RS.30/-, REGISTRATION NO. 379/2020.

Mrs. KARUNA SHRIRAM BAKRE
B. Com LLP
ADVOCATE & NOTARY
SANKHALI - GOA
TALUKA BICHOLIM

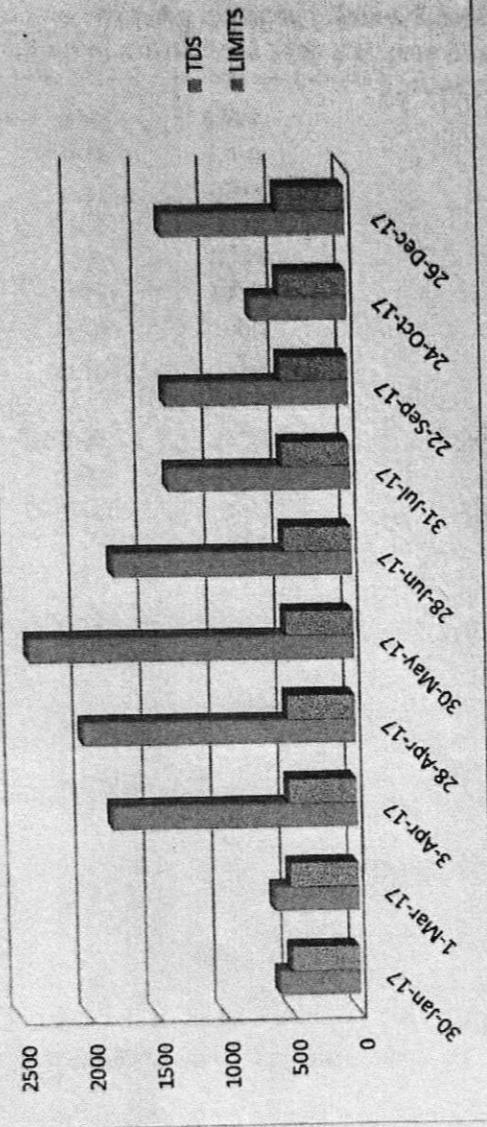


ANNEXURE A+B 14

A-14

Water Sample Contamination Chart, Gogte Minerals, Redi Iron Over Mines Redi, Water Sample From Mining Pit No. 138 .
 Sample Tested and determined by Environmental and pollution control wing, PANAJI-GOA.

Gogte Minerals, Redi Mines, Pit 138, Y-2017



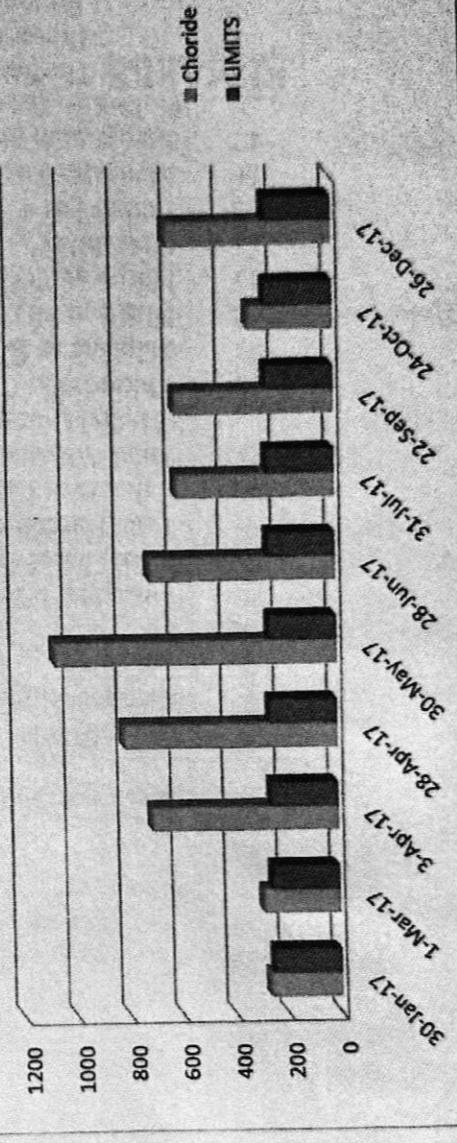
Total Dissolved Solids :

Sample Date	TDS	LIMITS
30-Jan-17	590	500
1-Mar-17	621	500
3-Apr-17	1800	500
28-Apr-17	2002	500
30-May-17	2384	500
28-Jun-17	1761	500
31-Jul-17	1339	500
22-Sep-17	1350	500
24-Oct-17	708	500
26-Dec-17	1357	500

Choride :

Sample Date	Choride	LIMITS
30-Jan-17	266	250
1-Mar-17	287	250
3-Apr-17	705	250
28-Apr-17	808	250
30-May-17	1068	250
28-Jun-17	703	250
31-Jul-17	596	250
22-Sep-17	598	250
24-Oct-17	316	250
26-Dec-17	625	250

Gogte Minerals, Redi Mines, Pit 138, Y-2017





GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/~~1437/2017-18~~ ^{1473/2016-17}

Date: 10/2/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redl Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 30/01/2017

Received / Collected on: 30/01/2017 analytical Work Completed 06/02/2017.....
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	1.0	5.0
6	Total Dissolved Solids	mg/l 590.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 175.0	300.0
8	Calcium as Ca ⁺⁺	mg/l 38.0	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 250	200.0
10	Chlorides as Cl ⁻	mg/l 266.5*	250.0
11	Sulphate as SO ₄	mg/l 6.0	200.0
12	Nitrite as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.6	2.0
15	Iron as Fe ⁺⁺	mg/l 0.05	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 19.4	30.0

** Above Permissible limits*

REMARKS: The Sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

(Handwritten signature)
 (Mrs.T.Coutinho)
 Sr. Scientific Assistant.

(Handwritten signature)
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1696/2016-17

Date: 17/3/2017

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 28/02/2017...

