Gujarat Industries Power Company Limited

At. : Nani Naroli, Ta: Mangrol
Dist.: Surat -394112

Six Monthly Report of Vastan Lignite Mine

ENVIRONMENTAL MONITORING & ANALYSIS REPORT

For the period of January 2021 to June-2021

Prepared By

ECOSYSTEM RESOURCE MANAGEMENT PVT. LTD.

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PREFACE

Consciousness at national level in the industrial sector is increasing day by day with the focus on environment and sustainable development. A good environment management policy requires a constant effort to analyses and monitors various operations and processes, to generate and transmit this information to the inspecting authority.

As per the Air & Water Consent Orders issued by **Gujarat Pollution Control Board** (GPCB) Gandhinagar & also as per the Environment Clearance certificate issued by Ministry of Environment, Forest and Climate Change (MoEF & CC), Govt. of India, New Delhi, it is mandatory to collect the samples of Air/Gaseous emissions and effluent, to analyses the samples from a recognized laboratory and submit the analysis reports to GPCB & MoEF.

Gujarat Industries Power Company Limited (GIPCL) - Surat Lignite Power Plant is situated at Village – Nani Naroli, Tal. Mangrol, Dist. Surat. This company engaged in the generation of Electricity. The Industry has awarded the contract for bimonthly monitoring and analysis to M/s. Ecosystem Resource Management Pvt. Ltd. Surat.

Ecosystem Resource Management Pvt. Ltd. is one of the leading companies in the field of Environmental Consultancy Service Providers in India. ERM has a well-equipped and developed **NABL Accredited and MoEF & CC** recognized laboratory to carry out the analysis in air, stack emission, fugitive emission, water & waste water, noise, soil, and solid waste etc.

Scope of work for Vastan Lignite Mine

I. Ambient Air Monitoring

Sr. No.	No. of stations & Location	Duration	Frequency	Parameters	Method of Analysis
1.	8 Nos. within the Core & Buffer Zone.	24 hours	Bi-Monthly	PM_{10}	IS 5182 Part 23 2006/Reaffirmed 2017
				$PM_{2.5}$	SOP No.WI/5.4/02-B/03,Issue No.1Date:01/01/2010
				SO_2	IS 5182 Part II 2001/Reaffirmed 2017
				NO_X	IS 5182(Part VI):2006/Reaffirmed 2017
				CO	IS 5182(Part 10):1999/Reaffirmed 2014

II. Dust Fall Measurement

Sr. No.	No. of station and locations	Duration	Frequency	Parameters	Method of analysis
1.	9 Nos. within the Core & Buffer Zone.	One Month	Bi-Monthly	Dust fall	As per IS-5182

III. Noise Monitoring:

Sr. No.	Noise of stations and locations	Duration	Frequency	Parameters	Method of analysis
1.	10 Nos. at various location within the plant premises	24 hours	Bi-Monthly	Day & night Noise level	As per IS 9989 using the Noise level meter.

Weather Monitoring Data

Sr. No.	No. of stations and locations	Duration	Frequency	Parameters	Method of analysis
1.	1 No. at Site.	24 hours	Bi-Monthly	Dry Bulb & Wet Bulb Temp., Atmospheric Pressure, Relative Humidity, Wind Speed, Wind Direction, Rain Fall and its Min. Max. & Avg. Value	As per IS 8829 on hourly basis for 24 hrs by using mechanical Instrument.

Water Quality Monitoring

Sr. No.	No. of stations and locations	Duration	Frequency	Parameters	Method of analysis
1.	7 Nos. of Bore well & 2 No. of Surface Water sample located both in Core & Buffer Zone	1	Bi-Monthly	Physical parameters, Chemical Parameters, Heavy metals	As per the standard methods for the examination of water and waste water APHA 23rd Edition 2017 and various Indian standards IS 3025.

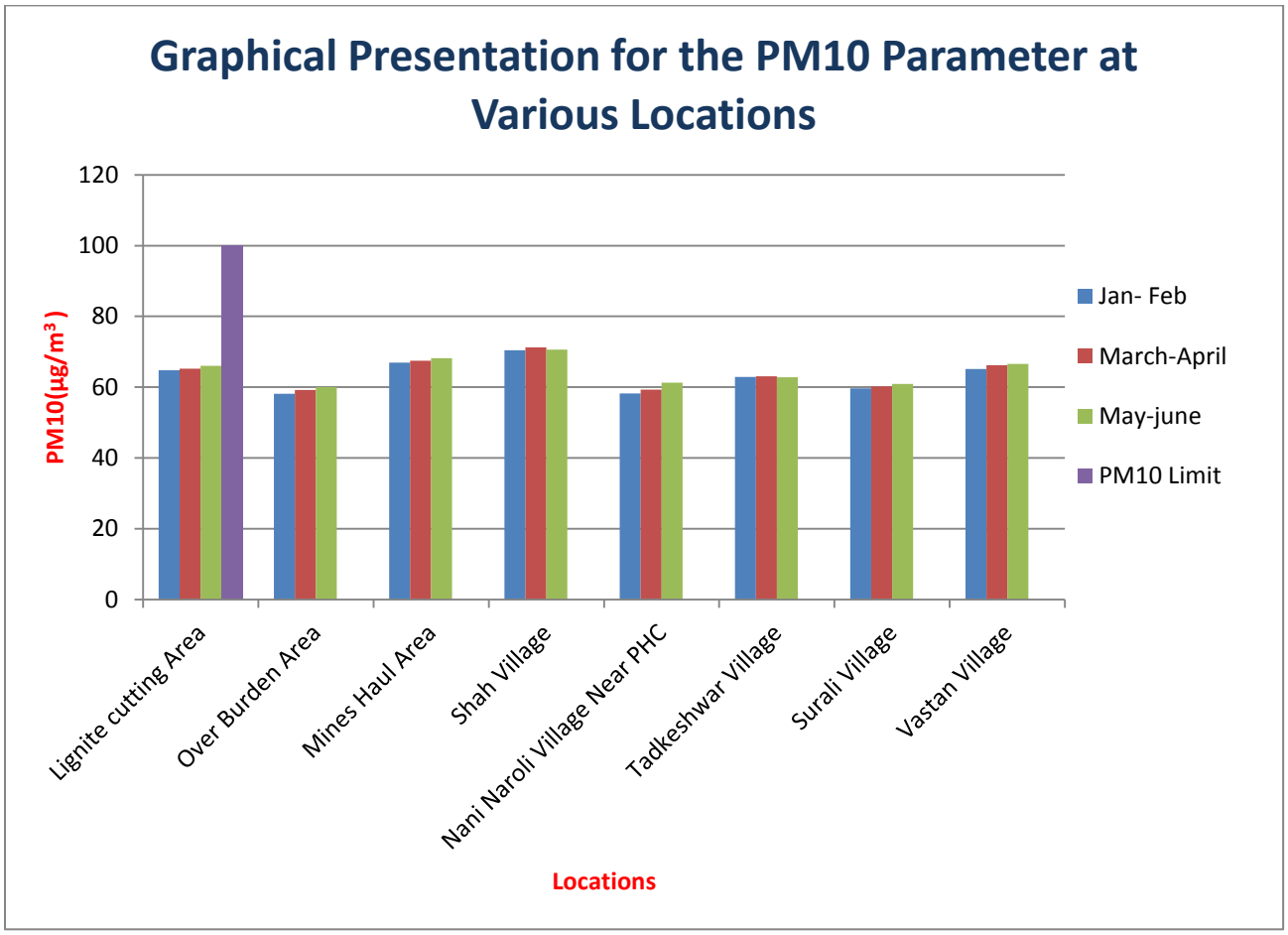
Comparative Ambient Air Monitoring & Dust fall Monitoring Report & Graphical Presentation

Six Monthly Variations in Ambient Air Quality

Parameter: PM_{10} (Respirable Particulate Matter)

Period: January – 2021 to June – 2021

Sr. No.	Location	Results ($\mu g/m^3$)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May-June 2021
1	Lignite cutting Area	64.8	65.2	66.0
2	Over Burden Area	58.1	59.2	60.0
3	Mines Haul Area	66.9	67.5	68.2
4	Shah Village	70.4	71.2	70.6
5	Nani Naroli Village Near PHC	58.2	59.3	61.3
6	Tadkeshwar Village	62.9	63.1	62.8
7	Surali Village	59.7	60.2	60.9
8	Vastan Village	65.1	66.2	66.6
	Limit	100($\mu g/m^3$)		


Graphical Presentation for the PM10 Parameter at Various Locations
120
100
80
60
40
20
0
PM10(µg/m³)
Jan- Feb
March-April
May-june
PM10 Limit
Lignite cutting Area
Over Burden Area
Mines Haul Area
Shah Village
Nani Naroli Village Near PHC
Tadkeshwar Village
Surali Village
Vastan Village
Locations

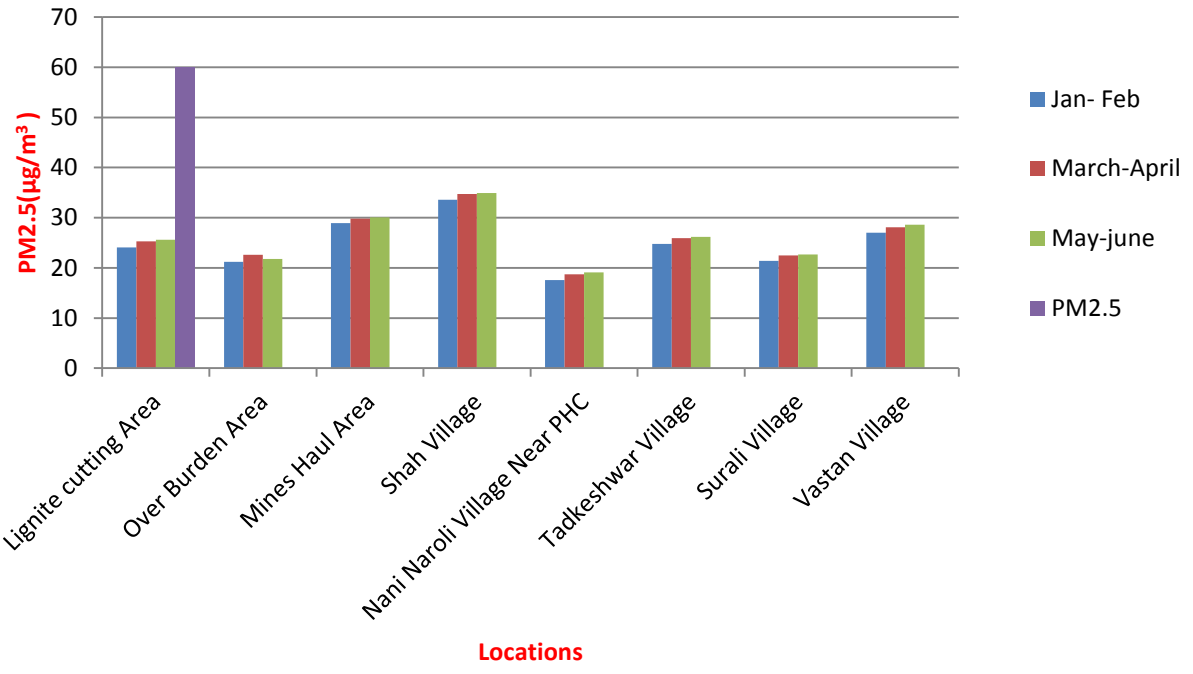
Six Monthly Variations in Ambient Air Quality

Parameter: $PM_{2.5}$ (Respirable Particulate Matter)

Period: January – 2021 to June – 2021

Sr. No.	Location	Results ($\mu g/m^3$)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May-June 2021
1	Lignite cutting Area	24.1	25.3	25.6
2	Over Burden Area	21.2	22.6	21.8
3	Mines Haul Area	28.9	29.8	30.1
4	Shah Village	33.6	34.7	34.9
5	Nani Naroli Village Near PHC	17.6	18.7	19.1
6	Tadkeshwar Village	24.8	25.9	26.2
7	Surali Village	21.4	22.5	22.7
8	Vastan Village	27.0	28.1	28.6
	Limit	60($\mu g/m^3$)		

Graphical Presentation for the PM2.5 Parameter at Various Locations

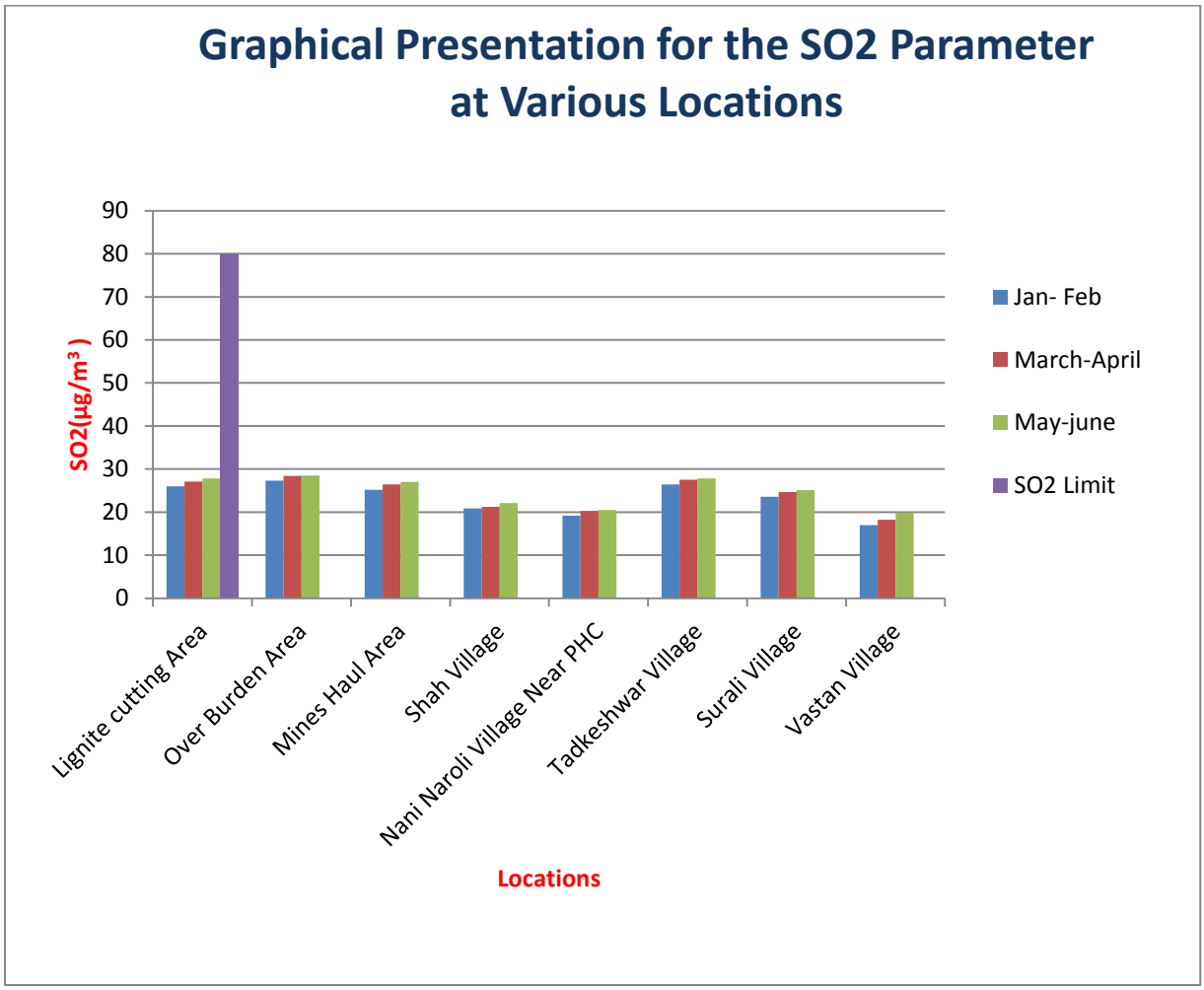


Six Monthly Variations in Ambient Air Quality

Parameter: SO2 (Sulphur Dioxide)

