

Date: 12/07/2017

To,
The Member Secretary
Goa State Pollution Control Board
EDC, Patto Plaza
Panjim, Goa -403001

Subject: Compliance of Consent to Operate for Mareta Sodo Iron Ore Mine for the month of June 2017.

Reference:

Mareta Sodo Iron Ore Mine, Village Onda, Satteri-Goa (T.C. No. 6/1955), Consent to Operate No. 5/2763/15-PCB/CI-563 dated 07/09/2015.

Sir,

With reference to the condition stipulated in Consent to Operate granted to Mareta Sodo Mine, we have enclosed herewith the Water Analysis Report for the Month of June 2017. We would like to inform your good office that Air monitoring is temporary discontinued due to monsoon.

Thanking you,
Yours faithfully,
For Vedanta Limited,



Sebastian Periera
Mines Manager
Mareta Sodo Mine
North Goa

Encl: as above

Goa State Pollution Control Board	
Patto, Panaji Goa	
Date: 14/07/2018	Time:
Inward no.:
Receivers signature:

VEDANTA LIMITED

Sesa Goa iron ore: Sesa Ghor, 20 EDC Complex, Patto, Panjim, Goa - 403 001, India
T +91 0832 2460600 | Website: www.sesagoaironore.com

M/s Sesa Environment Laboratory

Vedanta Limited, Mining Division, Codli Mines, P.O. Kiriapale, Goa-403727

Recognised by Ministry of Environment, Forests and Climate change, Govt. of India Vide Notification .S.O.137(E).

dated 12th January 2015, Valid up to 11.01.2020

* Certified by ISO 9001:2008 and OHSAS 18001:2007

Ambient Air Quality Monitoring Report

Location Name: Mareto Sodo mine

Instruments used: Respirable Dust Sampler 460NL

Calibration date: 28.09.2016

Validity of calibration: 20.08.2017

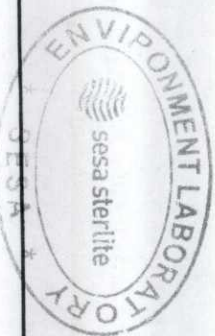
Standard method used for analysis: Particulate Matter Gravimetric method

Particulate Matter 24 hourly				Emission Standards
Monitoring Date	Mine Bench	Camp Area/ Road	Service	
01.06.2017	25	23		1200 µg/m ³
06.06.2017	36	46		
08.06.2017	43	21		
13.06.2017	26	32		
15.06.2017	MB	MB		
20.06.2017	20	20		
22.06.2017	26	25		
29.06.2017	MB	MB		

Note: Waste is temporary backfilled in working pit

MB- Machine Breakdown

Authorized Govt. Analyst



f.
Laboratory Incharge

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Well Water Level Report

Mine Name: Mareto Sodo mine

Instrument Used: Well water tape

Sr.No	Location	Total Depth of well in mtr	Depth of Water level from the reference point in mtr	
			12.06.2017	Water Column in mtr
1	Well of M/s Vedanta Limited	7.28	4.3	2.98
2	Well of Mr. Mahesh Gaude	3	1.8	1.2
3	Well of Mr. Gokuldas Gaude	7.4	4.53	2.87
4	PTI camp well	6	4.5	1.5

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Ambient Air Quality Monitoring Report

Mine Name: North Central Cluster Mine

Instruments used: Fine Particulate Sampler APM550 MFC, Respirable Dust Sampler 460 NL, Gaseous Pollutant Sampler

Validity of calibration :27.09.2017

Calibration date: 28.09.2016

Standard method used for analysis: PM10 & PM2.5 - Gravimetric method

SO2 - Improved west & Gaeke

NOx - Modified Jacob & Hocheiser

Location Name : Cudnem Village				Location Name : Datin village				
Monitoring Date	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)
01.06.2017	5	10	4	6	2	5	6	7
06.06.2017	2	8	BDL	BDL	3	7	BDL	6
08.06.2017	3	7	BDL	7	5	8	6	8
13.06.2017	4	6	4	5	6	11	4	8
15.06.2017	2	6	BDL	7	3	8	BDL	BDL
20.06.2017	3	8	6	8	5	7	BDL	5
22.06.2017	6	12	5	8	2	6	5	8
29.06.2017	3	5	BDL	8	6	10	4	6

Location Name : Viridi Village				Location Name : Sanquelim Village				
Monitoring Date	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)
01.06.2017	6	11	BDL	BDL	2	5	7	16
06.06.2017	4	7	6	10	5	7	BDL	7
08.06.2017	2	6	BDL	BDL	4	8	7	12
13.06.2017	3	8	5	8	2	9	BDL	BDL
15.06.2017	3	7	5	10	3	8	4	9
20.06.2017	2	8	8	10	3	9	5	8
22.06.2017	3	6	6	10	4	8	7	8
29.06.2017	6	9	BDL	BDL	2	6	BDL	BDL

NAQS Limits: PM_{2.5} 60 µg/m³ PM₁₀ 100 µg/m³ SO₂ 80 µg/m³ NOx 80 µg/m³

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Ambient Air Quality Monitoring Report

Mine Name: North central Mine

Location Name : Sonshi Village

Instruments used: Fine Particulate Sampler APM550 MFC, Respirable Dust Sampler 460 NL, Gaseous

