

**ENVIRONMENTAL MONITORING REPORT**  
**FOR**  
**6x600 MW COAL BASED POWER PLANT**  
**OF KSK MAHANADI POWER COMPANY LTD**  
**AT NARIYARA, JANJGIR-CHAMPA DISTRICT, CHHATTISGARH**

**MONTHLY REPORT: FEBRUARY-2025**

**Client:**

**KSK Mahanadi Power Company Ltd**  
**Nariyara, Chhattisgarh**

**Prepared by:**



**VIMTA Labs Ltd.**  
**142, IDA, Phase-II, Cherlapally**  
**Hyderabad – 500 051, Telangana State**  
**[www.vimta.com](http://www.vimta.com), [env@vimta.com](mailto:env@vimta.com)**

	<p><b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b></p> <p style="text-align: right;"><b>February 2025</b></p>
---	---

## **1.0 INTRODUCTION**

KSK Mahanadi Power Company Limited has installed 3 X 600 MW Power Plant at Narayana, Janjgir Champa District, Chhattisgarh.

## **2.0 PROCESS DESCRIPTION**

The 6x600 MW Power Plant has been constructed as a two phase configuration of 2x1800 MW unit, with two boilers. The project involves 6 Pulverized boiler, steam at 174 bars at 540 °C with six condensing turbo generator set having generating capacity of 600 MW of power each. Out six Units three units under operation and balance units are under construction.

## **3.0 DESCRIPTION OF ENVIRONMENT**

The coal based thermal power plant is located near Nariyara village, Janjgir-Champa District, Chhattisgarh. The index map of the power plant and 10-km radius study area map are shown in **Figure-1** and **Figure-2** respectively.

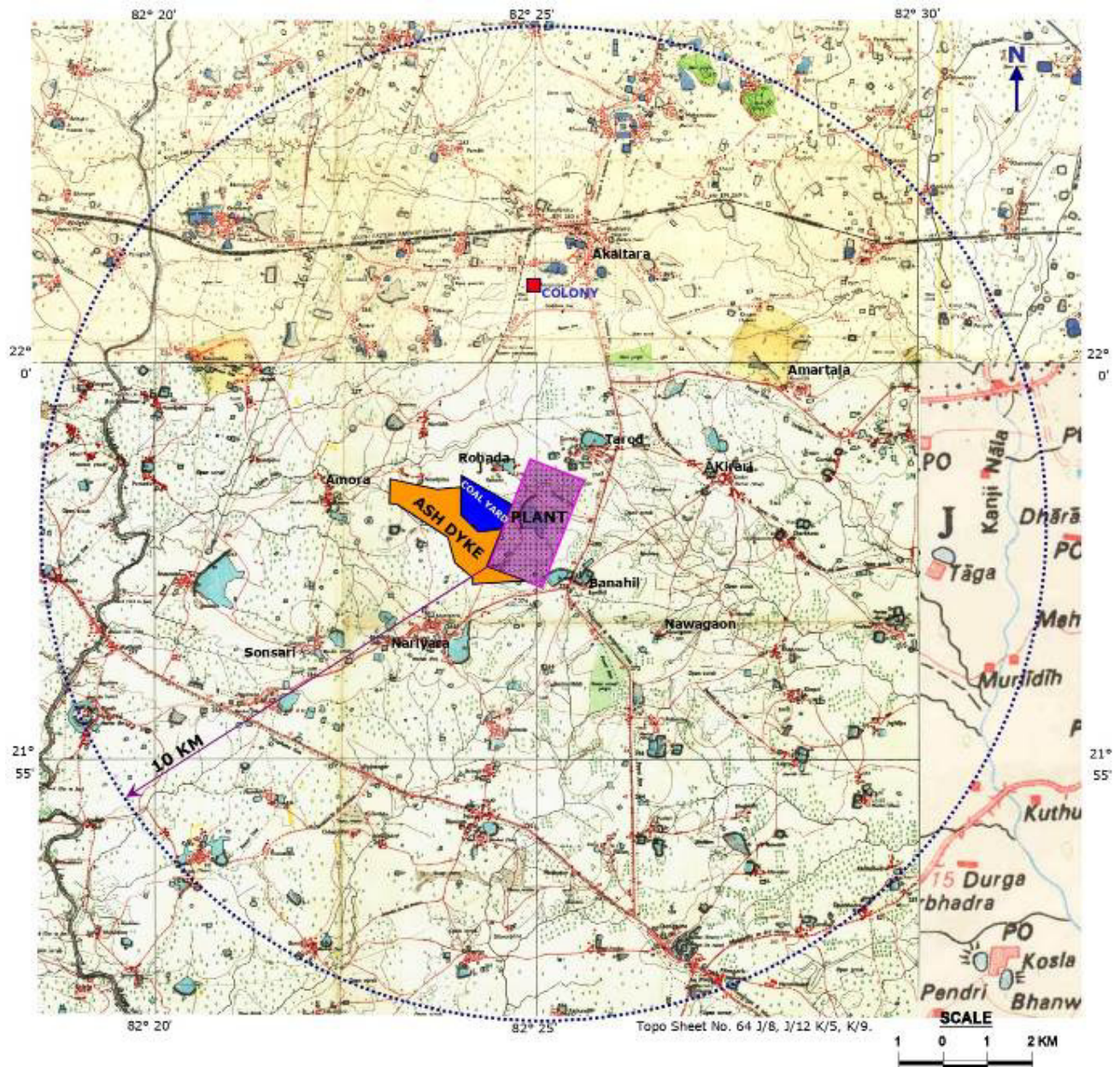
The air, noise and water sampling locations are given in **Figure-3, Figure-4** and **Figure-5**.



