

**Six Monthly
Environmental Monitoring Report
Of
M/s. Gujarat Industries Power Company Limited
(Mangrol-Valia Lignite Mine)
Village: Nani Naroli, Ta: Mangrol,
Di: Surat 394110
For the Month of January-2018 to June-2018**



Prepared By:

M/s. Greenleaf Envirotech Pvt. Ltd.

304, Kankavati Complex, Singanpore Cauzway Road,

Katargam, Surat.

Introduction:

M/s. Gujarat industries power company limited (GIPCL) had already set up lignite fired pit head 250 MW (2 X 125 MW) thermal power plant in phase 1st and company has expanded the capacity has expanded the capacity from 250 MW to 500 MW i.e. 250 MW was developed in second phase at NaniNaroli, Taluka Mangrol. GIPCL has developed its own captive lignite mines at Mangrol in surat District & valia of Bharuch district to meet the fuel supplies for above power capacity.

Total total mining lease area of Mangrol- valia Lignite Mine is 2080 Ha, the total estimated extractable reserves of 2080 Ha is 199.87 Million. The average stripping ratio in the area is about 2:8:36 for Lignite in Tonnes to cubic meter of waste. These reserves are sufficient to feed 250 MW power plant at an annual rate of 1.8 Million tones of Lignite requirement. Hence GIPCL is developing Mangrol- valia Lignite Mine for an annual Lignite production of 4.2 Million tones annum (MTPA).

As per the status related to Environment & Ecology , it is necessary to study the adverse environmental impacts likely to be caused in and around the Mining site before, during & after the execution of the project and provide necessary mitigative and control measures, so the project authority is required to prepare a detailed Environmental impact assessment (EIA). Report and environment plan (EMP) and obtain necessary clearance from the state pollution control board (GPCB) and Ministry of Environment & Forest.



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 concerted 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 (MoEF), Govt. of India, New Delhi. It is mandatory to get the samples of Air/ gaseous Emission & effluent, collected and analyzed from an approved laboratory. Bimonthly & its analysis report should be submitted to GPCB & six monthly analysis submitted to MoEF.

Gujarat industries power company limited (GIPCL), Mangrol- Valia Lignite Mines has Mangrol pit situated at Tal. Mangrol, Dist. Surat & Valia pit situated at Tal. Valia, Dist. Bharuch. This company engaged in the generation of electricity. The industry had awarded contract for monthly monitoring and analysis to M/s. GREENLEAF ENVIROTECH PVT. LTD., surat.

M/s. GREENLEAF ENVIROTECH PVT.LTD. is a leading environmental Consultancy firm situated at Siganpor- Cauzway road, Katargam, Surat. And is approved as Schedule -II environmental auditor by Gujarat Pollution control board. M/s. GREENLEAF ENVIROTECH PVT.LTD. has its own full fledged laboratory to measure the pollution parameters belongs to Air, water, Hazardous etc.



Methodology for Environment Monitoring:

M/s. Gujarat industries Power Company Limited has awarded the work of monthly environmental monitoring of its Mangrol-Valia Lignite Mine to Greenleaf Envirotech Pvt. Ltd. Greenleaf team visits the Mangrol – Valia Lignite Mines bimonthly to carry out environmental monitoring.

Greenleaf team follows the following methodology for carrying out methodology for carrying out monitoring of various components.

Water & waste quality monitoring:

Ground and surface water samples are collected at their source point using grab sampling. Surface and ground water sample are collected from core and buffer zones located near the mining area. Preserved samples are brought to Greenleaf laboratory for analysis. For sampling & analysis methods various IS & APHA methods are followed. The samples are analyzed for physico-chemical and bacteriological properties mainly.

Ambient air quality monitoring:

The wind direction and wind speed is monitored first and based on that sampling stations for ambient air quality monitoring are installed. The location are chosen such that at least one station falls in opposite wind direction from all stationary sources(Mining Area). The other stations are installed in two arrays. First array comprising minimum two stations located at approx. 120° and at a distance of approx. 2 Kms. from nearby stationary source falling in the wind directions. The second array comprising minimum 2 stations located in wind directions. Also at two stations are installed in the nearby population area falling in the wind direction. The samples are collected using Respirable dust sampler and fine particulate sampler for 24 hours, preserved and brought to Greenleaf's laboratory for analysis. For sampling & analysis methods IS 5182 & CPCB manual is followed. The main pollutants analyzed are PM₁₀, PM_{2.5}, sulfur dioxide, oxides of nitrogen & carbon monoxide.



Weather Monitoring:

Monitoring station for weather is selected based on Wind direction. The station is so selected that it remains unobstructed from upcoming wind. The micrometeorological data is collected on ambient temperature, humidity, wind speed, and direction on hourly basis for 24 hours. For this monitoring IS 8829 is followed. The equipment used are wind wane, anemometer and thermo hygrometer.

Noise level Monitoring:

The main sources of noise are lignite handling and transportation equipments and systems in the mines. The noise level is monitored in the immediate vicinity of the source. Then the noise level is monitored at the locations falling in the villages in core and buffer zones of mines. Two sets of data are collected for day time and night time monitoring. The noise level is monitored using digital sound level meter.

Dust fall Monitoring:

The dust fall resulting from mining and handling activities of lignite is monitored at several locations in the core and buffer zones. Large and liquid particles (typically greater than 10 μm in aerodynamic diameter) are collected via gravitational settling in an open mouth container for a period of the month. The container is washed with a known volume of distilled water, which is filtered and then evaporated. The mass of insoluble particles are determined by the weight gain of a crucible after evaporation. Total mass gain is measured gravimetrically. The dust fall is measured using jars as per the standard practice as per IS-5182.



Scope of work

1) Water & Waste water quality monitoring:

Sr.No.	Location	No.	Frequency	Parameter
1	06 Nos.Bore well water sample located both in Valia Pit	06	Bimonthly	Physico-Chemical, Heavy Metals, Biological & Microbiological parameter
2	06 Nos.Bore well water sample located both in Mangrol Pit	06	Bimonthly	Physico-Chemical, Heavy Metals, Biological & Microbiological parameter

2) Ambient Air Monitoring:

Sr.No.	Location	No.	Frequency	Duration	Parameter
1	8 Nos. within the radius of 10 km from the core zone	8	Bimonthly	24 hrs.	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x

3) Dust Fall Measurement:

Sr.No.	Location	No.	Frequency	Duration	Parameter
1	8 No. of location within the radius of Core & Buffer Zone of Valia Pit	8	Bimonthly	1 month	Dust fall

4) Weather Monitoring :

Sr.No.	Location	Frequency	Duration	Parameter
1	1 No. at Mining area of Mangrol Valia Lignite Mine	Bimonthly	24 hrs.	Dry & wet Bulb temperature, Relative humidity, Wind speed, & Direction, Temp., Atmospheric pressure, rainfall

5) Noise Monitoring:

Sr.No.	Location	Frequency	Duration	Parameter
1	8 No. at various location in plant premises	Bimonthly	2 Min/ Location	Day & Night Noise Level



BOREWATER'S
COMPARATIVE
ANALYSIS REPORTS



Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15. 07. 2017

Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Kosmadi Village (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2017	
RESULTS						
1	pH @ 25°C	pH unit	7.50	7.56	7.25	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	60.2	5.7	10.1	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	2050.0	2015.1	2035.1	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	--
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	3.5	4.2	2.1	10
9	Chloride	mg/L	968.6	717.9	970.7	1000
10	Sulphate	mg/L	77.6	84.4	155.8	300
11	Phosphate	mg/L	8.8	2.6	6.1	--
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.2	1.2	0.8	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	--
16	Iron	mg/L	2.3	1.1	BDL	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	240.5	40.1	184.3	--
23	Magnesium	mg/L	388.8	97.3	24.2	--
24	Percent sodium	%	40.6	54.5	31.5	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	92	91	94	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Morambli Borewell (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date	Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), DL.25/09/2000 inland surface water
			January-2018 to February-2018 26/02/2018	
			RESULTS	
1	pH @ 25°C	pH unit	7.10	5.5-9.0
2	Colour	Pt Co scale	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	8.3	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1362.1	2100
5	Total volatile solids	mg/L	BDL	--
6	BOD (5 days at 20°C)	mg/L	-	30
7	COD	mg/L	-	250
8	Oil & Grease	mg/L	8.8	10
9	Chloride	mg/L	360.2	1000
10	Sulphate	mg/L	87.6	300
11	Phosphate	mg/L	2.7	--
12	Phenolic Compound	mg/L	BDL	1.0
13	Flouride	mg/L	1.8	2.0
14	Total residual chlorine	mg/l	Nil	1.0
15	Free available chlorine	mg/L	Nil	--
16	Iron	mg/L	1.1	3.0
17	Copper	mg/L	BDL	3.0
18	Total Chromium	mg/L	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	0.1
20	Zinc	mg/L	BDL	5.0
21	Lead	mg/L	BDL	0.1
22	Calcium	mg/L	633.3	--
23	Magnesium	mg/L	388.8	--
24	Percent sodium	%	54.8	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	94	90 % survival of fish after 96 Hrs. in 100 % effluent

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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Dansoli village (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), D.L.25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.35	7.79	7.50	5.5-9.0
2	Colour	Pt Co scale	10.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	8.6	10.2	6.1	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1923.0	1986.5	2090.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	8.0	7.4	5.3	10
9	Chloride	mg/L	760.1	817.1	542.0	1000
10	Sulphate	mg/L	17.3	56.8	170.0	300
11	Phosphate	mg/L	4.1	3.9	3.1	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.9	1.0	1.0	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	0.19	0.1	1.1	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	184.4	152.3	48.0	-
23	Magnesium	mg/L	92.3	102.1	41.3	-
24	Percent sodium	%	57.8	67.4	45.8	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	93	92	91	90 % survival of fish after 96 Hrs. in 100 % effluent

