

Gujarat Industries Power Company Limited



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

Six Monthly Report of Vatsan Lime Stone Mine

ENVIRONMENTAL MONITORING & ANALYSIS REPORT

For the period of January 2019 to June-2019

Prepared By

ECOSYSTEM RESOURCE MANAGEMENT PVT. LTD.



OFFICE FLOOR, ASHOKA PAVILLION-A, OPP. KAPADIA HEALTH CLUB,
NEW CIVIL ROAD, SURAT – 395 001
Tel: 0261-2231630, 2236223 Fax: 0261-2231630

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 analyse and monitor 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 analyse 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 Lime Stone Mine

I. Ambient Air Monitoring:-

Sr. No.	No. of stations & Location	Duration	Frequency	Parameters	Method of Analysis
1.	5 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.	7 Nos. within the Core & Buffer Zone.	One Month	Bi-Monthly	Dust fall	Methods of air sampling and analysis, 3 rd edition by James P. Lodge, JR., Editor

III. Noise Monitoring:-

Sr. No.	Noise of stations and locations	Duration	Frequency	Parameters	Method of analysis
1.	8 Nos. at various location within the plant premises	24 hours	Bi-Monthly	Day & night Noise level	Using Sound level Meter

Weather Monitoring:-

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.	6 Nos. of Bore well & 1 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 23 rd Edition 2017 and various Indian standards IS 3025.



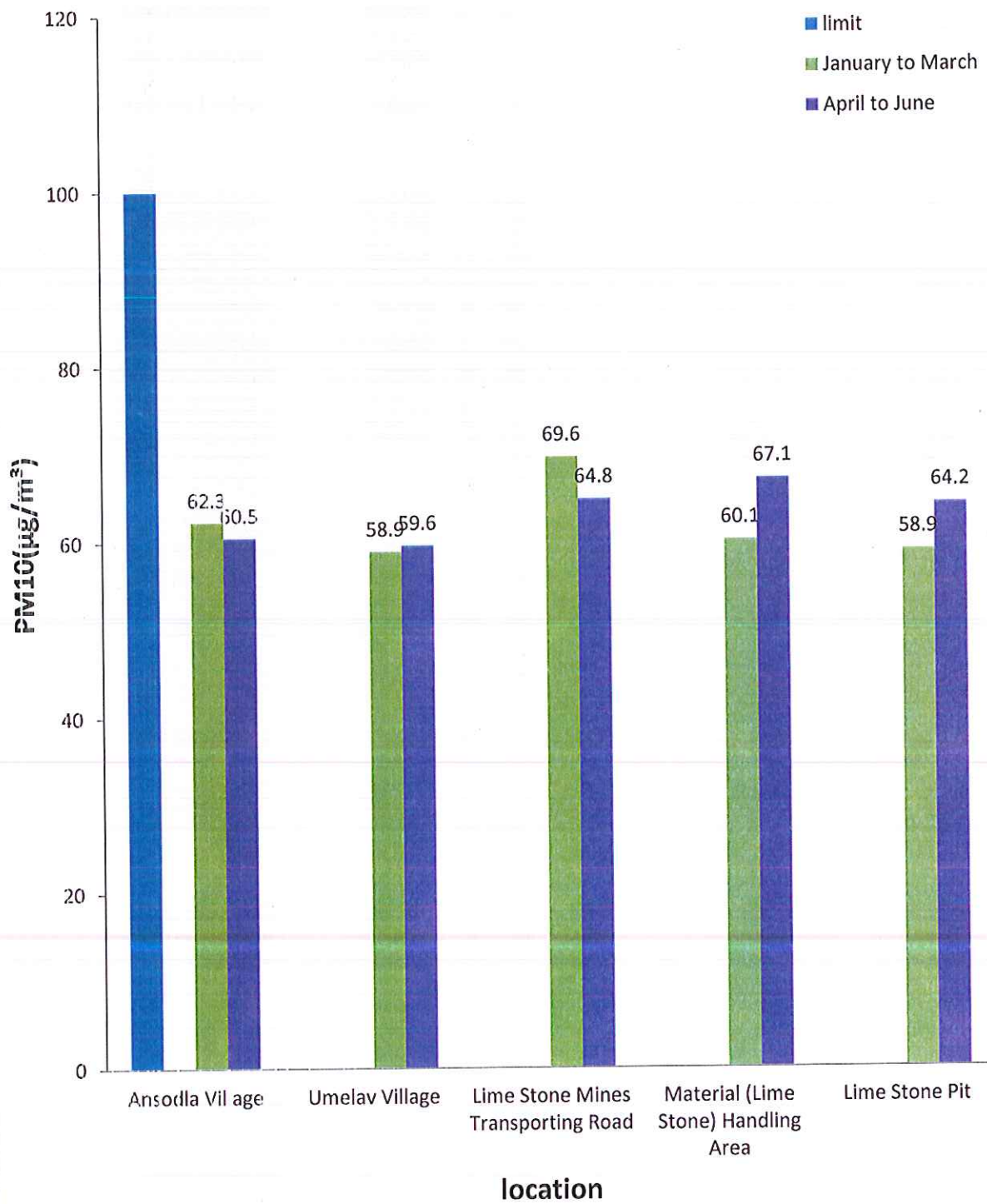
Six Monthly Variations in Ambient Air Quality

Parameter: PM₁₀ (Respirable Particulate Matter)

Period: January – 2019 to June – 2019

Sr. No.	Location	Results (µg/m ³)	
		Quarterly January to March -2019	Quarterly April to June - 2019
1	Ansodla Village	62.3	60.5
2	Umelav Village	58.9	59.6
3	Lime Stone Mines Transporting Road	69.6	64.8
4	Material (Lime Stone) Handling Area	60.1	67.1
5	Lime Stone Pit	58.9	64.2
	Limit	100	

Graphical presentation for the variation of PM₁₀ in Ambient Air





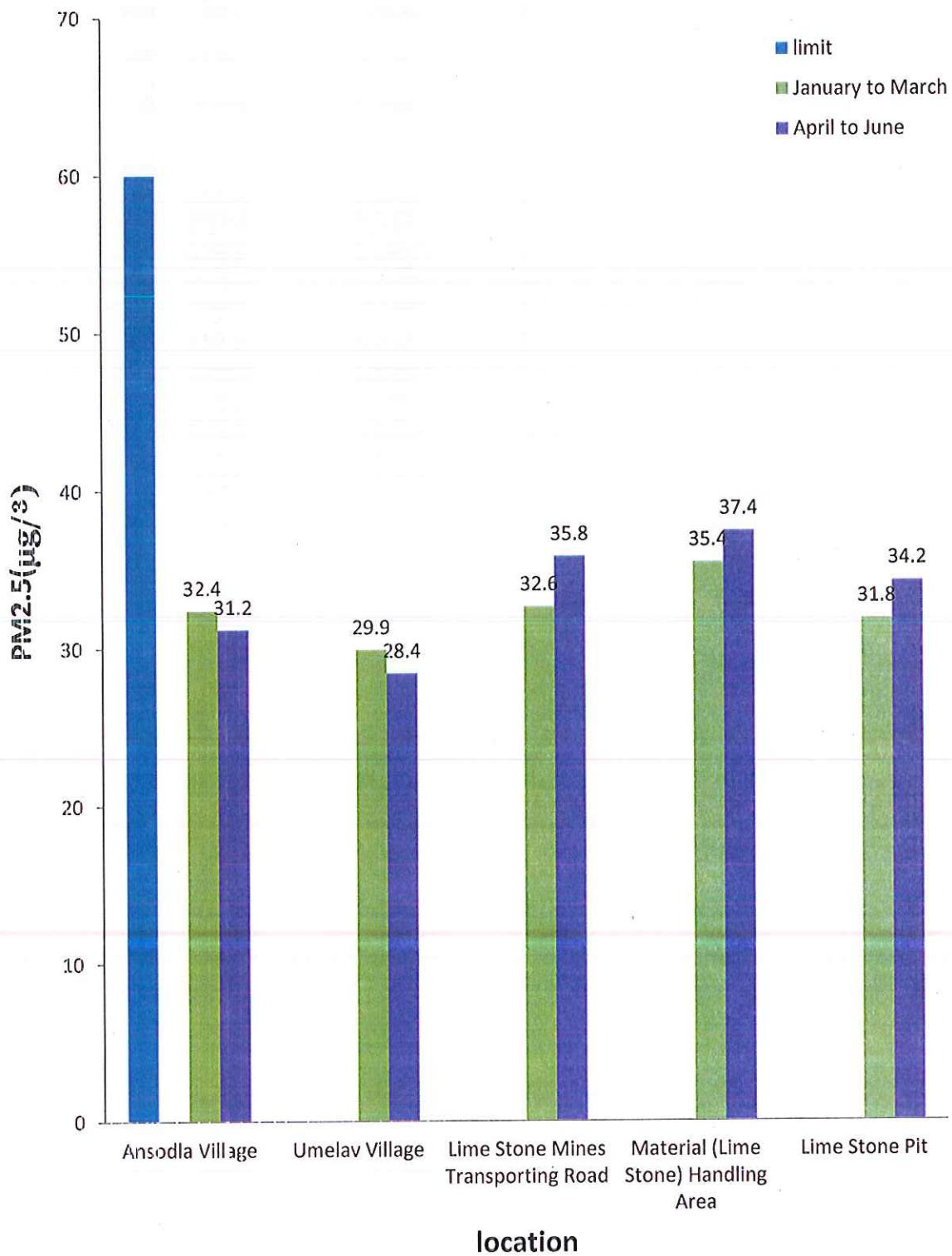
Six Monthly Variations in Ambient Air Quality