Received / Collected on:01/03/2017 analytical Work Completed 08/03/2017

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	1.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 621.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 175.0	300.0
8	Calcium as Ca ⁺⁺	mg/l 48	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 500	200.0
10	Chlorides as Cl ⁻	mg/l 287.6*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 54	200.0
12	Nitrate as NO ₃ ⁻	mg/l Nil	45.0
13	Nitrite as NO ₂ ⁻	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l Nil	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 13.4	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

(Mrs. T. Coutinho)
 Sr. Scientific Assistant.

(Mrs. V.S. Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/112/2017-18

Date: 18/4/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 03/04/2017

Received / Collected on: 03/04/2017 analytical Work Completed 10/04/2017.....
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.0	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids mg/l	1800.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	730.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	200.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	40.0	200.0
10	Chlorides as Cl ⁻ mg/l	703.0*	250.0
11	Sulphate as SO ₄ mg/l	6.5	200.0
12	Nitrite as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.05	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	60.0*	30.0

Some permissible limits

REMARKS: The Sample of water analysed does not confirm to the limits Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

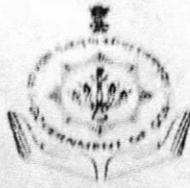
Seen:

Analyst:

Mrs. T. Coutinho
 (Mrs.T.Coutinho)
 Sr. Scientific Assistant

Mrs. V.S. Kunkoliencar
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/²³⁷~~157~~/2017-18

Date: 12/5/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redl Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 28/04/2017

Received / Collected on: 28/04/2017 analytical Work Completed 08/05/2017.....

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 2002.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 780.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 188.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 50.0	200.0
10	Chlorides as Cl-	mg/l 808.4*	250.0
11	Sulphate as SO ₄	mg/l 6.0	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.05	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺ * Above permissible limits.	mg/l 75.3*	30.0

REMARKS: The Sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

sd
 (Mrs. T. Coutinho)
 Sr. Scientific Assistant.

sd
 (Mrs. V. S. Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No. : EPCW/448/2017-18

Date : 16/5/2017

SAMPLE ANALYSED **Water**

Referred by : The Mines Manager, Redi Iron Ore Mines, Fomento Resources Pvt. Ltd
 325, 2nd floor, Casa Del Sol, Miramar-Goa, Ref. No. Nil dated 30/05/2017

Received/Collected on : 30/05/2017 analytical work completed on 07/06/2017

Sampling Point/Source : Raw water from pit 138

As below

To determine :

ANALYSIS

Sr.No.	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	3.0	5.0
3	Odour	Inoffensive	Inoffensive
4	pH	6.7	6.5 to 8.5
5	Turbidity NTU	4.0	5.0
6	Total Dissolved Solids mg/l	2384.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	780.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	182.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	45.0	200.0
10	Chlorides as Cl ⁻ mg/l	1068.0*	250.0
11	Sulphate as SO ₄ ⁻ mg/l	8.0	200.0
12	Nitrate as NO ₃ ⁻ mg/l	Nil	45.0
13	Nitrite as NO ₂ ⁻ mg/l	Nil	Nil
14	Oxidability - 4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	0.1
17	Magnesium as Mg ⁺⁺ mg/l	72.9*	30.0

* Above permissible limits.

REMARKS: The sample of water analysed does not conform to the standards prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

T. Coutinho
 (Mrs. T. Coutinho)
 Sr. Scientific Assistant

Analyst:

V.S. Kunkollencar
 (Mrs. V.S. Kunkollencar)
 Scientific Assistant

UNDER RTI


 GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No.: EPCW/ 576 /2017-18

Date: 18/7/17

SAMPLE ANALYSED: Water

Referred by: The Mines Manager, Redi Iron Ore Mines, Fomento Resources Pvt. Ltd.
 325, 2nd floor, Casa Del Sol, Miramar, Goa. Ref. No. Nil dated 28/06/2017

Received/Collected on: 28/06/2017 analytical work completed on 07/07/2017

Sampling Point/Source: Raw water from pit 138

To determine: As below

ANALYSIS

Sr.No.	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	pH	8.6	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids mg/l	1761.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	6980.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	132.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	50.0	200.0
10	Chlorides as Cl ⁻ mg/l	703.0*	250.0
11	Sulphate as SO ₄ ⁻ mg/l	6.5	200.0
12	Nitrate as NO ₃ ⁻ mg/l	Nil	45.0
13	Nitrite as NO ₂ ⁻ mg/l	Nil	Nil
14	Oxidability - 4 hrs. mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	0.1
17	Magnesium as Mg ⁺⁺ mg/l	85.0*	30.0

* Above permissible limits.

REMARKS: The sample of water analysed does not conform to the standards prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Doululo
 (Mrs. T. Coutinho)
 Sr. Scientific Assistant

Analyst:

Venkatesh
 (Mrs. V.S. Kunkollencar)
 Scientific Assistant

Govt. Plg. Press, Panaji-Goa-419/10,000-7/2016.

UNDER RTI



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/⁷⁴¹~~112~~/2017-18

Date: 11/8/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 31/07/2017

Received / Collected on: 31/07/2017 analytical Work Completed 07/08//2017.....
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1339.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 430.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 104.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 50.0	200.0
10	Chlorides as Cl-	mg/l 596.4*	250.0
11	Sulphate as SO ₄	mg/l 4.8	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.18	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 41.3*	30.0

REMARKS: The Sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

(Signature)
 (Mrs.T.Coutinho)
 Sr. Scientific Assistant.

