

**QUATERLY COMPLIANCE REPORT
(APRIL -20 TO MAY -20)**

**ON
ENVIRONMENTAL MONITORING**

AT

**BAINIBASA GRAPHITE MINES
& BENEFICIATION PLANT**

**(M/s PRADHAN INDUSTRY)
RAYAGADA**

Prepared by:-



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ISO 14001:2004
ISO 9001:2008
OHSAS 18001:2007

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METHODOLOGY OF ENVIRONMENTAL MONITORING STUDY

1.0 INTRODUCTION :

M/s Visiontek Consultancy Services Pvt. Ltd. carried out the environmental monitoring for the M/s Bainibasa Graphite Mines & Beneficiation Plant, Rayagada.

Environmental monitoring was carried out at various locations inside the plant site. The Monitoring was carried out with respect to the qualities of Ambient Air, Ground & Surface Water, Ground Water Level , Noise & Silica.

2.0 STUDY PERIOD:

The study was conducted during month of from April 2020 to May 2020.

3.0 METHODOLOGY:

The environmental monitoring was carried out as per the standard methodology of Bureau of Indian Standard (IS: 11255), American Public Health Association (APHA), & Central Pollution Control Board (CPCB).

4.0 SELECTION OF MONITORING LOCATIONS:

The location for Ambient Air, Ground & Surface Water, Ground Water Level & Noise Level Survey has been selected by Bandhamadi Graphite representative.

4.1 AMBIENT AIR QUALITY:

The ambient air quality (AAQ) of the study region was monitored at four locations selected within the premises. Ambient air quality (AAQ) in respect of Particulate Matter (size less than 10 μm or PM₁₀), Particulate matter (size less than 2.5 μm or PM_{2.5}), Sulphur di-oxide (SO₂), Oxides of Nitrogen (NOx), Carbon Monoxide (CO), Ozone (O₃), Ammonia (NH₃), Nickel (Ni), Lead (Pb), Arsenic (As), Benzene (C₆H₆) and Benzo(a) Pyrene (BaP). Respirable Dust Sampler (APM 460BL) of ENVIROTECH make, FPS (APM) of ENVIROTECH make, Organic Vapour Sampler,



BAINIBASA GRAPHITE MINE & BENEFICATION PLANT

(M/s Pradhan Industry)

Environmental Monitoring Report

ENVIROTECH make, model APM 850 were used for monitoring of ambient air quality at all the identified locations. The sampling method was carried out as per the guidelines for planning IS: 5182 (part 14): 2000. And the analysis methods are outlined in the table as shown below:

AMBIENT AIR QUALITY ANALYSIS METHOD

SL. NO.	PARAMETER	ANALYSIS METHOD
1.	Particulate Matter (size less than 10 μm or PM ₁₀), $\mu\text{g}/\text{m}^3$	Gravimetric method
2.	Particulate matter (size less than 2.5 μm or PM _{2.5}), $\mu\text{g}/\text{m}^3$	Gravimetric method
3.	Sulphur di-oxide (SO ₂), $\mu\text{g}/\text{m}^3$	Improved west & Geake method
4.	Oxides of Nitrogen (NO _x), $\mu\text{g}/\text{m}^3$	Jacob and Hochheiser Modified method
5.	Carbon Monoxide (CO), mg/m ³	NDIR Spectroscopy method
6.	Ozone (O ₃), $\mu\text{g}/\text{m}^3$	Chemical Method
7.	Ammonia (NH ₃), $\mu\text{g}/\text{m}^3$	Indophenol Blue Method
8.	Benzene (C ₆ H ₆), $\mu\text{g}/\text{m}^3$	Absorption & Desorption followed by GC analysis
9.	Benzo(a) Pyrene (BaP), ng/m ³	Solvent extraction followed by GC analysis.
10.	Nickel (Ni), ng/m ³	AAS method after sampling
11.	Lead (Pb), $\mu\text{g}/\text{m}^3$	AAS method after sampling
12.	Arsenic(As), ng/m ³	AAS method after sampling

4.1.1 AMBIENT AIR QUALITY SAMPLING STATIONS (CORE ZONE):

Details of the sampling locations are given below.