Parameter: PM_{2.5} (Respirable Particulate Matter)

Period: January – 2019 to June – 2019

Sr. No.	Location	Results (µg/m ³)	
		Quarterly January to March-2019	Quarterly April to June - 2019
1	Ansodla Village	32.4	31.2
2	Urnalav Village	29.9	28.4
3	Lime Stone Mines Transporting Road	32.6	35.8
4	Material (Lime Stone) Handling Area	35.4	37.4
5	Lime Stone Pit	31.8	34.2
	Limit	60	

Graphical presentation for the variation of PM_{2.5} in Ambient Air





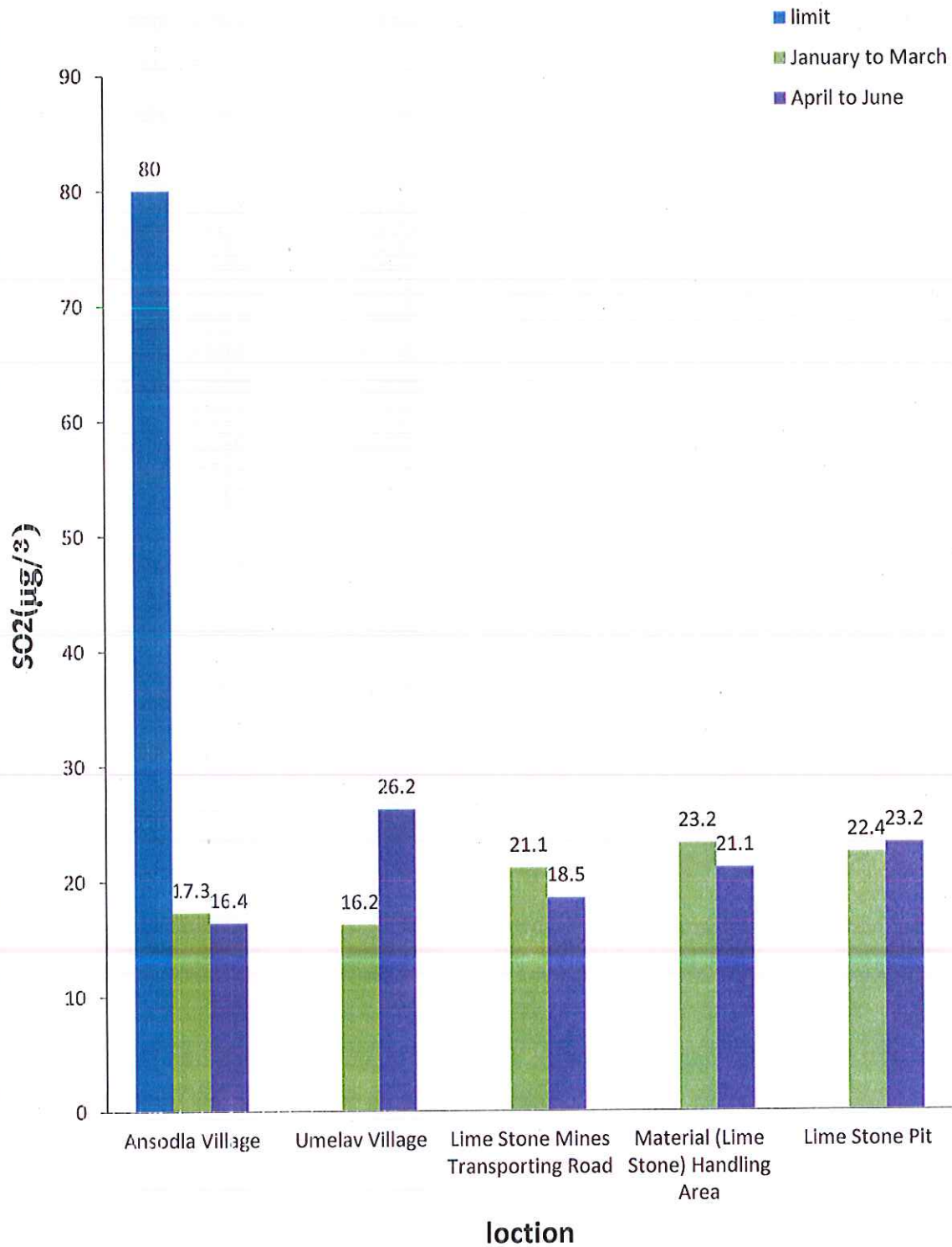
Six Monthly Variations in Ambient Air Quality

Parameter: SO₂ (Sulphur Dioxide)

Period: January – 2019 to June – 2019

Sr. No.	Location	Results (µg/m ³)	
		Quarterly January to March - 2019	Quarterly April to June - 2019
1	Ansodla Village	17.3	16.4
2	Umelav Village	16.2	26.2
3	Lime Stone Mines Transporting Road	21.1	18.5
4	Material (Lime Stone) Handling Area	23.2	21.1
5	Lime Stone Pit	22.4	23.2
	Limit	80	

Graphical presentation for the variation of SO₂ in Ambient Air





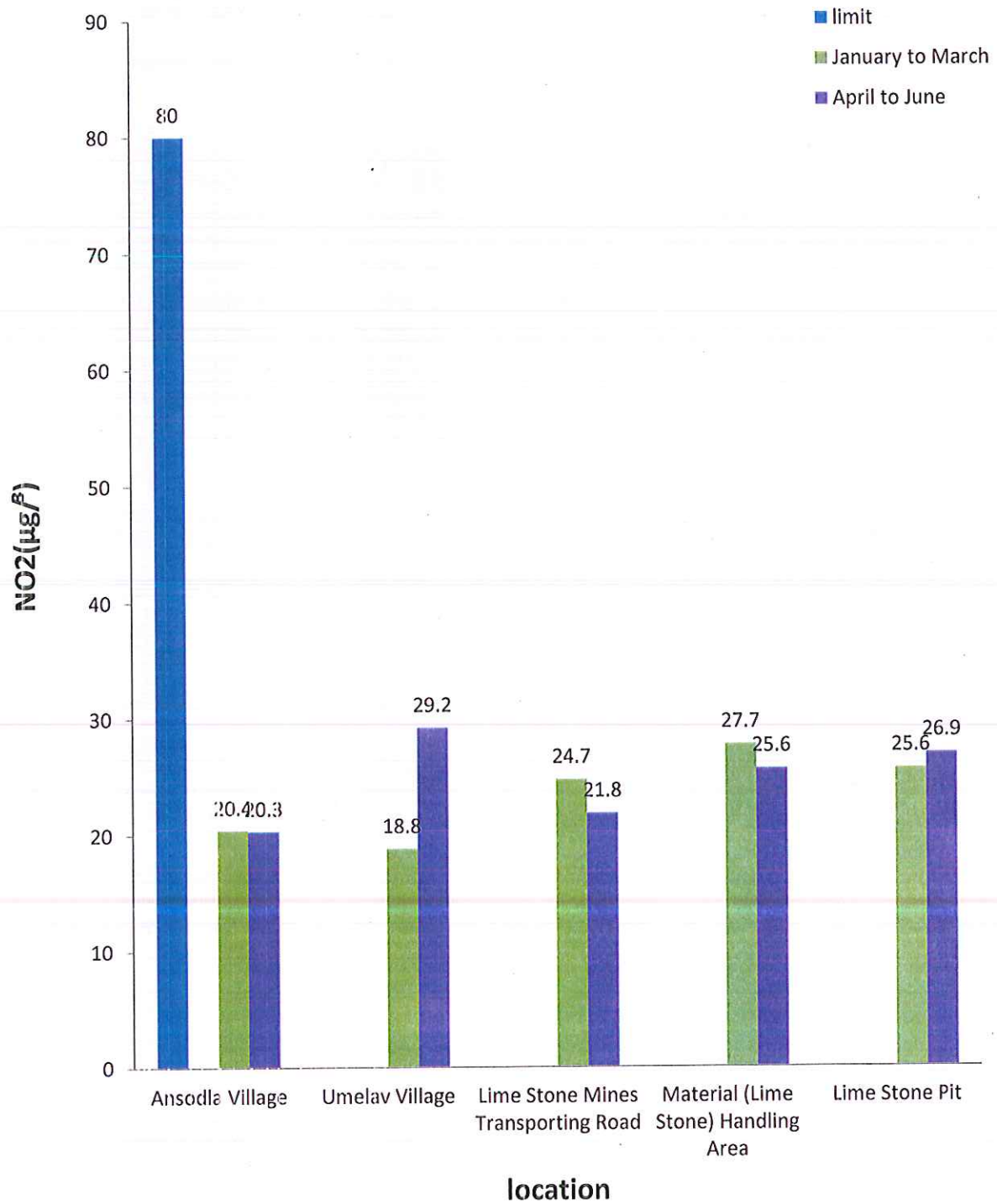
Six Monthly Variations in Ambient Air Quality