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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Bhaga village (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.30	7.45	7.59	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	15.2	11.3	13.4	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	2095.0	2079.8	2013.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	6.5	5.1	4.2	10
9	Chloride	mg/L	875.7	684.4	463.1	1000
10	Sulphate	mg/L	17.7	96.3	181.6	300
11	Phosphate	mg/L	4.7	2.5	6.1	--
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.95	1.0	1.1	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	0.19	0.4	0.7	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	72.1	71.5	40.8	-
23	Magnesium	mg/L	170.1	53.5	26.7	-
24	Percent sodium	%	58.3	70.3	63.9	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	95	93	96	90 % survival of fish after 96 Hrs. in 100 % effluent

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(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Harsani village (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt.25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.58	7.63	7.91	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	7.2	25.1	17.3	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1032.0	863.1	1230.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	2.8	2.1	1.7	10
9	Chloride	mg/L	807.2	134.0	235.4	1000
10	Sulphate	mg/L	15.9	31.6	21.7	300
11	Phosphate	mg/L	5.5	4.8	6.4	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	2.2	1.1	1.0	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	0.11	0.5	0.8	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	168.3	160.3	182.3	-
23	Magnesium	mg/L	106.9	48.6	61.8	-
24	Percent sodium	%	47.6	34.8	59.5	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	92	94	94	90 % survival of fish after 96 Hrs. in 100 % effluent

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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Minewater Sump(Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.65	7.96	7.76	5.5-9.0
2	Colour	Pt Co scale	10.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	32.5	16.7	12.1	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1985.0	2087.9	1998.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	7.2	6.5	5.1	10
9	Chloride	mg/L	665.3	724.3	873.2	1000
10	Sulphate	mg/L	82.5	93.7	213.5	300
11	Phosphate	mg/L	3.4	5.0	3.8	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.3	0.9	1.0	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	1.7	0.1	0.1	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	272.5	216.4	180.3	-
23	Magnesium	mg/L	179.8	184.8	63.1	-
24	Percent sodium	%	49.3	56.6	41.6	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	91	93	92	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

R. V. Der
Authorized Signatory
Rekha Der



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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Anoi Village (Valia Block)

Sr. No.	Test Parameters	Unit	Sampling Date		Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			March-2018 to April-2018	May-2018 to June-2018	
			27/04/2018	27/06/2018	
RESULTS					
1	pH @ 25°C	pH unit	7.72	7.30	5.5-9.0
2	Colour	Pt Co scale	10.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	27.9	11.5	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	989.1	2039.0	2100
5	Total volatile solids	mg/L	BDL	BDL	--
6	BOD (5 days at 20°C)	mg/L	-	-	30
7	COD	mg/L	-	-	250
8	Oil & Grease	mg/L	6.2	5.0	10
9	Chloride	mg/L	143.6	872.1	1000
10	Sulphate	mg/L	87.6	123.6	300
11	Phosphate	mg/L	2.7	4.4	--
12	Phenolic Compound	mg/L	BDL	BDL	1.0
13	Flouride	mg/L	1.6	0.9	2.0
14	Total residual chlorine	mg/L	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	--
16	Iron	mg/L	0.48	BDL	3.0
17	Copper	mg/L	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	0.1
22	Calcium	mg/L	24.0	184.3	--
23	Magnesium	mg/L	19.5	31.5	--
24	Percent sodium	%	64.0	43.6	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	92	91	90 % survival of fish after 96 Hrs. in 100 % effluent

Budhat
Chemist

R.V. Des
Authorized Signatory
Rekha Der



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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Charetha Shah Nala (Down stream) (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.27	7.86	7.59	5.5-9.0
2	Colour	Pt Co scale	10.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	4.1	15.6	8.1	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	855.0	532.0	721.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	--
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	5.1	5.6	4.1	10
9	Chloride	mg/L	220.1	143.6	110.3	1000
10	Sulphate	mg/L	7.6	44.6	13.5	300
11	Phosphate	mg/L	10.6	9.8	8.1	--
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.8	1.0	0.8	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	--
16	Iron	mg/L	0.14	1.5	1.0	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	44.1	36.1	53.8	--
23	Magnesium	mg/L	68.0	41.3	38.5	--
24	Percent sodium	%	22.9	46.1	30.1	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	93	91	95	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

R. V. Desai
Authorized Signatory
Rekha Der



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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Pond water Shah Nala (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt.25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.60	8.06	8.91	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	23.4	35.6	15.1	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	382.0	514.0	481.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	4.3	5.1	3.2	10
9	Chloride	mg/L	151.7	172.3	162.5	1000
10	Sulphate	mg/L	2.7	12.2	18.1	300
11	Phosphate	mg/L	18.8	15.4	10.3	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	0.68	0.9	0.7	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	2.3	0.5	0.8	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	16.0	56.1	43.8	-
23	Magnesium	mg/L	53.5	38.9	29.7	-
24	Percent sodium	%	52.9	35.4	40.5	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	91	95	95	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

R.V. Der
Authorized Signatory
Rekha Der



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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Mosali Village (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), DL 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.32	8.10	7.79	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	7.6	3.6	5.2	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	2070.2	2091.4	1982.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	--
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	8.9	9.2	6.5	10
9	Chloride	mg/L	960.2	869.7	620.8	1000
10	Sulphate	mg/L	17.4	102.3	168.4	300
11	Phosphate	mg/L	18.4	3.2	6.0	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.4	0.8	1.3	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	--
16	Iron	mg/L	0.09	0.07	BDL	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	200.4	208.4	176.3	--
23	Magnesium	mg/L	87.5	68.1	21.8	--
24	Percent sodium	%	62.4	51.1	58.7	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	92	93	94	90 % survival of fish after 96 Hrs. in 100 % effluent

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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Shah Nallah (Up stream) (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.56	7.48	7.20	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	6.4	4.1	3.5	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1610.0	895.3	1250.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	7.8	5.1	2.5	10
9	Chloride	mg/L	562.6	142.0	246.3	1000
10	Sulphate	mg/L	9.7	53.6	55.1	300
11	Phosphate	mg/L	7.6	1.2	5.8	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.5	1.0	1.6	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	0.89	0.05	BDL	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	72.1	48.1	52.1	-
23	Magnesium	mg/L	102.1	43.8	41.3	-
24	Percent sodium	%	55.0	48.1	51.6	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	94	94	92	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

R.V. Der
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Rekha Der



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Monthly Variation in January-2018-June-2018

(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Bore water Charetha Village (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), DL25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	7.56	7.89	7.41	5.5-9.0
2	Colour	Pt Co scale	10.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	3.2	5.5	6.9	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	1360.2	1895.4	1967.0	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	14.5	6.1	7.1	10
9	Chloride	mg/L	325.53	827.5	974.6	1000
10	Sulphate	mg/L	17.9	89.7	63.4	300
11	Phosphate	mg/L	2.3	1.2	1.9	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.6	1.1	1.0	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	--
16	Iron	mg/L	0.23	0.56	0.4	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	232.5	268.6	293.5	--
23	Magnesium	mg/L	53.5	60.1	98.7	--
24	Percent sodium	%	60.0	55.3	51.3	--
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	--
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	93	91	94	90 % survival of fish after 96 Hrs. in 100 % effluent

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(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Sample: Mine water Mangrol (Mangrol Block)

Sr. No.	Test Parameters	Unit	Sampling Date			Limits: Ministry of Environment & forests (MoEF), vide notification No. GSR 742 (E), Dt. 25/09/2000 Inland surface water
			January-2018 to February-2018	March-2018 to April-2018	May-2018 to June-2018	
			26/02/2018	27/04/2018	27/06/2018	
RESULTS						
1	pH @ 25°C	pH unit	6.70	5.97	6.93	5.5-9.0
2	Colour	Pt Co scale	5.0	5.0	5.0	-
3	Total Suspended Solids (TSS @ 105°C)	mg/L	36.6	32.5	21.8	100
4	Total Dissolved Solids (TDS @ 105°C)	mg/L	2093.1	2083.1	1969.2	2100
5	Total volatile solids	mg/L	BDL	BDL	BDL	-
6	BOD (5 days at 20°C)	mg/L	-	-	-	30
7	COD	mg/L	-	-	-	250
8	Oil & Grease	mg/L	8.9	8.1	6.6	10
9	Chloride	mg/L	945.2	897.3	879.0	1000
10	Sulphate	mg/L	13.2	198.4	209.8	300
11	Phosphate	mg/L	48.2	4.7	5.3	-
12	Phenolic Compound	mg/L	BDL	BDL	BDL	1.0
13	Flouride	mg/L	1.6	1.0	0.7	2.0
14	Total residual chlorine	mg/L	Nil	Nil	Nil	1.0
15	Free available chlorine	mg/L	Nil	Nil	Nil	-
16	Iron	mg/L	2.4	1.5	1.9	3.0
17	Copper	mg/L	BDL	BDL	BDL	3.0
18	Total Chromium	mg/L	BDL	BDL	BDL	2.0
19	Hexavalent Chromium	mg/L	BDL	BDL	BDL	0.1
20	Zinc	mg/L	BDL	BDL	BDL	5.0
21	Lead	mg/L	BDL	BDL	BDL	0.1
22	Calcium	mg/L	705.4	569.1	687.3	-
23	Magnesium	mg/L	398.5	321.0	359.5	-
24	Percent sodium	%	20.6	25.6	18.7	-
25	Coliform organism (MPN)	CFU/100 ml	Absent	Absent	Absent	-
26	Bioassay test	% survival of fish after 96 hrs in 100% effluent	95	92	96	90 % survival of fish after 96 Hrs. in 100 % effluent

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Chemist

R.D.
Authorized Signatory
Rekha Der



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Tel : +91-9712989446, E-mail : info@glepl.com, Web : www.greenleafenvirotech.com

Branch Office : 304, Kankavati Complex, Singanpor-Cauzway Road, Katargam, Surat - 395004, Tel : +91-9725519974.