(Signature)
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/¹¹³⁰~~1130~~/2017-18

Date: 10/11/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redl Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Re: No .Nil Dated 24/10/2017

Received / Collected on: 24/10/2017 analytical Work Completed 07/11/2017.....
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	3.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.5	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l	500.0
7	Total Hardness as CaCO ₃	708.0*	300.0
8	Calcium as Ca ⁺⁺	206.0	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	41.6 30.0	200.0
10	Chlorides as Cl-	mg/l	250.0
11	Sulphate as SO ₄	316.0*	200.0
12	Nitrite as NO ₂	7.4	45.0
13	Nitrite as NO ₂	mg/l	Nil
14	Oxidability -4 hrs	mg/l	Nil
15	Iron as Fe ⁺⁺	0.8	2.0
16	Manganese as Mn ⁺⁺	1.4*	0.3
17	Mangesium as Mg ⁺⁺	mg/l	01
	* Above Permissible limits	248	30.0

REMARKS: The Sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

*Hydrol
 Analyses*

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA

sd
 (Mrs.T.Coutinho)
 Sr.Scientific Assistant



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/885/2017-18

Date: 12/9/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redl Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 22/08/2017

Received / Collected on: 22/09/2017 analytical Work Completed 08/09//2017.....
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	1.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l	500.0
7	Total Hardness as CaCO ₃	mg/l	300.0
8	Calcium as Ca ⁺⁺	mg/l	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l	200.0
10	Chlorides as Cl-	mg/l	250.0
11	Sulphate as SO ₄	mg/l	200.0
12	Nitrate as NO ₂	mg/l	45.0
13	Nitrite as NO ₂	mg/l	Nil
14	Oxidability -4 hrs	mg/l	2.0
15	Iron as Fe ⁺⁺	mg/l	0.3
16	Manganese as Mn ⁺⁺	mg/l	01
17	Mangesium as Mg ⁺⁺	mg/l	30.0

REMARKS: The Sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analys:

(Mrs.T.Coutinho)
 Sr. Scientific Assistant.

(Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1417/2017-18

Date: 12/01/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 26/12/2017...
 Received / Collected on:26/12/2017 analytical Work Completed 05/01/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.0	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids	mg/l 1357.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 560.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 140.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40	200.0
10	Chlorides as Cl ⁻	mg/l 625.4*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 76	200.0
12	Nitrate as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 48.6*	30.0

REMARKS: The sample of water analysed does not confirm to the standards
 Prescribed for drinking water. The water therefore cannot be used
 for human consumption as such.

Seen:

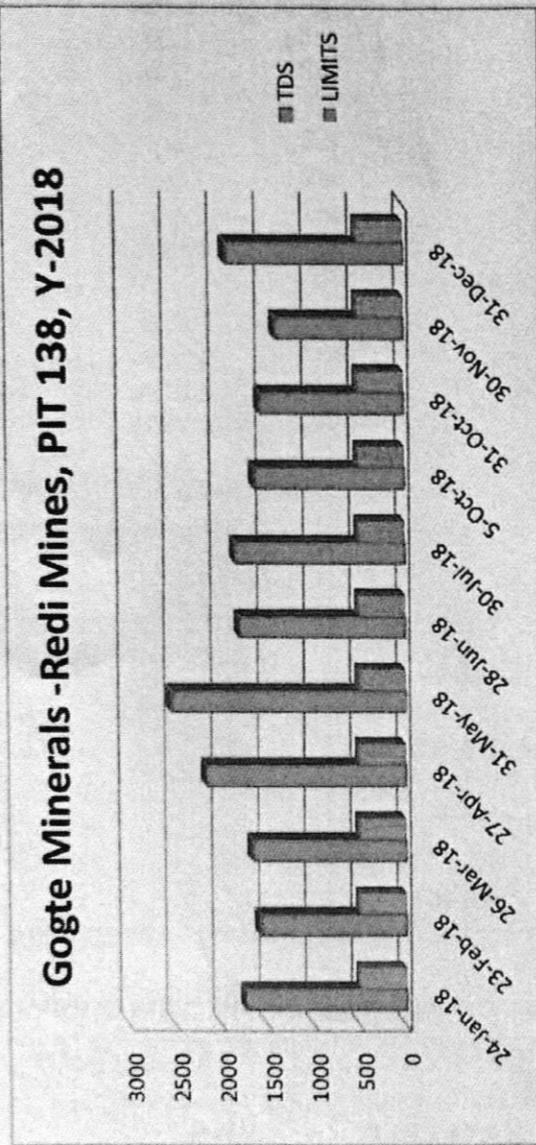
Analyst:

—sd—
 (Mrs. T. Coutinho)
 Sr. Scientific Assistant.

—sd—
 (Mrs. V.S. Kunkoliencar)
 Scientific Assistant

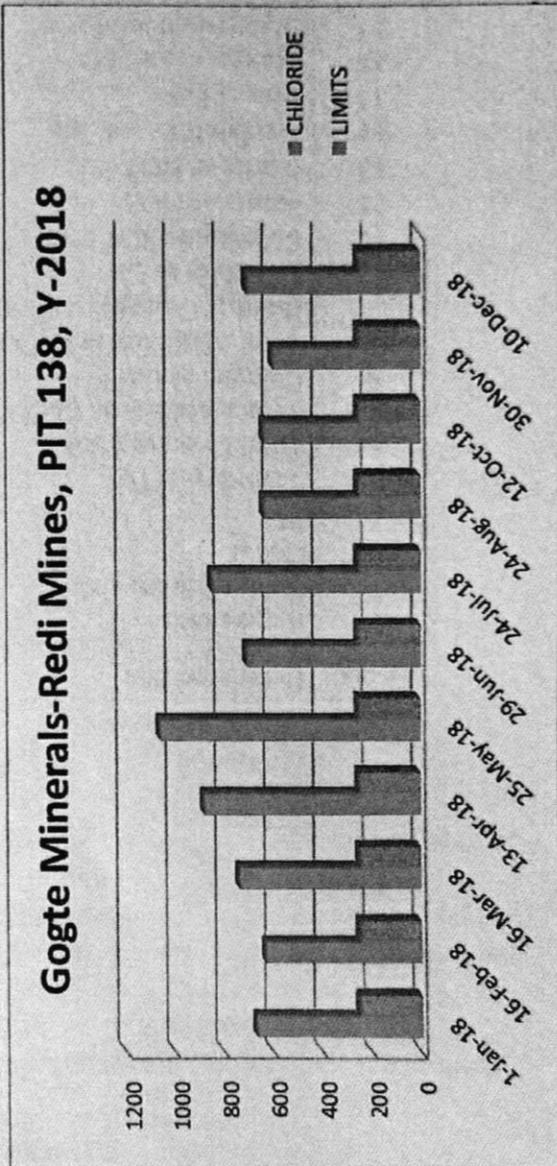
SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA

Water Sample Contamination Chart, Gogte Minerals, Redi Iron Over Mines Redi, Water Sample From Mining, Pit No. 138. Sample Tested and determined by Environmental and pollution control wing, PANAJI-GOA.