Source: Maps of India

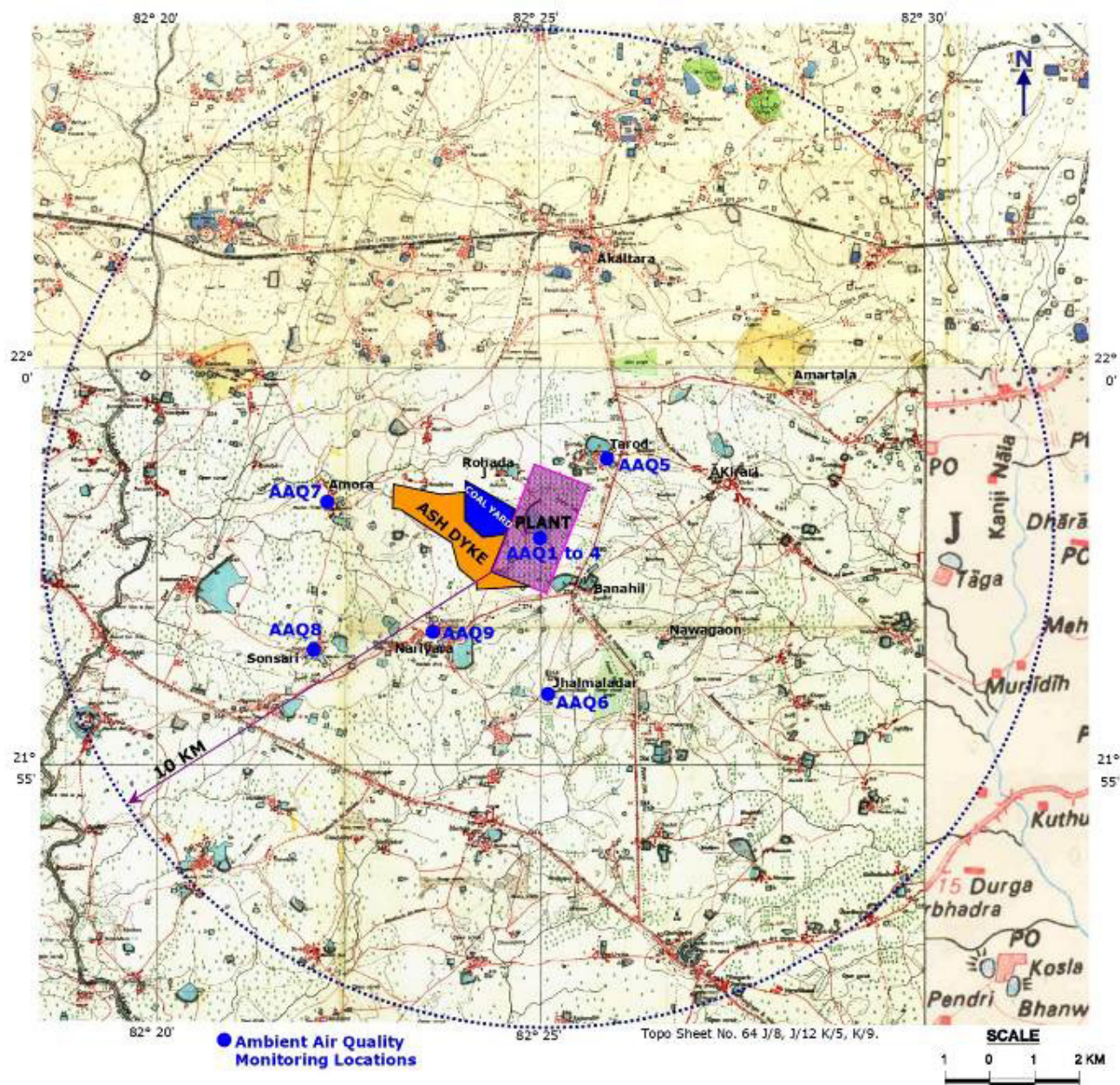
**FIGURE-1**  
**INDEX MAP**





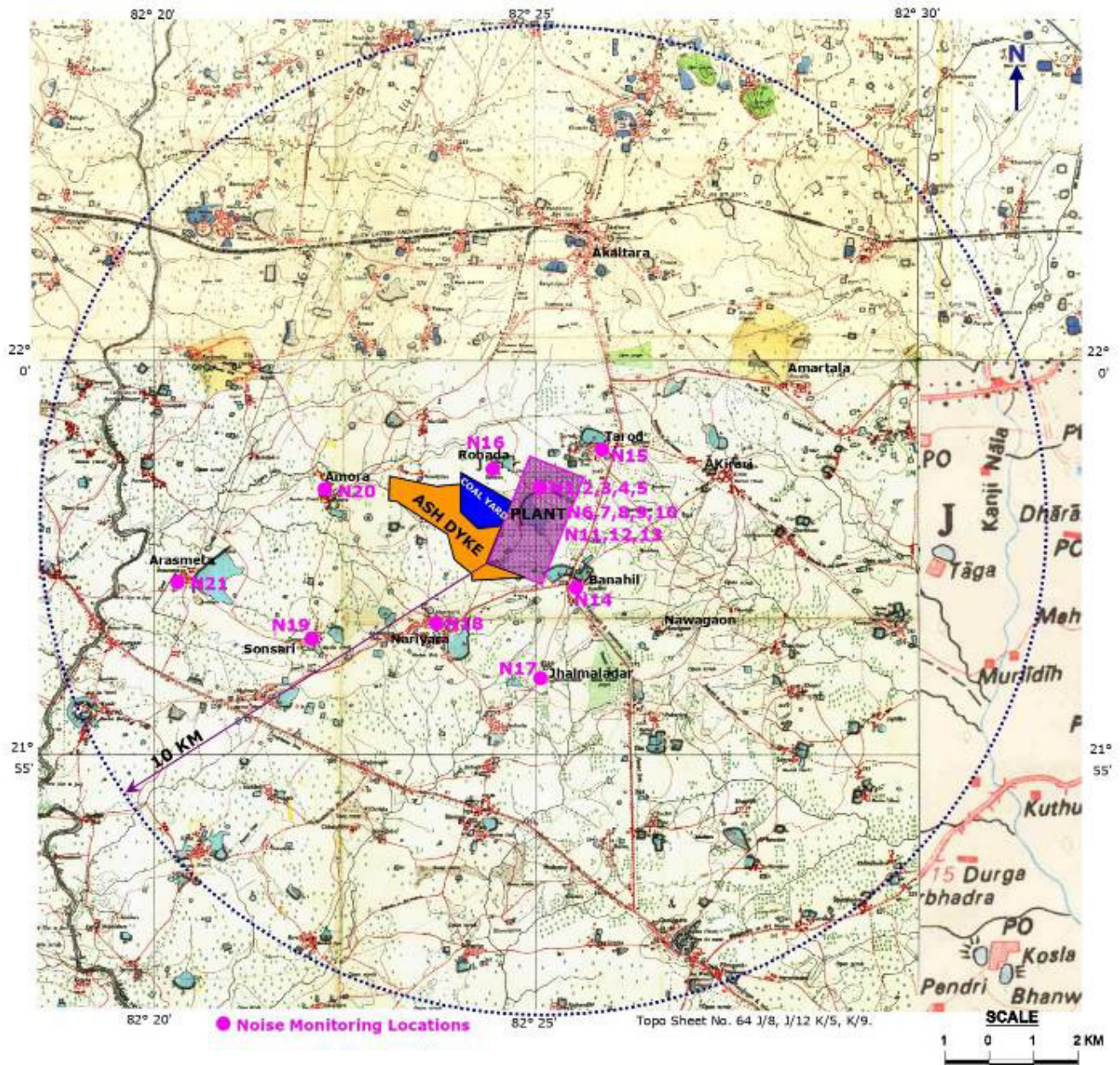
**FIGURE-2**  
**STUDY AREA MAP OF 10-KM RADIUS**





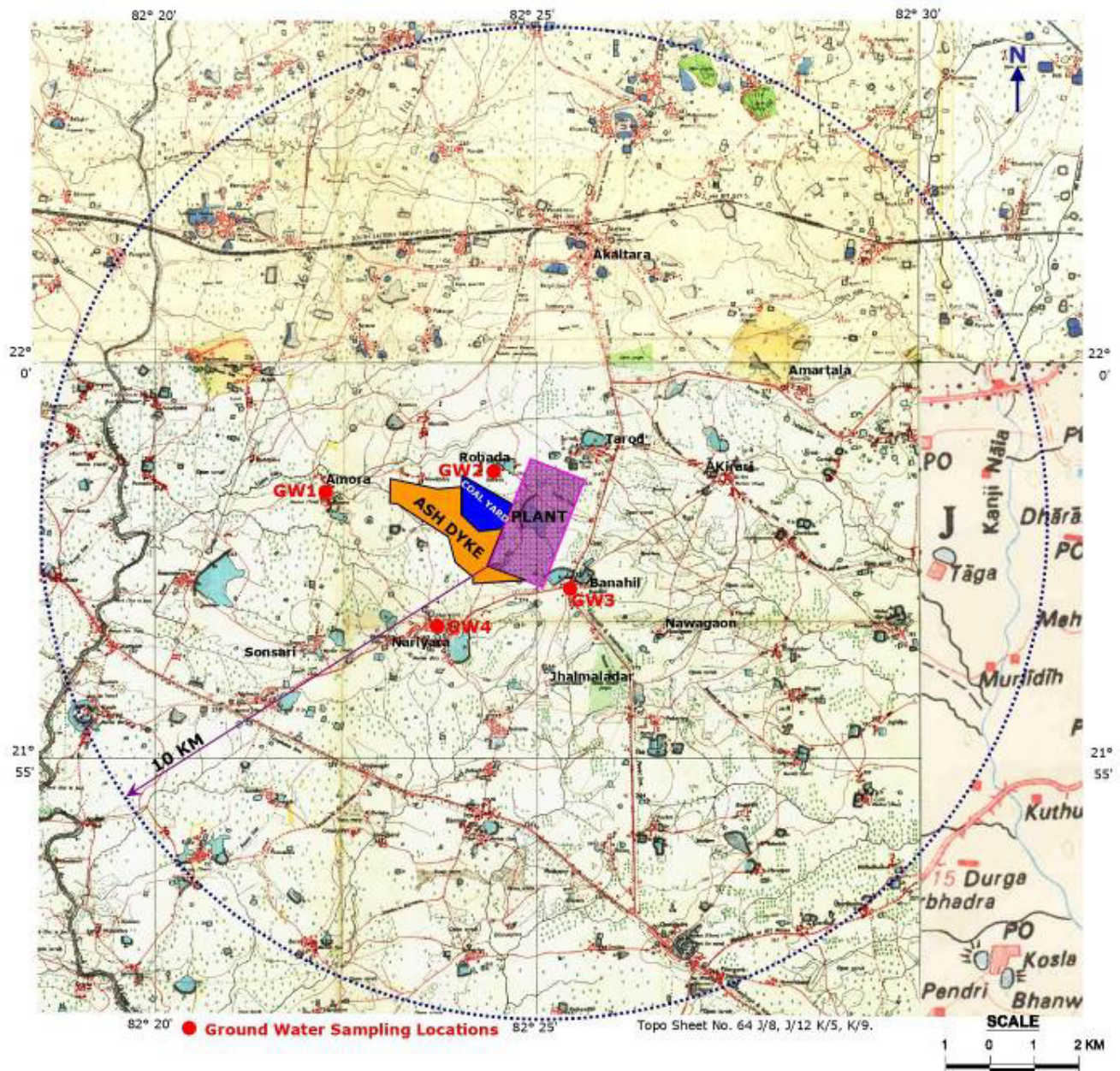
**FIGURE-3**  
**AMBIENT AIR QUALITY LOCATIONS**





**FIGURE-4**  
**NOISE MONITORING LOCATIONS**





**FIGURE-5**  
**GROUND WATER SAMPLING LOCATIONS**

#### 4.0 Scope of Work

M/s KSK Mahanadi Power Company Limited is regularly carrying out the environmental monitoring in and around plant site, as it is a requirement under consent for establishment and consent to Operate from CECB, Chhattisgarh. KSK Mahanadi Power Company Limited entrusted the job of regular environmental monitoring to M/s. Vimta Lab Ltd, Hyderabad.