Period: January – 2021 to June – 2021

Sr. No.	Location	Reults (µg/m^3)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May-June 2021
1	Lignite cutting Area	26.0	27.1	27.8
2	Over Burden Area	27.3	28.4	28.5
3	Mines Haul Area	25.2	26.4	27.0
4	Shah Village	20.9	21.2	22.1
5	Nani Naroli Village Near PHC	19.2	20.3	20.5
6	Tadkeshwar Village	26.4	27.5	27.8
7	Surali Village	23.6	24.7	25.1
8	Vastan Village	17.0	18.2	19.9
	Limit	80(µg/m^3)		


Graphical Presentation for the SO2 Parameter at Various Locations
90
80
70
60
50
40
30
20
10
0
SO2(µg/m³)
Jan- Feb
March-April
May-june
SO2 Limit
Lignite cutting Area
Over Burden Area
Mines Haul Area
Shah Village
Nani Naroli Village Near PHC
Tadkeshwar Village
Surali Village
Vastan Village
Locations

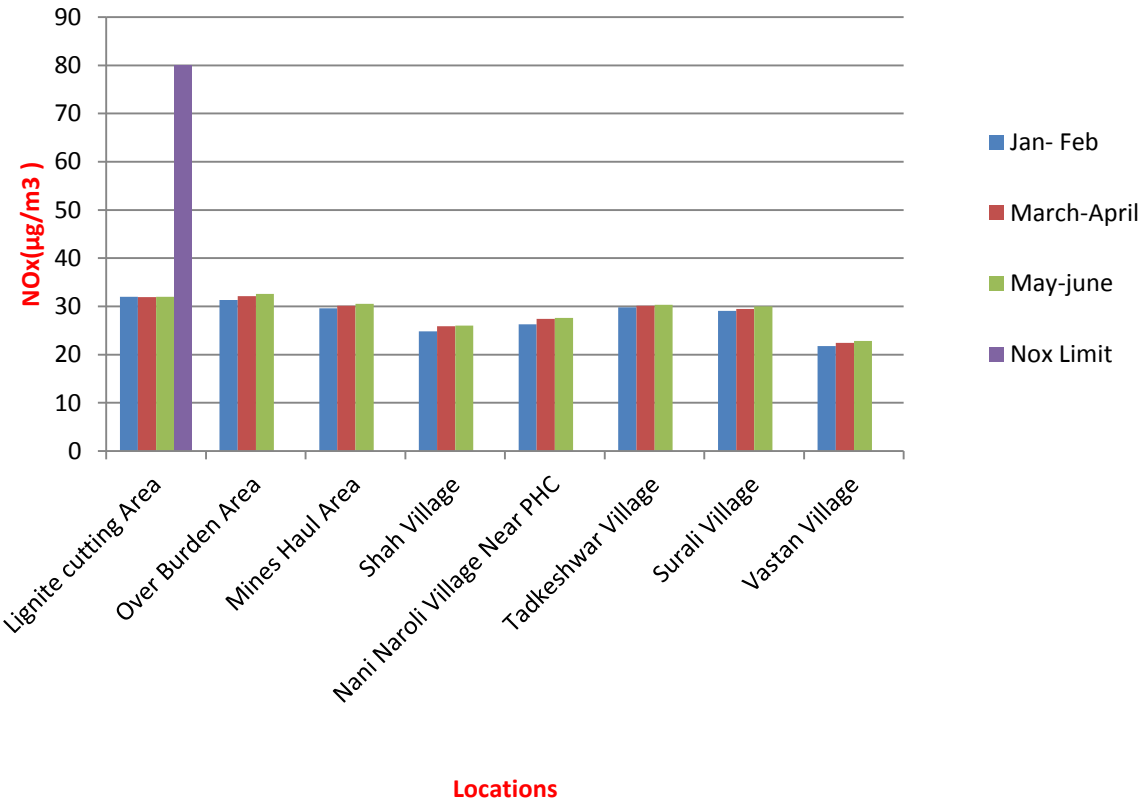
Six Monthly Variations in Ambient Air Quality

Parameter: NO_x (Nitrogen dioxide)

Period: January – 2021 to June – 2021

Sr. No.	Location	Results ($\mu g/m^3$)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May-June 2021
1	Lignite cutting Area	32.0	31.9	32.0
2	Over Burden Area	31.3	32.1	32.6
3	Mines Haul Area	29.6	30.1	30.5
4	Shah Village	24.8	25.9	26.0
5	Nani Naroli Village Near PHC	26.3	27.4	27.6
6	Tadkeshwar Village	29.8	30.1	30.3
7	Surali Village	29.1	29.5	30.0
8	Vastan Village	21.8	22.4	22.8
	Limit	80($\mu g/m^3$)		

Graphical Presentation for the NOx Parameter at Various Locations

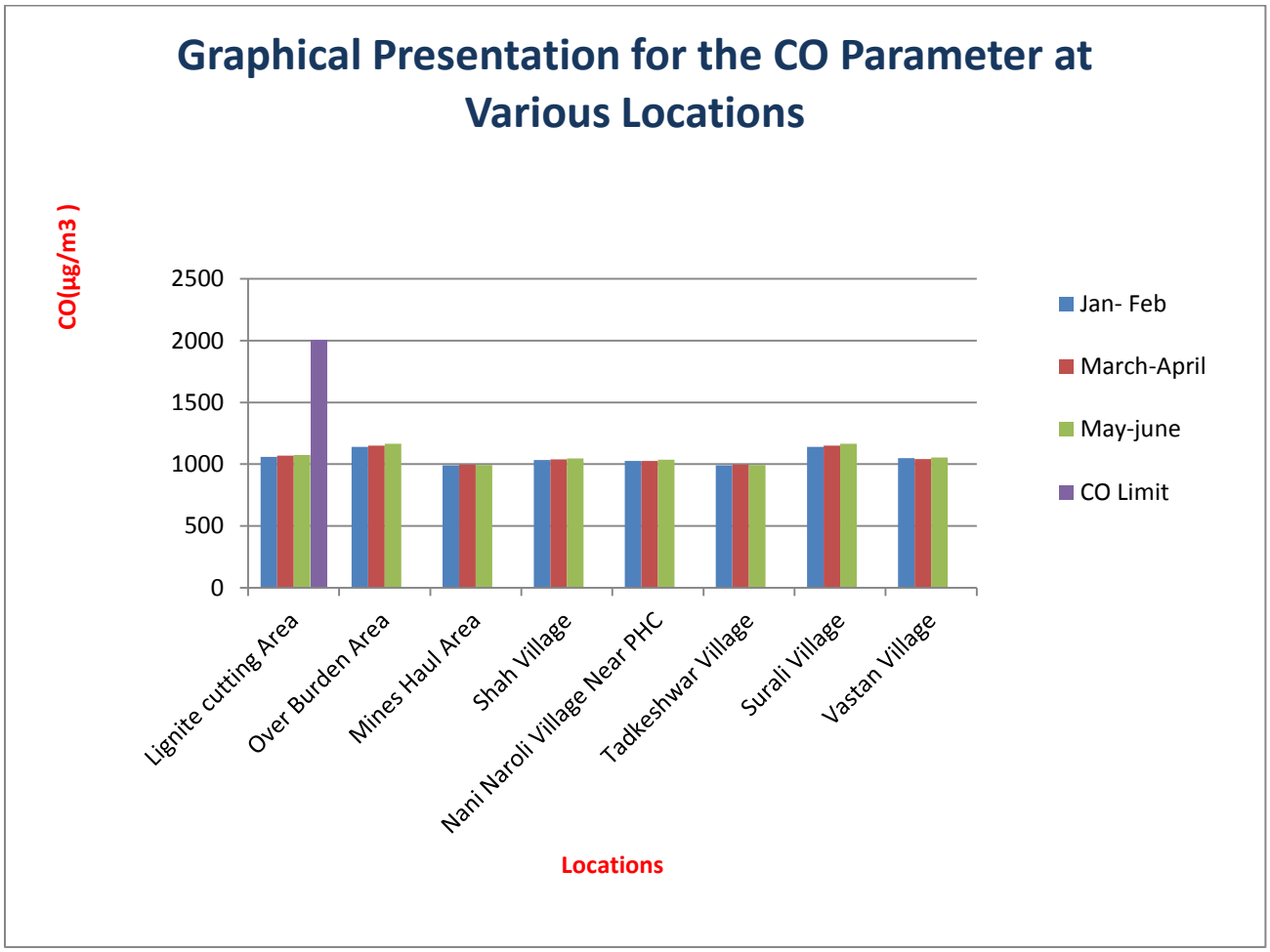


Six Monthly Variations in Ambient Air Quality

Parameter: CO (Carbon Monoxide)

Period: January – 2021 to June – 2021

Sr. No.	Location	Results ($\mu g/m^3$)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May-June 2021
1	Lignite cutting Area	1060	1070	1075
2	Over Burden Area	1140	1150	1165
3	Mines Haul Area	990	995	992
4	Shah Village	1033	1038	1045
5	Nani Naroli Village Near PHC	1025	1027	1036
6	Tadkeshwar Village	990	995	993
7	Surali Village	1140	1150	1165
8	Vastan Village	1050	1040	1055
	Limit	2000($\mu g/m^3$)		

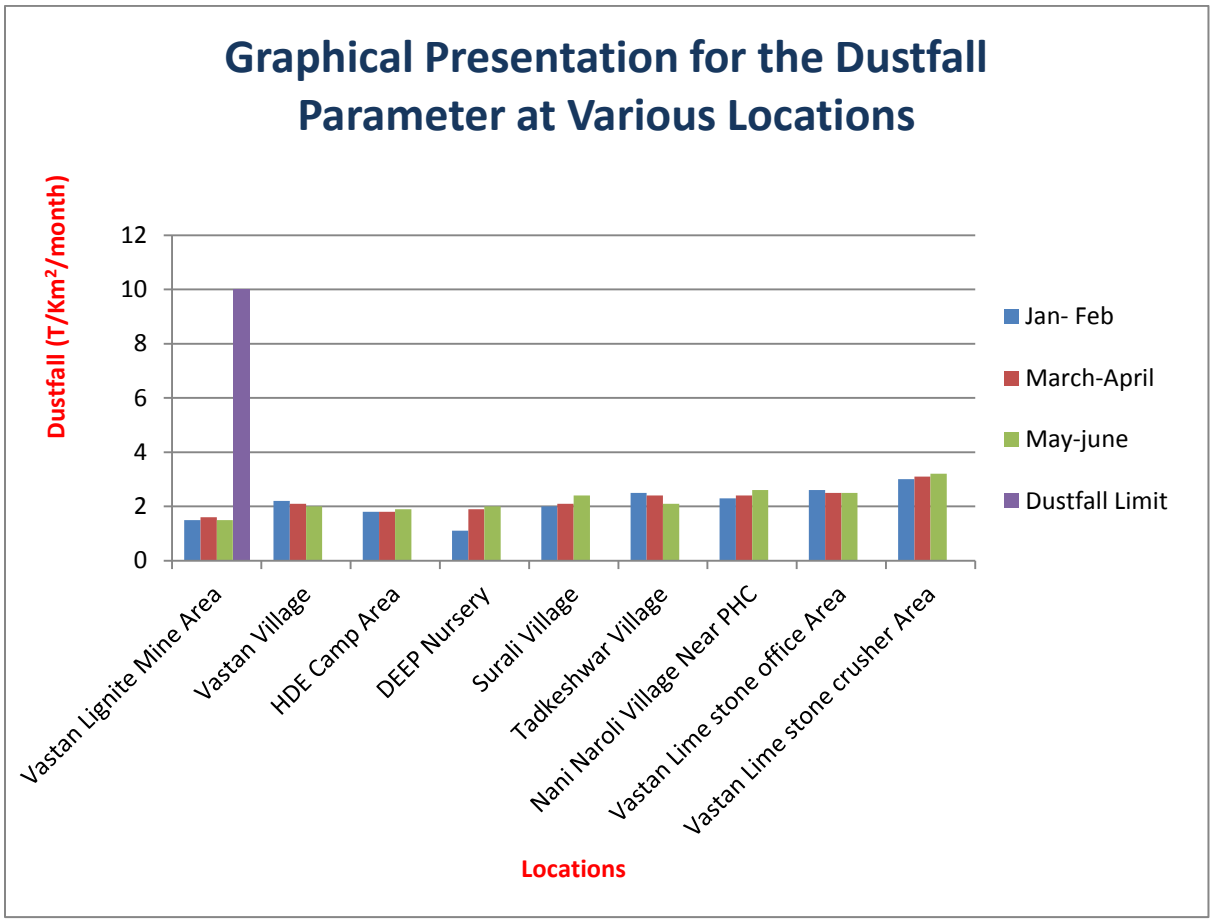

Graphical Presentation for the CO Parameter at Various Locations
CO(µg/m3)
2500
2000
1500
1000
500
0
Lignite cutting Area
Over Burden Area
Mines Haul Area
Shah Village
Nani Naroli Village Near PHC
Tadkeshwar Village
Surali Village
Vastan Village
Locations
Jan- Feb
March-April
May-june
CO Limit