TDS:

Sample Date	TDS	LIMITS
24-Jan-18	1740	500
23-Feb-18	1583	500
26-Mar-18	1662	500
27-Apr-18	2154	500
31-May-18	2530	500
28-Jun-18	1791	500
30-Jul-18	1831	500
5-Oct-18	1622	500
31-Oct-18	1556	500
30-Nov-18	1389	500
31-Dec-18	1918	500



CHLORIDE:

Sample Date	CHLORIDE	LIMITS
1-Jan-18	668	250
16-Feb-18	632	250
16-Mar-18	738	250
13-Apr-18	880	250
25-May-18	1057	250
29-Jun-18	703	250
24-Jul-18	844	250
24-Aug-18	631	250
12-Oct-18	632	250
30-Nov-18	596	250
10-Dec-18	702	250

Chloride is an indicator in detecting the contamination of waste or intrusion of salt water in to ground water.



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1565/2017-18

Date: 16/2/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 24/01/2018...

Received / Collected on:24/01/2018 analytical Work Completed on 05/02/2018
 Sampling Point/Source -----Raw water from pit ~~208~~ 138.....

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1740.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 720.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 160.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40.0	200.0
10	Chlorides as Cl-	mg/l 668.0*	250.0
11	Sulphate as SO ₄	mg/l 7.5	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 77.8*	30.0

REMARKS: The sample of water analysed does not confirm to the standards
 Prescribed for drinking water. The water therefore cannot be used
 for human consumption as such.

Seen:

Analyst:

- sd -
 (Dr.Utkarsh Betodkar)

- sd -
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1707/2017-18

Date: 16/3/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 23/02/2018...

Received / Collected on:23/02/2018 analytical Work Completed on 07/03/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.6	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1583.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 600.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 160.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40.0	200.0
10	Chlorides as Cl ⁻	mg/l 632.0*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 4.8	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 48.6*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

— Sd —
 (Dr.Utkarsh Betodkar)

— Sd —
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/86/2017-18

Date: 13/4/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 26/03/2018...

Received / Collected on:26/3/2018 analytical Work Completed on 05/04/2018
Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1662.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 540.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 208.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 35.0	200.0
10	Chlorides as Cl ⁻	mg/l 738.0*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 4.9	200.0
12	Nitrate as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 4.9	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

- SA
(Dr. Utkarsh Betodkar)
State Epidemiologist

- SA
(Mrs. V.S. Kunkoliencar)
Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
ENVIRONMENTAL AND POLLUTION CONTROL WING
DIRECTORATE OF HEALTH SERVICES
CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/365/2017-18

Date: 25/5/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Formento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 27/4/2018...

Received / Collected on:27/04/2018 analytical Work Completed on 07/05/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	inoffensive	Inoffensive
4	PH	7.2	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids mg/l	2154.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	820.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	208.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	90.0	200.0
10	Chlorides as Cl ⁻ mg/l	880.4*	250.0
11	Sulphate as SO ₄ ⁻⁻ mg/l	4.3	200.0
12	Nitrite as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	72.9*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

—sd—
 (Dr.Utkarsh Betodkar)

State Epidemiologist

—sd—
 (Mrs.V.S.Kunkoliencar)

Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA.



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/551/2018-19

Date: 29/6/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 31/5/2018...

Received / Collected on:31/5/2018 analytical Work Completed on 08/06/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.8	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids mg/l	2530.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	930.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	240.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	105.0	200.0
10	Chlorides as Cl- mg/l	1057.9*	250.0
11	Sulphate as SO ₄ -- mg/l	5.3	200.0
12	Nitrate as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.14	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	80.2*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

- sd -
 (Dr. Utkarsh Betodkar)
 State Epidemiologist

Analyst:

- sd -
 (Mrs. V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/716/2018-19

Date: 24/7/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 28/06/2018...

Received / Collected on:28/6/2018 analytical Work Completed on 06/07/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1791.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 720.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 180.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 50.0	200.0
10	Chlorides as Cl ⁻	mg/l 703.0*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 5.7	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.05	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 65.6*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

(Dr. Utkarsh Betodkar)

State Geologist

(Mrs. V.S. Kunkoliencar)

Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/806/2018-19

Date: 24/8/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 30/07/2018...

Received / Collected on:30/7/2018 analytical Work Completed on 08/08/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.8	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids mg/l	1831.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	550.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	144.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	50.0	200.0
10	Chlorides as Cl ⁻ mg/l	844.9*	250.0
11	Sulphate as SO ₄ ⁻⁻ mg/l	5.1	200.0
12	Nitrate as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	46.2*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

sd
 (Dr.Utkarsh Betodkar)

State epidemiologist

sd
 (Mrs.V.S.Kunkoliencar)

Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Date: 30/11/2018

Reg. No: EPCW/1213/2018-19

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 03/10/2018

Received / Collected on:05/10/2018 analytical Work Completed 12/10/2018

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.9	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids	mg/l 1622.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 660.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 128.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 50.0	200.0
10	Chlorides as Cl-	mg/l 631.9*	250.0
11	Sulphate as SO ₄ --	mg/l 4.4	200.0
12	Nitrite as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.14	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 82.6*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Analyst:

—sd—
 (Mrs. V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/1365/2018-19

Date: 04/01/19

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 31/10/2018...

Received / Collected on:31/10/2018 analytical Work Completed 05/11/2018

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	7.4	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids mg/l	156.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	590.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	160.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	35.0	200.0
10	Chlorides as Cl- mg/l	632.0*	250.0
11	Sulphate as SO ₄ -- mg/l	8.5	200.0
12	Nitrate as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	46.2*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Analyst:

—sd—
 (Mrs. V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA.