Work order No: SLPP/Mines/Envf. Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

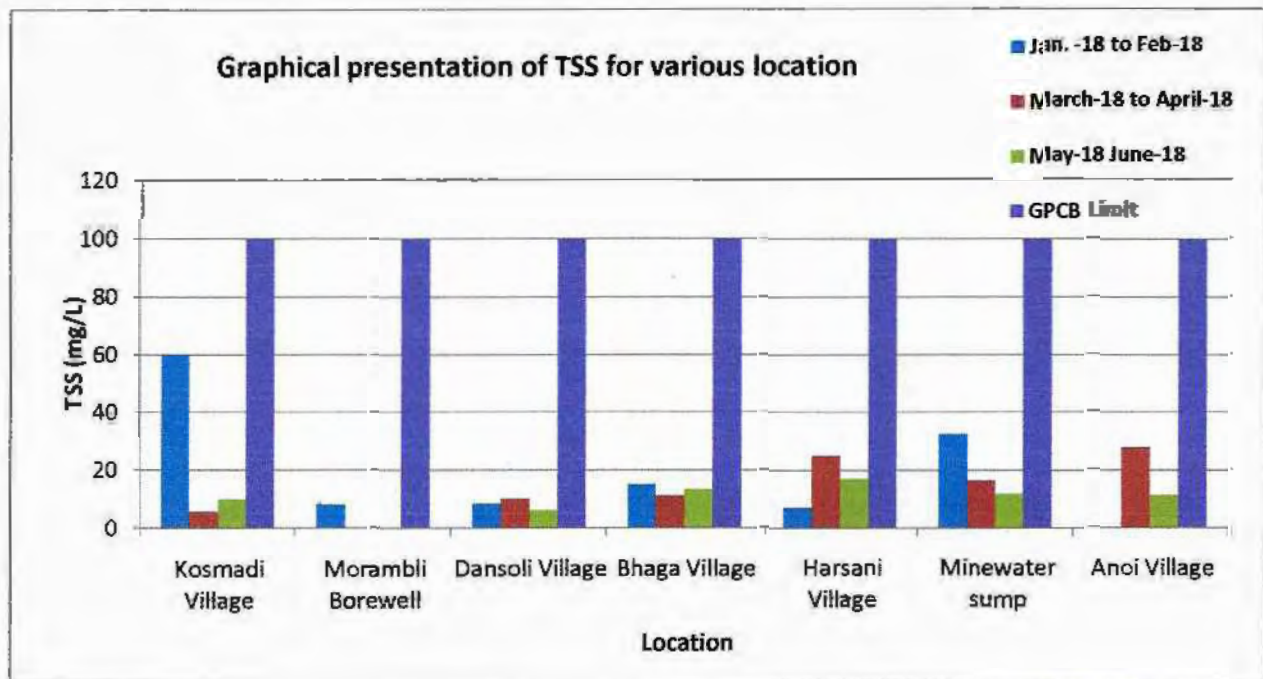
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: TSS (mg/L)

Comparative Results of TSS for Various Locations (Valia Block)

Description	Kosmadi Village	Morambli Borewell	Dansoli Village	Bhaga Village	Harsani Village	Minewater sump	Anoi Village
Jan. -18 to Feb-18	60.2	8.3	8.6	15.2	7.2	32.5	-
March-18 to April-18	5.7	-	10.2	11.3	25.1	16.7	27.9
May-18 June-18	10.1	-	6.2	13.4	17.3	12.1	11.5
GPCB Limit	100						



CIN : U74140GJ2010PTC059798

Greenleaf Envirotech Pvt. Ltd., Nr. Rangoli Flats, Radhanpur Road, Mehsana - 384002. Gujarat, India.

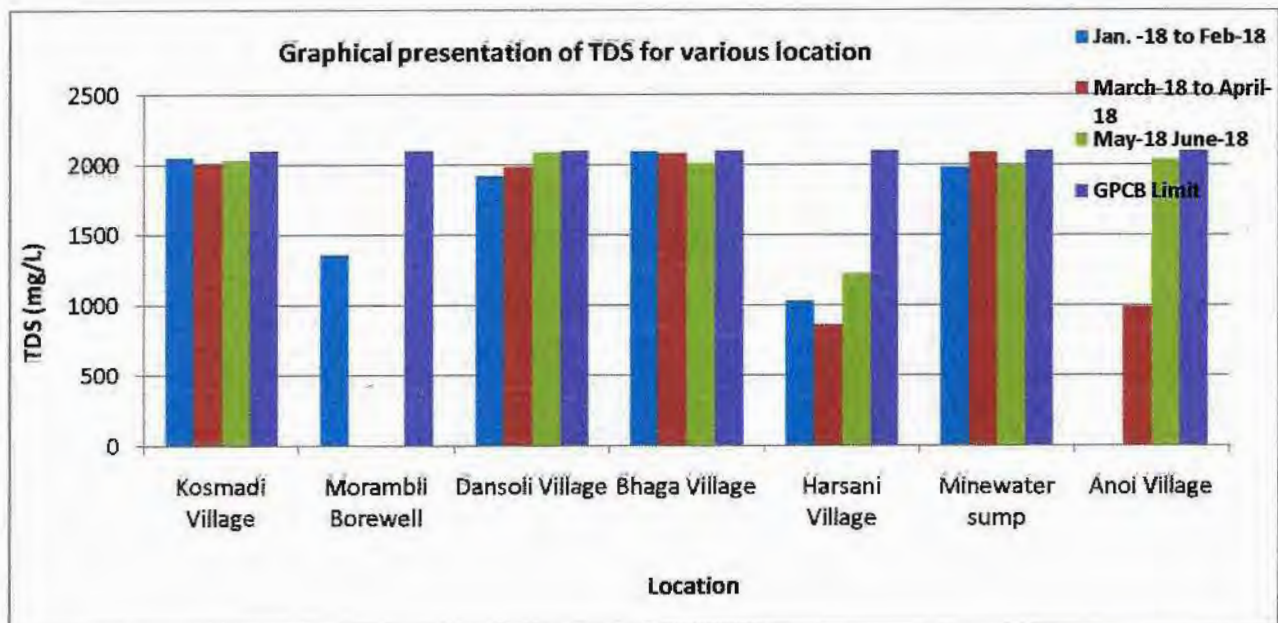
Tel : +91-9712989446, E-mail : info@glepl.com, Web : www.greenleafenvirotech.com

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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017
Comparative Results for the period of January-2018-June-2018
(Mangrol-Valia Lignite Mine)
Report period: January-2018-June-2018
Parameter: TSS (mg/L)

Comparative Results of TDS for Various Locations (Valia Block)

Description	Kosmadi Village	Morambli Borewell	Dansoli Village	Bhaga Village	Harsani Village	Minewater sump	Anoi Village
Jan. -18 to Feb-18	2050.0	1362.1	1923.0	2095.0	1032.0	1985.0	-
March-18 to April-18	2015.1	-	1986.5	2079.8	863.1	2087.9	989.1
May-18 June-18	2035.1	-	2090.0	2013.0	1230.0	1998.0	2039.0
GPCB Limit	2100						



CIN : U74140GJ2010PTC059798

Work order No: SLPP/Mines/Envr.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

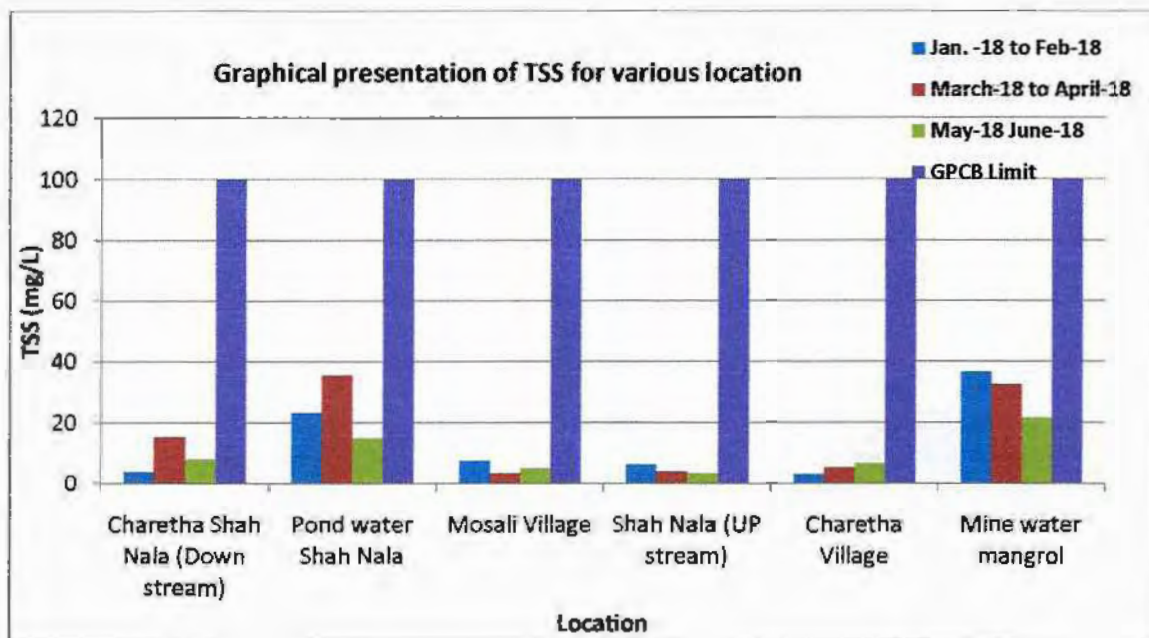
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: TDS (mg/L)