Six Monthly Variations in Ambient Air Quality

Parameter: Dust Fall

Period: January – 2021 to June – 2021

Sr. No.	Location	Results (T/Km^2/month)		
		Bi-Monthly Jan to Feb - 2021	Bi-Monthly March to April - 2021	Bi-Monthly May to June - 2021
1	Vastan Lignite Mine Area	1.5	1.6	1.5
2	Vastan Village	2.2	2.1	2.0
3	HDE Camp Area	1.8	1.8	1.9
4	DEEP Nursery	1.1	1.9	2.0
5	Surali Village	2.0	2.1	2.4
6	Tadkeshwar Village	2.5	2.4	2.1
7	Nani Naroli Village Near PHC	2.3	2.4	2.6
8	Vastan Lime stone office Area	2.6	2.5	2.5
9	Vastan Lime stone crusher Area	3.0	3.1	3.2
	Limit	**10**		


Graphical Presentation for the Dustfall Parameter at Various Locations
Dustfall (T/Km2/month)
12
10
8
6
4
2
0
Jan- Feb
March-April
May-june
Dustfall Limit
Vastan Lignite Mine Area
Vastan Village
HDE Camp Area
DEEP Nursery
Surali Village
Tadkeshwar Village
Nani Naroli Village Near PHC
Vastan Lime stone office Area
Vastan Lime stone crusher Area
Locations

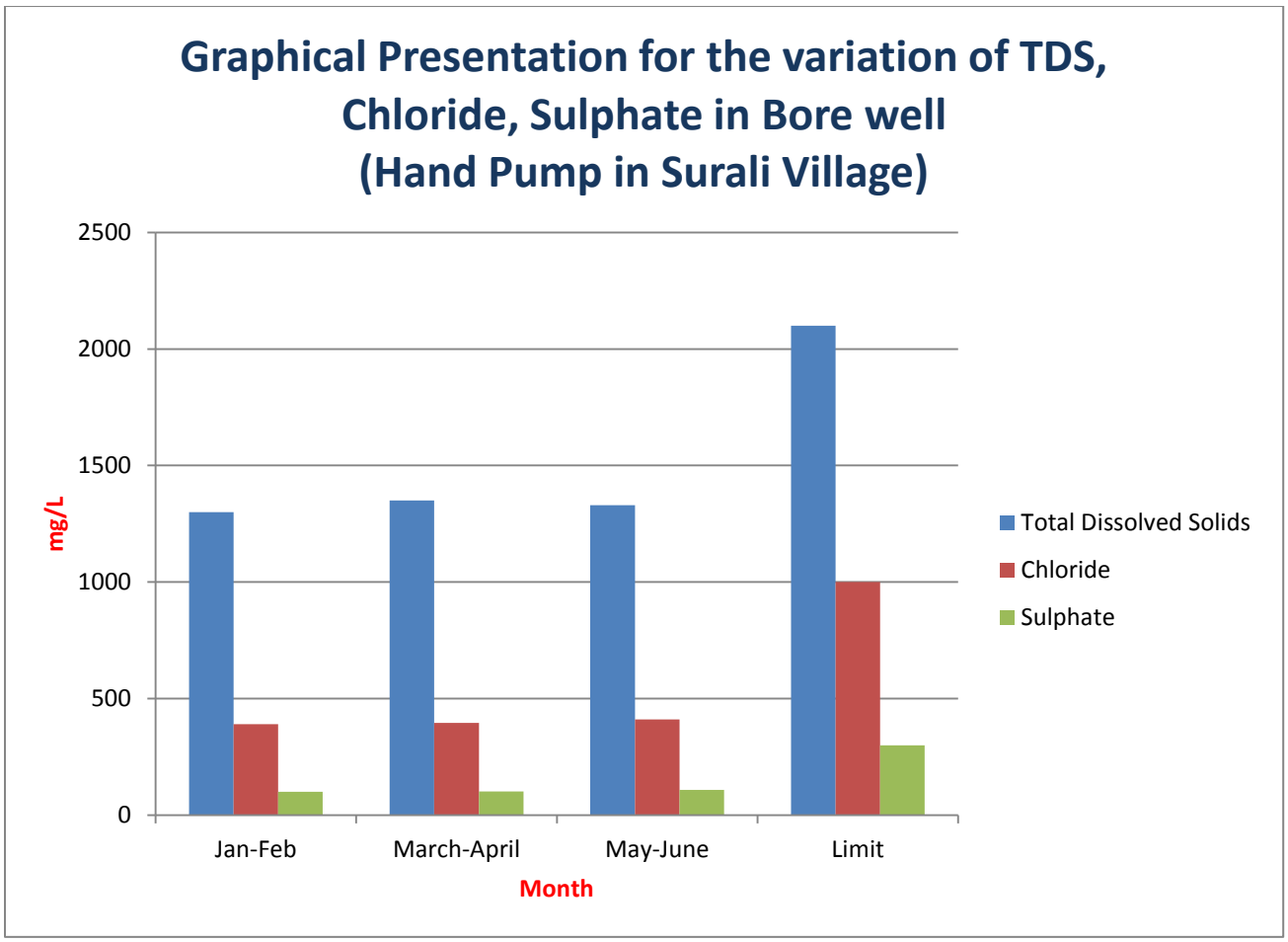
Comparative Water Analysis Test Report & Graphical Presentation

Six Monthly Variations in Bore water

Sampling point: Bore well (Hand Pump in Surali Village)

Period: January – 2021 to June – 2021

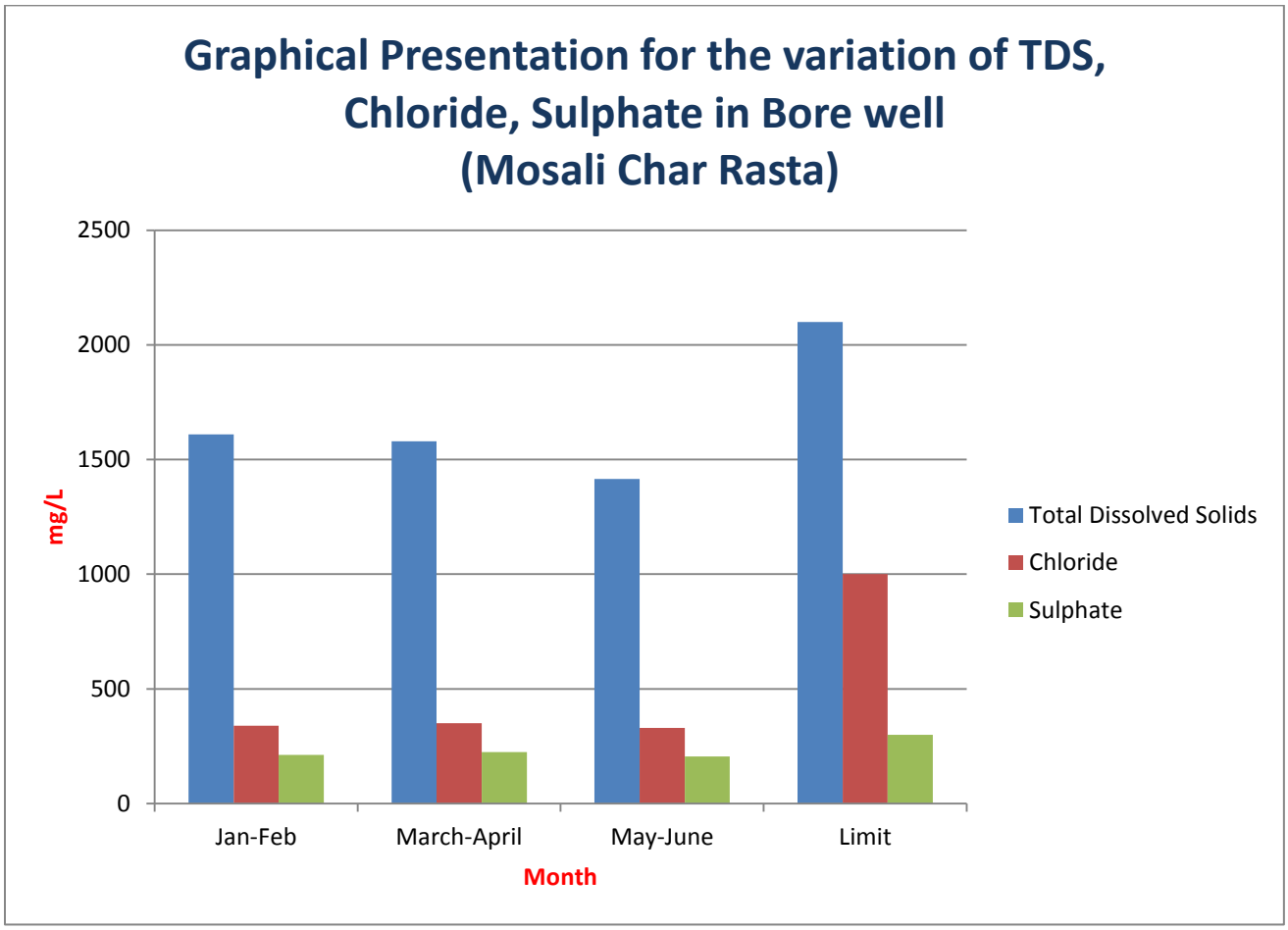
Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	29	28	28.6	**Shall not exceed 5˚c above the receiving water temp.**
2	pH@ 25^{o}C	pH unit	7.55	7.46	7.55	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	2.4	2.6	2.4	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1300	1350	1330	**2100**
6	Total volatile Solids	mg/L	1.3	1.4	1.3	**--**
7	COD	mg/L	< 10	< 4	< 4	**250**
8	BOD (5 days at 20^o C)	mg/L	< 4	< 2	< 2	**30**
9	Oil & Grease	mg/L	< 1	< 0.1	< 0.1	**10**
10	Chloride	mg/L	390	395	410	**1000**
11	Sulphate	mg/L	100	102	108	**300**
12	Fluoride	mg/L	0.9	0.8	0.7	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.0	1.1	1.2	**--**
14	Total Residual Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.02	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.50	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	< 0.03	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.10	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	0.6	< 0.1	< 0.1	**5.0**
22	Iron	mg/L	580	0.7	0.8	**3.0**
23	Calcium	mg/L	120	125	125	**--**
24	Magnesium	mg/L	80	86	83	**--**
25	Percentage Sodium	%	32.2	32	31	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**


Graphical Presentation for the variation of TDS, Chloride, Sulphate in Bore well (Hand Pump in Surali Village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in Bore water Data

Sampling point: Bore well (Mosali Char Rasta)
Period: January – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	28.6	29	29	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25 ^{0}C	pH unit	7.78	7.65	7.65	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{0}C	mg/L	1.3	1.6	1.6	**100**
5	Total Dissolved Solids (TDS) @180 ^{0}C	mg/L	1610	1580	1415	**2100**
6	Total volatile Solids	mg/L	1.0	1.1	1.4	**--**
7	COD	mg/L	< 10	< 4	< 4	**250**
8	BOD (5 days at 20^o C)	mg/L	< 4	< 2	< 2	**30**
9	Oil & Grease	mg/L	< 1	< 0.1	< 0.1	**10**
10	Chloride	mg/L	340	350	330	**1000**
11	Sulphate	mg/L	212	225	205	**300**
12	Fluoride	mg/L	0.8	0.9	0.98	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.4	1.3	1.3	**--**
14	Total Residual Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.02	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	< 0.50	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	< 0.10	< 0.1	< 0.1	**5.0**
22	Iron	mg/L	0.8	0.9	0.8	**3.0**
23	Calcium	mg/L	70.0	85	115	**--**
24	Magnesium	mg/L	46.0	51	75	**--**
25	Percentage Sodium	%	28.8	28	30.0	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**


Graphical Presentation for the variation of TDS, Chloride, Sulphate in Bore well (Mosali Char Rasta)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

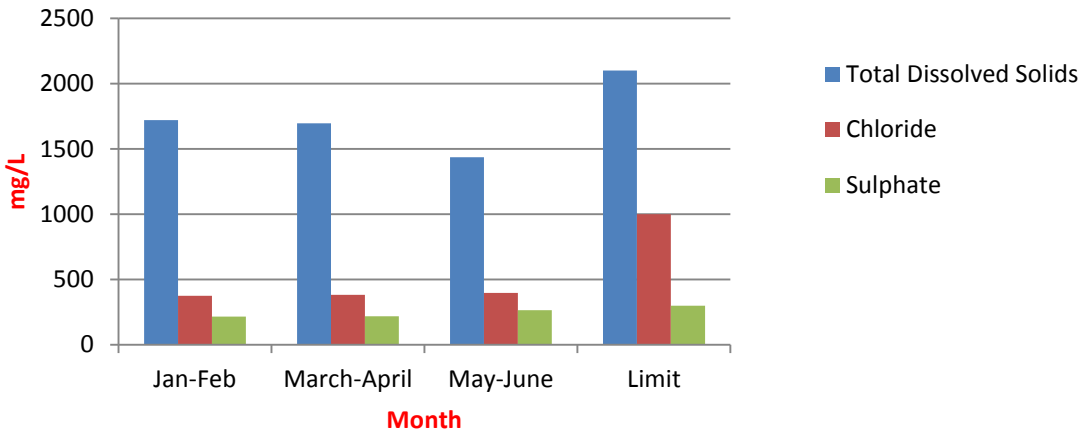
Six Monthly Variations in Bore water

Sampling point: Bore well (Vastan Village)