Calibration date: 28.09.2016

Validity of calibration :27.09.2017

Standard method used for analysis: PM10 & PM2.5 - Gravimetric method

SO2 - Improved west & Gaeke

NOx - Modified Jacob & Hoccheiser

Monitoring Date	PM _{2.5} in µg/m ³ hourly	(24 hourly)	PM ₁₀ in µg/m ³ hourly	(24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)
01.06.2017	6		10		6	8
06.06.2017	2		6		BDL	4
08.06.2017	5		8		8	9
13.06.2017	8		11		3	2
15.06.2017	6		12		7	10
20.06.2017	6		10		BDL	3
22.06.2017	5		9		2	5
29.06.2017	2		8		2	6

NAAQS Limits: PM_{2.5} 60 µg/m³

PM₁₀ 100 µg/m³

SO₂ 80 µg/m³

NO_x 80 µg/m³



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Surface Water Analysis Report for the Month of June 2017

Date of Receipt of sample: 12.06.2017
Analysis completion date: 22.06.2017

Mine Name: Mareto Sodo Mine
Date of Sample collection: 12.06.2017
Standard method used for analysis: APHA Standard
Test Report No: 314

Parameter	Unit	Desirable Limit	Location												
			Upstream Advoi Nallah	Downstream Advoi nallah	Upstream sonshi nallah	Down stream sonshi nallah	Pit Discharge	Pissurlem dump run off	Vaghure side dump run off	Sonshi Dump run off	Sonshi Nallah near Ajoba Temple				
Colour	Hazen	----	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
pH	----	5.5 to 9.0	6.36	6.25	6.53	6.51	6.35	6.03	6.23	6.01	6.01	6.01	6.01	6.01	6.52
Turbidity	NTU	----	2.6	6.1	5.8	6.4	1.8	7.0	4.3	7.0	4.3	7.0	4.3	7.0	5.6
Dissolved Solids	mg/lit	----	23	25	20	27	35	12	15	7	15	7	15	23	23
Conductivity	µS/cm	----	46	50	40	54	70	24	30	14	30	14	30	46	46
Suspended Solids	mg/lit	100	4	5	6	8	2	9	6	8	6	8	6	5	5
Chlorides	mg/lit	----	6.7	8.7	4.8	5.8	5.8	4.8	2.9	4.8	2.9	4.8	2.9	6.7	6.7
Total Hardness as CaCO ₃	mg/lit	----	18.4	18.4	16.3	16.3	33	10.2	10.2	10.2	10.2	10.2	10.2	18.4	18.4
Calcium as Ca ⁺⁺	mg/lit	----	4.1	4.1	3.3	3.3	9.0	2.5	2.5	2.5	2.5	2.5	2.5	4.9	4.9
Magnesium as Mg ⁺⁺	mg/lit	----	2.0	2.0	0.6	1	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5
Sulphate as SO ₄	mg/lit	----	0.6	0.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1	1
Phosphate as PO ₄	mg/lit	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate as NO ₃	mg/lit	10	0.1	0.1	BDL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
B.O.D (3days, 30°C)	mg/lit	30	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
C.O.D	mg/lit	250	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total Iron	mg/lit	3	0.05	0.08	0.04	0.05	0.09	0.06	0.06	0.05	0.06	0.05	0.06	0.04	0.04
Manganese as Mn	mg/lit	2	0.02	0.03	0.02	BDL	0.07	0.03	0.03	0.03	0.03	0.03	0.03	BDL	BDL
D.O	mg/lit	----	6	6	6	6	6	6	6	6	6	6	6	6	6
Oil & Grease	mg/lit	10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

BDL- Below Detection Limit

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[Signature]

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Well Water Analysis Report

Mine Name: Mareto Sodo Mine

Date of Receipt of sample: 12.06.2017

Date of Sample collection : 12.06.2017

Analysis completion date: 22.06.2017

Standard method used for analysis: APHA Standard

Test Report No: 315

Parameter	Unit	Desirable Limit	Location			
			Sonshi Well	PTI Camp Well	Mahesh Gaude Well	Mr. Gokuldas Gawde Well
Colour	Hazen	<5	<5	<5	<5	<5
pH	-	6.5-8.5	6.43	6.32	6.51	6.22
Turbidity	NTU	1	0.9	0.8	0.7	0.5
Conductivity	µs/cm	-	36	50	166	80
Dissolved Solids	mg/lit	500	18	25	83	40
Suspended Solids	mg/lit	-	2	2	2	1
Chloride	mg/lit	250	8.7	7.7	36.6	13.5
Total Hardness as CaCO3	mg/lit	200	12.2	20.4	24.5	22.4
Calcium as Ca++	mg/lit	75	1.6	4.9	7.4	4.1
Magnesium as mg++	mg/lit	30	2.0	2.0	1.5	3.0
Sulphate as SO4	mg/lit	200	1	1.5	6.5	4
Nitrate as NO3	mg/lit	45	0.1	0.1	0.1	0.1
Alkalinity	mg/lit	200	15	19	16	15
Iron as Fe	mg/lit	0.3	0.05	0.06	0.06	0.04
Manganese as Mn	mg/lit	0.1	0.01	0.02	0.02	BDL
Total Coliform/100ml	-	-	25	20	26	21
E.Coli	-	Absent	Absent	Absent	Absent	Absent

BDL- Below Detection Limit



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