Comparative Results of TSS for Various Locations (Mangrol Block)

Description	Charetha Shah Nala (Down stream)	Pond water Shah Nala	Mosali Village	Shah Nala (up stream)	Charetha Village	Mine water mangrol
Jan. -18 to Feb-18	4.1	23.4	7.6	6.4	3.2	36.6
March-18 to April-18	15.6	35.6	3.6	4.1	5.5	32.5
May-18 June-18	8.1	15.1	5.2	3.5	6.9	21.8
GPCB Limit	100					



CIN : U74140GJ2010PTC059798

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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

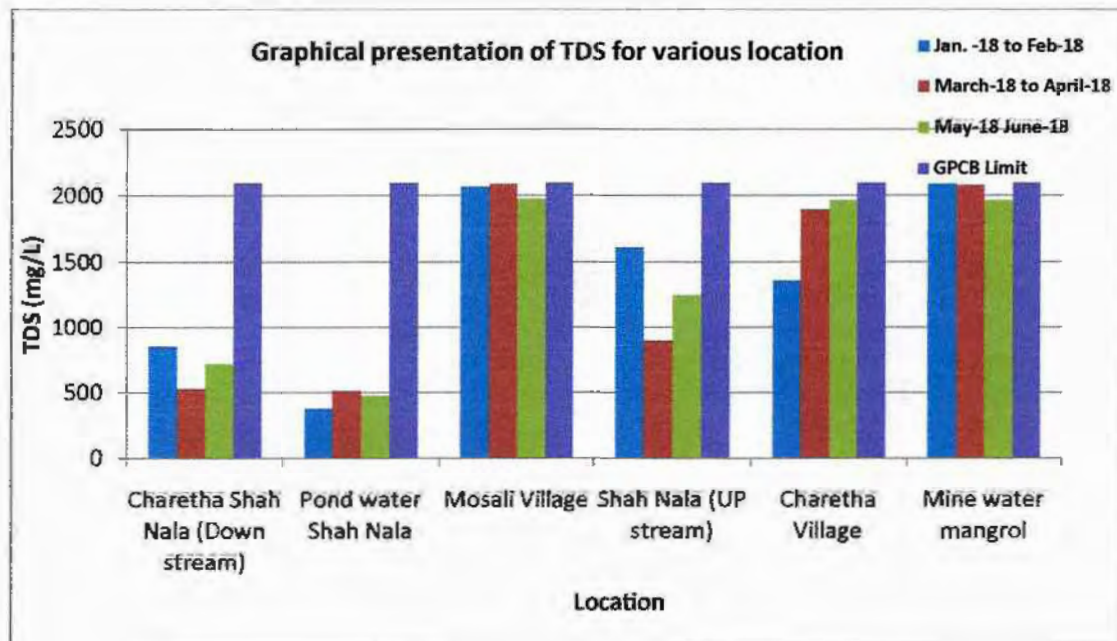
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: TDS (mg/L)

Comparative Results of TDS for Various Locations (Mangrol Block)

Description	Charetha Shah Nala (Down stream)	Pond water Shah Nala	Mosali Village	Shah Nala (up stream)	Charetha Village	Mine water mangrol
Jan. -18 to Feb-18	855.0	382.0	2070.2	1610.0	1360.2	2093.1
March-18 to April-18	532.0	514.0	2091.4	895.3	1895.4	2083.1
May-18 June-18	721.0	481.0	1982.0	1250.0	1967.0	1969.2
GPCB Limit	2100					



CIN : U74140GJ2010PTC059798

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AMBIENT AIR
COMPARATIVE
ANALYSIS REPORTS



Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

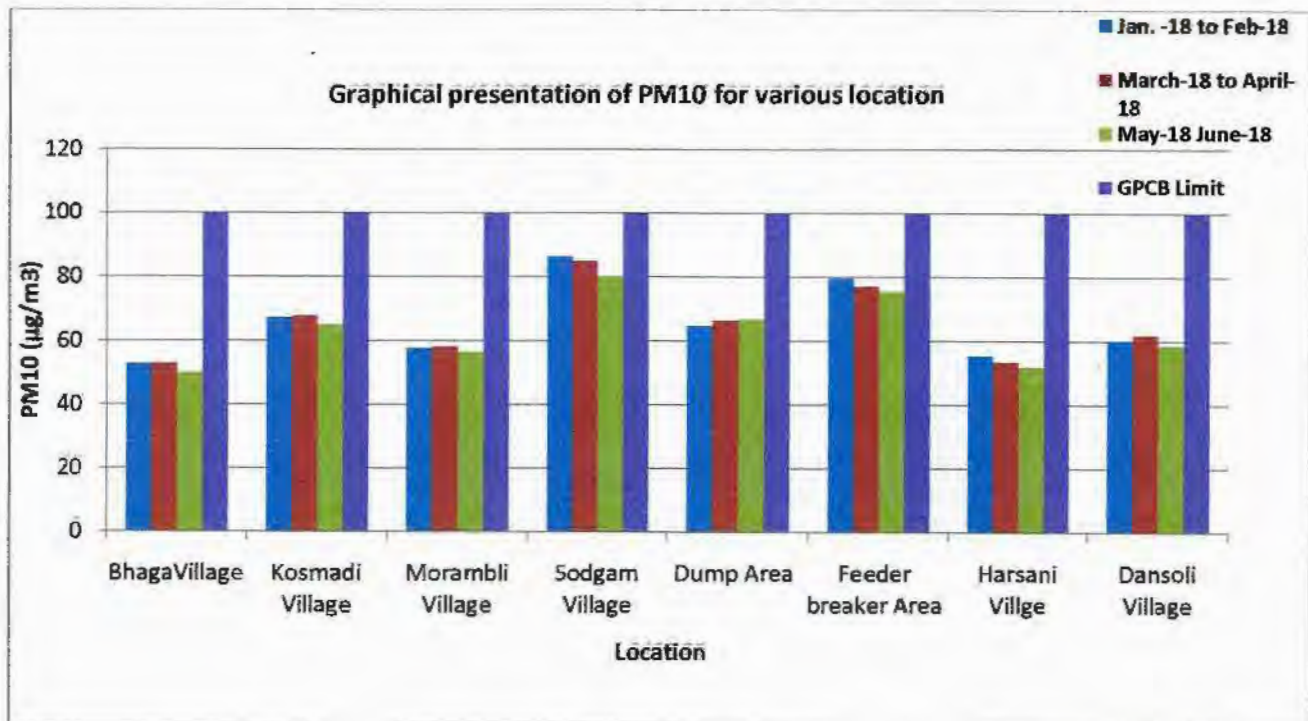
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: PM₁₀ (Particulate Matter) (µg/m³)

Comparative Results of PM₁₀ for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	52.7	67.2	57.6	86.2	64.8	79.5	55.4	60.3
March-18 to April-18	53.0	67.7	58.2	84.8	66.5	77.2	53.5	61.8
May-18 June-18	50.2	65.1	56.5	80.1	66.7	75.4	51.9	58.7
GPCB Limit	100							



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Work order No: SLPP/Mines/Envnt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

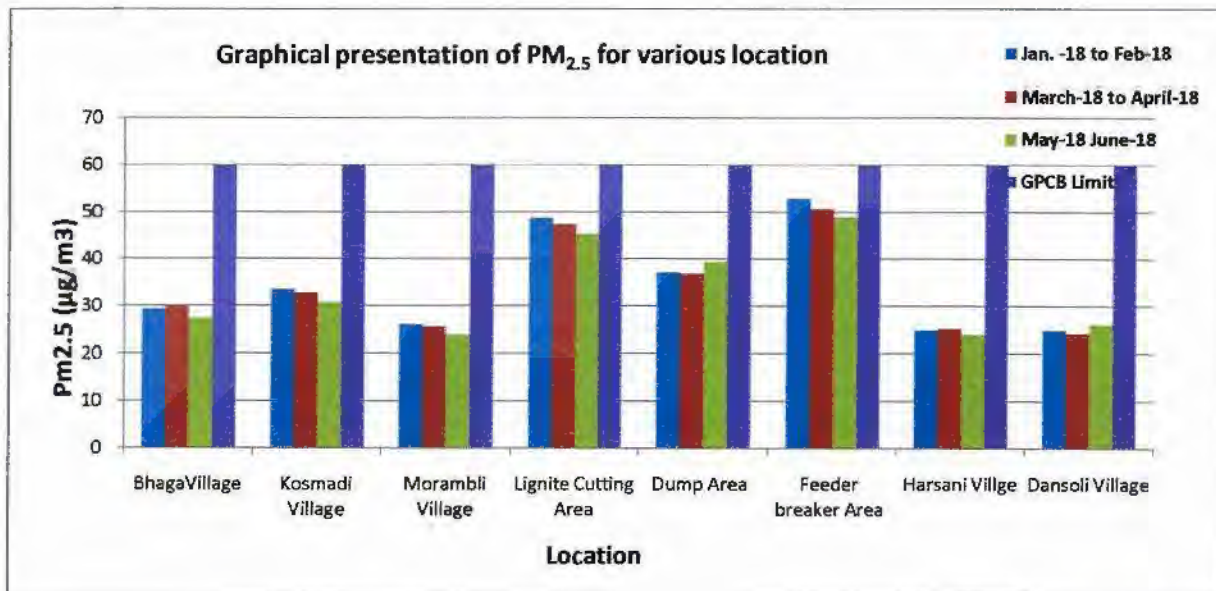
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: PM_{2.5} (Particulate Matter) (µg/m³)

Comparative Results of PM_{2.5} for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	29.3	33.5	26.1	48.7	37.1	52.9	25.0	25.0
March-18 to April-18	30.1	32.9	25.7	47.3	36.9	50.7	25.3	24.3
May-18 June-18	27.5	30.8	23.9	45.3	39.4	48.9	24.0	26.2
GPCB Limit	60							



CIN : U74140GJ2010PTC059798

Greenleaf Envirotech Pvt. Ltd., Nr. Rangoli Flats, Radhanpur Road, Mehsana - 384002. Gujarat, India.