Period: January – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	28.5	28	28.6	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.35	7.51	7.50	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{0}C	mg/L	1.5	1.6	2.0	**100**
5	Total Dissolved Solids (TDS) @180 ^{0}C	mg/L	1720	1695	1435	**2100**
6	Total volatile Solids	mg/L	0.8	0.9	1.0	**--**
7	COD	mg/L	< 10	< 4	< 4	**250**
8	BOD (5 days at 20 ^{0}C)	mg/L	< 4	< 2	< 2	**30**
9	Oil & Grease	mg/L	< 1	< 0.1	< 0.1	**10**
10	Chloride	mg/L	375	382	396	**1000**
11	Sulphate	mg/L	215	217	265	**300**
12	Fluoride	mg/L	0.6	0.7	0.9	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.0	1.1	1.1	**--**
14	Total Residual Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.02	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	< 0.50	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	< 0.10	< 0.1	< 0.1	**5.0**
22	Iron	mg/L	0.5	0.6	0.8	**3.0**
23	Calcium	mg/L	110	112	115	**--**
24	Magnesium	mg/L	62	61	50	**--**
25	Percentage Sodium	%	25.3	26	28	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**

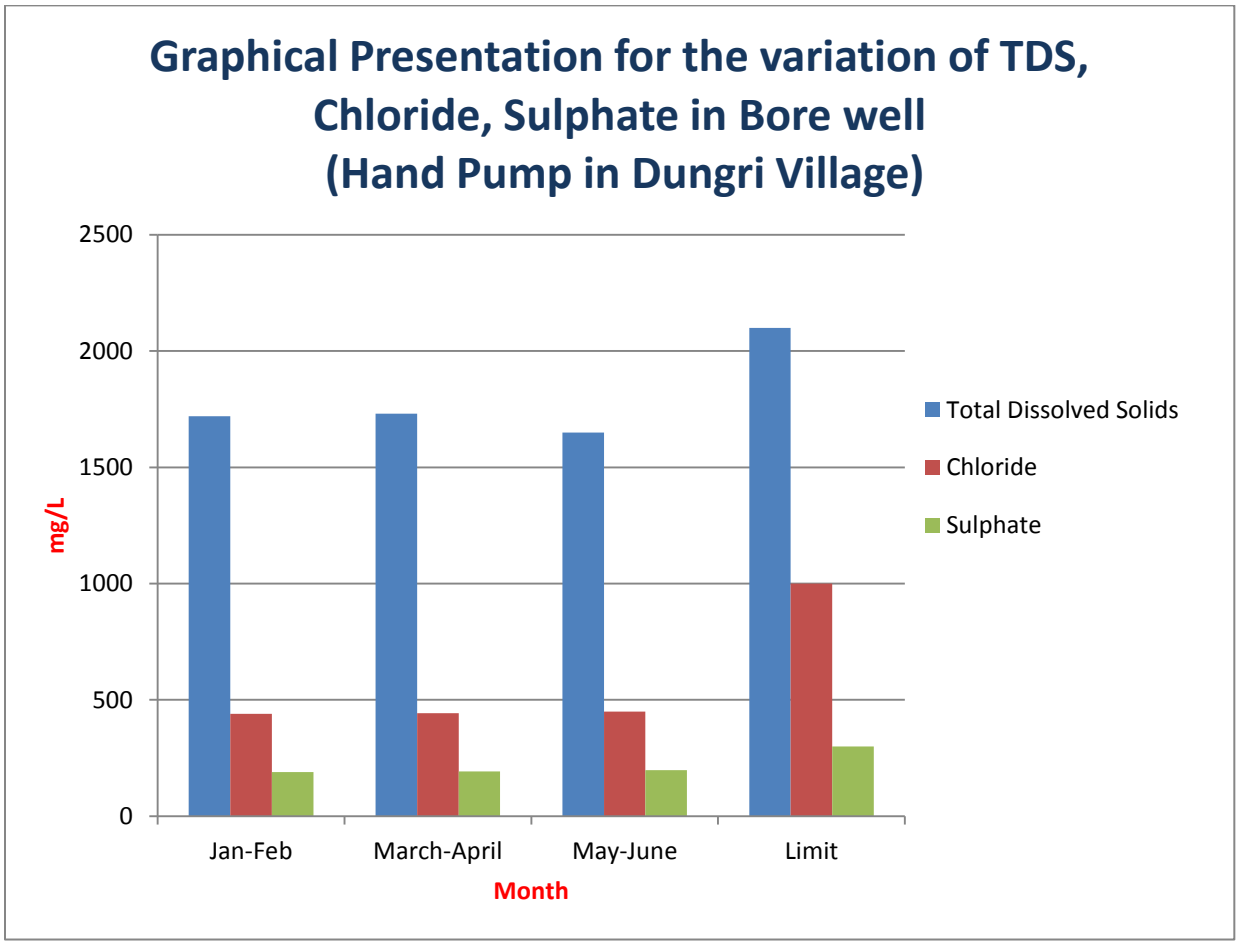
Graphical Presentation for the variation of TDS, Chloride, Sulphate in Bore well (Vastan Village)



Six Monthly Variations in Bore water

Sampling point: Bore well (Hand Pump in Dungri Village)
Period: January – 2021 to June – 2021

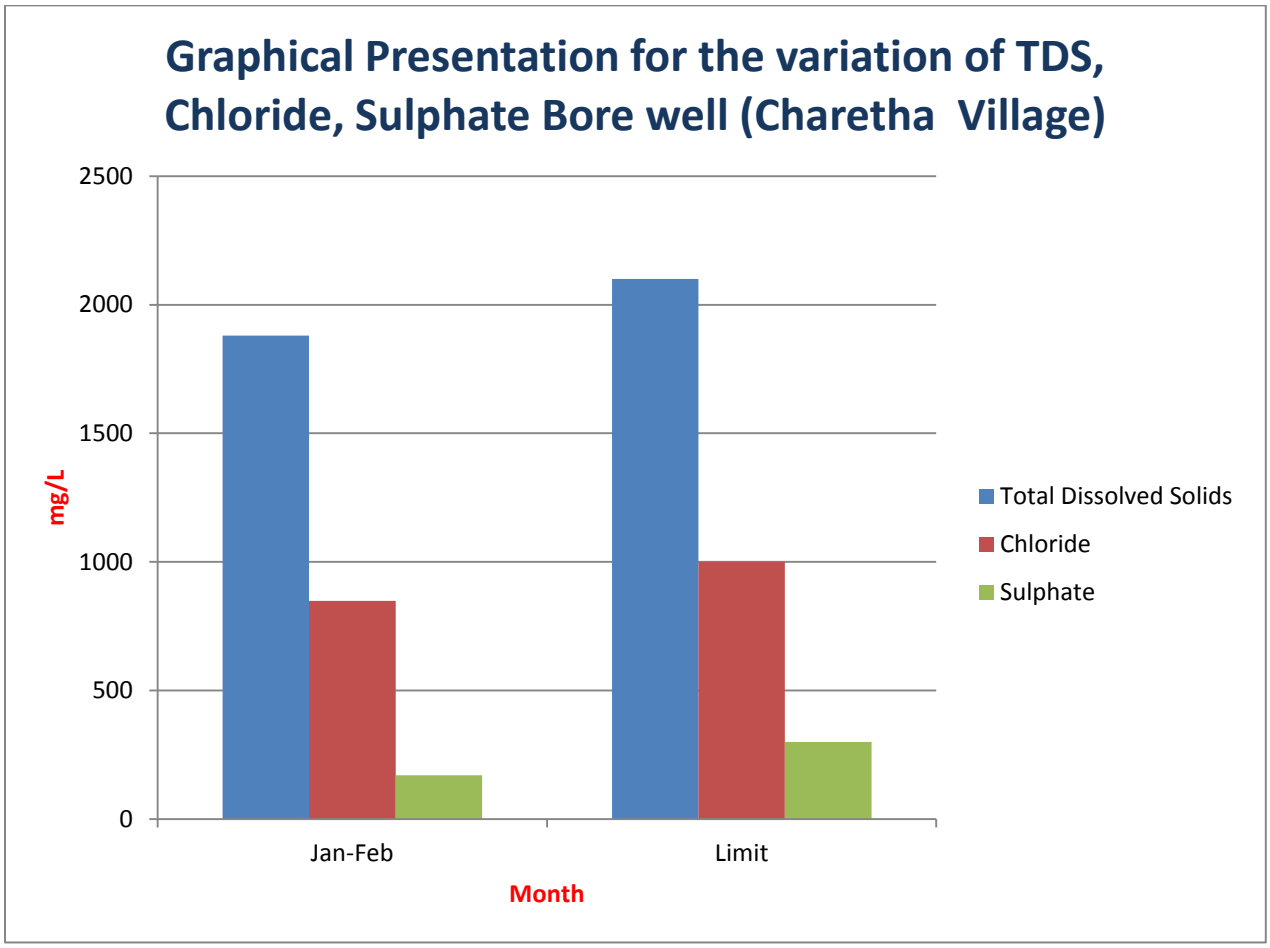
Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	27.6	26	26	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.60	7.55	7.55	**5.5-9.0**
3	Colour	pt. Co. Scale	<5	<5	<5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	1.8	1.9	1.9	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1720	1731	1650	**2100**
6	Total volatile Solids	mg/L	0.7	0.8	0.8	**--**
7	COD	mg/L	< 10	< 4	< 4	**250**
8	BOD (5 days at 20^o C)	mg/L	< 4	< 2	< 2	**30**
9	Oil & Grease	mg/L	<1	<0.1	<0.1	**10**
10	Chloride	mg/L	440	443	450	**1000**
11	Sulphate	mg/L	189	192	198	**300**
12	Fluoride	mg/L	0.6	0.7	0.8	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.0	1.1	1.1	**--**
14	Total Residual Chlorine	mg/L	<0.1	<0.1	<0.1	**1.0**
15	Free Available Chlorine	mg/L	<0.1	< 0.1	< 0.1	**--**
16	Phenolic Compound	mg/L	<0.01	< 0.1	< 0.1	**1.0**
17	Lead	mg/L	<0.02	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	<0.01	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	<0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	<0.03	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	<0.1	< 0.1	< 0.1	**5.0**
22	Iron	mg/L	0.8	0.9	0.8	**3.0**
23	Calcium	mg/L	112	115	145	**--**
24	Magnesium	mg/L	38	41	52	**--**
25	Percentage Sodium	%	30.3	30.5	30.5	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**


Graphical Presentation for the variation of TDS, Chloride, Sulphate in Bore well (Hand Pump in Dungri Village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in Bore water

Sampling point: Bore well (Charetha Village)
Period: January – 2021 to Feb – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	MoEF Limit
1	Temperature	^{0}C	27.8	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.20	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	13	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1880	**2100**
6	Total volatile Solids	mg/L	2.2	**--**
7	COD	mg/L	45	**250**
8	BOD (5 days at 20^o C)	mg/L	10	**30**
9	Oil & Grease	mg/L	< 1	**10**
10	Chloride	mg/L	848	**1000**
11	Sulphate	mg/L	170	**300**
12	Fluoride	mg/L	1.1	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.3	**--**
14	Total Residual Chlorine	mg/L	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	**1.0**
17	Lead	mg/L	<0.1	**0.1**
18	Copper	mg/L	0.39	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	**2.0**
21	Zinc	mg/L	0.12	**5.0**
22	Iron	mg/L	1.2	**3.0**
23	Calcium	mg/L	175	**--**
24	Magnesium	mg/L	90	**--**
25	Percentage Sodium	%	40.6	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	**90%Survival of fish after 96 Hours in 100% of effluent**

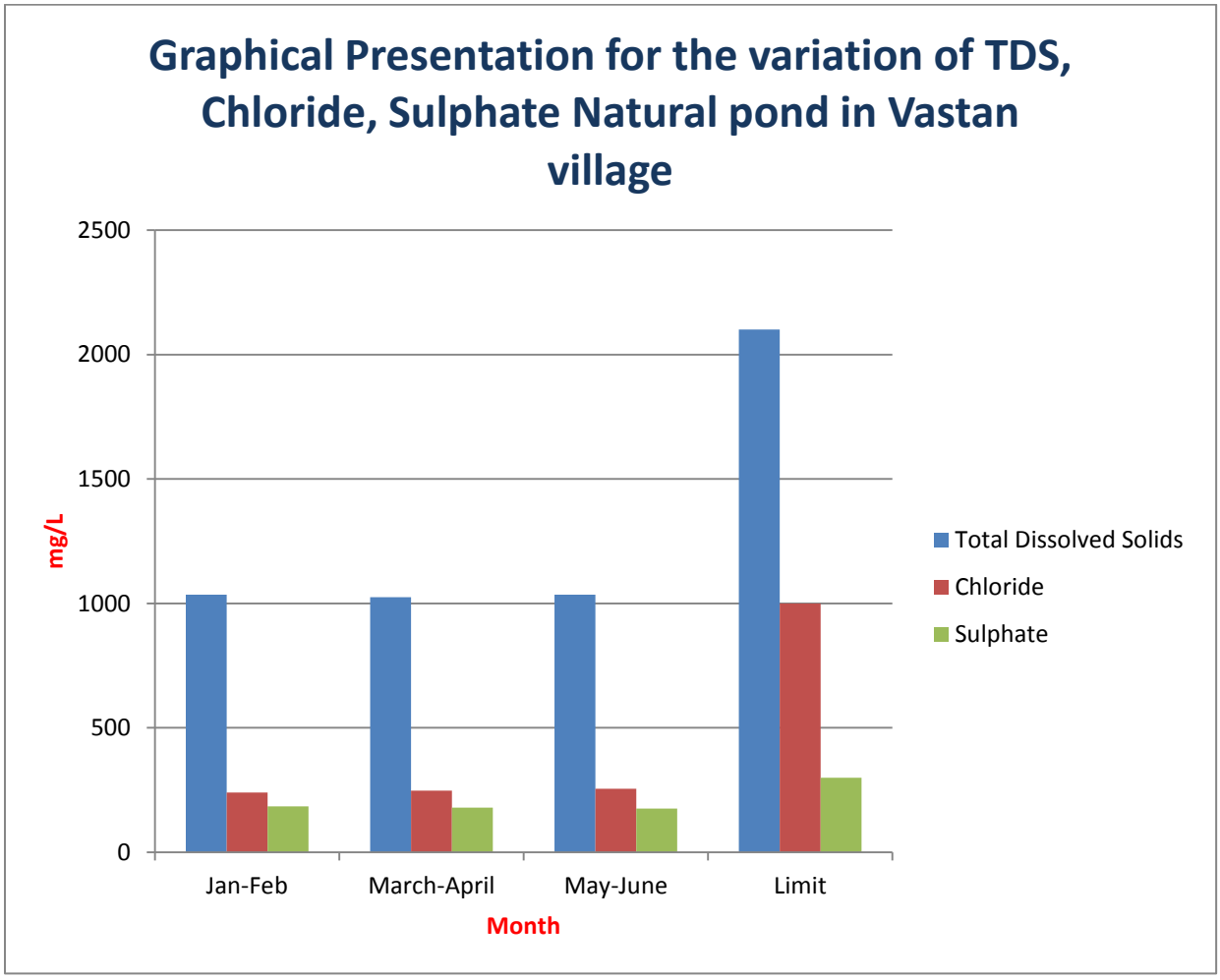

Graphical Presentation for the variation of TDS, Chloride, Sulphate Bore well (Charetha Village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in water