Parameter: NO₂ (Nitrogen Di-oxide)

Period: January – 2019 to June – 2019

Sr. No.	Location	Results (µg/m ³)	
		Quarterly January to March -2019	Quarterly April to June - 2019
1	Ansodla Village	20.4	20.3
2	Umrelav Village	18.8	29.2
3	Lime Stone Mines Transporting Road	24.7	21.8
4	Material (Lime Stone) Handling Area	27.7	25.6
5	Lime Stone Pit	25.6	26.9
	Limit	80	

Graphical presentation for the variation of NO₂ in Ambient Air





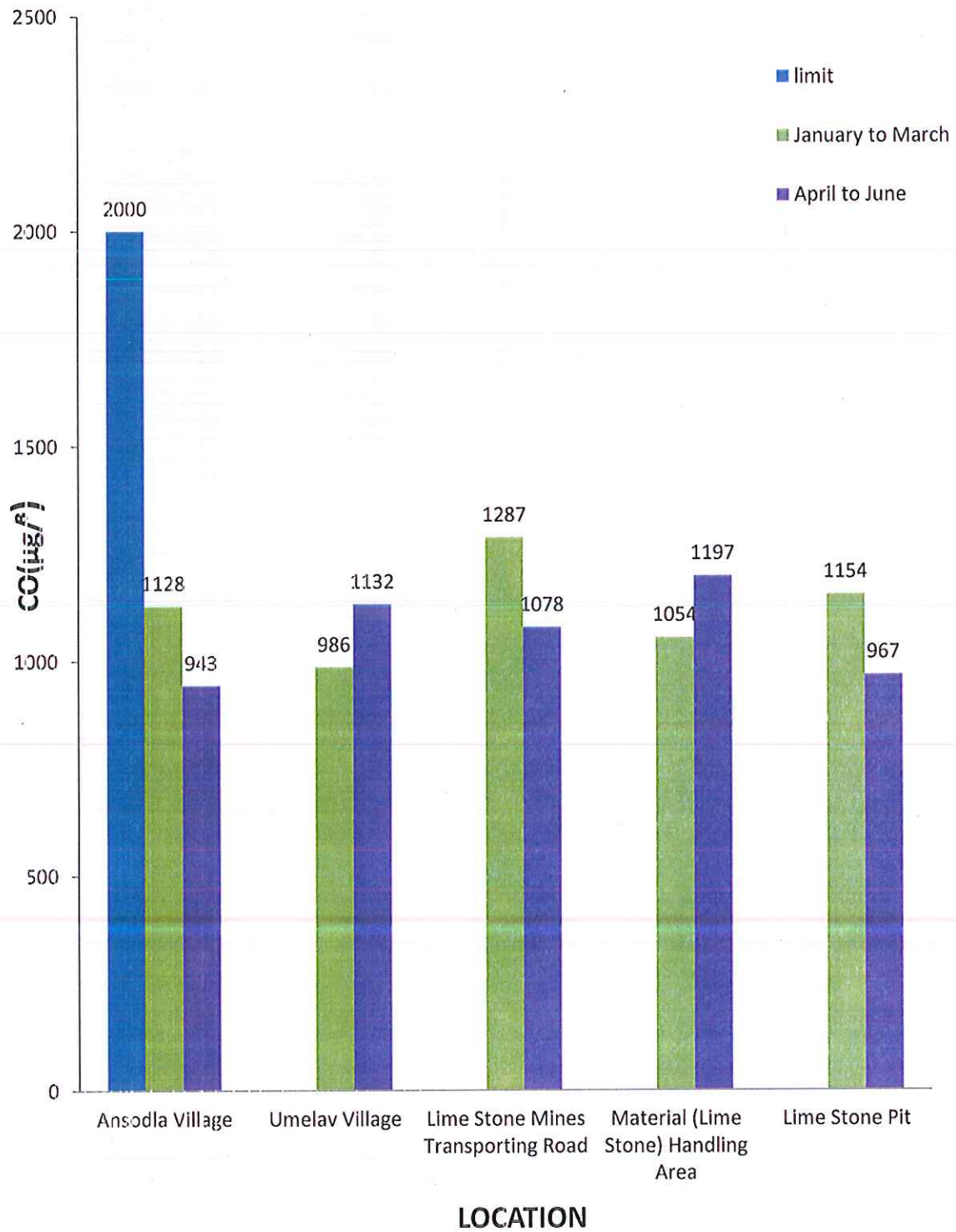
Six Monthly Variations in Ambient Air Quality

Parameter: CO (Carbon Monoxide)

Period: January – 2019 to June – 2019

Sr. No.	Location	Results($\mu\text{g}/\text{m}^3$)	
		Quarterly January to March -2019	Quarterly April to June - 2019
1	Ansodla Village	1128	943
2	Umelav Village	986	1132
3	Lime Stone Mines Transporting Road	1287	1078
4	Material (Lime Stone) Handling Area	1054	1197
5	Lime Stone Pit	1154	967
	Limit	2000	

Graphical presentation for the variation of CO in Ambient Air





Six Monthly Variations in Ambient Air Quality

Parameter: Dust Fall

Period: January-2019 to June-2019

Sr. No.	Location	Results (T/Km ² /month)	
		Quarterly Jan to March - 2019	Quarterly April to June - 2019
1	Vastan Mir e Area	3.6	2.4
2	Vastan Village	2.6	3.2
3	HDIE Camp Area	4.1	3.5
4	Deep Nursery	4.7	4
5	Surali Village	3.2	2.9
6	Tadkeshwar Village	3.6	4.5
7	Nani Naroli Village Near PHC	3.0	2.1
	Limit	10	

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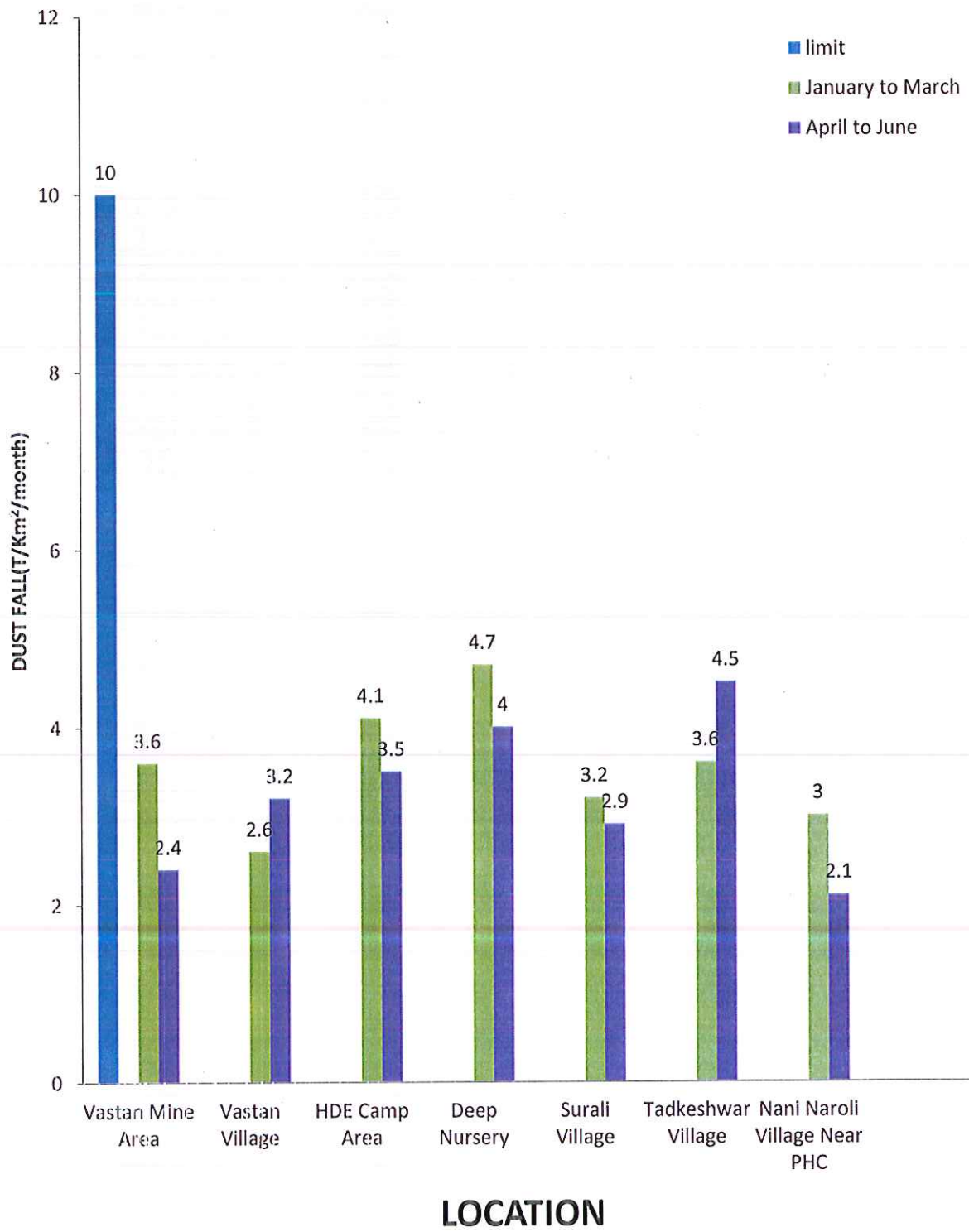
e-mail : eco@ecoshripad.com Website : www.ecosystemindia.com CIN No.: U72200GJ2000PTC030265