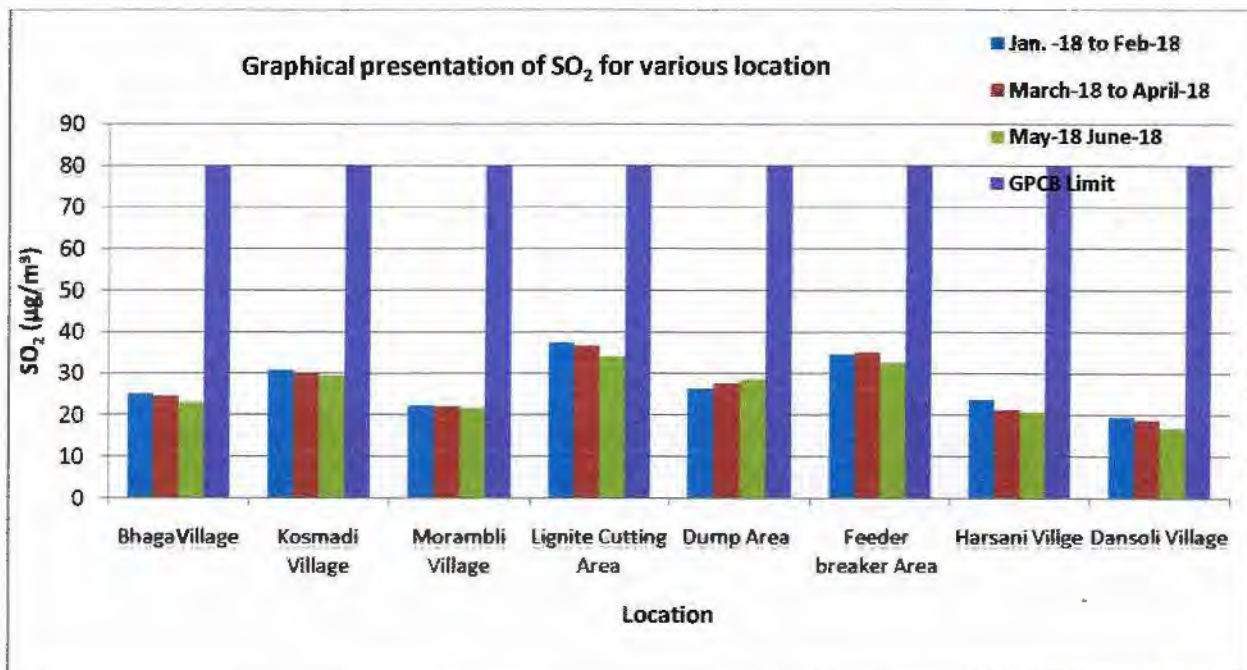
Tel : +91-9712989446, E-mail : info@glepl.com, Web : www.greenieafenvirotech.com

Branch Office : 304, Kankavati Complex, Singanpor-Cauzway Road, Katargam, Surat - 395004, Tel : +91-9725519974.

Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017
Comparative Results for the period of January-2018-June-2018
(Mangrol-Valia Lignite Mine)
Report period: January-2018-June-2018
Parameter: SO₂ (Sulphur Dioxide) (µg/m³)

Comparative Results of SO₂ for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambl Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	25.0	30.8	22.4	37.5	26.4	34.7	23.7	19.5
March-18 to April-18	24.5	30.1	22.1	36.7	27.6	35.2	21.4	18.7
May-18 June-18	23.1	29.3	21.7	34.2	28.6	32.7	20.8	16.8
GPCB Limit	80							



CIN : U74140GJ2010PTC059798

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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

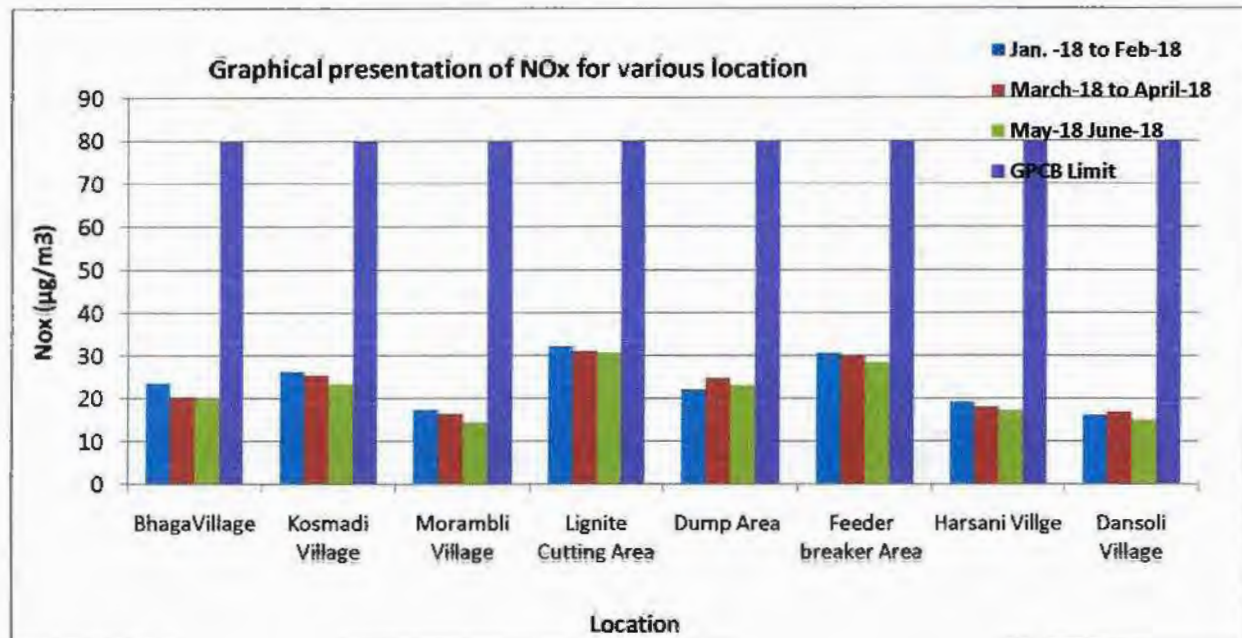
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: NO_x (Oxide of Nitrogen) (µg/m³)

Comparative Results of NO_x for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	23.6	26.2	17.3	32.3	22.0	30.6	19.2	16.2
March-18 to April-18	20.3	25.4	16.5	31.2	24.8	30.1	18.2	16.9
May-18 June-18	19.8	23.5	14.5	30.7	23.1	28.5	17.3	15.1
GPCB Limit	80							



CIN : U74140GJ2010PTC059798

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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

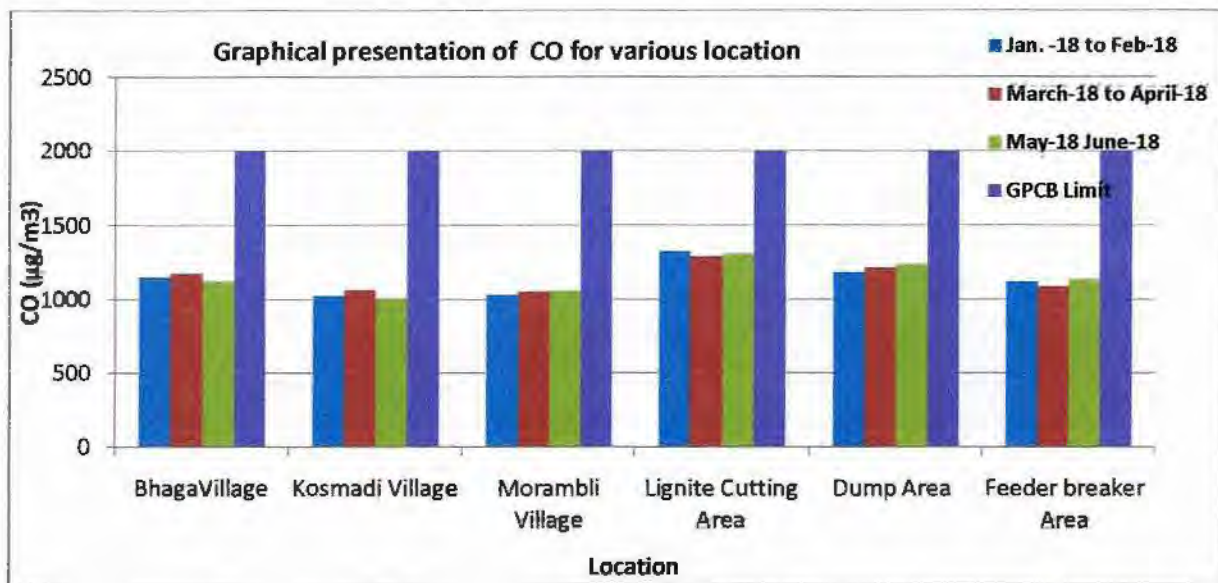
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: CO (Carbon Monoxide) ($\mu\text{g}/\text{m}^3$)

Comparative Results of CO for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	1150.0	1025.0	1034.0	1325.0	1185.0	1120.0	835.0	1040.0
March-18 to April-18	1176.0	1063.0	1052.0	1293.0	1215.0	1088.0	789.0	1115.0
May-18 June-18	1126.0	1012.0	1061.0	1310.0	1238.0	1141.0	815.0	1093.0
GPCB Limit	2000							