Sampling point: (Natural pond in Vastan village)

Period: January – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	27	28	28	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.40	7.35	7.26	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	8.2	8.5	8.2	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1035	1025	1035	**2100**
6	Total volatile Solids	mg/L	<1	<1	<1	**--**
7	COD	mg/L	<4	<4	<4	**250**
8	BOD (5 days at 20^o C)	mg/L	<2	<2	<2	**30**
9	Oil & Grease	mg/L	< 0.1	< 0.1	< 0.1	**10**
10	Chloride	mg/L	240	248	255	**1000**
11	Sulphate	mg/L	185	180	175	**300**
12	Fluoride	mg/L	0.7	0.5	0.6	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.0	1.0	1.0	**--**
14	Total Residual Chlorine	mg/L	< 0.1	< 0.1	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.05	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	< 0.05	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	< 0.1	< 0.1	< 0.1	**5.0**
22	Iron	mg/L	<0.1	<0.1	<0.1	**3.0**
23	Calcium	mg/L	73	75	90	**--**
24	Magnesium	mg/L	30	29	38	**--**
25	Percentage Sodium	%	22.4	22.4	23	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**

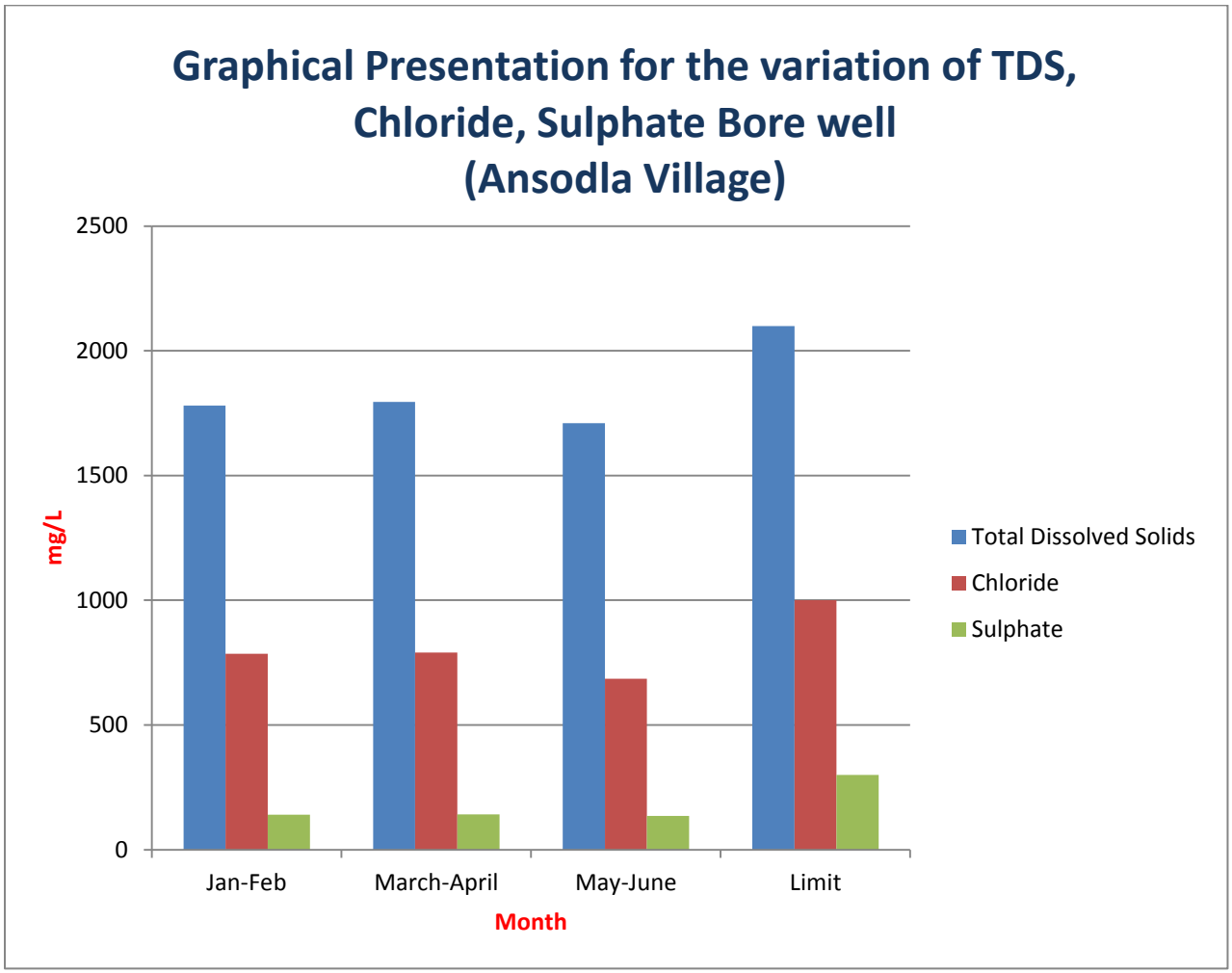

Graphical Presentation for the variation of TDS, Chloride, Sulphate Natural pond in Vastan village
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in Bore water

Sampling point: Bore well (Ansodla Village)

Period: January – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	27	26	26	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.50	7.70	7.7	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	1.2	1.4	1.4	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1780	1795	1710	**2100**
6	Total volatile Solids	mg/L	1.1	1.2	1.2	**--**
7	COD	mg/L	< 10	< 4	< 4	**250**
8	BOD (5 days at 20^o C)	mg/L	< 4	< 2	< 2	**30**
9	Oil & Grease	mg/L	< 1	< 0.1	< 0.1	**10**
10	Chloride	mg/L	785	791	685	**1000**
11	Sulphate	mg/L	140	142	135	**300**
12	Fluoride	mg/L	0.4	0.5	0.5	**2.0**
13	Phosphate as PO_4^{--}	mg/L	0.9	1.0	1.0	**--**
14	Total Residual Chlorine	mg/L	< 0.1	< 0.1	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.02	< 0.05	< 0.05	**0.1**
18	Copper	mg/L	< 0.50	< 0.05	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	< 0.10	< 0.10	< 0.10	**5.0**
22	Iron	mg/L	0.6	0.7	0.8	**3.0**
23	Calcium	mg/L	190	192	182	**--**
24	Magnesium	mg/L	86	88	81	**--**
25	Percentage Sodium	%	32.0	33	33.5	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**

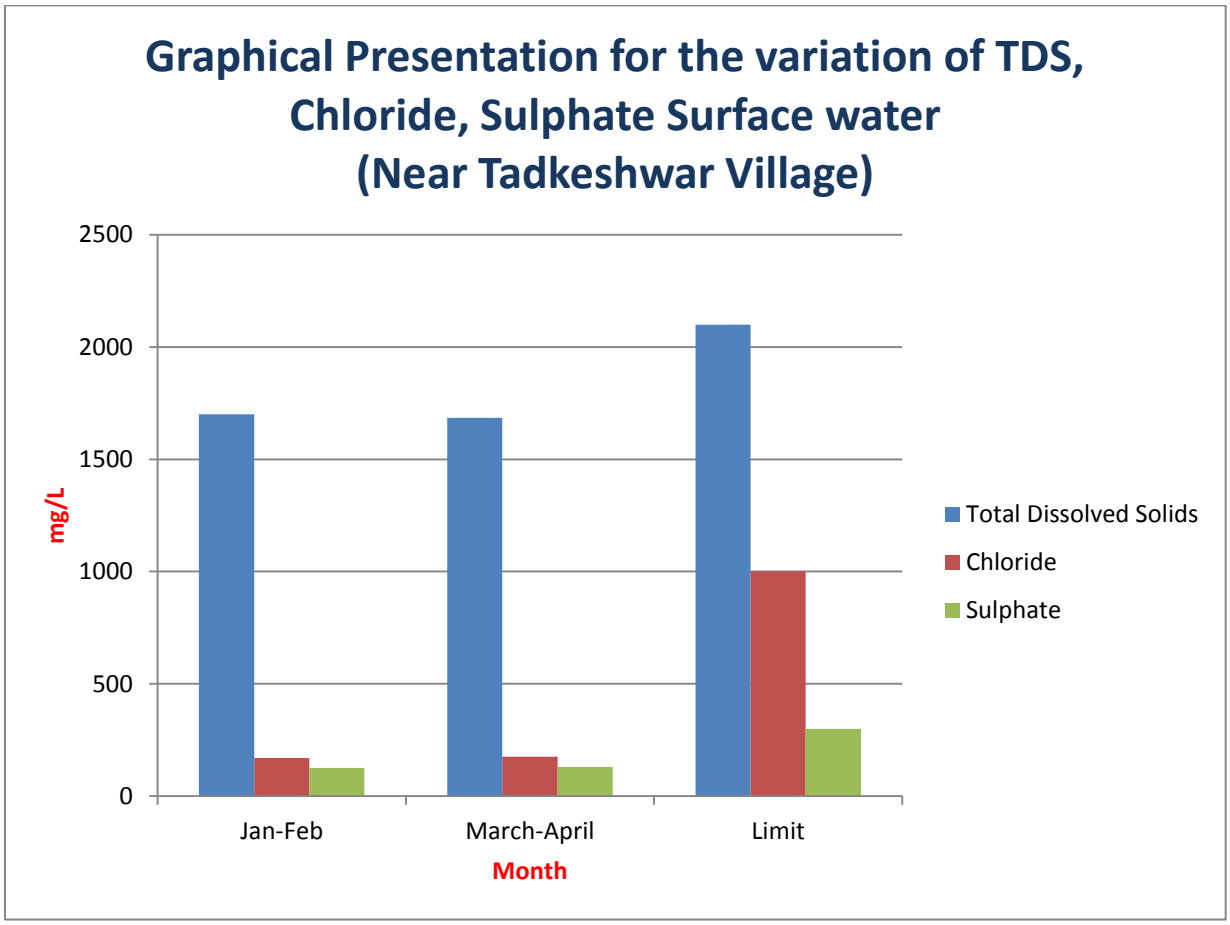

Graphical Presentation for the variation of TDS, Chloride, Sulphate Bore well (Ansodla Village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in surface water

Sampling point: Surface water (Near Tadkeshwar Village)

Period: January – 2021 to April – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	MoEF Limit
1	Temperature	^{0}C	28	27	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.50	7.400	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	2.2	2.1	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1700	1685	**2100**
6	Total volatile Solids	mg/L	17	15	**--**
7	COD	mg/L	< 10	< 4	**250**
8	BOD (5 days at 20^o C)	mg/L	< 4	< 2	**30**
9	Oil & Grease	mg/L	< 1	< 0.1	**10**
10	Chloride	mg/L	170	175	**1000**
11	Sulphate	mg/L	125	130	**300**
12	Fluoride	mg/L	0.9	0.7	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.0	1.2	**--**
14	Total Residual Chlorine	mg/L	< 0.1	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	< 0.10	**1.0**
17	Lead	mg/L	< 0.02	< 0.05	**0.1**
18	Copper	mg/L	< 0.50	< 0.05	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	< 0.03	**2.0**
21	Zinc	mg/L	< 0.10	< 0.1	**5.0**
22	Iron	mg/L	0.4	0.5	**3.0**
23	Calcium	mg/L	90	96	**--**
24	Magnesium	mg/L	45	47	**--**
25	Percentage Sodium	%	32.5	33	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**