Bharuch Branch : Shop No. 7/8, Saffron City, Opp. Bharat Petrol Pump, VIII, Jolwa, Dahaj - Bharuch Road, Bharuch. Mo.: 98250 94443

Vapi Branch : 131, Ashapura Complex, Near New Telephone Exchange Road, GIDC Vapi-396 195 Tel.: 0260-2970305 / 94262 63805

Vadodara Branch : 216, Race Course Tower, Gotri Road, Vadodara-390007. Tel.: 0265-2121215, 2331215

Graphical presentation for the variation of Dust Fall in Ambient Air





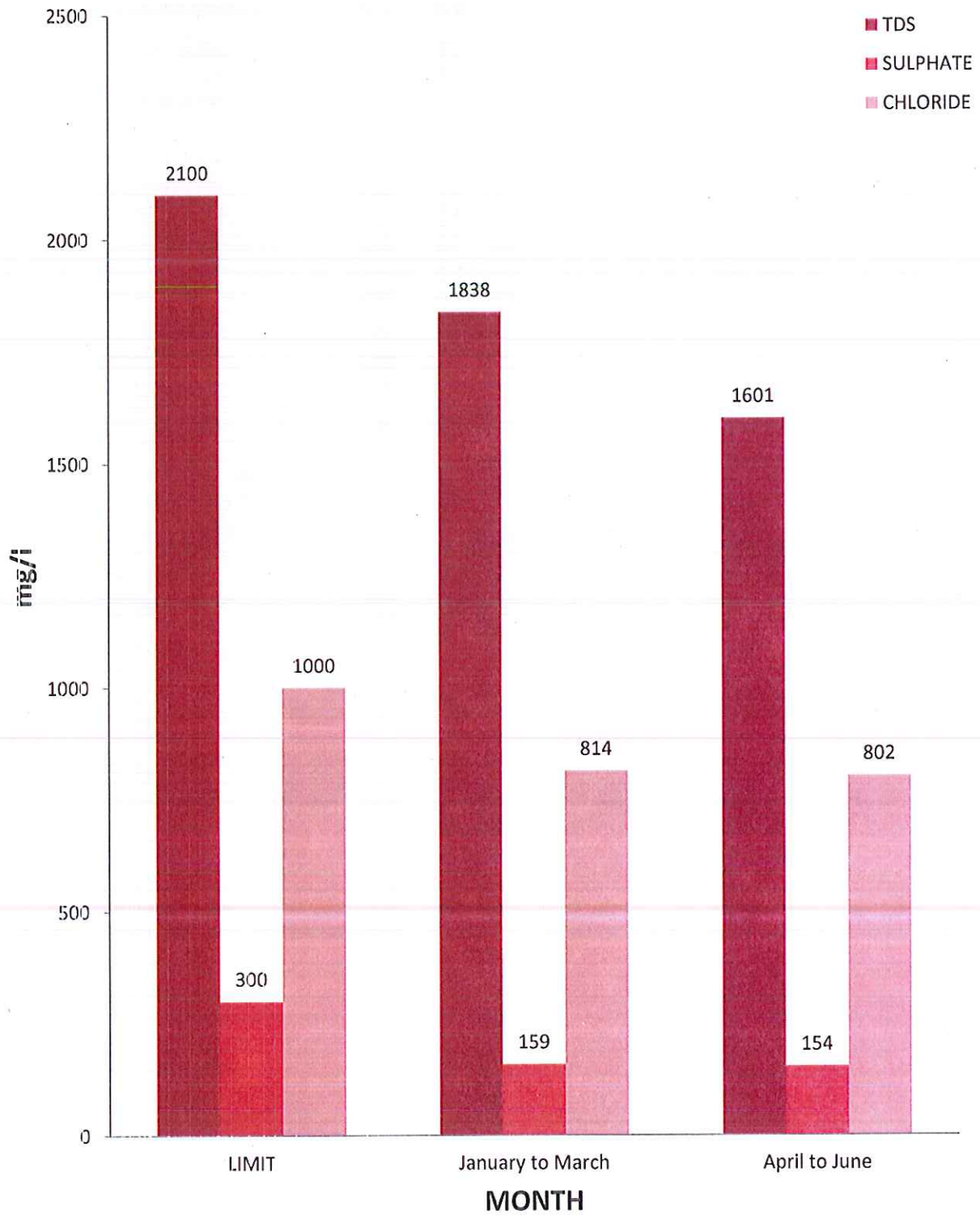
Six Monthly Variations in Bore water

Sampling point: Bore well (Ansodla Village)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	25	29	Shall not exceed 5°c above the receiving water temp.
2	pH@ 25°C	pH unit	7.43	7.46	5.5-9.0
3	Colour	pt. Co. Scale	< 5	< 5	--
4	Total Suspended Solids (TSS) @105°C	mg/L	4.0	4.0	100
5	Total Dissolved Solids (TDS) @180°C	mg/L	1838	1601	2100
6	Total volatile Solids	mg/L	6	5	--
7	COD	mg/L	< 10	< 10	250
8	BOD (5 days at 20° C)	mg/L	< 4	< 4	30
9	Oil & Grease	mg/L	< 1	< 1	10
10	Chloride	mg/L	814	802	1000
11	Sulphate	mg/L	159	154	300
12	Fluoride	mg/L	0.6	0.6	2.0
13	Phosphate as PO ₄ ³⁻	mg/L	2.2	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	< 0.02	0.1
18	Copper	mg/L	< 0.50	< 0.50	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	< 0.10	5.0
22	Iron	mg/L	< 0.05	< 0.05	3.0
23	Calcium	mg/L	227	218	--
24	Magnesium	mg/L	96	90	--
25	Percentage Sodium	%	31.4	33.2	--
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	--
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	100	90%Survival of fish after 96 Hours in 100% of effluent

Graphical presentation for the variation of TDS, SO₄ & Cl in bore water Ansodla village





Six Monthly Variations in Bore water Data

Sampling point: Bore well (Hand pump in surali Village)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	26	30	Shall not exceed 5°c above the receiving water temp
2	pH@ 25 °C	pH unit	7.95	7.52	5.5-9.0
3	Colour	pt. Co. Scale	< 5	< 5	--
4	Total Suspended Solids (TSS) @105 °C	mg/L	17.3	7.9	100
5	Total Dissolved Solids (TDS) @180 °C	mg/L	1632	1679	2100
6	Total volatile Solids	mg/L	2	6	--
7	COD	mg/L	< 10	< 10	250
8	BOD (5 days at 20° C)	mg/L	< 4	< 4	30
9	Oil & Grease	mg/L	< 1	< 1	10
10	Chloride	mg/L	405	405	1000
11	Sulphate	mg/L	92	92	300
12	Fluoride	mg/L	0.4	0.6	2.0
13	Phosphate as PO ₄ ³⁻	mg/L	2.5	2.1	--
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	< 0.02	0.1
18	Copper	mg/L	< 0.50	< 0.50	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	< 0.10	5.0
22	Iron	mg/L	<0.05	<0.05	3.0
23	Calcium	mg/L	97	102	--
24	Magnesium	mg/L	22	30	--
25	Percentage Sodium	%	42	47	--
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	--
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	100	90%Survival of fish after 96 Hours in 100% of effluent