Monitoring of Ambient Air Quality, water quality and noise level measurement are part of the scope of work given to M/s Vimta Lab Ltd. The environmental monitoring study has been carried out at the following locations:

##### A] Ambient Air Quality

**TABLE-1**  
**AMBIENT AIR QUALITY MONITORING LOCATIONS**

Location Code	Location Name	Direction w.r.t Plant	Distance from Plant (Km)
<b>Inside the Premises</b>			
AAQ1	BTG area	-	-
AAQ2	CHP area	-	-
AAQ3	DM Plant area	-	-
AAQ4	Ash handling area	-	-
<b>Outside the Premises</b>			
AAQ5	Tarod Village	NNE	0.8
AAQ6	Jhalmala Village	S	2.2
AAQ7	Amora Village	W	4.0
AAQ8	Sonsari Village	SW	4.3
AAQ9	Nariyara Village	SSW	1.8

##### B] Stack monitoring

Power Plant Unit –II, Unit – III and Unit - IV

##### C] Ambient Noise Levels

**TABLE-2**  
**AMBIENT NOISE LEVEL MONITORING LOCATIONS**

Location Code	Location Name	Direction w.r.t Plant	Distance from Plant (Km)
<b>Inside the Premises</b>			
N1	TG floor	-	-
N2	Cooling tower	-	-
N3	Main Gate	-	-
N4	Boiler feed pump	-	-
N5	Admin Building area	-	-
N6	CHP Machine area	-	-
N7	AHP area	-	-
N8	Ash Silo area	-	-
N9	CW Pump house	-	-
N10	Compressor 1	-	-
N11	Compressor 2	-	-
N12	Compressor 3	-	-
N13	Compressor 4	-	-
<b>Outside the Premises</b>			
N14	Banahil Village	E	0.7
N15	Tarod Village	NNE	0.8



	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

Location Code	Location Name	Direction w.r.t Plant	Distance from Plant (Km)
N16	Rogda Village	NW	1.5
N17	Jhalmala Village	S	2.2
N18	Nariyara Village	SSW	1.8
N19	Sonsari Village	SW	4.3
N20	Amora Village	W	4.0
N21	Arasmeta Village	W	6.8

#### D] Ground Water Sampling Locations

**TABLE-3**  
**GROUND WATER SAMPLING LOCATIONS**

Location Code	Location Name	Direction w.r.t Plant	Distance from Plant (Km)
<b>Ground Water Locations</b>			
GW1	Amora Village	W	4.0
GW2	Rogda Village	NW	1.5
GW3	Banahill Village	E	0.7
GW4	Nariyara Village	SSW	1.8
<b>Ash Pond Ground Water Locations</b>			
GW5	Ash pond Location-1	--	--
GW6	Ash pond Location-2	--	--
GW7	Ash pond Location-3	--	--
GW8	Ash pond Location-4	--	--

#### E] Waste water samples Locations

**TABLE-4**  
**WASTE WATER SAMPLING LOCATIONS**

Sr. No.	Code	Location
<b>Unit –I</b>		
1	WW1	CT blow down
2	WW2	Boiler blow down
3	WW3	Condenser Cooling Water
4	WW4	Guard pond
5	WW5	STP Outlet

#### F] Water Depth Sampling Locations

**TABLE-5**  
**WATER DEPTH SAMPLING LOCATIONS**

Location Code	Location Name	Direction w.r.t Plant	Distance from Plant (Km)
<b>Ground Water Depth Locations</b>			
GW1	Banahill village	E	0.7
GW2	Nariyara Village	SSW	1.8
GW3	Amora Village	W	4.0
GW4	Rogda Village	NW	1.5
<b>Ash pond Area</b>			
ASH1	Ash pond Location-1	--	--
ASH2	Ash pond Location-2	--	--
ASH3	Ash pond Location-3	--	--
ASH4	Ash pond Location-4	--	--

## **5.0 METHODOLOGY OF MONITORING AND SAMPLING PROCEDURES**

### **5.1 Ambient Air Quality Monitoring**

Respirable dust samplers with suitable calibration were located in selected sampling stations as mentioned above, based on topography and wind pattern of the region. Samples were collected continuously on 24 hours average basis for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, Carbon Monoxide (CO), Ammonia, Lead, Arsenic, Nickel, Ozone, Benzene and Benzo(a)pyrene. Air samples were analyzed for SO<sub>2</sub> by West- Gaeke Method using Spectrophotometer at a wave length of 560 nm. For NO<sub>2</sub>, the analysis was carried out using Sodium Arsenite Method, spectrophotometrically at a wave length of 540 nm. The Fine Particulate Matter PM<sub>2.5</sub> & PM<sub>10</sub> is calculated by using gravimetric analysis. Pre-weighed Teflon filter paper and whatman GFA filter papers were used for determining the respirable particulate matter. The details of the sampling locations are presented in below **Table-1**.

### **5.2 Stack Gas Sampling**

The stack sampling was carried out using ISO-Kinetic Method using pre-calibrated stack kit. Glass fiber thimbles were used for collecting particulate matter.

### **5.3 Ambient Noise Monitoring**

Sound Pressure Levels (SPL) measurements were recorded at 8 locations. The readings were taken for every hour for 24-hrs. The day noise levels have been monitored during 6 am to 10 pm and night noise levels during 10 pm to 6 am at all the locations covered in the study area and 13 work zone noise levels. The details of the sampling locations are given in **Table-2**.

During each hour parameters like L10, L50, L90 and Leq were directly computed by the instrument based on the sound pressure levels.

### **5.4 Water Sampling**

Water sample were collected and analyzed for Total Suspended Solids, Total Dissolved Solids, pH, Dissolved oxygen, Chemical Oxygen Demand, Biochemical Oxygen Demand, Oil & Grease, chlorides, sulphates, phosphates(Total), Zinc, chromium, copper, Iron(Total), as per standard methods published by APHA. The details of the sampling locations are given in **Table-3**.

### **5.5 Waste water Sampling**

Waste water samples were collected and analyzed for Total Suspended Solids, Total Dissolved Solids, pH, Dissolved oxygen, Chemical Oxygen Demand, Biochemical Oxygen Demand, Oil & Grease, chlorides, sulphates, phosphates(Total), Zinc, chromium, copper, Iron(Total), as per standard methods published by APHA. The details of the sampling locations are given in **Table-4** and Water Depth levels of sampling locations are given in **Table-5**.



## 6.0 QUALITY ASSURANCE

Vimta Labs Ltd is accredited by NABL Govt. of India and follows quality systems as per ISO/IEC 17025-2017. The QA/QC procedures are laid prior to sample collection and laboratory analysis. It includes the standard procedures of sample collection, preservation, transportation and laboratory analysis with all documented procedures and continuous monitoring of Quality Control division.


## 7.0 RESULTS OF SURVEY DATA

The monitoring results of Ambient Air Quality analysis for the month of **February-2025** are presented in below **Table-6 to Table-10**.

### 7.1 Ambient Air Quality Monitoring Results

**TABLE-6**  
**AAO MONITORING RESULTS**

Monitoring Date	PM2.5 Particulate Matter( $\mu\text{g}/\text{m}^3$ )	PM10	SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	CO mg/ $\text{m}^3$
<b>BTG area – AAQ1</b>					
03.02.2025	45.7	71.1	15.1	17.2	0.248
06.02.2025	40.0	67.6	16.8	19.6	0.274
10.02.2025	45.6	68.4	14.8	17.5	0.261
13.02.2025	39.6	65.5	16.4	20.4	0.267
17.02.2025	48.2	67.5	14.7	17.8	0.294
20.02.2025	43.5	66.8	17.0	19.7	0.270
24.02.2025	48.3	73.9	15.6	16.7	0.286
27.02.2025	41.6	70.1	17.0	20.5	0.272
<b>Max</b>	<b>48.3</b>	<b>73.9</b>	<b>17.0</b>	<b>20.5</b>	<b>0.294</b>
<b>Min`</b>	<b>39.6</b>	<b>65.5</b>	<b>14.7</b>	<b>16.7</b>	<b>0.248</b>
<b>Avg</b>	<b>44.1</b>	<b>68.9</b>	<b>15.9</b>	<b>18.7</b>	<b>0.272</b>
<b>98%ile</b>	<b>48.3</b>	<b>73.5</b>	<b>17.0</b>	<b>20.5</b>	<b>0.293</b>
<b>CHP area – AAQ2</b>					
03.02.2025	45.7	75.9	16.7	19.5	0.276
06.02.2025	50.2	72.5	18.4	22.1	0.313
10.02.2025	47.8	80.5	15.8	20.8	0.318
13.02.2025	41.7	74.3	18.3	21.6	0.278
17.02.2025	51.6	76.6	15.7	17.6	0.311
20.02.2025	43.4	73.7	17.9	22.1	0.283
24.02.2025	49.3	77.5	15.3	16.3	0.321
27.02.2025	39.7	74.9	16.8	18.8	0.295
<b>Max</b>	<b>51.6</b>	<b>80.5</b>	<b>18.4</b>	<b>22.1</b>	<b>0.321</b>
<b>Min</b>	<b>39.7</b>	<b>72.5</b>	<b>15.3</b>	<b>16.3</b>	<b>0.276</b>
<b>Avg</b>	<b>46.2</b>	<b>75.7</b>	<b>16.9</b>	<b>19.9</b>	<b>0.299</b>
<b>98%ile</b>	<b>51.4</b>	<b>80.1</b>	<b>18.4</b>	<b>22.1</b>	<b>0.321</b>
<b>DM plant area – AAQ3</b>					
03.02.2025	41.4	59.8	15.3	18.0	0.244
06.02.2025	39.1	70.4	13.4	17.2	0.271
10.02.2025	38.2	54.8	15.7	16.5	0.239
13.02.2025	40.7	63.0	13.8	13.9	0.263
17.02.2025	37.0	58.2	15.3	17.8	0.281
20.02.2025	42.6	65.1	12.7	15.4	0.254
24.02.2025	37.9	63.5	14.6	17.6	0.250
27.02.2025	43.1	69.2	12.4	16.4	0.262
<b>Max</b>	<b>43.1</b>	<b>70.4</b>	<b>15.7</b>	<b>18.0</b>	<b>0.281</b>
<b>Min</b>	<b>37.0</b>	<b>54.8</b>	<b>12.4</b>	<b>13.9</b>	<b>0.239</b>
<b>Avg</b>	<b>40.0</b>	<b>63.0</b>	<b>14.2</b>	<b>16.6</b>	<b>0.258</b>
<b>98%ile</b>	<b>43.0</b>	<b>70.2</b>	<b>15.6</b>	<b>18.0</b>	<b>0.280</b>

