



**STACK MONITORING RESULT**

Name of Industry & Address	M/s SHIVA CEMENT LIMITED: Teleghana, Kutra, Sundargarh
Date of Monitoring	25-03-18
Date of Analysis	27-02-18
Reference No	Stk-05/03/18

Sl. No.	Parameters	(Result)					Protocols
		Cement Mill 1	Kiln	Coal Mill	Raw Material Mill	Cement Mill 2	
1	Particulate Matter (PM) in mg/Nm <sup>3</sup>	28.3	27.2	27.2	26.4	28.4	IS:11255 (Pt 1)
2	Flue Gas Temperature (°C) T <sub>s</sub>	38.1	149.4	38.2	38.3	38.2	IS:11255 (Pt 3)
3	Flue Gas Velocity (m/s)	4.2	5.6	4.9	4.6	4.5	IS:11255 (Pt 3)
4	Ambient Temperature °C (T <sub>a</sub> )	38.4	38.5	38.7	38.8	38.4	-
5	Height of H <sub>2</sub> O Column in mm	2.02	2.03	2.05	2.02	2.05	-
6	Carbon Monoxide (CO) in ppm	-	358	-	-	-	IS:13270/GC
7	Carbon Dioxide (CO <sub>2</sub> ) in %	-	-	-	-	-	IS:13270/GC
8	Oxygen (O <sub>2</sub> ) in %	-	14.4	-	-	-	Orsat Apparatus
9	Sulfur Dioxide (SO <sub>2</sub> ) in ppm	-	71	-	-	-	IS:11255 (Pt 2)
10	Oxides of Nitrogen (NO <sub>x</sub> ) in ppm	-	112	-	-	-	IS:11255 (Pt 7)

Sampling Instrument : Stack Monitoring Kit VSS-I & Flue Gas Analyzer (Quintox)  
Permissible Standard for PM: 30 mg/ Nm<sup>3</sup>.

For Global Tech Enviro Experts Pvt. Ltd.

  
(Authorised Signatory)

**GLOBAL TECH ENVIRO EXPERTS PVT. LTD.****(FORMERLY GLOBAL EXPERTS)**

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**AMBIENT AIR QUALITY RESULTS**

Name of Industry & Address	:	M/s SHIVA CEMENT LIMITED Teleghana, Kutra, Sundargarh
Date of Monitoring	:	25-03-18
Date of Analysis	:	27-03-18
Reference No.	:	Air-03/03/18

Pollutant	Concentration in Ambient Air			NAAQS 2009 In $\mu\text{g}/\text{m}^3$	Protocol	Instrument used and Method of Measurement
	Main Gate	Office Building	Kiln Site			
	1	2	3			
Particulate Matter ( $\text{PM}_{10}$ )	70.2	69.8	74.3	100	IS : 5182(Pt 23)	Fine Particulate Sampler SLE/FPS 105 and Gravimetric
Particulate Matter ( $\text{PM}_{2.5}$ )	31.4	28.9	32.2	60	EPA Guideline	Fine Particulate Sampler SLE/FPS 105 and Gravimetric
Sulfur Dioxide ( $\text{SO}_2$ )	9.8	9.7	10.2	80	IS : 5182(Pt 2)	Spectrophoto- metric Analysis (West-Gaeke Method)
Oxides of Nitrogen ( $\text{NO}_x$ )	14.2	15.6	17.2	80	IS : 5182(Pt 6)	Jacob & Hochheiser Modified(Na- Arsenite) Method
Carbon Monoxide( $\text{CO}$ )	388	384	438	4000	NDIR	Non dispersive Infrared Spectrometry

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## AMBIENT NOISE MONITORING RESULTS

Name of Industry & Address	:	M/s SHIVA CEMENT LIMITED Teleghana, Kutra, Sundargarh
Date of Monitoring	:	26-03-18
Reference No.	:	N-08 / 03/ 18

SL NO	Location	Noise Level in dB (A)		
		Ld	Ln	Ldn
1	Main Gate	58.4	55.3	57.6
2	Cement Mill	70.5	65.6	69.4
3	Cement Mill 1	73.6	60.3	71.9
4	Cement Mill 2	71.2	61.2	69.7
5	Coal Mill	70.4	63.8	69.1
6	Office Building	55.2	50.2	54.1
7	Raw Mill	71.4	67.4	70.4
8	Crusher	73.3	65.3	71.9
	CPCB Standard(Industrial	75	70	
	Methodology	SLM 100 Envirotech	SLM 100 Envirotech	

Noise level in Day time – (6.00am – 10.00 pm)

Noise level in Night time – (10.00pm – 6.00 am)

For Global Tech Enviro Experts Pvt. Ltd.