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/1357/2018-19

Date: 04/01/19

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 30/11/2018...
 Received / Collected on:30/11/2018 analytical Work Completed 10/12/2018
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.7	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1389.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 480.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 100.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 38.0	200.0
10	Chlorides as Cl-	mg/l 596.4*	250.0
11	Sulphate as SO ₄ --	mg/l 5.0	200.0
12	Nitrate as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 51.0*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Analyst:

—sd—
 (Mrs. V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1496/2018-19

Date: 22/1/2019

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 31/12/2018..

Received / Collected on:31/12/2018 analytical Work Completed 08/01/2019

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	8.3	6.5 to 8.5
5	Turbidity NTU	3.0	5.0
6	Total Dissolved Solids mg/l	1918.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	860.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	180.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	75.0	200.0
10	Chlorides as Cl ⁻ mg/l	702.9	250.0
11	Sulphate as SO ₄ ⁻⁻ mg/l	5.5	200.0
12	Nitrate as NO ₂ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	109.3*	30.0
*Above permissible limits			
REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.			

Handwritten signature

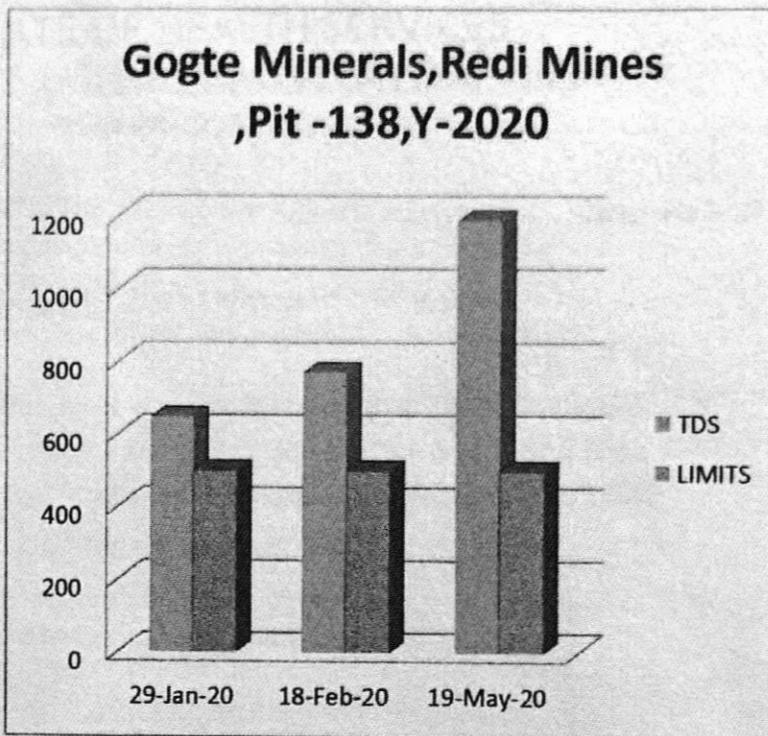
Analyst:

—sd—
 (Mrs. V.S.Kunkoliencar)
 Scientific Assistant

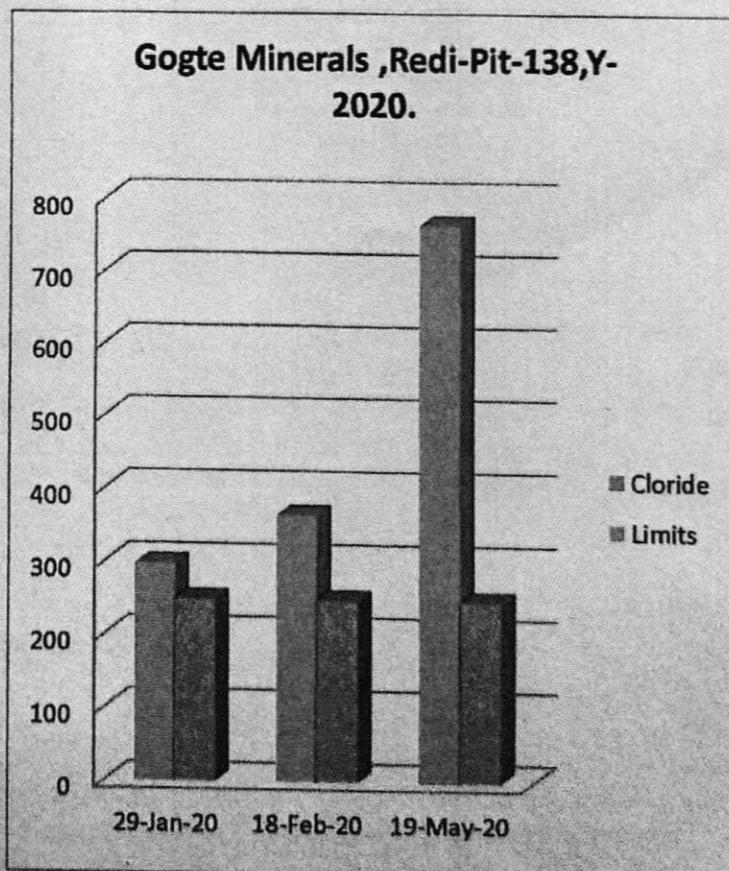


Water Sample Contamination Chart, Gogte Minerals, Redi Iron Over Mines Redi, Water Sample From Mining, Pit No. 138. Sample Tested and determined by Environmental and pollution control wing, PANAJI-GOA.

Sample Taken Date	TDS	LIMITS
29-Jan-20	648	500
18-Feb-20	773	500
19-May-20	1187	500



Sample Taken Date	Cloride	Limits
29-Jan-20	298	250
18-Feb-20	365	250
19-May-20	766	250



Chloride is an indicator in detecting the contamination of waste or intrusion of salt water in to ground water



43

GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1865/2019

Date: 18/2/20

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 29/01/2020...