	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

**TABLE-7**  
**AAO MONITORING RESULTS**

Monitoring Date	PM2.5	PM10	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m <sup>3</sup>
	Particulate				
Ash handling area – AAQ4					
03.02.2025	44.5	68.0	17.4	20.7	0.306
06.02.2025	47.9	80.7	14.5	17.3	0.288
10.02.2025	40.0	73.9	16.8	19.6	0.252
13.02.2025	41.8	79.2	15.2	18.5	0.283
17.02.2025	46.5	69.4	17.5	19.6	0.297
20.02.2025	48.2	83.0	13.8	15.5	0.306
24.02.2025	44.5	69.2	16.4	20.5	0.296
27.02.2025	43.4	78.6	13.4	15.8	0.291
Max	48.2	83.0	17.5	20.7	0.306
Min	40.0	68.0	13.4	15.5	0.252
Avg	44.6	75.2	15.6	18.4	0.290
98%ile	48.2	82.4	17.5	20.7	0.306
Tarod Village – AAQ5					
03.02.2025	33.2	55.5	11.1	12.7	0.160
06.02.2025	29.1	60.4	13.3	14.3	0.174
10.02.2025	30.0	54.2	12.1	15.5	0.155
13.02.2025	34.9	60.6	13.3	14.4	0.149
17.02.2025	31.7	56.1	11.9	14.0	0.165
20.02.2025	38.2	62.4	13.5	15.7	0.122
24.02.2025	35.7	54.3	11.1	12.9	0.197
27.02.2025	30.4	57.3	13.2	14.9	0.121
Max	38.2	62.4	13.5	15.7	0.197
Min	29.1	54.2	11.1	12.7	0.121
Avg	32.9	57.6	12.4	14.3	0.155
98%ile	37.9	62.1	13.5	15.7	0.194
Jhalmala Village- AAQ6					
03.02.2025	36.8	54.4	10.8	13.0	0.180
06.02.2025	32.4	55.1	12.4	14.9	0.157
10.02.2025	35.2	48.0	11.3	12.4	0.138
13.02.2025	31.6	57.3	13.1	14.7	0.152
17.02.2025	33.3	50.7	10.5	13.1	0.181
20.02.2025	32.5	55.4	12.3	14.8	0.130
24.02.2025	36.9	46.4	13.3	12.1	0.172
27.02.2025	31.7	56.5	11.9	14.3	0.156
Max	36.9	57.3	13.3	14.9	0.181
Min	31.6	46.4	10.5	12.1	0.130
Avg	33.8	53.0	12.0	13.7	0.158
98%ile	36.9	57.2	13.3	14.9	0.181
Limits as per NAAQS	60	100	80	80	02

Teflon filter paper was used in PM2.5 & whatman filter paper for PM10 weighed in Mettler electronic balance and computed as per standard methods PM2.5, PM10, SO<sub>2</sub>, NO<sub>x</sub> is monitored on 24 hrs. Basis CO is monitored on 8 hours basis All the values are expressed in µg/m<sup>3</sup> except CO is measured in mg/m<sup>3</sup>




	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

**TABLE-8**  
**AAQ MONITORING RESULTS**

Monitoring Date	PM2.5	PM10	SO <sub>2</sub> µg/m <sup>3</sup>	NO <sub>2</sub> µg/m <sup>3</sup>	CO mg/m <sup>3</sup>
	Particulate				
Amora Village - AAQ7					
03.02.2025	33.5	58.8	11.2	13.5	0.149
06.02.2025	34.8	63.2	13.4	14.6	0.156
10.02.2025	32.8	55.2	12.1	12.8	0.120
13.02.2025	29.9	60.3	11.5	14.1	0.151
17.02.2025	33.3	55.1	12.8	14.0	0.128
20.02.2025	31.0	65.3	13.7	15.0	0.137
24.02.2025	34.1	58.1	11.5	13.4	0.154
27.02.2025	32.1	56.5	12.6	14.8	0.136
Max	34.8	65.3	13.7	15.0	0.156
Min	29.9	55.1	11.2	12.8	0.120
Avg	32.7	59.1	12.4	14.0	0.141
98%ile	34.7	65.0	13.7	15.0	0.156
Sonsari Village - AAQ8					
03.02.2025	36.1	53.3	11.3	13.0	0.160
06.02.2025	30.1	55.8	12.7	14.1	0.152
10.02.2025	36.4	54.6	10.8	13.2	0.130
13.02.2025	32.6	62.2	11.9	13.9	0.163
17.02.2025	34.3	53.2	10.8	12.3	0.138
20.02.2025	30.9	56.3	13.5	14.4	0.160
24.02.2025	32.8	58.2	11.4	13.3	0.159
27.02.2025	35.1	55.5	12.7	14.6	0.143
Max	36.4	62.2	13.5	14.6	0.163
Min	30.1	53.2	10.8	12.3	0.130
Avg	33.5	56.1	11.9	13.6	0.151
98%ile	36.4	61.6	13.4	14.6	0.163
Nariyara Village – AAQ9					
03.02.2025	35.1	52.2	10.3	11.9	0.137
06.02.2025	31.8	54.4	12.2	13.6	0.162
10.02.2025	34.1	53.4	10.7	12.3	0.128
13.02.2025	27.1	53.9	12.0	14.4	0.172
17.02.2025	35.4	53.3	11.5	13.1	0.165
20.02.2025	29.6	51.0	12.2	14.2	0.122
24.02.2025	31.9	53.4	11.1	13.3	0.139
27.02.2025	33.9	52.0	10.7	12.5	0.124
Max	35.4	54.4	12.2	14.4	0.172
Min	27.1	51.0	10.3	11.9	0.122
Avg	32.4	53.0	11.3	13.2	0.144
98%ile	35.4	54.3	12.2	14.4	0.171
Limits as per NAAQS	60	100	80	80	02

Teflon filter paper was used in PM2.5 & whatman filter paper for PM10 weighed in Mettler electronic balance and computed as per standard methods PM2.5, PM10, SO<sub>2</sub>, NO<sub>x</sub> is monitored on 24 hrs. Basis CO is monitored on 8 hours basis All the values are expressed in µg/m<sup>3</sup> except CO is measured in mg/m<sup>3</sup>

 KSK Power from knowledge	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
--	---

**TABLE-9**  
**AAQ MONITORING RESULTS**

Monitoring Date & Location	Arsenic ng/m <sup>3</sup>	Nickel ng/m <sup>3</sup>	Lead µg/m <sup>3</sup>	O <sub>3</sub> µg/m <sup>3</sup>	NH <sub>3</sub> µg/m <sup>3</sup>	C <sub>6</sub> H <sub>6</sub> µg/m <sup>3</sup>	Benzo(a) Pyrene ng/m <sup>3</sup>	Hg µg/m <sup>3</sup>
<b>BTG area – AAQ1</b>								
03.02.2025	<1.0	<1.0	<0.001	9.2	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	1.8	<0.001	10.4	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	1.3	<0.001	6.8	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	2.3	<0.001	9.7	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	1.5	<0.001	10.8	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	8.2	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	1.8	<0.001	11.2	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	1.4	<0.001	10.1	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>2.3</b>	<b>&lt;0.001</b>	<b>11.2</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.8</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>1.7</b>	<b>&lt;0.001</b>	<b>9.6</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>2.3</b>	<b>&lt;0.001</b>	<b>11.1</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>CHP area – AAQ2</b>								
03.02.2025	<1.0	2.5	<0.001	9.5	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	1.7	<0.001	10.5	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	1.5	<0.001	8.2	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	2.0	<0.001	12.9	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	10.7	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	1.5	<0.001	9.6	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	2.3	<0.001	10.6	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	2.1	<0.001	11.5	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>2.5</b>	<b>&lt;0.001</b>	<b>12.9</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.2</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>1.9</b>	<b>&lt;0.001</b>	<b>10.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>2.5</b>	<b>&lt;0.001</b>	<b>12.7</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>DM plant area – AAQ3</b>								
03.02.2025	<1.0	1.6	<0.001	9.7	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	1.2	<0.001	6.5	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	10.0	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	1.7	<0.001	9.5	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	1.1	<0.001	8.5	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	1.9	<0.001	7.9	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	10.4	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	1.5	<0.001	9.5	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>1.9</b>	<b>&lt;0.001</b>	<b>10.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.5</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>1.5</b>	<b>&lt;0.001</b>	<b>9.0</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>1.9</b>	<b>&lt;0.001</b>	<b>10.3</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Limits as per</b>	<b>06</b>	<b>20</b>	<b>1.0</b>	<b>100</b>	<b>400</b>	<b>05</b>	<b>01</b>	<b>-</b>