CIN : U74140GJ2010PTC059798

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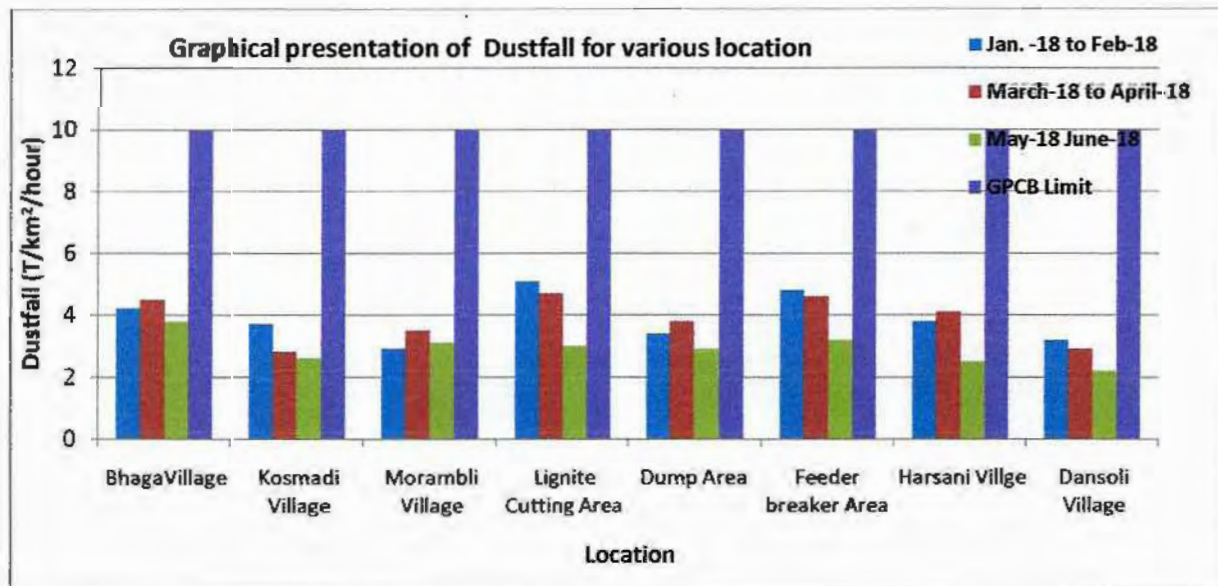
DUSTFALL
MONITORING
COMPARATIVE
ANALYSIS REPORTS



Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017
Comparative Results for the period of January-2018-June-2018
(Mangrol-Valia Lignite Mine)
Report period: January-2018-June-2018
Parameter: Dust fall (T/km²/month)

Comparative Results of Dustfall for Various Locations

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morampli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	4.2	3.7	2.9	5.1	3.4	4.8	3.8	3.2
March-18 to April-18	4.5	2.8	3.5	4.7	3.8	4.6	4.1	2.9
May-18 June-18	3.8	2.6	3.1	3.0	2.9	3.2	2.5	2.2
GPCB Limit	10							



CIN : U74140GJ2010PTC059798

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Branch Office : 304, Kankavati Complex, Singanpor-Cauzway Road, Katargam, Surat - 395004, Tel : +91-9725519974.

NOISE LEVEL
COMPARATIVE
ANALYSIS REPORTS



Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018-June-2018

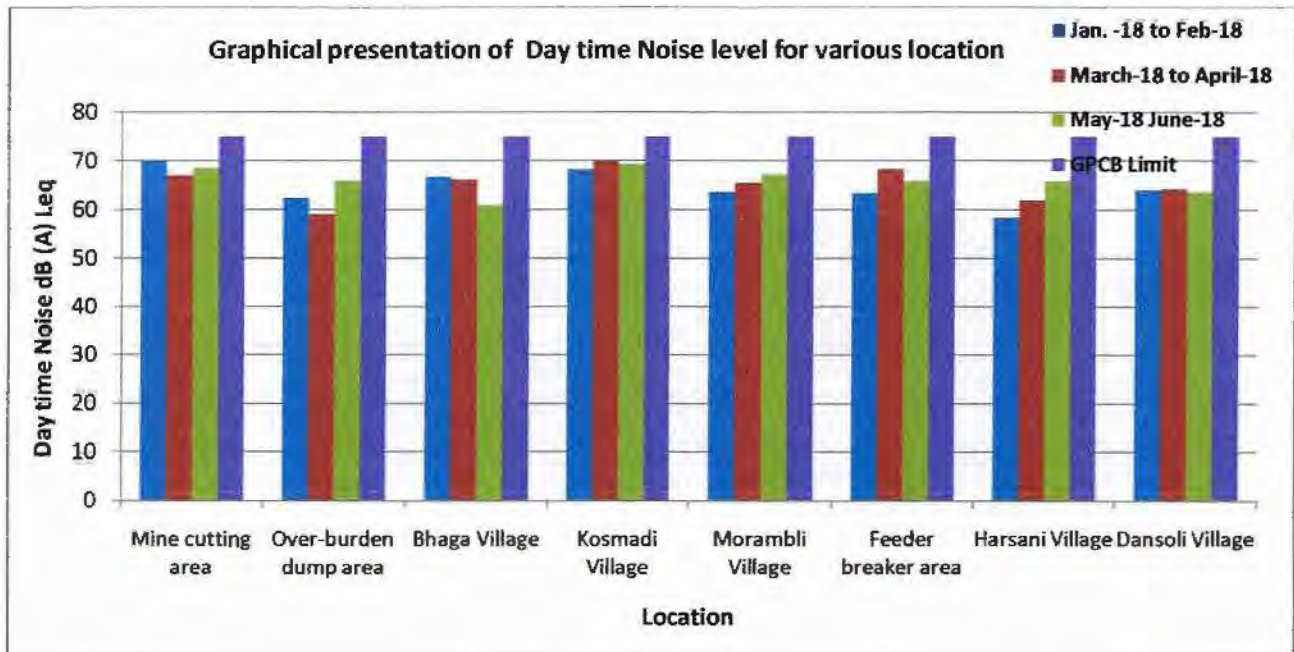
(Mangrol-Valia Lignite Mine)

Report period: January-2018-June-2018

Parameter: Noise level (dB(A)) (For day time)

Comparative Results of Noise level for Various Locations (Day time)

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morambli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	70.1	62.4	66.7	68.3	63.6	63.4	58.5	64.1
March-18 to April-18	67.0	59.1	66.2	70.2	65.5	68.4	62.0	64.4
May-18 June-18	68.7	66.0	61.0	69.4	67.1	65.9	65.9	63.7
GPCB Limit	75							



CIN : U74140GJ2010PTC059798

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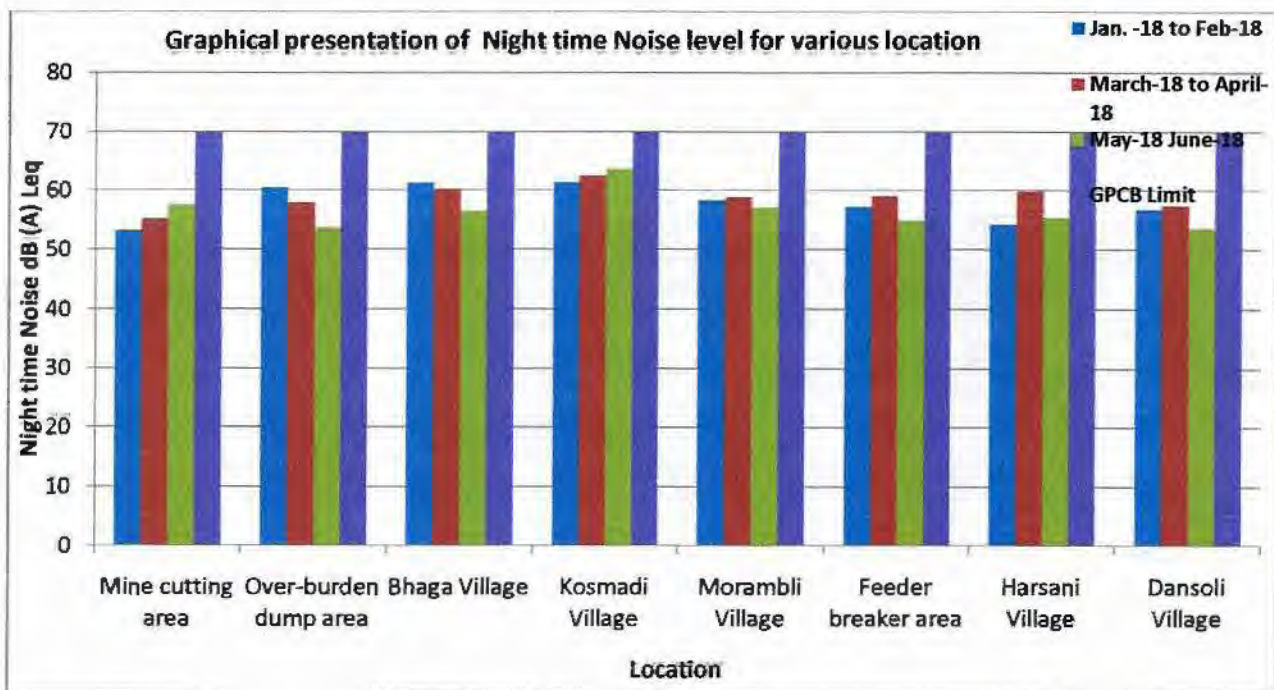
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Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017
Comparative Results for the period of January-2018-June-2018
(Mangrol-Valia Lignite Mine)
Report period: January-2018-June-2018
Parameter: Noise level (dB(A)) (For Night time)

Comparative Results of Noise level for Various Locations (Night time)