Received / Collected on:29/01/2020 analytical Work Completed 07/02/2020

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 648.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 183	300.0
8	Calcium as Ca ⁺⁺	mg/l 38	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 30.0	200.0
10	Chlorides as Cl-	mg/l 298.2*	250.0
11	Sulphate as SO ₄ --	mg/l 6.0	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 21.4	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Analyst:

— sd —
(Mrs. V.S.Kunkoliencar)
Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
ENVIRONMENTAL AND POLLUTION CONTROL WING
DIRECTORATE OF HEALTH SERVICES
CAMPAL, PANAJI - GOA



44

GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1935/2019-20

Date: 03/03/20

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 18/02/2020

Received / Collected on:18/02/2020 analytical Work Completed 25/02/2020

Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 773.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 210	300.0
8	Calcium as Ca ⁺⁺	mg/l 47.2	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 26.0	200.0
10	Chlorides as Cl ⁻	mg/l 365.6*	250.0
11	Sulphate as SO ₄ ⁻⁻	mg/l 5.3	200.0
12	Nitrite as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.14	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 22.4	30.0

Attested
Resubmission

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Analyst:

— Sd —
(Mrs. V.S.Kunkoliencar)
Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
ENVIRONMENTAL AND POLLUTION CONTROL WING
DIRECTORATE OF HEALTH SERVICES
CAMPAL PANAJI GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/208/2020-21

Date: 23/06/2020

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325,2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil dated 19/05/2020

Received / Collected on:19/05/2020 analytical Work Completed 29/05/2020
 Sampling Point/Source -----Raw water from pit 138

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	PH	6.5	6.5 to 8.5
5	Turbidity NTU	1.0	5.0
6	Total Dissolved Solids	mg/l 1187*	500.0
7	Total Hardness as CaCO ₃	mg/l 390.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 78.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40	200.0
10	Chlorides as Cl ⁻	mg/l 766.0*	250.0
11	Sulphate as NO ₃	mg/l 40	200.0
12	Nitrate as NO ₃	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.05	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 47.4*	30.0

Applied
Wastewater

Remarks: The Sample of water analysed confirm to the ~~confirm to the~~ standards Prescribed for drinking water. The water therefore cannot be recommended for human consumption as such.
 *Above permissible limit does not

Seen:

Analyst:

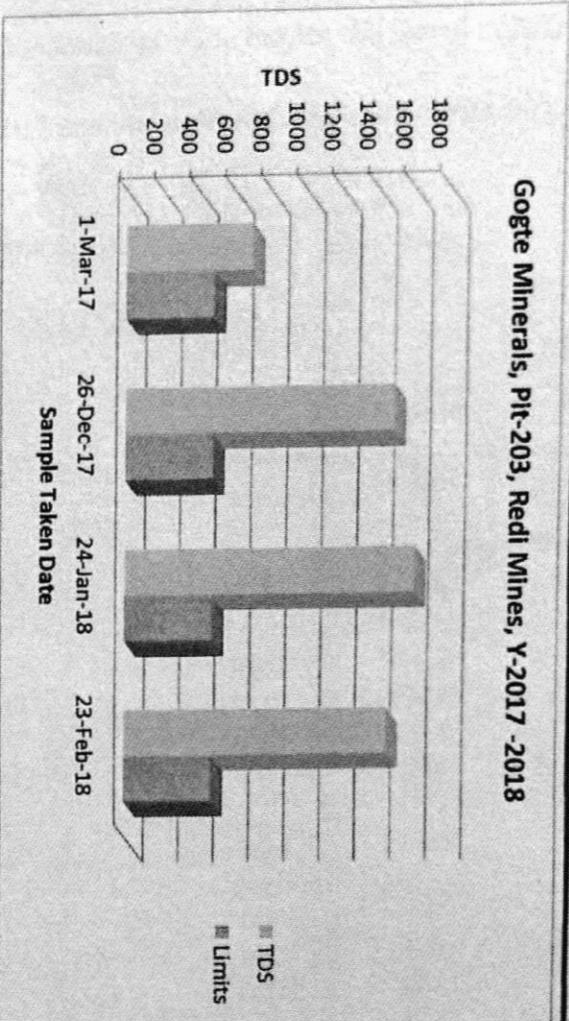
—sd—
 (Mrs. V.S.Kunkoliencar)
 Sr..Scientific Assistant.

—sd—
 (Satish G Gawas)
 Laboratory Technician



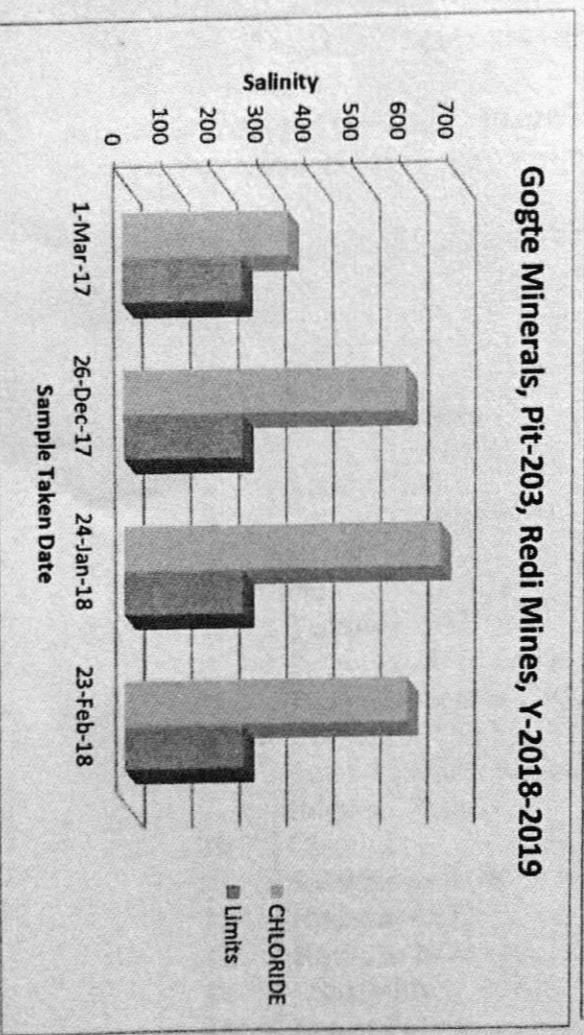
Water Sample Contamination Chart, Gogte Minerals, Redi Iron Over Mines Redi, Water Sample From Mining Pit No. 203, Sample Tested and determined by Environmental and pollution control wing, PANAJI-GOA.