Below Detectable Limit for As and Ni 1.0 ng/m<sup>3</sup> Below Detectable Limit for Pb 0.001 µg/m<sup>3</sup> Ozone and CO is monitored on 8 hours basis Below Detectable Limit for O<sub>3</sub> 50 µg/m<sup>3</sup> Below Detectable Limit for NH<sub>3</sub> 5.0 µg/m<sup>3</sup>



	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

**TABLE-10**  
**AAQ MONITORING RESULTS**

Monitoring Date & Location	Arsenic ng/m <sup>3</sup>	Nickel ng/m <sup>3</sup>	Lead µg/m <sup>3</sup>	O <sub>3</sub> µg/m <sup>3</sup>	NH <sub>3</sub> µg/m <sup>3</sup>	C <sub>6</sub> H <sub>6</sub> µg/m <sup>3</sup>	Benzo(a) Pyrene ng/m <sup>3</sup>	Hg µg/m <sup>3</sup>
<b>Ash handling area – AAQ4</b>								
03.02.2025	<1.0	1.8	<0.001	10.2	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	1.4	<0.001	8.5	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	11.5	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	1.6	<0.001	9.7	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	2.2	<0.001	10.4	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	2.8	<0.001	13.5	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	1.7	<0.001	10.8	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	2.2	<0.001	11.6	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>2.8</b>	<b>&lt;0.001</b>	<b>13.5</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.5</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>2.0</b>	<b>&lt;0.001</b>	<b>10.8</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>2.7</b>	<b>&lt;0.001</b>	<b>13.2</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Tarod Village – AAQ5</b>								
03.02.2025	<1.0	<1.0	<0.001	5.3	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	<1.0	<0.001	7.2	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	5.8	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	<1.0	<0.001	7.7	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	5.7	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	8.8	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	6.5	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	<1.0	<0.001	7.2	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.8</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>5.3</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.8</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.6</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Jhalmala Village- AAQ-6</b>								
03.02.2025	<1.0	<1.0	<0.001	6.5	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	<1.0	<0.001	6.6	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	5.2	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	<1.0	<0.001	6.7	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	5.3	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	6.6	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	7.4	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	<1.0	<0.001	6.7	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>7.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>5.2</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>7.3</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.001</b>
<b>Limits as per</b>	<b>06</b>	<b>20</b>	<b>1.0</b>	<b>100</b>	<b>400</b>	<b>05</b>	<b>01</b>	<b>-</b>

**TABLE-11**  
**AAQ MONITORING RESULTS**

Monitoring Date & Location	Arsenic ng/m <sup>3</sup>	Nickel ng/m <sup>3</sup>	Lead µg/m <sup>3</sup>	O <sub>3</sub> µg/m <sup>3</sup>	NH <sub>3</sub> µg/m <sup>3</sup>	C <sub>6</sub> H <sub>6</sub> µg/m <sup>3</sup>	Benzo(a) Pyrene ng/m <sup>3</sup>	Hg µg/m <sup>3</sup>
<b>Amora Village – AAQ7</b>								
03.02.2025	<1.0	<1.0	<0.001	6.0	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	<1.0	<0.001	7.4	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	6.4	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	<1.0	<0.001	7.1	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	5.6	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	8.4	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	7.5	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	<1.0	<0.001	6.4	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>5.6</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.9</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.3</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Sonsari Village – AAQ8</b>								
03.02.2025	<1.0	<1.0	<0.001	6.4	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	<1.0	<0.001	8.0	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	5.6	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	<1.0	<0.001	6.4	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	8.1	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	6.6	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	6.9	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	<1.0	<0.001	5.9	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.1</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>5.6</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.7</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.1</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Nariyara Village – AAQ9</b>								
03.02.2025	<1.0	<1.0	<0.001	5.0	<5.0	<1.0	<0.1	<0.001
06.02.2025	<1.0	<1.0	<0.001	6.7	<5.0	<1.0	<0.1	<0.001
10.02.2025	<1.0	<1.0	<0.001	5.6	<5.0	<1.0	<0.1	<0.001
13.02.2025	<1.0	<1.0	<0.001	7.1	<5.0	<1.0	<0.1	<0.001
17.02.2025	<1.0	<1.0	<0.001	4.4	<5.0	<1.0	<0.1	<0.001
20.02.2025	<1.0	<1.0	<0.001	8.3	<5.0	<1.0	<0.1	<0.001
24.02.2025	<1.0	<1.0	<0.001	5.2	<5.0	<1.0	<0.1	<0.001
27.02.2025	<1.0	<1.0	<0.001	6.8	<5.0	<1.0	<0.1	<0.001
<b>Max</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.3</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Min</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>4.4</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Avg</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>6.1</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>98%</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;0.001</b>	<b>8.0</b>	<b>&lt;5.0</b>	<b>&lt;1.0</b>	<b>&lt;0.1</b>	<b>&lt;0.00</b>
<b>Limits as per</b>	<b>06</b>	<b>20</b>	<b>1.0</b>	<b>100</b>	<b>400</b>	<b>05</b>	<b>01</b>	<b>-</b>

Below Detectable Limit for As and Ni 1.0 ng/m<sup>3</sup> Below Detectable Limit for Pb 0.001 µg/m<sup>3</sup> Ozone and CO is monitored on 8 hours basis Below Detectable Limit for O<sub>3</sub> 50 µg/m<sup>3</sup> Below Detectable Limit for NH<sub>3</sub> 5.0 µg/m<sup>3</sup>

#### 7.1.1 Observations (Inside the premises)

PM2.5: The maximum value for PM2.5 observed at CHP area as 51.6  $\mu\text{g}/\text{m}^3$  and minimum value for PM2.5 at BTG plant area as 37.0  $\mu\text{g}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 60  $\mu\text{g}/\text{m}^3$  for industrial area.

PM10: The maximum value for PM10 observed at AHP area as 83.0  $\mu\text{g}/\text{m}^3$  and minimum value for PM10 at DM Plant area as 54.8  $\mu\text{g}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 100  $\mu\text{g}/\text{m}^3$  for industrial area.

SO<sub>2</sub>: The maximum value for SO<sub>2</sub> observed at CHP plant area as 18.4  $\mu\text{g}/\text{m}^3$  and minimum value for SO<sub>2</sub> at DM Plant area as 12.4  $\mu\text{g}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 80  $\mu\text{g}/\text{m}^3$  for industrial area.

NO<sub>2</sub>: The maximum value for NO<sub>2</sub> observed at CHP area as 22.1  $\mu\text{g}/\text{m}^3$  and minimum value for NO<sub>2</sub> at DM Plant area as 13.9  $\mu\text{g}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 80  $\mu\text{g}/\text{m}^3$  for industrial area.

CO: The maximum value for CO observed at CHP area as 0.321  $\text{mg}/\text{m}^3$  and minimum value for CO at DM plant as 0.239  $\text{mg}/\text{m}^3$ . The 8 hours applicable limit inside the plant premises 02  $\text{mg}/\text{m}^3$  for industrial area.

Ammonia: The maximum and minimum value for Ammonia observed at all the locations as <5.0  $\mu\text{g}/\text{m}^3$ . The 24 hours' applicable limit inside the plant premises 400  $\mu\text{g}/\text{m}^3$  for industrial area

Nickel: The maximum value for Nickel observed at AHP area as 2.8  $\text{ng}/\text{m}^3$  and <1.0  $\text{ng}/\text{m}^3$  minimum value for BTG, DM, CHP & AHP Plant area. The 24 hours' applicable limit inside the plant premises 20  $\text{ng}/\text{m}^3$  for industrial area.

Arsenic: The maximum and minimum value for Arsenic observed at all the locations as <1.0  $\text{ng}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 6  $\text{ng}/\text{m}^3$  for industrial area

Lead: The maximum value for Lead observed at all the locations as <0.001  $\mu\text{g}/\text{m}^3$ . The 24 hours' applicable limit inside the plant premises 1  $\mu\text{g}/\text{m}^3$  for industrial area.