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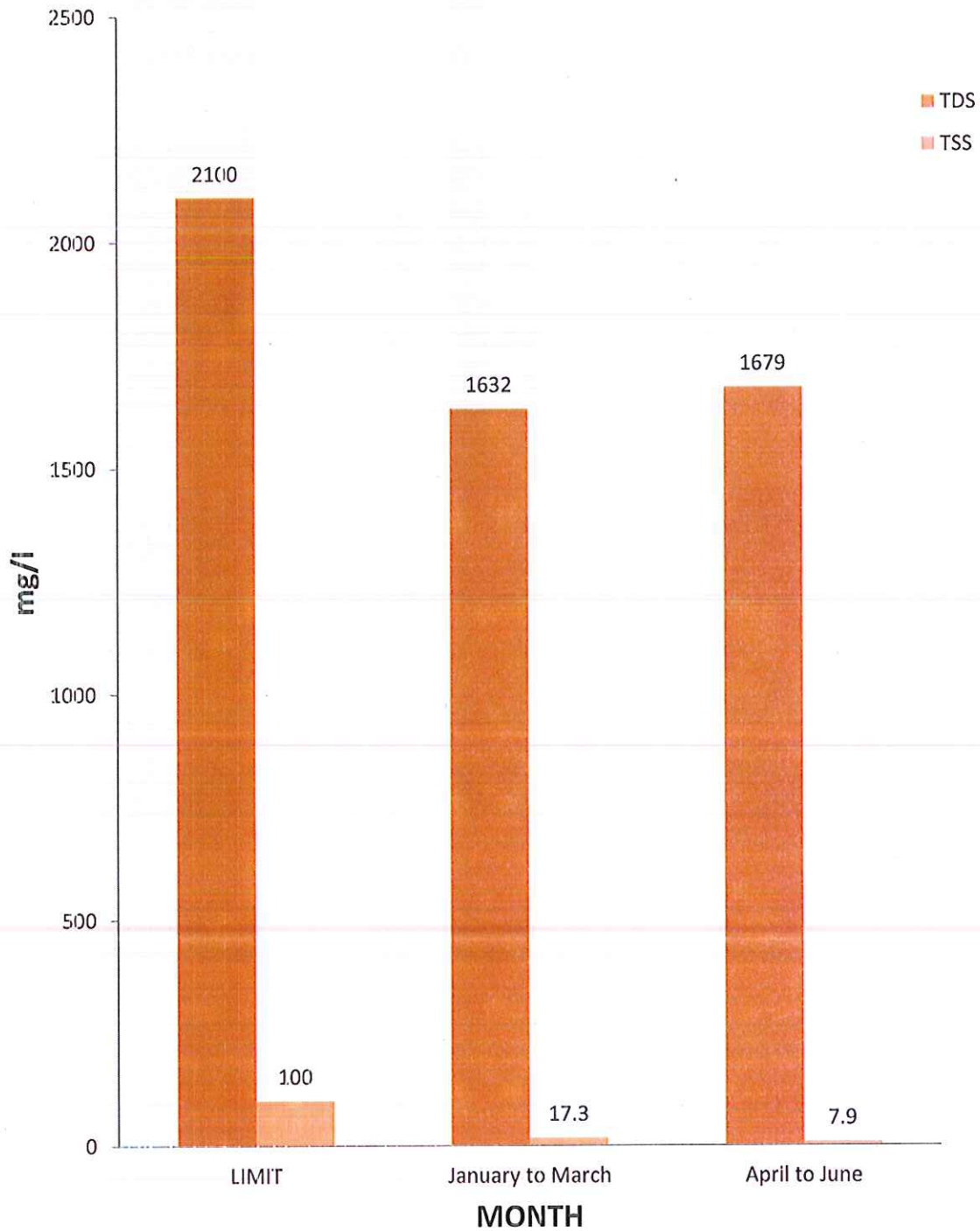
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Graphical presentation for the variation of TDS & TSS in bore water Hand pump in Surali village





Six Monthly Variations in Bore water

Sampling point: Bore well (Mosali char rasta)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	25.5	30	Shall not exceed 5°c above the receiving water temp
2	pH@ 25°C	pH unit	7.28	7.52	5.5-9.0
3	Colour	pt. Co. Scale	< 5	< 5	--
4	Total Suspended Solids (TSS) @105 °C	mg/L	4.0	4.0	100
5	Total Dissolved Solids (TDS) @180 °C	mg/L	1573	1704	2100
6	Total volatile Solids	mg/L	5	6	--
7	COD	mg/L	< 10	< 10	250
8	BOD (5 days at 20 °C)	mg/L	< 4	< 4	30
9	Oil & Grease	mg/L	< 1	< 1	10
10	Chloride	mg/L	334	342	1000
11	Su phate	mg/L	219	225	300
12	Fluoride	mg/L	0.7	1.0	2.0
13	Phosphate as PO ₄ ⁻	mg/L	1.6	1.4	--
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	< 0.02	0.1
18	Copper	mg/L	< 0.50	< 0.50	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	< 0.10	5.0
22	Iron	mg/L	< 0.05	< 0.05	3.0
23	Calcium	mg/L	64.4	68.0	--
24	Magnesium	mg/L	46.2	46.4	--
25	Percentage Sodium	%	23.42	27.4	--
26	Total Coliform (MPN)	Present/ Absent	Absent	Absent	--
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	100	90% Survival of fish after 96 Hours in 100% of effluent



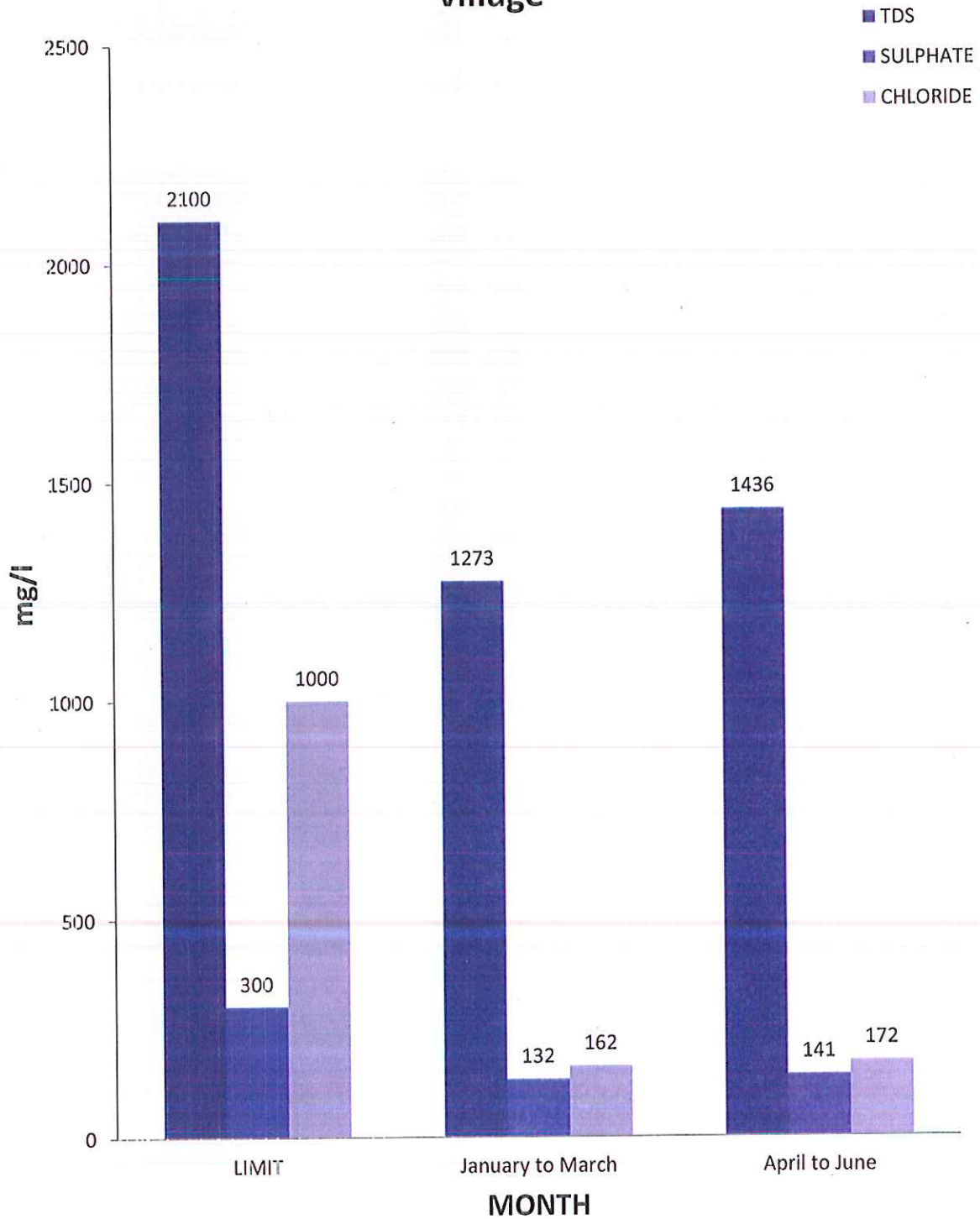
Six Monthly Variations in Bore water

Sampling point: Bore well (Near Tadkeshwar char rasta)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	26	30	Shall not exceed 5°c above the receiving water temp
2	pH@ 25°C	pH unit	7.19	7.34	5.5-9.0
3	Colour	pt. Co. Scale	< 5	< 5	--
4	Total Suspended Solids (TSS) @105 °C	mg/L	4	6	100
5	Total Dissolved Solids (TDS) @180° C	mg/L	1273	1436	2100
6	Total volatile Solids	mg/L	3	5	--
7	COD	mg/L	< 10	< 10	250
8	BOD (5 days at 20° C)	mg/L	< 4	< 4	30
9	Oil & Grease	mg/L	< 1	< 1	10
10	Chloride	mg/L	162	172	1000
11	Sulphate	mg/L	132	141	300
12	Fluoride	mg/L	0.4	0.7	2.0
13	Phosphate as PO ₄ ⁻	mg/L	1.5	1.5	--
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	< 0.02	0.1
18	Copper	mg/L	< 0.50	< 0.50	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	< 0.10	5.0
22	Iron	mg/L	< 0.05	< 0.05	3.0
23	Calcium	mg/L	76	84	--
24	Magnesium	mg/L	50	56	--
25	Percentage Sodium	%	28.1	31.4	--
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	--
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	100	90%Survival of fish after 96 Hours in 100% of effluent