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**GROUND WATER MONITORING REPORT (PLANT SITE)**

Name of Industry & Address	:	M/s SHIVA CEMENT LIMITED Teleghana, Kutra, Sundargarh
Date of Monitoring	:	25-03-18
Date of Analysis	:	27-03-18
Reference No.	:	N-35 /02/18

Sl. No.	Parameters	Unit	Desirable Limits as per IS:10500 (Max)	Permissible	Result	Protocol
1.	pH	-	6.5 - 8.5	No Relax	7.8	IS3025:PART11:1983
2.	Colour	Hazen	5	25	1.7	IS3025:PART04:1983
3.	Odour	Un Objectionable	UO	Un objectionable	UO	IS3025:PART05:1983
4.	Taste		Agreeable	-	Agreeable	IS3025:PART 7&8.:1984
5.	Turbidity	NTU	5	10	1.8	IS3025:PART10:1984
6.	Total Dissolved Solid	mg/l	500	2000	170	IS3025:PART16:1984
7.	Alkalinity (as CaCO <sub>3</sub> )	mg/l	200	600	56	IS3025:PART23:1986
8.	Total Hardness as CaCO <sub>3</sub>	mg/l	300	1000	110	IS3025:PART21:1983
9.	Iron as Fe	mg/l	0.03	1.0	0.002	IS3025:PART53:2003
10.	Chloride as Cl	mg/l	250	1000	49.3	IS3025:PART32:1988
11.	Residual Chlorine	mg/l	0.2	-	<0.001	IS3025:PART26:1986
12.	Calcium as Ca	mg/l	75	200	35.2	IS3025:PART40:1991
13.	Magnesium as Mg	mg/l	30	100	29.3	IS3025:PART46:1994
14.	Copper as Cu	mg/l	0.05	1.5	<0.001	IS3025:PART42:1992
15.	Manganese as Mn	mg/l	0.1	0.3	<0.001	IS3025:PART35:1964
16.	Sulphate as SO <sub>4</sub>	mg/l	200	400	25.1	IS3025:PART24:1986
17.	Nitrate as NO <sub>3</sub> -N	mg/l	45	No Relax	1.7	IS3025:PART34:1988
18.	Fluoride as F	mg/l	1	1.5	0.18	IS3025:PART23:1964
19.	Phenolic Compound C <sub>6</sub> H <sub>5</sub> OH	mg/l	0.001	0.002	<0.001	IS3025:PART54:1964
20.	Mercury as Hg	mg/l	0.001	No Relax	<0.0005	IS3025:PART48:1994
21.	Cadmium as Cd	mg/l	0.01	No Relax	0.001	IS3025:PART41:1992
22.	Selenium as Se	mg/l	0.01	No Relax	<0.001	IS3025:PART56:2003
23.	Arsenic as As	mg/l	0.01	No Relax	<0.001	IS3025:PART37:1988
24.	Cyanide as CN	mg/l	0.05	No Relax	<0.001	IS3025:PART27:1986



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25.	Lead as Pb	mg/l	0.05	No Relax	<0.001	IS3025:PART47:1994
26.	Zinc as Zn	mg/l	5	15	0.02	IS3025:PART49:1991
27.	Anionic Detergent as MBAS	mg/l	0.2	1	<0.005	Annex K of IS 13428:2005
28.	Chromium as Cr <sup>6+</sup>	mg/l	0.05	No Relax	<0.001	IS3025:PART52:2003
29.	Mineral Oil	mg/l	0.01	0.03	<0.001	IS3025:PART39:2003
30.	Polynuclear Aromatic hydrocarbon	mg/l	-	-	<0.001	APHA 6440
31.	Aluminium as Al	mg/l	0.03	0.2	0.002	IS3025:PART55:2003
32.	Boron as B	mg/l	1	5	0.001	Annex H of IS13428: 2005
33.	Total Coliforms	MPN/100ml	-	10/100ml	Absent	IS 1622:1981(Reaff 2003)
34.	E.Coli	MPN/100ml	-	Abs/ 100 ml	Absent	IS 1622:1981(Reaff 2003)
35.	Faecal Coliforms	MPN/100ml	-	Abs/ 100 ml	Absent	IS 1622:1981(Reaff 2003)

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