Description	Bhaga Village (Valia Block)	Kosmadi Village (Valia Block)	Morampli Village (Valia Block)	Lignite Cutting Area (Valia Block)	Dump Area (Valia Block)	Feeder breaker Area (Valia Block)	Harsani Village (Valia Block)	Dansoli Village (Valia Block)
Jan. -18 to Feb-18	53.3	60.5	61.3	61.4	58.4	57.3	54.3	56.8
March-18 to April-18	55.3	58.0	60.3	62.5	58.9	59.1	59.9	57.6
May-18 June-18	57.7	53.7	56.5	63.7	57.2	55.0	55.5	53.6
GPCB Limit	70							



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WEATHER
MONITORING DATA



Work order No: SLPP/Mines/Envr.Monitoring 2017-18/11 Dated 15.07.2017

Variation in Temperature for the period of January-2018 to June-2018

Sr.No.	Times in Hrs.	Monitoring Date		
		Jan.-18 to Feb.18	March-18 to April-18	May-18 to June-18
		26/02/2018 27/02/2018	26/04/2018- 27/04/2018	27/06/2018- 28/06/2018
1.	09.00	26	36	30
2.	10.00	25	36	29
3.	11.00	25	37	30
4.	12.00	29	39	31
5.	13.00	29	39	32
6.	14.00	28	40	32
7.	15.00	33	40	31
8.	16.00	32	39	32
9.	17.00	33	38	31
10.	18.00	33	39	31
11.	19.00	33	38	30
12.	20.00	32	38	29
13.	21.00	31	37	30
14.	22.00	31	36	31
15.	23.00	30	36	30
16.	00.00	28	34	29
17.	01.00	27	32	28
18.	02.00	27	31	29
19.	03.00	28	30	29
20.	04.00	27	29	30
21.	05.00	28	29	30
22.	06.00	27	30	29
23.	07.00	26	28	28
24.	08.00	26	29	29
24 Hrs. Max.		33	40	32
24 Hrs. Min.		25	28	28
24 Hrs. Avg.		28.9	35	30



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Work order No: SLPP/Mines/Envnt.Monitoring 2017-18/11 Dated 15.07.2017

Variation in Relative Humidity for the period of January-2018 to June-2018

Sr.No.	Times in Hrs.	Monitoring Date		
		Jan.-18 to Feb.18	March-18 to April-18	May-18 to June-18
		26/02/2018 27/02/2018	26/04/2018- 27/04/2018	27/06/2018- 28/06/2018
1.	09.00	41	27	71
2.	10.00	40	26	69
3.	11.00	40	24	68
4.	12.00	39	15	68
5.	13.00	38	14	67
6.	14.00	39	13	67
7.	15.00	35	13	68
8.	16.00	34	17	70
9.	17.00	34	18	70
10.	18.00	33	24	72
11.	19.00	32	26	74
12.	20.00	32	28	76
13.	21.00	39	45	77
14.	22.00	38	43	79
15.	23.00	39	46	78
16.	00.00	42	48	78
17.	01.00	41	49	76
18.	02.00	41	51	76
19.	03.00	38	54	78
20.	04.00	37	56	77
21.	05.00	37	58	78
22.	06.00	40	59	77
23.	07.00	39	58	79
24.	08.00	39	58	78
24 Hrs. Max.		42	59	79
24 Hrs. Min.		32	13	67
24 Hrs. Avg.		37.7	26	73.7



CIN : U74140GJ2010PTC059798

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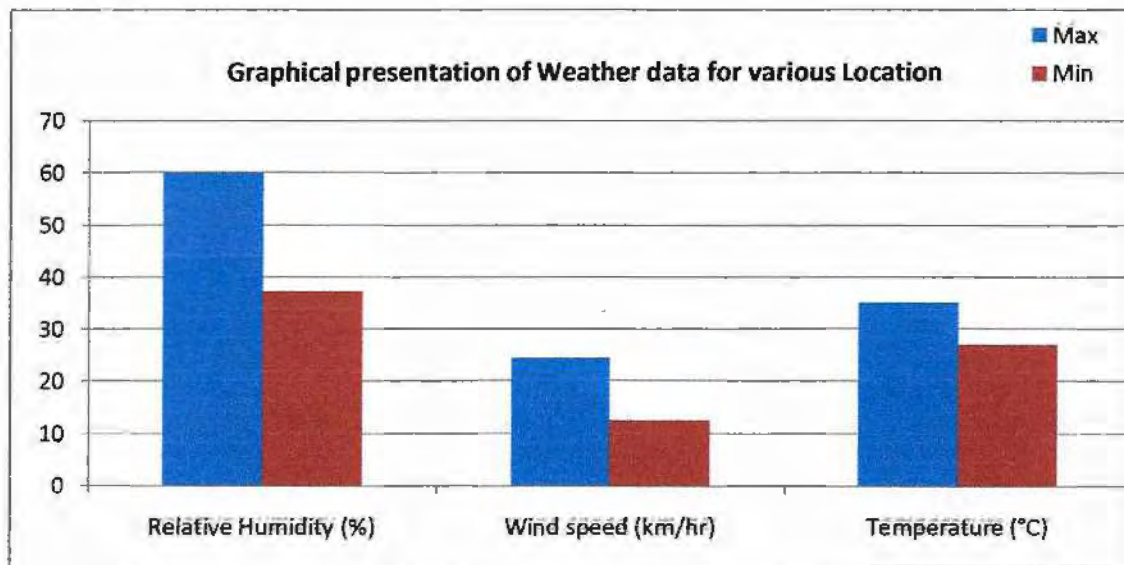
Branch Office : 304, Kankavati Complex, Singanpor-Cauzway Road, Katargam, Surat - 395004, Tel : +91-9725519974.

Work order No: SLPP/Mines/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Comparative Results for the period of January-2018 to June-2018

WEATHER MONITORING AT VALIA PIT

Description	Relative Humidity (%)	Wind speed (km/hr)	Temperature (°C)
Max	60.0	24.3	35.0
Min	37.3	12.6	27.0



CIN : U74140GJ2010PTC059798

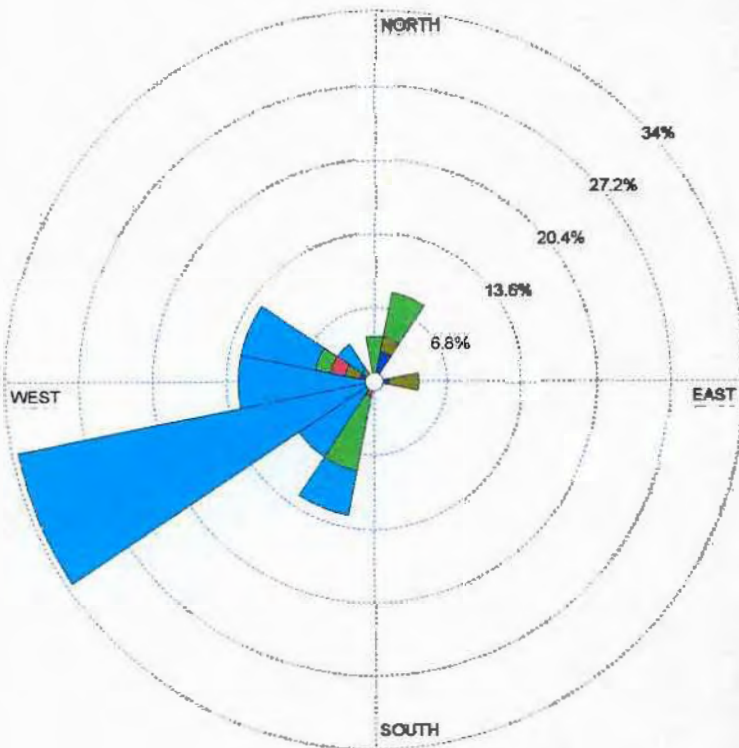
Greenleaf Envirotech Pvt. Ltd., Nr. Rangoli Flats, Radhanpur Road, Mehsana - 384002. Gujarat, India.

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Branch Office : 304, Kankavati Complex, Singanpor-Cauzway Road, Katargam, Surat - 395004, Tel : +91-9725519974.

WIND ROSE PLOT:
Station # 3

DISPLAY:
Wind Speed
Direction (blowing from)