DATE	TDS	Limits
1-Mar-17	714	500
26-Dec-17	1514	500
24-Jan-18	1638	500
23-Feb-18	1489	500



DATE	CHLORIDE	Limits
1-Mar-17	348	250
26-Dec-17	596	250
24-Jan-18	667	250
23-Feb-18	598	250

Chloride is an indicator in detecting the contamination of waste or intrusion of salt water in to ground water





47

GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/69/2016-17

Date: 17/03/17

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 28/02/2017...

Received / Collected on:01/03/2017 analytical Work Completed 08/03/2017
 Sampling Point/Source -----Raw water from pit 203

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	1.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.4	6.5 to 8.5
5	Turbidity NTU	1.0	5.0
6	Total Dissolved Solids	mg/l 714.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 174.0	300.0
8	Calcium as Ca ⁺⁺	mg/l 66.8	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 30	200.0
10	Chlorides as Cl ⁻	mg/l 348.0*	250.0
11	Sulphate as SO ₄ ²⁻	mg/l 6.0	200.0
12	Nitrate as NO ₃ ⁻	mg/l Nil	45.0
13	Nitrite as NO ₂ ⁻	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l Nil	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Manganese as Mg ⁺⁺	mg/l 1.7	30.0

** Above permissible limits*

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

Handwritten signature

- sd -

(Mrs. T. Coutinho)
 Sr. Scientific Assistant.

- sd -

(Mrs. V. S. Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
 DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No: EPCW/1415/2017-18

Date: 12/01/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redl Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 25/12/2017...

Received / Collected on:26/12/2017 analytical Work Completed 05/01/2018
 Sampling Point/Source -----Raw water from pit 203

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.0	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1514.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 600.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 136.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40	200.0
10	Chlorides as Cl-	mg/l 596.4*	250.0
11	Sulphate as SO ₄	mg/l 103	200.0
12	Nitrate as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.05	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 63.2*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

(Mrs. T. Coutinho)
 Sr. Scientific Assistant.

(Mrs. V. S. Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1564/2017-18

Date: 16/2/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 24/01/2018...

Received / Collected on:24/01/2018 analytical Work Completed 05/02/2018
 Sampling Point/Source -----Raw water from pit 203

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	6.8	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids	mg/l 1638.0*	500.0
7	Total Hardness as CaCO ₃	mg/l 630.0*	300.0
8	Calcium as Ca ⁺⁺	mg/l 152.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l 40.0	200.0
10	Chlorides as Cl-	mg/l 667.0*	250.0
11	Sulphate as SO ₄	mg/l 7.6	200.0
12	Nitrite as NO ₂	mg/l Nil	45.0
13	Nitrite as NO ₂	mg/l Nil	Nil
14	Oxidability -4 hrs	mg/l 0.8	2.0
15	Iron as Fe ⁺⁺	mg/l 0.09	0.3
16	Manganese as Mn ⁺⁺	mg/l Nil	01
17	Mangesium as Mg ⁺⁺	mg/l 60.8*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

— S A —
 (Dr.Utkarsh Betodkar)

— S A —
 (Mrs.V.S.Kunkoliencar)
 Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL PANAJI - GOA



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
ENVIRONMENTAL AND POLLUTION CONTROL WING
PANAJI-GOA

Reg. No: EPCW/1709/2017-18

Date: 16/3/18

SAMPLE ANALYSED - Water

Referred by:The Mines Manager, Redi Iron Ore Mines, Fomento Recourses PVT.LTD
 325 2nd floor, Casa Del Sol Miramar -Goa Ref No .Nil Dated 23/02/2018...

Received / Collected on:23/02/2018 analytical Work Completed 07/03/2018
 Sampling Point/Source -----Raw water from pit 203

To determine:As below

ANALYSIS

Sr.No	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour (Hazen Units)	2.0	5.0
3	Odour	Inoffensive	Inoffensive
4	PH	7.0	6.5 to 8.5
5	Turbidity NTU	2.0	5.0
6	Total Dissolved Solids mg/l	1489.0*	500.0
7	Total Hardness as CaCO ₃ mg/l	580.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	140.0*	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	35.0	200.0
10	Chlorides as Cl ⁻ mg/l	598.0*	250.0
11	Sulphate as SO ₄ mg/l	5.2	200.0
12	Nitrate as NO ₃ mg/l	Nil	45.0
13	Nitrite as NO ₂ mg/l	Nil	Nil
14	Oxidability -4 hrs mg/l	0.8	2.0
15	Iron as Fe ⁺⁺ mg/l	0.09	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	01
17	Mangesium as Mg ⁺⁺ mg/l	55.9*	30.0

REMARKS: The sample of water analysed does not confirm to the standards Prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

-sd-
(Dr.Utkarsh Betodkar)

-sd-
(Mrs.V.S.Kunkoliencar)
Scientific Assistant

SENIOR SCIENTIFIC ASSISTANT
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 DIRECTORATE OF HEALTH SERVICES
 CAMPAL, PANAJI - GOA

State / Regional / District / Public Health Laboratory Sindhudurg

E-mail-ID :

Phone No. : 02362 228977

REPORT ON CHEMICAL EXAMINATION OF WATER FOR DRINKING PURPOSES

Date of Collection :- 04/05/18 Date of Receipt :- 04/05/18 Date of Examination :- 05/05/18

(All the Analytical Results are in mg/Litre except pH, Turbidity)

Sr. No.	TEST PARAMETER	(1)	(2)	(3)	BIS Specification 10500 : 2012 - Normal Values	
					Desirable Limits	Permissible Limits
	SOURCE :-	रेडी नकचोजी SS6671010W01				
1.	Physical Appearance	Clear			—	—
2.	Odour	Agreeable			Agreeable	Agreeable
3.	Turbidity (as N.T.U.)	0.21			1.0	5.0
4.	pH Value	7.50			6.5 to 8.5	No relaxation
5.	Chlorides (as Cl)	771.03			250	1000
6.	Nitrates (as NO ₃)	Not detected			45	No relaxation
7.	Total Hardness (as CaCO ₃)	408.00			200	600
8.	Alkalinity (as CaCO ₃)	461.25			200	600
9.	Total Dissolved Solids	1249.00			500	2000
10.	Iron (as Fe)	0.02			0.3	No relaxation
11.	Fluoride (as F)	0.003			1.0	1.5
12.	Other Tests (if any)	—				
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

• This report is restricted only for the Sample/s is Submitted to this Laboratory.