Ozone: The maximum value for Ozone observed at AHP area as 13.5  $\mu\text{g}/\text{m}^3$  and minimum value for Ozone AHP area as 6.3  $\mu\text{g}/\text{m}^3$ . The 8 hours' applicable limit inside the plant premises 100  $\mu\text{g}/\text{m}^3$  for industrial area.

Benzo(a)Pyrene: The maximum and minimum value for Benzo(a)Pyrene observed at all the locations as <0.1  $\text{ng}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 1  $\text{ng}/\text{m}^3$  for industrial area

Benzene: The maximum and minimum value for Benzene observed at all the locations as <1.0  $\mu\text{g}/\text{m}^3$ . The 24 hours applicable limit inside the plant premises 5  $\mu\text{g}/\text{m}^3$  for industrial area



	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

Mercury: The maximum and minimum value for Mercury observed at all the locations as  $<0.001 \mu\text{g} / \text{m}^3$  for 24 hours.

#### 7.1.2 Observations (Outside the premises)

PM<sub>2.5</sub>: The maximum value for PM<sub>2.5</sub> observed at Tarod village as  $38.2 \mu\text{g} / \text{m}^3$  and minimum value for PM<sub>2.5</sub> at Nariyara village as  $27.1 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $60 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

PM<sub>10</sub>: The maximum value for PM<sub>10</sub> observed at Amora village as  $65.3 \mu\text{g} / \text{m}^3$  and minimum value for PM<sub>10</sub> at Jhalmala village as  $46.4 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $100 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

SO<sub>2</sub>: The maximum value for SO<sub>2</sub> observed at Amora village as  $13.7 \mu\text{g} / \text{m}^3$  and minimum value for SO<sub>2</sub> at Nariyara village as  $10.3 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the Plant premises  $80 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

NO<sub>x</sub>: The maximum value for NO<sub>x</sub> observed at Tarod village as  $15.7 \mu\text{g} / \text{m}^3$  and minimum value for NO<sub>x</sub> at Nariyara village as  $11.9 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $80 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

CO: The maximum value for CO observed at Tarod village as  $0.197 \text{ mg} / \text{m}^3$  and minimum value for CO at Amora village as  $0.120 \text{ mg} / \text{m}^3$ . The 8 hours' applicable limit outside the plant premises  $02 \text{ mg} / \text{m}^3$  for Rural/Residential area.

Ammonia: The maximum and minimum value for Ammonia observed at all the locations as  $<5.0 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $400 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

Nickel: The maximum and minimum value for Nickel observed at all the locations as  $<1.0 \text{ ng} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $20 \text{ ng} / \text{m}^3$  for Rural/Residential area.

Arsenic: The maximum and minimum value for Arsenic observed at all the locations as  $<1.0 \text{ ng} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $6 \text{ ng} / \text{m}^3$  for Rural/Residential area.

Lead: The maximum and minimum value for Lead observed at all the locations as  $<0.001 \mu\text{g} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $1 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

Ozone: The maximum value for Ozone observed at Tarod village as  $8.8 \mu\text{g} / \text{m}^3$  and minimum value for Ozone at Nariyara village as  $4.4 \mu\text{g} / \text{m}^3$ . The 8 hours applicable limit outside the plant premises  $100 \mu\text{g} / \text{m}^3$  for Rural/Residential area.

Benzo(a)Pyrene: The maximum and minimum value for Benzo(a)Pyrene observed at all the locations as  $<0.1 \text{ ng} / \text{m}^3$ . The 24 hours applicable limit outside the plant premises  $1 \text{ ng} / \text{m}^3$  for Rural/Residential area.

**Benzene:** The maximum and minimum value for Benzene observed at all the locations as  $<1.0 \mu\text{g}/\text{m}^3$ . The 24 hours applicable limit outside the plant premises  $5 \mu\text{g}/\text{m}^3$  for Rural/Residential area

**Mercury:** The maximum and minimum value for Mercury observed at all the locations as  $<0.001 \mu\text{g}/\text{m}^3$  for 24 hours.

#### Results and conclusions:

The results of the monitored data indicate that the ambient air quality of the region in general is conformity with respect to norms of National Ambient Air Quality standards of CPCB, at all locations monitored.

## **7.2 Noise Monitoring**

### **7.2.1 Source Noise Monitoring – Inside the Plant Premises**

The spot noise levels observed inside the premises at various locations is given in **Table-12**

**TABLE-12**  
**INDUSTRIAL NOISE LEVELS IN WORK ENVIRONMENT**

Sr. No	Code	Location	Date of sampling	Noise Level $L_{eq}$ [dB(A)]
1	N1	TG floor	04/02/2025	84.0
2	N2	Cooling tower#3	04/02/2025	83.2
3	N3	Main Gate	05/02/2025	62.4
4	N4	Boiler feed pump	04/02/2025	83.8
5	N5	Admin Building area	05/02/2025	55.1
6	N6	CHP Machine area	07/02/2025	84.1
7	N7	AHP area	05/02/2025	83.5
8	N8	Ash Silo area	05/02/2025	82.6
9	N9	CW Pump house	04/02/2025	83.9
10	N10	Compressor 1	07/02/2025	84.3
11	N11	Compressor 2	07/02/2025	84.0
12	N12	Compressor 3	07/02/2025	83.8
13	N13	Compressor 4	07/02/2025	84.1

### **7.2.2 Observations**

The industrial noise levels within the premises at Work Zone area are observed to be in the range of 55.1 to 84.3 dB (A), which are within the prescribed limit of 85 dB (A).

### **7.2.3 Noise Monitoring – Outside the Premises**

The statistical analysis is done for measured noise levels at four locations in the study area. The parameters are analyzed for  $L_{day}$ ,  $L_{night}$ , and  $L_{dn}$ . The statistical analysis results are given in **Table-13**.

**TABLE-13**  
**AMBIENT NOISE LEVELS IN THE STUDY AREA**

*All the values are given in dB (A)*

Code	Location	Date of sampling	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>day</sub>	L <sub>night</sub>	L <sub>dn</sub>
N14	Banahill Village	17.02.2025	54.4	50.5	46.8	51.5	52.3	42.5	48.6
N15	Tarod Village	28.02.2025	52.8	48.9	45.2	49.9	50.7	41.6	47.3
N16	Rogda Village	27.02.2025	53.1	49.2	45.5	50.2	51.0	40.8	48.2
N17	Jhalmala Village	18.02.2025	54.2	50.3	46.6	51.3	52.1	42.8	49.1
N18	Nariyara Village	19.02.2025	53.3	49.4	45.7	50.4	51.2	41.9	47.7
N19	Sonsari Village	20.02.2025	55.2	51.3	47.6	52.3	53.1	42.4	49.3
N20	Amora Village	22.02.2025	52.9	49.0	45.3	50.0	50.8	41.4	47.6
N21	Arasmeta Village	21.02.2025	53.7	49.8	46.1	50.8	51.6	42.7	48.8

#### 7.2.3.1 Observations

##### a) Day time Noise Levels (L<sub>day</sub>)

###### Residential Area

The daytime (L<sub>day</sub>) noise levels are observed to be in the range of 53.1 dB (A) – 50.7 dB (A), which are within the prescribed limit of 55 dB (A).

##### b) Night time Noise Levels (L<sub>night</sub>)

###### Residential Area

The nighttime (L<sub>night</sub>) noise levels were observed to be in the range of 42.7 dB (A) – 40.8 dB (A), which are within the prescribed limit of 45 dB (A).

### 7.3 Ground Water Quality

Four ground water samples were collected around Ash pond area and four ground water samples were collected at villages around the plant site and analyzed for various parameters. The analytical results are presented below in **Table-14** and **Table-15**.



**TABLE-14**  
**GROUND WATER QUALITY AROUND ASHPOND**

Sr. No	Parameter	Units	GW5	GW6	GW7	GW8
	Sampling season		Winter Season			
	Sampling date		11.02.2025	11.02.2025	11.02.2025	11.02.2025
	Date of analysis		14.02.2025	14.02.2025	14.02.2025	14.02.2025
1	pH	--	7.84	7.65	7.81	7.53
2	Color	Hazen	6	5	4	3
3	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable
5	Conductivity	µs/cm	1406	1073	1171	1025
6	Turbidity	NTU	3	2	4	4
7	Total Dissolved Solids	mg/l	928	709	758	656
8	Total Hardness as CaCO <sub>3</sub>	mg/l	406	320	361	322
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	285	218	248	208
10	Calcium as Ca <sup>2+</sup>	mg/l	92.4	68.6	78.4	69.2
11	Magnesium as Mg <sup>2+</sup>	mg/l	42.5	36.2	40.2	36.2
12	Residual Chlorine	mg/l	<0.1	<0.1	<0.1	<0.1
13	Boron as B	mg/l	0.8	0.5	0.6	0.4
14	Chloride as Cl <sup>-</sup>	mg/l	206.2	152.4	162.2	146.0
15	Sulphate as SO <sub>4</sub> <sup>2+</sup>	mg/l	98.2	86.7	87.1	78.2
16	Fluorides as F	mg/l	1.5	1.0	1.2	1.8
17	Nitrate as NO <sub>3</sub>	mg/l	25.2	12.5	17.8	14.7
18	Sodium as Na <sup>+</sup>	mg/l	124.0	86.9	91.6	78.4
19	Potassium as K <sup>+</sup>	mg/l	21.5	17.5	19.5	15.7
20	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001
21	Cyanides as CN	mg/l	<0.02	<0.02	<0.02	<0.02
22	Anionic Detergents	mg/l	<0.1	<0.1	<0.1	<0.1
23	Mineral Oil	mg/l	<0.01	<0.01	<0.01	<0.01
24	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003
25	Total Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01
26	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01
27	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01
28	Manganese as Mn	mg/l	<0.01	<0.01	<0.01	<0.01
29	Iron as Fe	mg/l	0.11	0.08	0.13	0.07
30	Total Chromium (as Cr)	mg/l	<0.01	<0.01	<0.01	<0.01
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01
32	Zinc as Zn	mg/l	0.28	0.36	0.24	0.32
33	Aluminium as Al	mg/l	<0.01	<0.01	<0.01	<0.01
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001
35	Pesticides	mg/l	Absent	Absent	Absent	Absent
36	E. Coli	--	Absent	Absent	Absent	Absent
37	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent