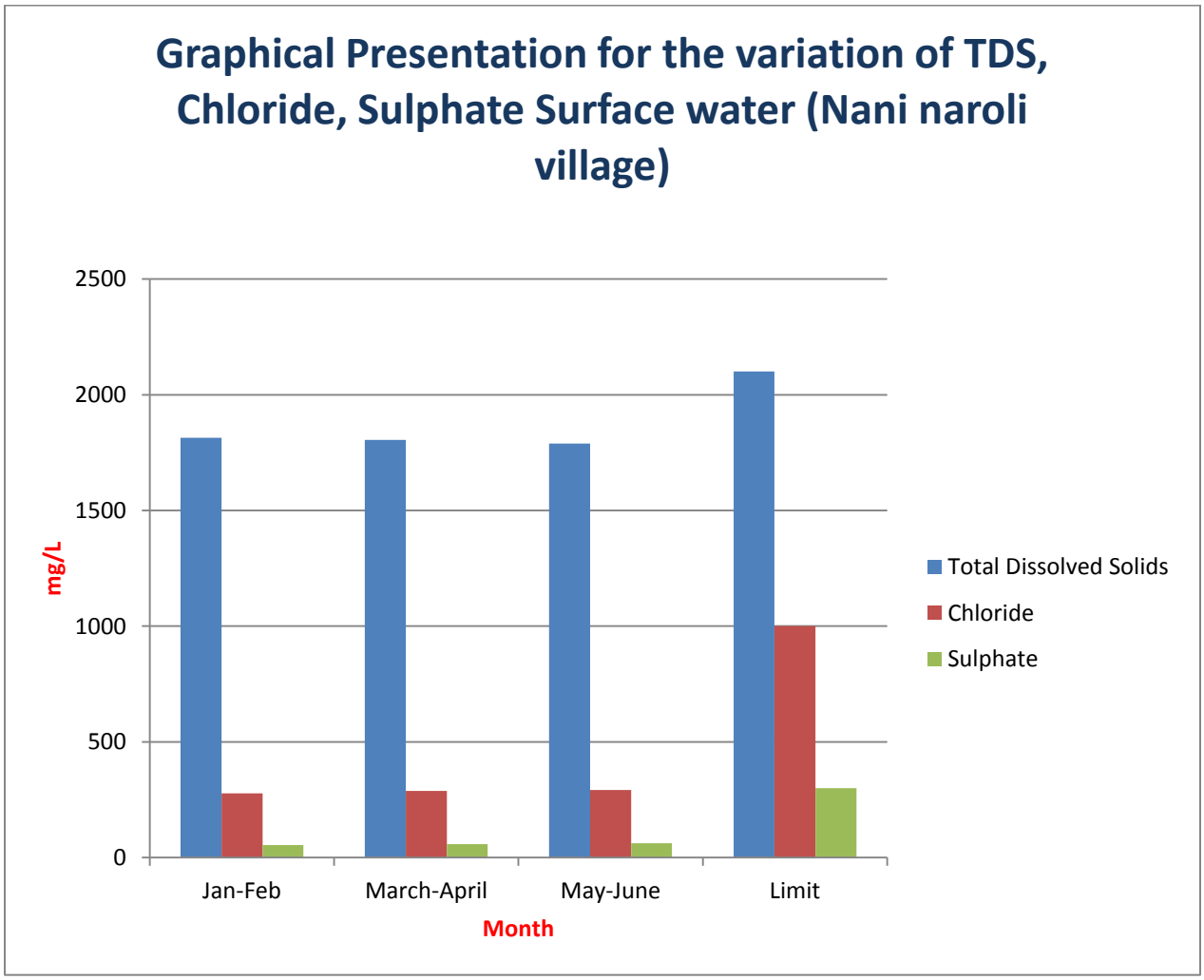

Graphical Presentation for the variation of TDS, Chloride, Sulphate Surface water (Near Tadkeshwar Village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in surface water

Sampling point: Surface water (Nani naroli village)

Period: January – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly Jan-Feb 2021	Bi-Monthly March-April 2021	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	28.2	29	29	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.50	7.6	7.6	**5.5-9.0**
3	Colour	pt. Co. Scale	<5	<5	<5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	1.2	1.4	1.4	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1814	1805	1789	**2100**
6	Total volatile Solids	mg/L	1.0	1.1	1.3	**--**
7	COD	mg/L	<10	<4	<4	**250**
8	BOD (5 days at 20^o C)	mg/L	<4	<2	<2	**30**
9	Oil & Grease	mg/L	<1	<0.1	<0.1	**10**
10	Chloride	mg/L	278	288	292	**1000**
11	Sulphate	mg/L	55	59	62	**300**
12	Fluoride	mg/L	0.8	0.9	0.9	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.1	1.2	1.2	**--**
14	Total Residual Chlorine	mg/L	<0.1	<0.1	<0.1	**1.0**
15	Free Available Chlorine	mg/L	<0.1	<0.1	<0.1	**--**
16	Phenolic Compound	mg/L	<0.01	<0.1	<0.1	**1.0**
17	Lead	mg/L	<0.02	<0.05	<0.05	**0.1**
18	Copper	mg/L	<0.01	<0.05	<0.05	**3.0**
19	Hexavalent Chromium	mg/L	<0.03	<0.03	<0.03	**0.1**
20	Total Chromium	mg/L	<0.03	<0.03	<0.03	**2.0**
21	Zinc	mg/L	<0.1	<0.1	<0.1	**5.0**
22	Iron	mg/L	0.5	0.6	0.8	**3.0**
23	Calcium	mg/L	85	88	92	**--**
24	Magnesium	mg/L	32	31	38	**--**
25	Percentage Sodium	%	26.6	27.1	27.6	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	100	100	**90%Survival of fish after 96 Hours in 100% of effluent**

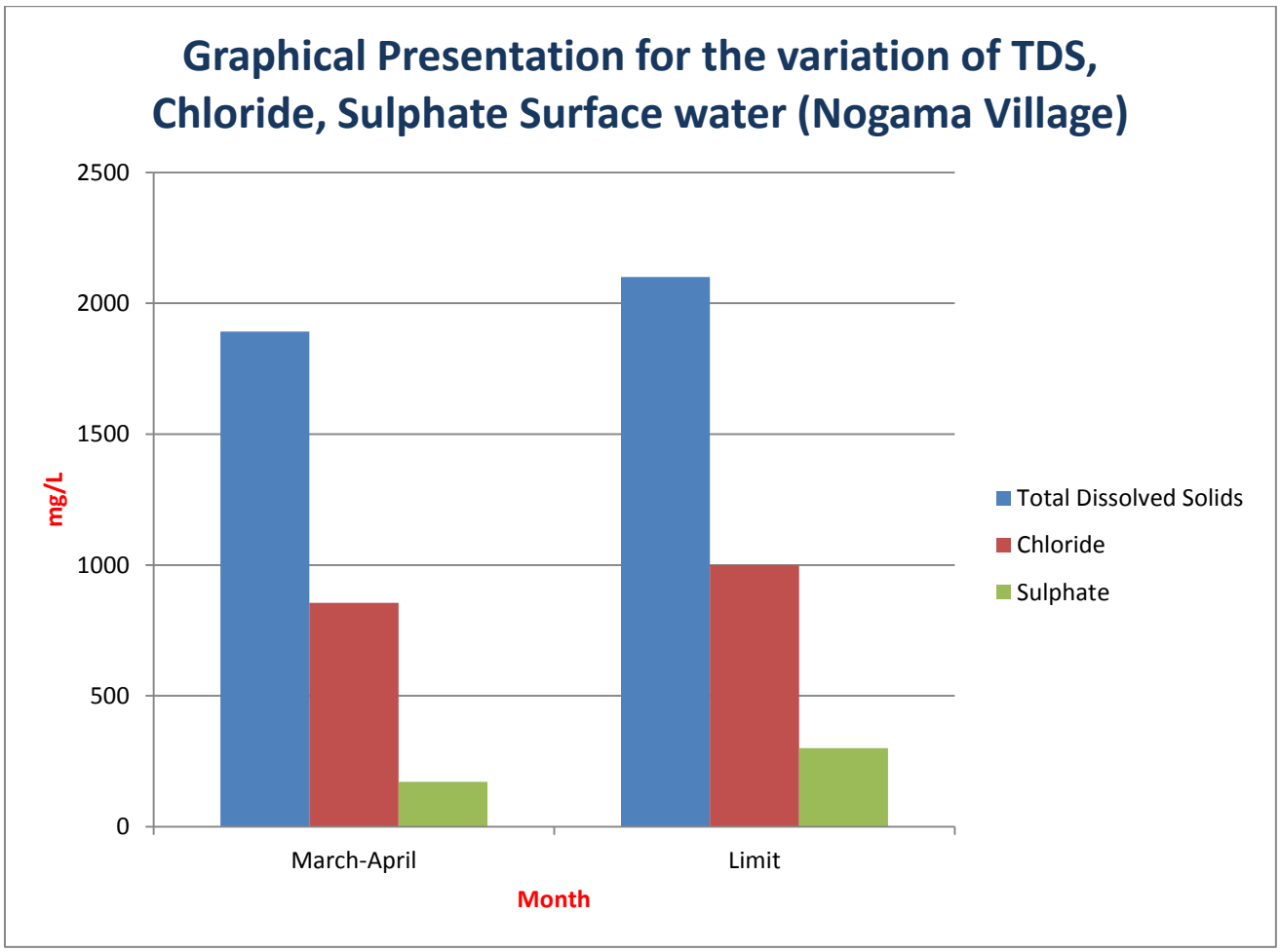

Graphical Presentation for the variation of TDS, Chloride, Sulphate Surface water (Nani naroli village)
2500
2000
1500
1000
500
0
mg/L
Jan-Feb
March-April
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in surface water

Sampling point: Surface water (Nogama Village)

Period: March – 2021 to April – 2021

Sr. No.	Parameter	Unit	Bi-Monthly March-April 2021	MoEF Limit
1	Temperature	^{0}C	28	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.40	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	15	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1892	**2100**
6	Total volatile Solids	mg/L	2.5	**--**
7	COD	mg/L	51	**250**
8	BOD (5 days at 20^o C)	mg/L	12	**30**
9	Oil & Grease	mg/L	<0.1	**10**
10	Chloride	mg/L	856	**1000**
11	Sulphate	mg/L	172	**300**
12	Fluoride	mg/L	1.2	**2.0**
13	Phosphate as PO_4^{--}	mg/L	1.1	**--**
14	Total Residual Chlorine	mg/L	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	**1.0**
17	Lead	mg/L	<0.05	**0.1**
18	Copper	mg/L	0.41	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	**2.0**
21	Zinc	mg/L	0.15	**5.0**
22	Iron	mg/L	1.3	**3.0**
23	Calcium	mg/L	182	**--**
24	Magnesium	mg/L	95	**--**
25	Percentage Sodium	%	41.2	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	**90%Survival of fish after 96 Hours in 100% of effluent**

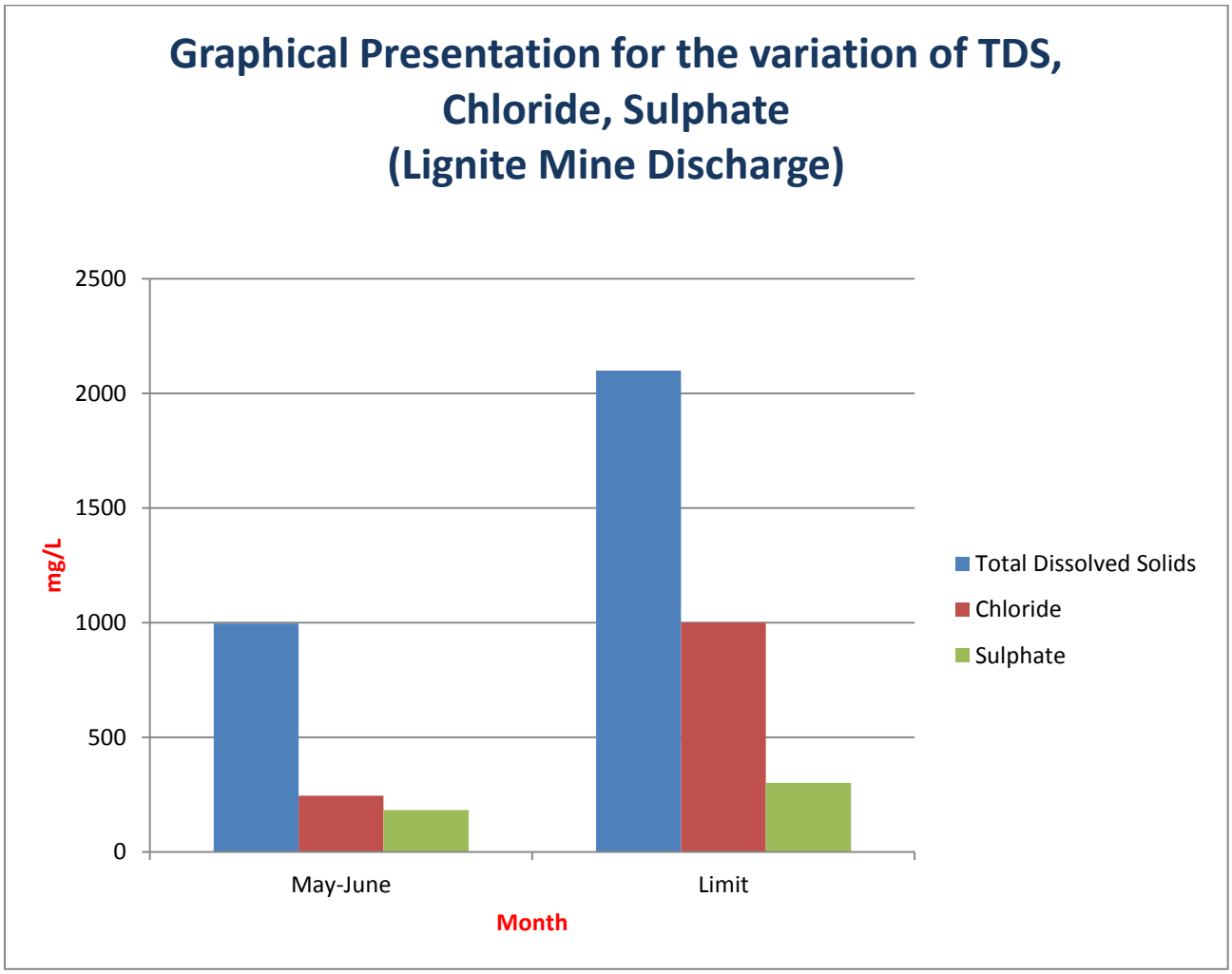

Graphical Presentation for the variation of TDS, Chloride, Sulphate Surface water (Nogama Village)
2500
2000
1500
1000
500
0
mg/L
March-April
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in surface water

Sampling point: (Lignite Mine Discharge)

Period: May – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	27.2	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.50	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	8.4	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	995	**2100**
6	Total volatile Solids	mg/L	<1	**--**
7	COD	mg/L	<4	**250**
8	BOD (5 days at 20^o C)	mg/L	<2	**30**
9	Oil & Grease	mg/L	< 1	**10**
10	Chloride	mg/L	245	**1000**
11	Sulphate	mg/L	182	**300**
12	Fluoride	mg/L	0.6	**2.0**
13	Phosphate as PO_4^{--}	mg/L	0.7	**--**
14	Total Residual Chlorine	mg/L	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	**1.0**
17	Lead	mg/L	<0.02	**0.1**
18	Copper	mg/L	<0.50	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	**2.0**
21	Zinc	mg/L	<0.10	**5.0**
22	Iron	mg/L	<0.05	**3.0**
23	Calcium	mg/L	82	**--**
24	Magnesium	mg/L	38	**--**
25	Percentage Sodium	%	22.8	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	100	**90%Survival of fish after 96 Hours in 100% of effluent**