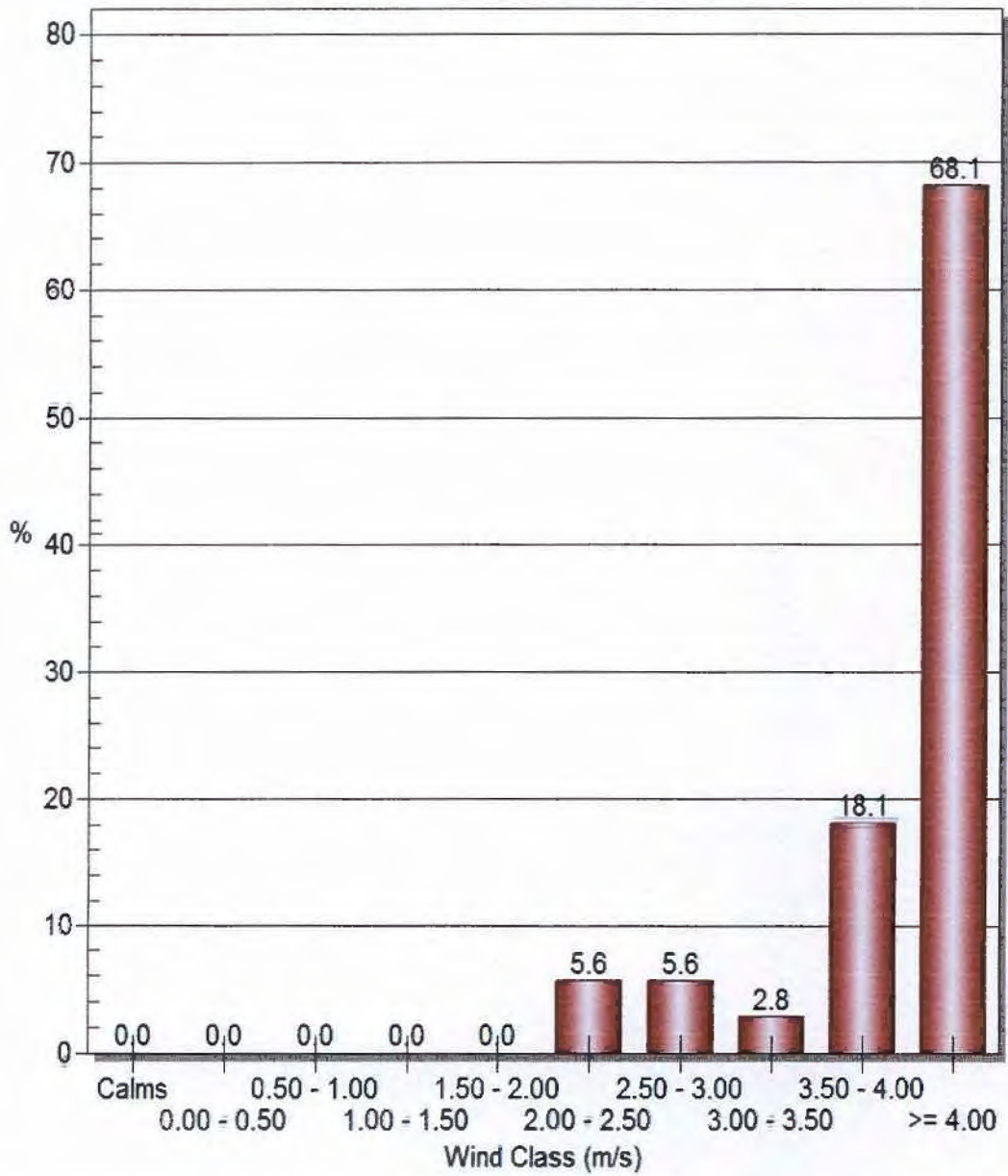


COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 07-02-18 - 09:00 End Date: 28-06-18 - 08:00	GIPCL VALIA	
	CALM WIND:	MODELER:	
	0.00%	Green leaf Pvt. Ltd.	
AVG WIND SPEED:	TOTAL COUNT:	DATE:	PROJECT NO.:
5.12 m/s	72 hrs.	29-06-18	07

WRPLOT View - Lakes Environmental Software



Wind Class Frequency Distribution



Comparative
Reports of Peizometer
Reading



Work order No: SLPP/Mines-Valia/Envt.Monitoring 2017-18/11 Dated 15.07.2017

Variation in Peizometer reading for the period of January-2018 to June-2018

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B009	02-01-18 14:00	3.03	-3.741473	28.4	1002.3
B009	04-01-18 14:00	3.03	-3.805214	28.4	1004.6
B009	06-01-18 14:00	3.03	-3.833037	28.4	1003.9
B009	08-01-18 14:00	3.03	-3.810035	28.4	1004.9
B009	10-01-18 14:00	3.02	-3.844931	28.4	1007.8
B009	12-01-18 14:00	3.02	-3.870984	28.4	1005.4
B009	14-01-18 14:00	3.02	-3.899919	28.4	1005.2
B009	16-01-18 14:00	3.02	-3.908155	28.4	1004.3
B009	18-01-18 14:00	3.02	-3.925097	28.4	1005.8
B009	20-01-18 14:00	3.02	-3.932319	28.4	1004.8
B009	22-01-18 14:00	3.02	-3.932934	28.4	1001.2
B009	24-01-18 14:00	3.02	-3.985464	28.3	1004.3
B009	26-01-18 14:00	3.02	-3.986486	28.4	1003.3
B009	28-01-18 14:00	3.02	-4.034892	28.3	1004.6
B009	30-01-18 14:00	3.02	-4.052168	28.3	1006.1



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B009	01-02-18 14:00	3.02	-4.0463	28.3	1005.5
B009	03-02-18 14:00	3.02	-4.05355	28.3	1004.7
B009	05-02-18 14:00	3.02	-4.08504	28.3	1005.2
B009	07-02-18 14:00	3.02	-4.077426	28.4	1004.2
B009	09-02-18 14:00	3.02	-4.106517	28.4	1004.3
B009	11-02-18 14:00	3.02	-4.172691	28.4	1005.4
B009	13-02-18 14:00	3.02	-4.18022	28.3	1009.1
B009	15-02-18 14:00	3.02	-4.19719	28.3	1009.8
B009	17-02-18 14:00	3.01	-4.179648	28.3	1004.8
B009	19-02-18 14:00	3.01	-4.240825	28.3	1003.2
B009	21-02-18 14:00	3.01	-4.256162	28.3	1002.4
B009	23-02-18 14:00	3.01	-4.284027	28.3	1001.7
B009	25-02-18 14:00	3.01	-4.302598	28.3	1005.2
B009	27-02-18 14:00	3.01	-4.310044	28.3	1003.1



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B009	01-03-18 14:00	3.01	-4.331359	28.3	1002
B009	03-03-18 14:00	3.01	-4.329939	28.3	1002.3
B009	05-03-18 14:00	3.01	-4.382469	28.3	1003.5
B009	07-03-18 14:00	3.01	-4.389642	28.3	1001.3
B009	09-03-18 14:00	3.01	-4.432007	28.3	1003.3
B009	11-03-18 14:00	3.01	-4.472813	28.3	1003.8
B009	13-03-18 14:00	3.01	-4.506082	28.3	1003.2
B009	15-03-18 14:00	3.01	-4.557532	28.3	1002.8
B009	17-03-18 14:00	3.01	-4.589143	28.3	1002.2
B009	19-03-18 14:00	3.01	-4.492663	28.3	1004.3
B009	21-03-18 14:00	3.01	-4.538969	28.3	1003
B009	23-03-18 14:00	3.01	-4.613673	28.3	1002.2
B009	25-03-18 14:00	3.01	-4.682387	28.3	1004.8
B009	27-03-18 14:00	3.01	-4.726355	28.3	1002.2
B009	29-03-18 14:00	3.01	-4.782317	28.3	1001.9
B009	31-03-18 14:00	3.01	-4.804426	28.3	1000.4



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B009	02-04-18 14:00	3.01	-4.83707	28.3	1001
B009	04-04-18 14:00	3.01	-4.874134	28.3	999.1
B009	06-04-18 14:00	3.01	-4.929142	28.3	999.4
B009	08-04-18 14:00	3.01	-4.926781	28.3	1000.5
B009	10-04-18 14:00	3.01	-4.946409	28.3	999.6
B009	12-04-18 14:00	3.01	-4.969335	28.3	999.8
B009	14-04-18 14:00	3.01	-5.016385	28.3	999.8
B009	16-04-18 14:00	3.01	-5.07527	28.3	1002.3
B009	18-04-18 14:00	3.01	-5.095362	28.3	1002.7
B009	20-04-18 14:00	3	-5.12369	28.3	1000.1
B009	22-04-18 14:00	3.01	-5.140242	28.3	1000.6
B009	24-04-18 14:00	3	-5.173156	28.3	1000.9
B009	26-04-18 14:00	3	-5.170388	28.3	999.4
B009	28-04-18 14:00	3.01	-5.223472	28.3	1000.2
B009	30-04-18 14:00	3	-5.246943	28.3	999



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B009	02-05-18 14:00	3	-5.278752	28.3	999.7
B009	04-05-18 14:00	3.01	-5.31147	28.3	999.9
B009	06-05-18 14:00	3	-5.358989	28.3	1000.7
B009	08-05-18 14:00	3	-5.431684	28.3	999.9
B009	10-05-18 14:00	3	-5.467898	28.3	1000.7
B009	12-05-18 14:00	3	-5.541532	28.3	999.8
B009	14-05-18 14:00	3	-5.573792	28.3	999.8
B009	16-05-18 14:00	3	-5.610118	28.3	998.5
B009	18-05-18 14:00	3	-5.710277	28.3	998.7
B009	20-05-18 14:00	3	-5.776604	28.3	997.6
B009	22-05-18 14:00	3	-5.786168	28.3	998.8
B009	24-05-18 14:00	3	-5.772864	28.3	997.9
B009	26-05-18 14:00	3	-5.784231	28.3	995.7
B009	28-05-18 14:00	3	-5.865251	28.3	993.7
B009	30-05-18 14:00	3	-5.940866	28.3	995.1



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B009	01-06-18 14:00	3	-5.986141	28.3	998
B009	03-06-18 14:00	3	-5.92372	28.3	996.9
B009	05-06-18 14:00	3	-5.954805	28.3	997
B009	07-06-18 14:00	3	-5.971019	28.3	995.6
B009	09-06-18 14:00	3	-6.022774	28.3	991.2
B009	11-06-18 14:00	3	-6.025165	28.3	993.7
B009	13-06-18 14:00	3	-6.051965	28.3	994.5
B009	15-06-18 14:00	3	-6.114275	28.3	996.9
B009	17-06-18 14:00	3	-6.073044	28.3	996.6
B009	19-06-18 14:00	3	-6.083527	28.3	996
B009	21-06-18 14:00	2.99	-6.105454	28.3	995.7
B009	23-06-18 14:00	3	-6.134599	28.3	995.5
B009	25-06-18 14:00	3	-6.07203	28.3	993.6
B009	27-06-18 14:00	3	-5.869357	28.3	991.8
B009	29-06-18 14:00	3	-5.986579	28.3	993.3



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