Graphical presentation for the variation of TDS, SO₄ & Cl in bore water Near Tadkeshwar village





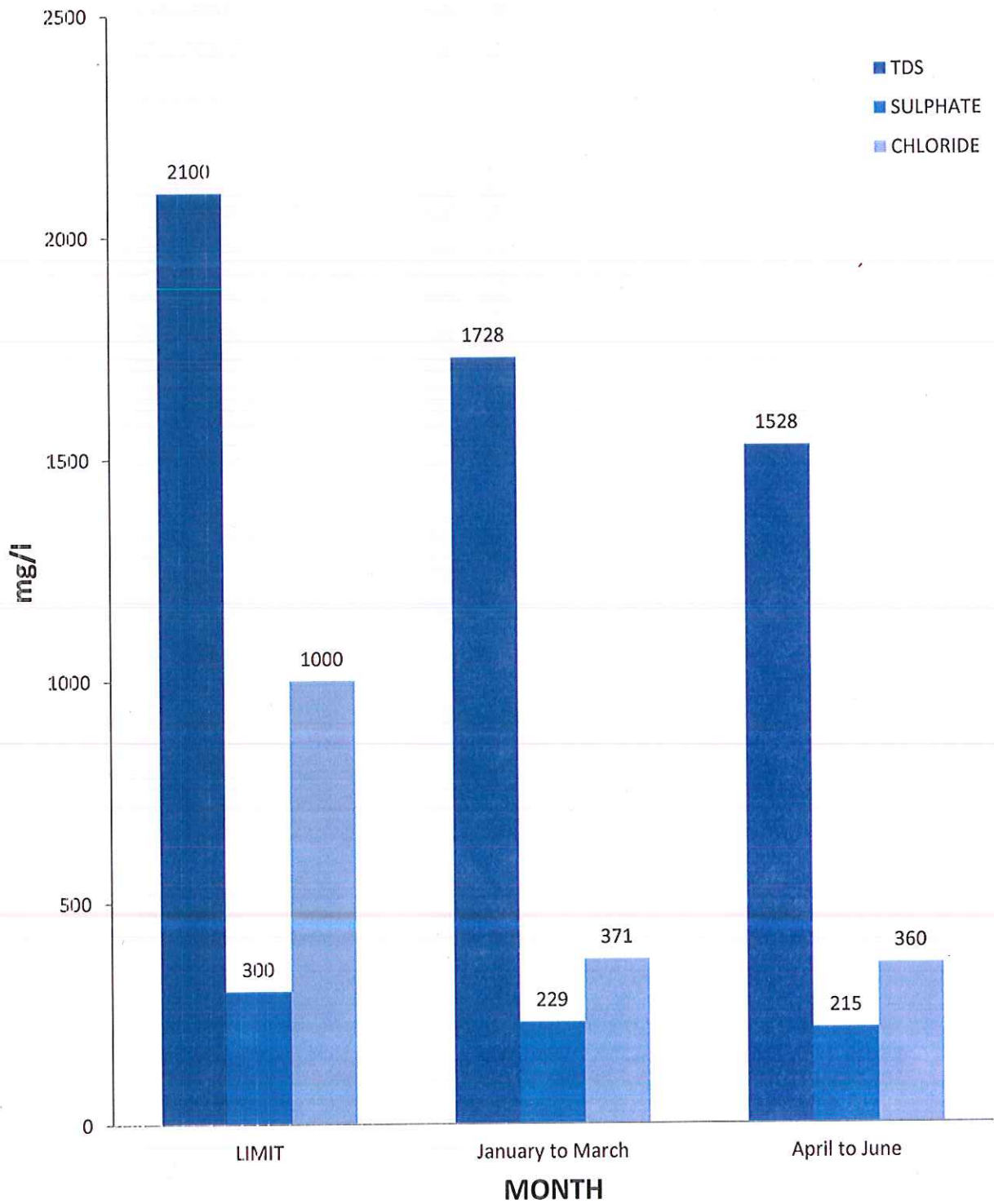
Six Monthly Variations in Bore water

Sampling point: Bore well (Vatsan Village)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	26	30	Shall not exceed 5°c above the receiving water temp
2	pH@ 25°C	pH unit	7.39	7.36	5.5-9.0
3	Colour	pt. Co. Scale	< 5	< 5	--
4	Total Suspended Solids (TSS) @105 °C	mg/L	5.0	6.0	100
5	Total Dissolved Solids (TDS) @180° C	mg/L	1728	1528	2100
6	Total volatile Solids	mg/L	5	2	--
7	COD	mg/L	< 10	< 10	250
8	BOD (5 days at 20° C)	mg/L	< 4	< 4	30
9	Oil & Grease	mg/L	< 1	< 1	10
10	Chloride	mg/L	371	360	1000
11	Sulphate	mg/L	229	215	300
12	Fluoride	mg/L	0.4	0.4	2.0
13	Phosphate as PO ₄ ⁻	mg/L	1.3	1.6	--
14	Total Residual Chlorine	mg/L	< 0.10	< 0.10	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	< 0.02	0.1
18	Copper	mg/L	< 0.50	< 0.50	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	< 0.10	5.0
22	Iron	mg/L	< 0.05	< 0.05	3.0
23	Calcium	mg/L	98	90	--
24	Magnesium	mg/L	62	56	--
25	Percentage Sodium	%	25.3	21.8	--
26	Total Coliform(MPN)	Present/ Absent	Absent	Absent	--
27	Bioassay Test	% Survival of fish after 96 hrs in 100% effluent	90	100	90%Survival of fish after 96 Hours in 100% of effluent

Graphical presentation for the variation of TDS,SO4 & Cl in bore water Vatsan village