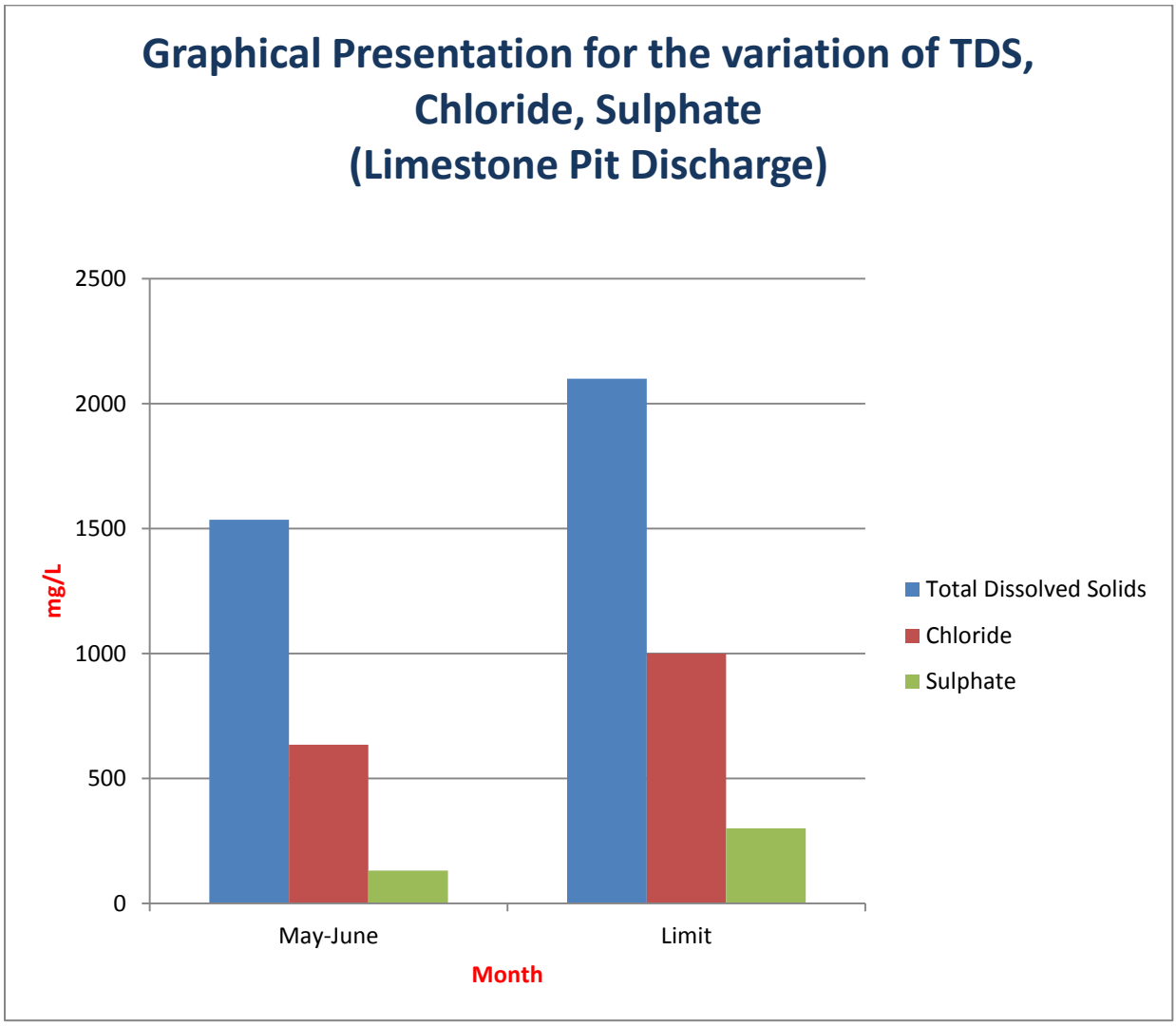

Graphical Presentation for the variation of TDS, Chloride, Sulphate (Lignite Mine Discharge)
2500
2000
1500
1000
500
0
mg/L
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Six Monthly Variations in surface water

Sampling point: (Limestone Pit Discharge)

Period: May – 2021 to June – 2021

Sr. No.	Parameter	Unit	Bi-Monthly May -June 2021	MoEF Limit
1	Temperature	^{0}C	26.8	**Shall not exceed 5˚c above the receiving water temp**
2	pH@ 25^{o}C	pH unit	7.60	**5.5-9.0**
3	Colour	pt. Co. Scale	< 5	**--**
4	Total Suspended Solids (TSS) @105 ^{o}C	mg/L	12	**100**
5	Total Dissolved Solids (TDS) @180^o C	mg/L	1535	**2100**
6	Total volatile Solids	mg/L	3.5	**--**
7	COD	mg/L	39	**250**
8	BOD (5 days at 20^o C)	mg/L	8	**30**
9	Oil & Grease	mg/L	< 1	**10**
10	Chloride	mg/L	635	**1000**
11	Sulphate	mg/L	131	**300**
12	Fluoride	mg/L	1.0	**2.0**
13	Phosphate as PO_4^{--}	mg/L	0.7	**--**
14	Total Residual Chlorine	mg/L	< 0.1	**1.0**
15	Free Available Chlorine	mg/L	< 0.10	**--**
16	Phenolic Compound	mg/L	< 0.10	**1.0**
17	Lead	mg/L	<0.1	**0.1**
18	Copper	mg/L	0.5	**3.0**
19	Hexavalent Chromium	mg/L	< 0.03	**0.1**
20	Total Chromium	mg/L	< 0.03	**2.0**
21	Zinc	mg/L	0.15	**5.0**
22	Iron	mg/L	0.9	**3.0**
23	Calcium	mg/L	130	**--**
24	Magnesium	mg/L	50	**--**
25	Percentage Sodium	%	33.0	**--**
26	Total Coliform(MPN)	Present/ Absent	Absent	**--**
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	**90%Survival of fish after 96 Hours in 100% of effluent**


Graphical Presentation for the variation of TDS, Chloride, Sulphate (Limestone Pit Discharge)
2500
2000
1500
1000
500
0
mg/L
May-June
Limit
Month
Total Dissolved Solids
Chloride
Sulphate

Comparative Noise Monitoring Report & Graphical Presentation

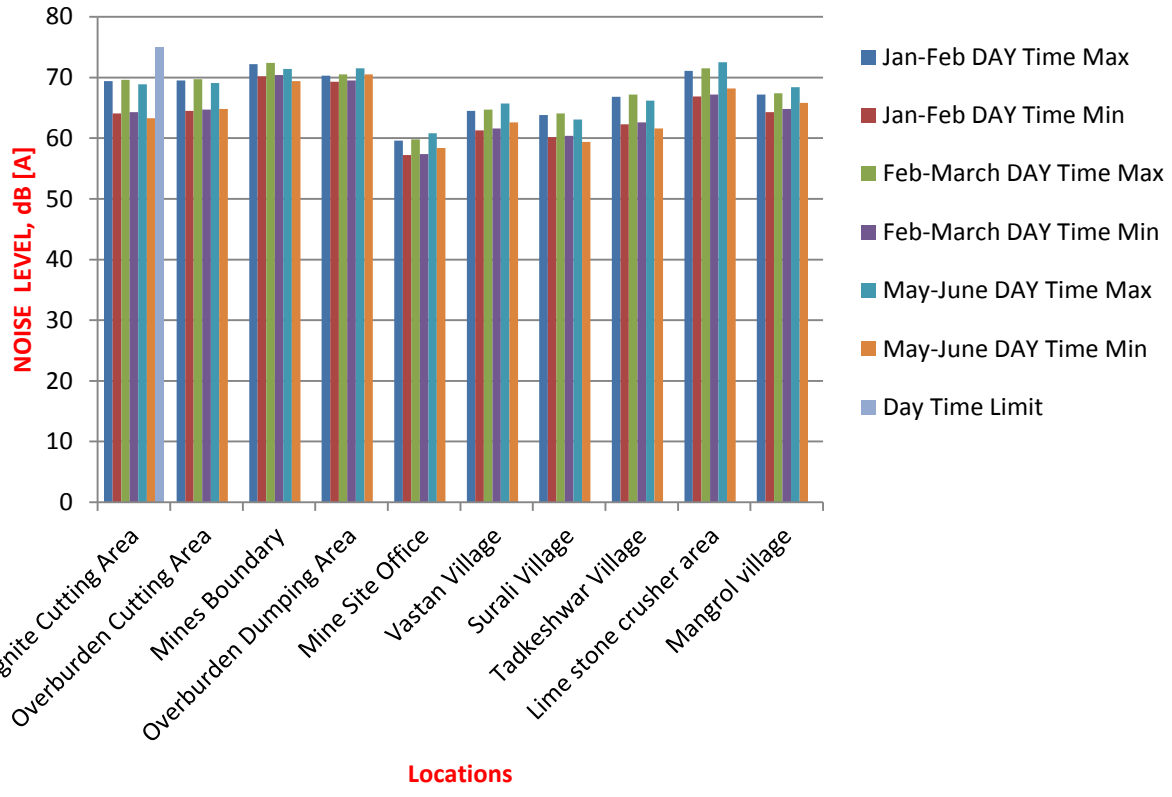
Six Monthly Variations in Noise Level

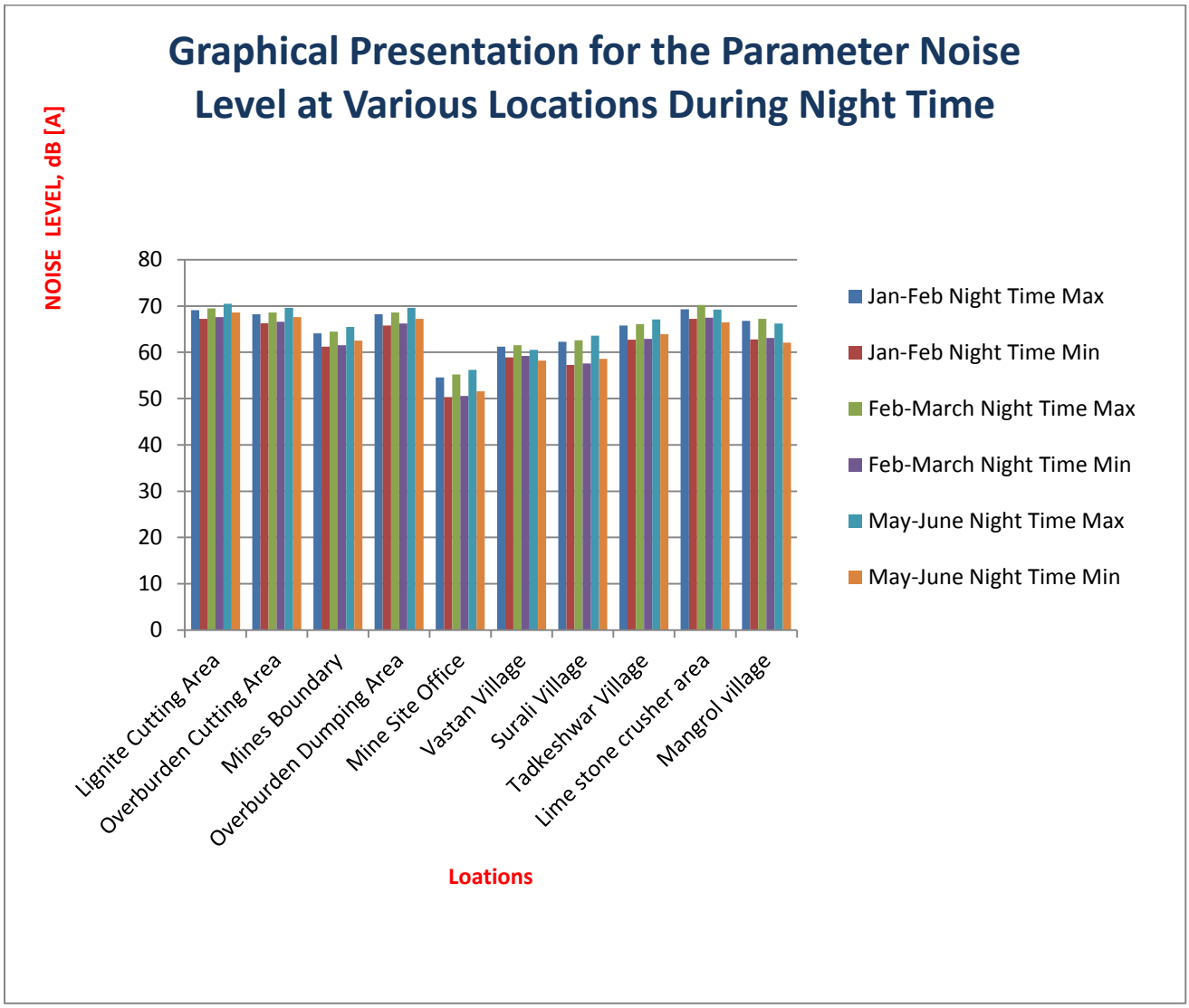
Parameter: Noise

Period: January – 2021 to June – 2021

SR. NO.	LOCATION	NOISE LEVEL, dB [A]											
		Bi-Monthly Jan. to Feb - 2021				Bi-Monthly March to April - 2020				Bi-Monthly May to June - 2021			
		DAY Time		Night Time		DAY Time		Night Time		DAY Time		Night Time	
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	Lignite Cutting Area	69.4	64.1	69.1	67.2	69.6	64.3	69.5	67.6	68.9	63.3	70.5	68.6
2	Overburden Cutting Area	69.5	64.5	68.2	66.3	69.7	64.7	68.6	66.6	69.1	64.8	69.6	67.6
3	Mines Boundary	72.2	70.2	64.1	61.2	72.4	70.4	64.5	61.5	71.4	69.4	65.5	62.5
4	Overburden Dumping Area	70.3	69.3	68.2	65.8	70.5	69.5	68.6	66.2	71.5	70.5	69.6	67.2
5	Mine Site Office	59.6	57.2	54.6	50.3	59.8	57.4	55.2	50.6	60.8	58.4	56.2	51.6
6	Vastan Village	64.5	61.3	61.2	58.9	64.7	61.6	61.5	59.2	65.7	62.6	60.5	58.2
7	Surali Village	63.8	60.2	62.3	57.3	64.1	60.4	62.6	57.6	63.1	59.4	63.6	58.6
8	Tadkeshwar Village	66.8	62.3	65.8	62.7	67.2	62.6	66.1	62.9	66.2	61.6	67.1	63.9
9	Lime stone crusher area	71.1	66.9	69.3	67.2	71.5	67.2	70.2	67.5	72.5	68.2	69.2	66.5
10	Mangrol village	67.2	64.3	66.8	62.8	67.4	64.8	67.2	63.1	68.4	65.8	66.2	62.1
	GPCB limit	75 (dB)		70(dB)		75 (dB)		70(dB)		75 (dB)		70(dB)	