#### **Sampling Locations**

**GW5. Ash pond Location-1, GW6. Ash pond Location-2, GW7. Ash pond Location-3, GW8. Ash pond Location-4**

#### **7.3.1 Observations**

##### **7.3.2.1 Ground Water Around Ash pond Quality**

The analysis results indicate that the pH and conductivity of the ground water was found to be in the range of 7.53– 7.84 and 1025 to 1406 µS/cm. The Total Dissolved Solids were found to be in the ranging of 656 to 928 mg/L. The Other parameters like Chlorides, Sulphates, Nitrates and Fluorides were found to be in the range of observed to be 146 mg/l to 206.2 mg/l, 78.2 mg/l to 98.2 mg/l, 12.5 mg/l to 25.2 mg/l and 1.0 mg/l to 1.8 mg/l.

**TABLE-15**  
**GROUND WATER QUALITY IN STUDY AREA**

Sr. No	Parameter	Units	GW1	GW2	GW3	GW4	Limits as per IS:10500
	Sampling season		Winter Season				
	Sampling date		12.02.2025	12.02.2025	12.02.2025	12.02.2025	
	Date of analysis		14.02.2025	14.02.2025	14.02.2025	14.02.2025	
1	pH	--	7.45	7.27	7.56	7.34	6.5 – 8.5 (NR)
2	Color	Hazen	<1.0	<1.0	<1.0	<1.0	5(15)
3	Taste	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Conductivity	µs/cm	600	1023	619	1260	\$
6	Turbidity	NTU	<1.0	<1.0	<1.0	<1.0	1(5)
7	Total Dissolved Solids	mg/l	385	665	395	821	500(2000)
8	Total Hardness as CaCO <sub>3</sub>	mg/l	196	324	210	401	200(600)
9	Total Alkalinity as CaCO <sub>3</sub>	mg/l	134	224	128	268	200(600)
10	Calcium as Ca <sup>2+</sup>	mg/l	38.4	68.3	38.5	82.9	75(200)
11	Magnesium as Mg <sup>2+</sup>	mg/l	24.2	37.2	27.6	47.2	30(100)
12	Residual Chlorine	mg/l	<0.1	<0.1	<0.1	<0.1	0.2(1)
13	Boron as B	mg/l	0.03	0.06	0.04	0.03	0.5(1)
14	Chloride as Cl <sup>-</sup>	mg/l	89.2	143.0	96.2	174.0	250(1000)
15	Sulphate as SO <sub>4</sub> <sup>2+</sup>	mg/l	31.2	70.8	34.4	98.5	200(400)
16	Fluorides as F	mg/l	0.7	0.9	0.6	0.8	1.0(1.5)
17	Nitrate as NO <sub>3</sub>	mg/l	7.1	10.8	9.8	13.6	45(NR)
18	Sodium as Na <sup>+</sup>	mg/l	42.7	79.8	41.5	95.0	\$
19	Potassium as K <sup>+</sup>	mg/l	9.3	11.2	7.5	17.4	\$
20	Phenolic Compounds	mg/l	<0.001	<0.001	<0.001	<0.001	0.001(0.002)
21	Cyanides as CN	mg/l	<0.02	<0.02	<0.02	<0.02	0.05 (NR)
22	Anionic Detergents	mg/l	<0.1	<0.1	<0.1	<0.1	0.2 (1.0)
23	Mineral Oil	mg/l	<0.01	<0.01	<0.01	<0.01	0.5 (NR)
24	Cadmium as Cd	mg/l	<0.003	<0.003	<0.003	<0.003	0.003 (NR)
25	Total Arsenic as As	mg/l	<0.01	<0.01	<0.01	<0.01	0.01 (0.05)
26	Copper as Cu	mg/l	<0.01	<0.01	<0.01	<0.01	0.05 (1.5)
27	Lead as Pb	mg/l	<0.01	<0.01	<0.01	<0.01	0.01 (NR)
28	Manganese as Mn	mg/l	<0.01	<0.01	<0.01	<0.01	0.1 (0.3)
29	Iron as Fe	mg/l	0.10	0.07	0.06	0.11	0.3(NR)
30	Total Chromium (as Cr)	mg/l	<0.01	<0.01	<0.01	<0.01	0.05(NR)
31	Selenium as Se	mg/l	<0.01	<0.01	<0.01	<0.01	0.01(NR)
32	Zinc as Zn	mg/l	0.22	0.17	0.15	0.20	5(15)
33	Aluminium as Al	mg/l	<0.01	<0.01	<0.01	<0.01	0.03(0.2)
34	Mercury as Hg	mg/l	<0.001	<0.001	<0.001	<0.001	0.001(NR)
35	Pesticides	mg/l	Absent	Absent	Absent	Absent	Absent
36	E. Coli	--	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	MPN/100ml	Absent	Absent	Absent	Absent	10

Note: \$ - Limits not specified; NR - No Relaxation Limits are shown in IS 10500 are Acceptable limits (Requirement) and in parenthesis are Permissible limit in absence of alternate source

**Sampling Locations**

GW1. Amora Village (Bore well) , GW2. Rogda (Bore well)  
GW3. Banahill (Bore well) , GW4. Nariyara Village (Bore well)

**7.3.1 Observations**

**7.3.2.1 Ground Water Quality**

The analysis results indicate that the pH and conductivity of the ground water was found to be in the range of 7.27 - 7.56 and 600 to 1260 µS/cm. The Total Dissolved Solids were found to be well within the limits ranging from 385 to 821 mg/L. Other parameters like Chlorides, Sulphates, Nitrates and Fluorides were observed to be well within the prescribed limits. The overall physico-chemical analysis of all the parameters is well within the standards as per IS: 10500.

#### 7.4 Waste Water Quality

Four waste water samples were collected within the plant site and analyzed for various parameters. The analytical results are presented below in **Table-16**.

**TABLE-16**  
**WASTE WATER QUALITY**

Sr. No.	Parameters	Units	CT Blow Down	Boiler Blow Down	Condenser Cooling water	Guard Pond	Limits as per CECB& CPCB
			WW1	WW2	WW3	WW4	
	Sampling Date		12.02.2025	12.02.2025	12.02.2025	12.02.2025	
	Date of Analysis		14.02.2025	14.02.2025	14.02.2025	14.02.2025	
1	p <sup>H</sup>	-	7.50	8.11	8.21	7.44	6.5-8.5
	Temperature	°C	27.8	28.3	28.0	27.5	
3	Total Dissolved Solids	mg/l	566	12	9	724	-
4	Total Suspended Solids	mg/l	22.8	<1.0	<1.0	57.6	100
5	Dissolved Oxygen	mg/l	5.4	5.2	5.1	5.2	-
6	Biochemical Oxygen Demand, (3 days at 27°C)	mg/l	<3	<3	<3	19	-
7	Chemical Oxygen Demand	mg/l	<5	<5	<5	72	-
8	Chlorides	mg/l	76.2	19.4	14.1	157.3	-
9	Sulphates	mg/l	62.3	13.7	10.7	132.5	-
10	Phosphates	mg/l	0.51	<0.01	<0.01	1.85	5.0
11	Zinc	mg/l	<0.01	<0.01	<0.01	0.46	1.0
12	Chromium	mg/l	<0.01	<0.01	<0.01	<0.01	0.2
13	Copper	mg/l	<0.01	<0.01	<0.01	<0.01	1.0
14	Free Available chlorine	mg/l	<0.2	<0.2	<0.2	<0.2	0.5
15	Irons	mg/l	<0.01	<0.01	<0.01	0.22	1.0
16	Oil & Grease	mg/l	<1.0	<1.0	<1.0	<1.0	20

##### 7.4.1 Results and Conclusions

The data analysis to be as per CFO Norms and analytical results indicated that the guard pond waste water is well within the standard limits specified by EPA Notification [G.S.R.7, dt. Dec.22,1998].