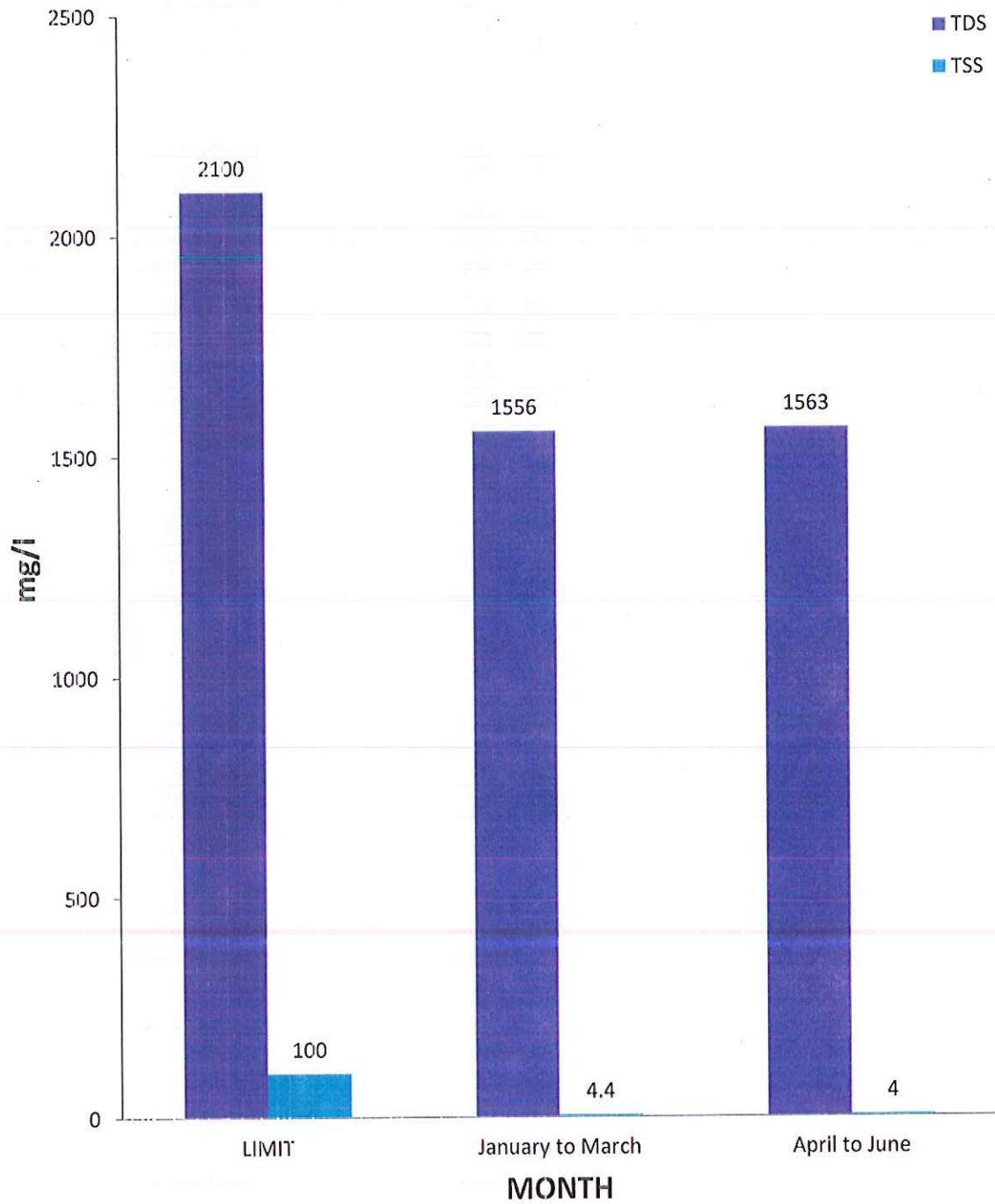
Six Monthly Variations in Bore water

Sampling point: Bore well (Hand pump in dungri Village)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	24	29	Shall not exceed 5°c above the receiving water temp
2	pH@ 25°C	pH unit	6.95	7.18	5.5-9.0
3	Colour	pt. Co. Scale	<5	<5	--
4	Total Suspended Solids (TSS) @105°C	mg/L	4.4	4.0	100
5	Total Dissolved Solids (TDS) @180° C	mg/L	1556	1563	2100
6	Total volatile Solids	mg/L	4	5	--
7	COD	mg/L	--	--	250
8	BOD (5 days at 20° C)	mg/L	--	--	30
9	Oil & Grease	mg/L	<1	<1	10
10	Chloride	mg/L	451	450	1000
11	Sulphate	mg/L	190	190	300
12	Fluoride	mg/L	0.8	0.6	2.0
13	Phosphate as PO ₄ ⁻³	mg/L	0.38	1.1	--
14	Total Residual Chlorine	mg/L	<0.1	<0.1	1.0
15	Free Available Chlorine	mg/L	<0.1	<0.1	--
16	Phenolic Compound	mg/L	<0.01	<0.01	1.0
17	Lead	mg/L	<0.02	<0.02	0.1
18	Copper	mg/L	<0.01	<0.01	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	<0.1	<0.1	5.0
22	Iron	mg/L	<0.05	<0.05	3.0
23	Calcium	mg/L	88	92	--
24	Magnesium	mg/L	20	20	--
25	Percentage Sodium	%	12.4	16.8	--
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,SO4 & Cl in bore water Hand pump in dungri village





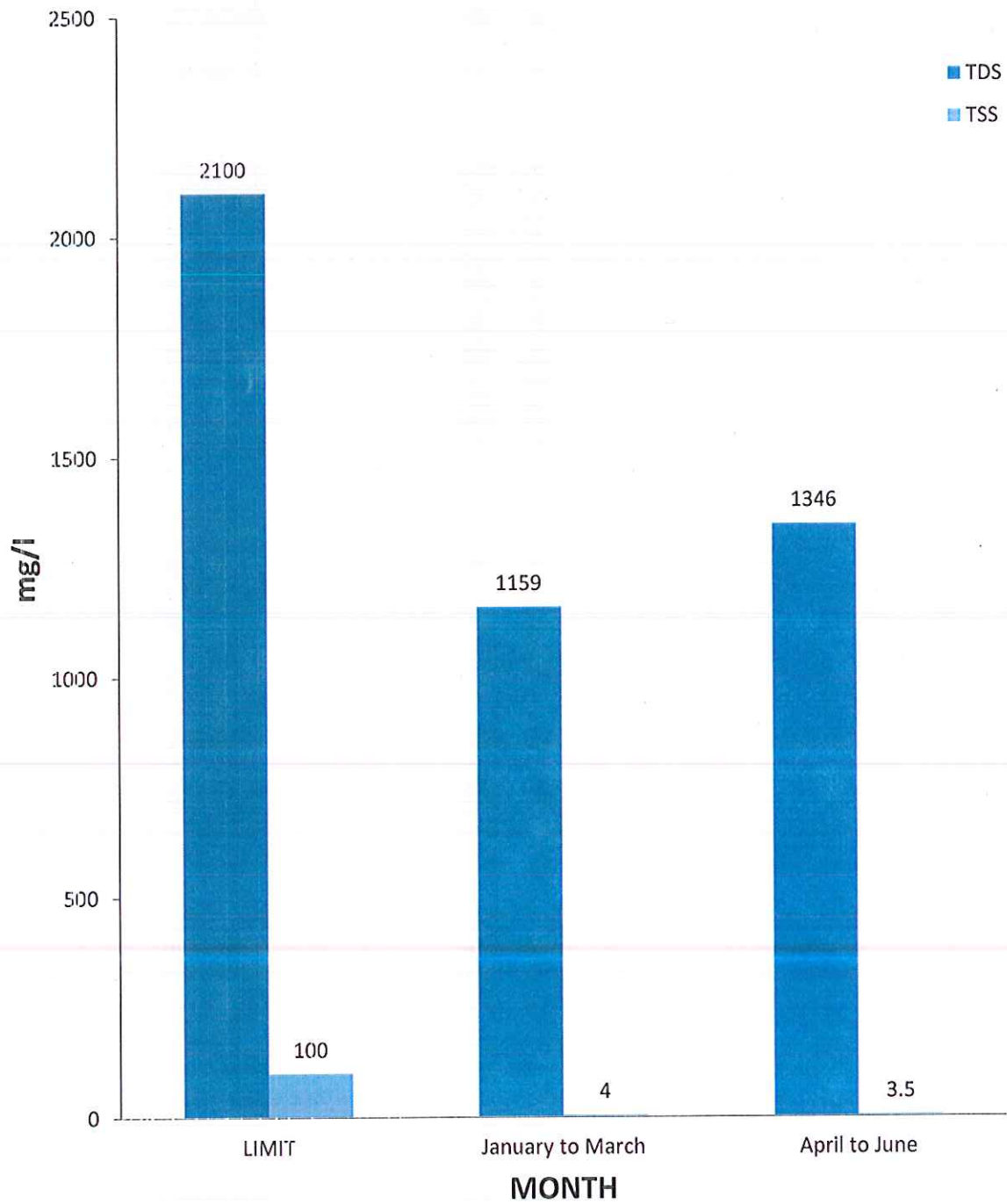
Six Monthly Variations in Bore water

Sampling point: Bore well (Nani naroli Village)

Period: January – 2019 to June – 2019

Sr. No.	Parameter	Unit	Quarterly Jan to March - 2019	Quarterly April to June - 2019	MoEF Limit
1	Temperature	°C	24	30	Shall not exceed 5°c above the receiving water temp
2	pH@ 25°C	pH unit	7.29	7.46	5.5-9.0
3	Colour	pt. Co. Scale	<5	<5	--
4	Total Suspended Solids (TSS) @105°C	mg/L	4.0	3.5	100
5	Total Dissolved Solids (TDS) @180° C	mg/L	1159	1346	2100
6	Total volatile Solids	mg/L	3	3	--
7	COD	mg/L	--	--	250
8	BOD (5 days at 20° C)	mg/L	--	--	30
9	Oil & Grease	mg/L	<1	<1	10
10	Chloride	mg/L	253	263	1000
11	Sulphate	mg/L	8	15	300
12	Fluoride	mg/L	0.5	0.9	2.0
13	Phosphate as PO ₄ ⁻	mg/L	0.60	1.2	--
14	Total Residual Chlorine	mg/L	<0.1	<0.1	1.0
15	Free Available Chlorine	mg/L	<0.1	<0.1	--
16	Phenolic Compound	mg/L	<0.01	<0.01	1.0
17	Lead	mg/L	<0.02	<0.02	0.1
18	Copper	mg/L	<0.01	<0.01	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	<0.1	<0.1	5.0
22	Iron	mg/L	<0.05	<0.05	3.0
23	Calcium	mg/L	61	71	--
24	Magnesium	mg/L	24	29	--
25	Percentage Sodium	%	14.2	21.4	--
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, SO₄ & Cl in bore water Nani naroli village