Graphical Presentation for the Parameter Noise Level at Various Locations During Day Time




Graphical Presentation for the Parameter Noise Level at Various Locations During Night Time
NOISE LEVEL, dB [A]
80
70
60
50
40
30
20
10
0
Lignite Cutting Area
Overburden Cutting Area
Mines Boundary
Overburden Dumping Area
Mine Site Office
Vastan Village
Surali Village
Tadkeshwar Village
Lime stone crusher area
Mangrol village
Loations
Jan-Feb Night Time Max
Jan-Feb Night Time Min
Feb-March Night Time Max
Feb-March Night Time Min
May-June Night Time Max
May-June Night Time Min

Comparative Micro Meteorological Data and Wind rose & Wind Frequency Distribution

Six Monthly Variations in Micrometeorological data

Period: January – 2021 to June – 2021

Dry Bulb Temperature (^{0}C)			
Time in Hrs.	**Bi-Monthly Jan. to Feb- 2021**	**Bi-Monthly March to April - 2021**	**Bi-Monthly May to June - 2021**
10.00	29	34	35
11.00	31	37	36
12.00	33	39	37
13.00	35	40	34
14.00	33	41	36
15.00	34	42	37
16.00	33	42	35
17.00	32	41	36
18.00	31	39	35
19.00	30	37	36
20.00	29	34	33
21.00	28	33	34
22.00	30	31	32
23.00	27	29	33
00.00	26	28	34
01.00	28	26	31
02.00	26	25	32
03.00	25	25	33
04.00	28	25	30
05.00	26	26	31
06.00	25	25	32
07.00	26	25	31
08.00	28	28	33
09.00	29	32	34
Maximum	**35**	**42**	**37**
Minimum	**25**	**25**	**30**
Average	**30**	**33.5**	**33.5**

Six Monthly Variations in Micrometeorological data

Period: January – 2021 to June – 2021

Wet Bulb Temperature (^{0}C)			
Time in Hrs.	**Bi-Monthly Jan. to Feb- 2021**	**Bi-Monthly March to April - 2021**	**Bi-Monthly May to June - 2021**
10.00	25.4	28.2	31
11.00	22.9	29.2	30
12.00	25.4	28.7	32
13.00	24.3	24.3	34
14.00	25.0	29.0	33
15.00	26.8	26.8	32
16.00	24.1	26.1	33
17.00	25.3	25.3	31
18.00	26.1	26.1	30
19.00	24.3	24.3	27
20.00	24.9	24.9	28
21.00	24.0	25.0	29
22.00	23.6	26.3	27
23.00	24.8	24.2	28
00.00	25.1	25.1	29
01.00	26.3	24.6	31
02.00	27.8	23.8	30
03.00	25.1	23.1	29
04.00	26.8	22.8	30
05.00	24.3	24.3	29
06.00	25.1	22.6	28
07.00	26.8	21.8	27
08.00	24.2	24.2	29
09.00	24.9	26.2	30
Maximum	**27.8**	**29.2**	**34**
Minimum	**22.9**	**21.8**	**27**
Average	**25.2**	**25.5**	**30.5**

Six Monthly Variations in Micrometeorological data

Period: January – 2021 to June – 2021

Relative Humidity %			
Time in Hrs.	**Bi-Monthly Jan. to Feb- 2021**	**Bi-Monthly March to April - 2021**	**Bi-Monthly May to June - 2021**
10.00	30	16	63
11.00	26	13	59
12.00	25	11	57
13.00	26	12	56
14.00	25	11	58
15.00	24	10	59
16.00	23	10	61
17.00	25	11	63
18.00	26	13	66
19.00	28	16	68
20.00	34	17	70
21.00	38	20	73
22.00	46	24	74
23.00	52	21	75
00.00	58	28	76
01.00	56	32	77
02.00	57	44	76
03.00	58	42	75
04.00	56	36	77
05.00	53	28	75
06.00	52	32	74
07.00	48	32	70
08.00	40	30	67
09.00	37	21	62
Maximum	**58**	**44**	**77**
Minimum	**23**	**10**	**56**
Average	**40.5**	**27**	**66.5**

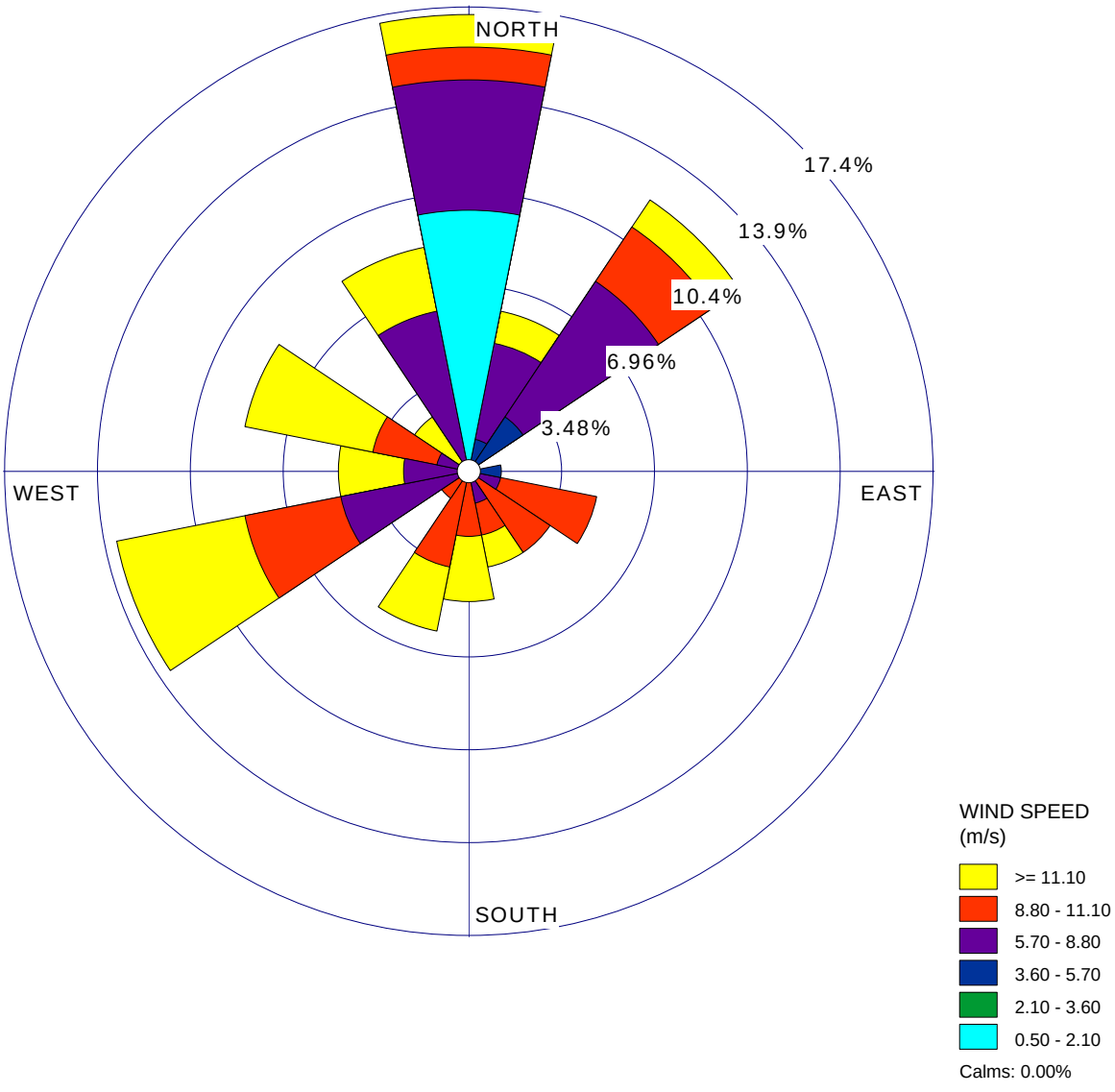
Six Monthly Variations in Micrometeorological data

Period: January – 2021 to June – 2021

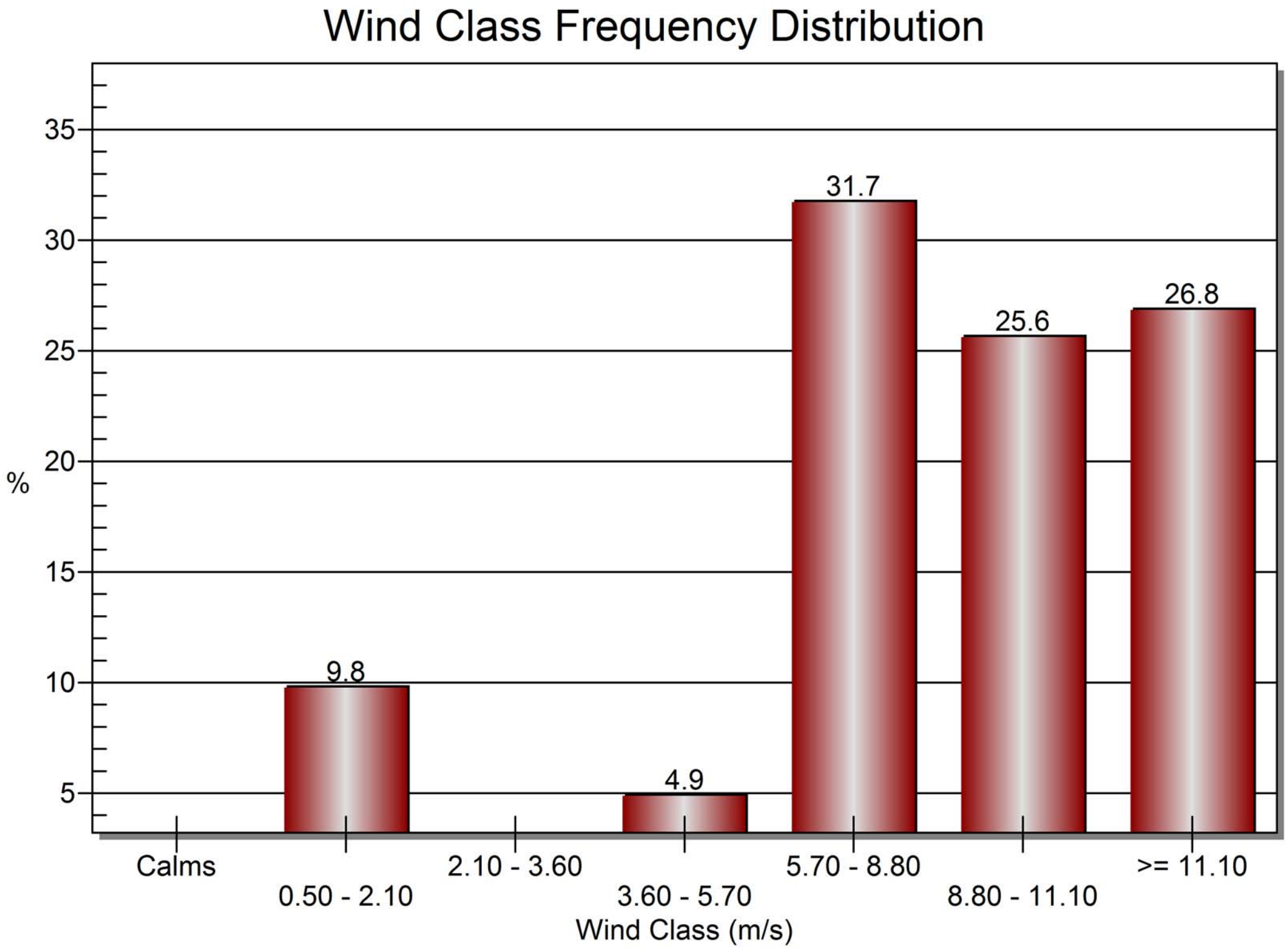
Wind Speed (km/hour)			
Time in Hrs.	**Bi-Monthly Jan. to Feb- 2021**	**Bi-Monthly March to April - 2021**	**Bi-Monthly May to June - 2021**
10.00	10	11	9
11.00	12	15	10
12.00	14	11	11
13.00	15	11	12
14.00	16	7	13
15.00	17	11	14
16.00	16	6	12
17.00	18	6	13
18.00	17	6	14
19.00	16	6	13
20.00	14	1	12
21.00	12	1	11
22.00	11	1	13
23.00	10	1	12
00.00	9	2	11
01.00	8	1	10
02.00	6	1	9
03.00	5	6	8
04.00	6	6	6
05.00	7	6	7
06.00	8	6	8
07.00	11	6	7
08.00	9	1	9
09.00	10	6	10
Maximum	**18**	**15**	**14**
Minimum	**5**	**1**	**6**
Average	**11.5**	**8.0**	**10.5**

WIND ROSE PLOT:
M/s. Gujarat Industries Power Company Limited
Vastan Lignitemine

DISPLAY:
Wind Speed
Direction (blowing from)



COMMENTS:	**DATA PERIOD:** **Start Date: 23-02-2021 - 00:00** **End Date: 03-06-2021 - 10:00**	**COMPANY NAME:** **M/s. gujarat Industries Power Company Limited**	
		MODELER: **M/s. Eco Chem Sales & Services**	
	CALM WINDS: **0.00%**	**TOTAL COUNT:** **81 hrs.**	
	AVG. WIND SPEED: **8.93 m/s**		**PROJECT NO.:**


Wind Class Frequency Distribution
35
30
25
20
15
10
5
%
31.7
26.8
25.6
9.8
4.9
Calms
0.50 - 2.10
2.10 - 3.60
3.60 - 5.70
5.70 - 8.80
8.80 - 11.10
>= 11.10
Wind Class (m/s)