78/07

G.P. P. Pune-P/31-(500 Peds)-4-2015

State / Regional / District / Public Health Laboratory ... Sindhudurg

E-mail-ID :

Phone No. : 02362 228977

REPORT ON CHEMICAL EXAMINATION OF WATER FOR DRINKING PURPOSES

Date of Collection :— 06.06.18 Date of Receipt :— 06.06.18 Date of Examination :— 19.06.18

(All the Analytical Results are in mg/Litre except pH, Turbidity)

Sr. No.	TEST PARAMETER	(1)	(2)	(3)	BIS Specification 10500 : 2012 Normal Values	
					Desirable Limits	Permissible Limits
	SOURCE :-	Redi water supply TUP				
1	Physical Appearance	clear			—	—
2	Odour	Agreeable			Agreeable	Agreeable
3	Turbidity (as N.T.U.)	0.27			1.0	5.0
4	pH Value	6.80			6.5 to 8.5	No relaxation
5	Chlorides (as Cl)	373.92			250	1000
6	Nitrates (as NO ₃)	6.49			45	No relaxation
7	Total Hardness (as CaCO ₃)	329.6			200	600
8	Alkalinity (as CaCO ₃)	155.25			200	600
9	Total Dissolved Solids	799.0			500	2000
10	Iron (as Fe)	0.01			0.3	No relaxation
11	Fluoride (as F)	0.002			1.0	1.5
12	Other Tests (if any)	—				
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

• This report is restricted only for the Sample/s Submitted to this Laboratory.

80/87



53

GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No.: EPCW/28/2019-20

Date: 3/6/2019
 Water

SAMPLE ANALYSED

Krishan Marathe, H.No.2923, Behind III, Bordem, Bicholim - Goa

Referred by: Ref. No. Nil dated 21/05/2019

21/05/2019 analytical work completed on 31/05/2019

Received/Collected on: Well Water

Sampling Point/Source: As below

To determine:

ANALYSIS

Sr.No.	Determination	Results	Limits
1	Appearance	Clear	Clear
2	Colour	Colourless	Colourless
3	Odour	Inoffensive	Inoffensive
4	pH	7.4	6.5 - 8.5
5	Turbidity NTU	1.0	5.0
6	Total Dissolved Solids	mg/l	500.0
7	Total Hardness as CaCO ₃	mg/l	300.0
8	Calcium as Ca ⁺⁺	mg/l	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange)	mg/l	200.0
10	Chlorides as Cl ⁻	mg/l	250.0
11	Sulphate as SO ₄ ⁻	mg/l	200.0
12	Nitrates as NO ₃ ⁻	mg/l	45.0
13	Nitrite as NO ₂ ⁻	mg/l	Nil
14	Oxidability - 4 hrs.	mg/l	2.0
15	Iron as Fe ⁺⁺	mg/l	0.3
16	Manganese as Mn ⁺⁺	mg/l	0.1
18	Magnesium as Mg ⁺⁺	mg/l	30.0

* Above permissible limits.

Remarks: The sample of water analysed does not confirm to the standards prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

Analyst:

C1-2

(Mrs. V. S. Kunkun)

(Satish Gopal Gawas)



GOVERNMENT OF GOA
DIRECTORATE OF HEALTH SERVICES
 ENVIRONMENTAL AND POLLUTION CONTROL WING
 PANAJI-GOA

Reg. No. EPC/W/92/2020-21

Date: 10/6/20

Water

SAMPLE ANALYSED

Referred by: Krishna P. Marathe 1204, Kedi Kanya, Tal - Vengurla, Dist. Sindhudurg
Ref. No. Nil dated 26/05/2020
 Received/Collected on 26/05/2020, analytical work completed 18/06/2020
 Sampling Point/Source: Well Water, Srv. No. 47/1
 To determine: As below

ANALYSIS

Sr.No.	Determination	Results	Limits
1	Appearance	Colourless	Colourless
2	Colour	Inoffensive	Inoffensive
3	Odour		
4	pH 5.6 (Boiled & Cooled)	6.8	6.5 - 8.5
5	Turbidity NTU	1.0	5.0
6	Total Dissolved Solids mg/l	1237.1*	500.0
7	Total Hardness as CaCO ₃ mg/l	320.0*	300.0
8	Calcium as Ca ⁺⁺ mg/l	72.0	75.0
9	Total Alkalinity as CaCO ₃ (Methyl Orange) mg/l	75.0	200.0
10	Chlorides as Cl ⁻ mg/l	603.5*	250.0
11	Sulphate as SO ₄ ⁻⁻ mg/l	3.3	200.0
12	Nitrates as NO ₃ ⁻ mg/l	Nil	45.0
13	Nitrite as NO ₂ ⁻ mg/l	Nil	Nil
14	Oxidability - 4 hrs. mg/l	0.6	2.0
15	Iron as Fe ⁺⁺ mg/l	0.24	0.3
16	Manganese as Mn ⁺⁺ mg/l	Nil	0.1
16	Magnesium as Mg ⁺⁺ mg/l	34.02*	30.0

* Above permissible limits.

Remarks: The sample of water analysed does not confirm to the standards prescribed for drinking water. The water therefore cannot be used for human consumption as such.

Seen:

(Signature)
 (Mrs. V. S. Kunkolencar)
 Sr. Environmental Analyst

Analyst,

(Signature)
 (Satish Gopal Gawas)
 Environmental Analyst