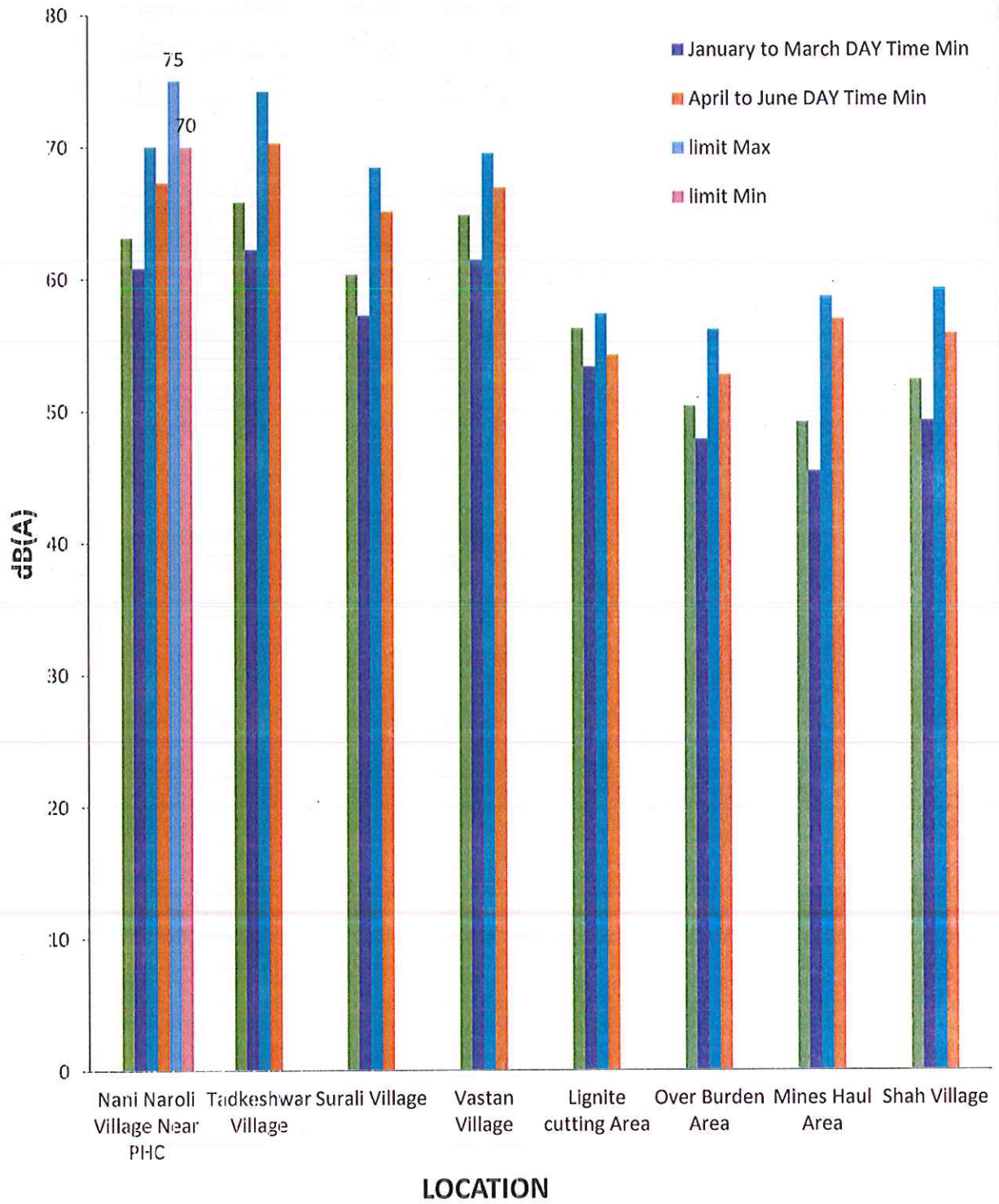
Six Monthly Variations in Noise Level

Parameter: Noise

Period: January – 2019 to June – 2019

SR. NO	LOCATION	NOISE LEVEL, dB [A]							
		Quarterly Jan to March - 2019				Quarterly April to June - 2019			
		DAY Time		Night Time		DAY Time		Night Time	
		Max	Min	Max	Min	Max	Min	Max	Min
1	Lignite Cutting Area	63.1	60.8	57.1	55.3	70.0	67.3	65.7	64.1
2	Overburden Cutting Area	65.8	62.2	59.4	55.7	74.2	70.3	68.1	66.3
3	Mines Boundary	60.3	57.2	55.8	51.1	68.4	65.1	65.2	61.7
4	Overburden Dumping Area	64.8	61.4	56.6	53.6	69.5	66.9	66.8	63.2
5	Mine Site Office	56.2	53.3	49.3	45.6	57.3	54.2	53.9	50.3
6	Vastan Village	50.3	47.8	43.9	39.3	56.1	52.7	52.5	49.5
7	Surali Village	49.1	45.4	42.6	38.6	58.6	56.9	55.7	50.2
8	Tadkeshwar Village	52.3	49.2	44.7	40.1	59.2	55.8	54.3	51.8
	GPCB limit	75 (dB)		70(dB)		75 (dB)		70(dB)	

Graphical presentation for the variation of in Noise level





Six Monthly Variations in Micrometeorological data

Period: January – 2019 to June – 2019

Dry Bulb Temperature (°C)		
Time in Hrs.	Quarterly Jan to March - 2019	Quarterly April to June - 2019
10.00	27.0	32.5
11.00	28.0	33.2
12.00	30.0	33.7
13.00	30.0	31.9
14.00	31.0	32.1
15.00	31.3	33.4
16.00	30.6	31.4
17.00	30.2	31.8
18.00	30.0	30.5
19.00	29.8	28.7
20.00	28.4	28.0
21.00	28.2	29.9
22.00	27.5	27.1
23.00	27.0	27.0
00.00	26.0	27.4
01.00	25.7	27.5
02.00	25.4	27.2
03.00	25.1	27.6
04.00	25.0	27.9
05.00	24.8	28.2
06.00	25.0	28.9
07.00	25.5	28.4
08.00	25.8	29.5
09.00	26.0	30.1
Maximum	31.3	33.7
Minimum	24.8	27.0
Average	27.6	29.7



Six Monthly Variations in Micrometeorological data

Period: January – 2019 to June – 2019

Wet Bulb Temperature (°C)		
Time in Hrs.	Quarterly Jan to March - 2019	Quarterly April to June - 2019
10.00	25.5	26.4
11.00	26.7	30.2
12.00	28.4	30.8
13.00	28.5	28.9
14.00	29.2	29.1
15.00	29.4	30.7
16.00	28.7	29.1
17.00	28.5	27.4
18.00	28.1	28.7
19.00	27.5	26.2
20.00	26.8	27.2
21.00	26.6	25.7
22.00	25.3	25.2
23.00	25.1	25.0
00.00	24.7	24.9
01.00	23.8	24.1
02.00	23.5	25.1
03.00	23.0	25.4
04.00	23.9	24.6
05.00	22.7	25.8
06.00	23.0	24.7
07.00	23.4	27.3
08.00	23.6	25.6
09.00	24.8	27.7
Maximum	25.4	30.7
Minimum	18.5	24.1
Average	21.6	26.9

Regd. Off.: Office Floor, Ashoka Pavillion-A, Opp. Kapadia Health Club, New Civil Road, SURAT-395 001.

Telefax : 91 - 261 - 2231630 - 2236223 Phone : 04605 45050, 80660 69151

e-mail : eco@ecoshrpad.com Website : www.ecosystemindia.com CIN No.: U72200GJ2000PTC030265

Bharuch Branch : Shop No. 7/8, Saffron City, Opp. Bharat Petrol Pump, Vill. Jolwa, Dahej - Bharuch Road, Bharuch. Mo.: 98250 94443

Vapi Branch : 131, Ashapura Complex, Near New Telephone Exchange Road, GIDC Vapi-396 195 Tel.: 0260-2970305 / 94262 63805

Vadodara Branch : 216, Race Course Tower, Gotri Road, Vadodara-390007. Tel.: 0265-2121215, 2331215



Six Monthly Variations in Micrometeorological data

Period: January – 2019 to June – 2019

Time in Hrs.	Relative Humidity %	
	Quarterly Jan to March - 2019	Quarterly April to June - 2019
10.00	30.0	62.5
11.00	28.7	60.5
12.00	23.4	58.4
13.00	22.4	58.3
14.00	22.0	59.4
15.00	21.2	59.8
16.00	22.8	62.3
17.00	23.5	64.7
18.00	24.0	66.7
19.00	25.8	67.8
20.00	26.9	72.3
21.00	28.0	75.2
22.00	29.8	70.0
23.00	31.2	55.3
00.00	33.1	46.2
01.00	34.4	52.2
02.00	34.8	55.4
03.00	35.0	64.1
04.00	34.7	60.0
05.00	34.5	56.4
06.00	34.0	49.3
07.00	34.3	51.2
08.00	34.6	56.7
09.00	34.0	64.5
Maximum	35.0	75.2
Minimum	21.2	51.2
Average	29.3	60.4

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Six Monthly Variations in Micrometeorological data

Period: January – 2019 to June – 2019

Wind Speed (km/hour)		
Time in Hrs.	Quarterly Jan to March - 2019	Quarterly April to June - 2019
10.00	10	29
11.00	12	32
12.00	14	34
13.00	14	33
14.00	15	32
15.00	15	33
16.00	13	31
17.00	11	32
18.00	9	31
19.00	8	30
20.00	6	30
21.00	6	30
22.00	6	29
23.00	7	28
00.00	9	27
01.00	9	26
02.00	9	27
03.00	8	26
04.00	8	25
05.00	8	27
06.00	8	30
07.00	8	32
08.00	9	34
09.00	9	36
Maximum	15	34
Minimum	6	25
Average	9.6	30.2