##### 7.4.2 Observations-Waste water quality.

The analysis results indicate that the pH ranges from 7.44 – 8.21 and the Total Suspended Solids were found to be within the limits ranging from <1.0-57.6 mg/l. Other parameters like Zinc, Chromium, Available, chloride, Iron and Oil& Grease were observed to be well within the prescribed limits.



#### 7.4.3 Sewage Waste Water Quality

One Sewage water samples is collected and analyzed for various parameters. The survey analytical results are given in **Table-17**.

**TABLE-17**  
**SEWAGE WASTE WATER QUALITY**

Sr.No	Parameter	UOM	WW5 (STP Outlet)
	Sampling Date		11.02.2025
	Date of Analysis		14.02.2025
1	pH	-	7.28
2	Total Dissolved Solids	mg/l	412
3	Total Suspended Solids	mg/l	30.7
4	Dissolved Oxygen	mg/l	5.3
5	Bio Chemical Oxygen Demand for 3 day 27°C	mg/l	11.5
6	Chemical Oxygen Demand	mg/l	45
7	Chlorides	mg/l	84.5
8	Sulphates	mg/l	103.7
9	Phosphates	mg/l	0.46
10	Zinc	mg/l	0.30
11	Chromium	mg/l	<0.01
12	Copper	mg/l	<0.01
13	Available Chlorine	mg/l	<0.2
14	Iron	mg/l	0.18
15	Oil and Grease	mg/l	<1.0

#### 7.5 Water Depth measurement

Four ground water depths at villages and plant and four ash pond area locations were measured and results are given in **Table-18**.

**TABLE-18**  
**WATER DEPTH MEASUREMENT**

Location Code	Location Name	Depth(m)
GW1	Banahil Village	2.75
GW2	Nariyara Village	3.12
GW3	Amora Village	3.28
GW4	Rogda Village	2.57
ASH1	Ash pond Location-1	6.90
ASH2	Ash pond Location-2	6.55
ASH3	Ash pond Location-3	7.45
ASH4	Ash pond Location-4	1.84

## 7.6 Stack Emission Monitoring

The power plant has stack of height 275.0-m, which is the major source of air pollution. The stack emission monitoring for Unit – II, Unit - III & Unit - IV has been carried out and results are given in **Table-19 to 21**.

**TABLE19**  
**STACK EMISSION MONITORING UNIT -II**

Sr. No.	Parameters	UOM	Result	Methods
Date Of Sampling :25/02/2025				
Sampling Time : 10.30 to 11.30 hrs				
Duration Of sampling : 60 mints				
Date of sample analysis : 27/02/2025				
<b>Details of the source</b>				
1	Capacity	MW	600	-
2	Stack Height	M	275	-
3	Duct Dimension	M	7.0	-
4	Duct area	m <sup>2</sup>	38	-
<b>Flue Gas Characteristics</b>				
5	Temperature	°C	119	USEPA 1,2,3&4
6	Velocity	m/s	23.65	USEPA 1,2,3&4
7	Volumetric Flow Rate	Nm <sup>3</sup> /s	657.3	USEPA 1,2,3&4
8	Particulate Matter	mg/Nm <sup>3</sup>	26.08	USEPA 5
9	Sulfur dioxide	mg/Nm <sup>3</sup>	974	USEPA 6
10	Oxides of Nitrogen	mg/Nm <sup>3</sup>	408	USEPA 7
11	Arsenic as As	mg/Nm <sup>3</sup>	0.023	USEPA method -29
12	Cadmium as Cd	mg/Nm <sup>3</sup>	0.019	USEPA method -29
13	Cobalt as Co	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
14	Nickel as Ni	mg/Nm <sup>3</sup>	0.028	USEPA method -29
15	Copper as Cu	mg/Nm <sup>3</sup>	0.039	USEPA method -29
16	Mercury as Hg	mg/Nm <sup>3</sup>	0.012	USEPA method -29
17	Chromium as Cr	mg/Nm <sup>3</sup>	0.025	USEPA method -29
18	Manganese as Mn	mg/Nm <sup>3</sup>	0.047	USEPA method -29
19	Antimony as Sb	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
20	Lead as Pb	mg/Nm <sup>3</sup>	0.04	USEPA method -29
21	Thallium as TI	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
22	Vanadium as V	mg/Nm <sup>3</sup>	<0.001	USEPA method -29

The results indicate that the PM is observed as 26.08 mg/Nm<sup>3</sup>.

	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

**TABLE-20**  
**STACK EMISSION MONITORING UNIT -III**

Sr. No.	Parameters	UOM	Result	Methods
Date Of Sampling : 25/02/2025				
Sampling Time : 12.20 to 13.20 hrs				
Duration Of sampling : 60 mints				
Date of sample analysis : 27/02/2025				
<b>Details of the source</b>				
1	Capacity	MW	600	-
2	Stack Height	M	275	-
3	Duct Dimension	M	7.0	-
4	Duct area	m <sup>2</sup>	38	-
<b>Flue Gas Characteristics</b>				
5	Temperature	°C	112	USEPA 1,2,3&4
6	Velocity	m/s	21.74	USEPA 1,2,3&4
7	Volumetric Flow Rate	Nm <sup>3</sup> /s	647.23	USEPA 1,2,3&4
8	Particulate Matter	mg/Nm <sup>3</sup>	14.73	USEPA 5
9	Sulfur dioxide	mg/Nm <sup>3</sup>	996	USEPA 6
10	Oxides of Nitrogen	mg/Nm <sup>3</sup>	414	USEPA 7
11	Arsenic as As	mg/Nm <sup>3</sup>	0.019	USEPA method -29
12	Cadmium as Cd	mg/Nm <sup>3</sup>	0.021	USEPA method -29
13	Cobalt as Co	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
14	Nickel as Ni	mg/Nm <sup>3</sup>	0.024	USEPA method -29
15	Copper as Cu	mg/Nm <sup>3</sup>	0.035	USEPA method -29
16	Mercury as Hg	mg/Nm <sup>3</sup>	0.01	USEPA method -29
17	Chromium as Cr	mg/Nm <sup>3</sup>	0.031	USEPA method -29
18	Manganese as Mn	mg/Nm <sup>3</sup>	0.042	USEPA method -29
19	Antimony as Sb	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
20	Lead as Pb	mg/Nm <sup>3</sup>	0.031	USEPA method -29
21	Thallium as TI	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
22	Vanadium as V	mg/Nm <sup>3</sup>	<0.001	USEPA method -29

The results indicate that the PM is observed as 14.73 mg/Nm<sup>3</sup>.



	<b>Monthly Environmental Monitoring Report for 6x600 MW Coal Based Power Plant of KSK Mahanadi Power Company Limited at Nariyara Village, Janjgir-Champa District, Chhattisgarh</b>  <b>February 2025</b>
---	---

**TABLE-21**  
**STACK EMISSION MONITORING UNIT -IV**

Sr. No.	Parameters	UOM	Result	Methods
Date Of Sampling : 28/02/2025				
Sampling Time : 11.00 to 12.00 hrs				
Duration Of sampling : 60 mints				
Date of sample analysis : 03/03/2025				
<b>Details of the source</b>				
1	Capacity	MW	600	-
2	Stack Height	M	275	-
3	Duct Dimension	M	10.4 x 7.8	-
4	Duct area	m <sup>2</sup>	81.12	-
<b>Flue Gas Characteristics</b>				
5	Temperature	°C	122	USEPA 1,2,3&4
6	Velocity	m/s	18.82	USEPA 1,2,3&4
7	Volumetric Flow Rate	Nm <sup>3</sup> /s	1056.3	USEPA 1,2,3&4
8	Particulate Matter	mg/Nm <sup>3</sup>	18.56	USEPA 5
9	Sulfur dioxide	mg/Nm <sup>3</sup>	960	USEPA 6
10	Oxides of Nitrogen	mg/Nm <sup>3</sup>	420	USEPA 7
11	Arsenic as As	mg/Nm <sup>3</sup>	0.03	USEPA method -29
12	Cadmium as Cd	mg/Nm <sup>3</sup>	0.017	USEPA method -29
13	Cobalt as Co	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
14	Nickel as Ni	mg/Nm <sup>3</sup>	0.033	USEPA method -29
15	Copper as Cu	mg/Nm <sup>3</sup>	0.035	USEPA method -29
16	Mercury as Hg	mg/Nm <sup>3</sup>	0.009	USEPA method -29
17	Chromium as Cr	mg/Nm <sup>3</sup>	0.036	USEPA method -29
18	Manganese as Mn	mg/Nm <sup>3</sup>	0.027	USEPA method -29
19	Antimony as Sb	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
20	Lead as Pb	mg/Nm <sup>3</sup>	0.042	USEPA method -29
21	Thallium as TI	mg/Nm <sup>3</sup>	<0.001	USEPA method -29
22	Vanadium as V	mg/Nm <sup>3</sup>	<0.001	USEPA method -29

The results indicate that the PM is observed as 18.56 mg/Nm<sup>3</sup>.