Field ID	Station
AAQ-1	Quarry-1
AAQ-2	Quarry-2
AAQ-3	Bainibasa
AAQ-4	Jamaruguda Road
AAQ-5	Bhairabguda Village
AAQ-6	Bhairabguda Road
AAQ-7	Padmapur
AAQ-8	Muniguda

The detailed Ambient Air Quality report (Core Zone) is given in the Annexure-1.



4.2 WATER QUALITY:

Water quality monitoring was carried out at fourteen waste water locations. Samples were collected manually during study period. Considering several possibilities of interference the poly tetrafluoroethylene (PTFE) sample bottles were used. These bottles were sterilized properly before being used for water sample collection.

The methodology for sample collection, preservation and analysis was as per Standard methods for the Examination of Water and Wastewater, 23rd Edition, 2017 APHA.

WATER QUALITY ANALYSIS METHOD

SL.NO.	PARAMETER	TESTING METHOD
1	Colour	APHA 2120 B, C
2	Odour	APHA 2150 B
3	Taste	APHA 2160 C
4	Turbidity	APHA 2130 B
5	pH	APHA 4500H ⁺ B
6	Total Hardness (as CaCO ₃)	APHA 2340 C
7	Iron (as Fe)	APHA 3500Fe, B
8	Chloride (as Cl)	APHA 4500Cl ⁻ B
9	Residual Free Chlorine	APHA 4500Cl, B
10	Total Dissolved Solids	APHA 2540 C
11	Calcium as Ca	APHA 3500Ca B
12	Magnesium as Mg	APHA 3500Mg B
13	Copper as Cu	APHA 3111 B,C
14	Manganese as Mn	APHA 3500Mn B
15	Sulphate as SO ₄ ²⁻	APHA 4500 SO ₄ ²⁻ E
16	Nitrate as NO ₃ ⁻	APHA 4500 NO ₃ ⁻ E
17	Fluoride as F	APHA 4500F C
18	Phenolic Compounds as C ₆ H ₅ OH	APHA 5530 B,D
19	Mercury as Hg	APHA 3500 Hg
20	Cadmium as Cd	APHA 3111 B,C
21	Selenium as Se	APHA 3114 B
22	Arsenic as As	APHA 3114 B
23	Cyanide as CN	APHA 4500 CN C,D
24	Lead as Pb	APHA 3111 B,C
25	Zinc as Zn	APHA 3111 B,C
26	Anionic Detergents as MBAS	APHA 5540 C
27	Chromium as Cr ^{VI}	APHA 3500Cr B
28	Mineral Oil	APHA 5220 B
29	Alkalinity	APHA 2320 B
30	Aluminium as Al	APHA 3500Al B
31	Boron	APHA 4500B, B
32	Poly Aromatic Hydrocarbon as PAH	APHA 6440 B
33	Pesticides	APHA 6630 B,C



4.2.1 GROUND WATER SAMPLING LOCATIONS :

Detail of the sampling location is given below:

Field ID	Location
GW-1	Muniguda or Munikhol Village Borewell
GW-2	Palama Village Openwell
GW-3	Tikarpada Village Openwell
GW-4	Bhairabgarh Tubewell
GW-5	Jamuruguda Road Openwell (New Hope Hospital)
GW-6	Jamuruguda Village Tubewell Near Muniguda Bypass
GW-7	Hatamuniguda Road

The detailed Ground water analysis report is mentioned in Annexure-2.

4.2.2 SURFACE WATER SAMPLING LOCATIONS :

Detail of the sampling location is given below:

Field ID	Location
SW-1	Sakatnalla Distubutaries Near Munikhol & Bhairabguda Road
SW-2	Nala Feeding Sakatnala Munikhol bhairabguda road
SW-3	Bainibasa MIP
SW-4	Nala in MLA Area
SW-5	Sakatnala Perrinial Stream From Niyangiri
SW-7	Pond in Muniguda
SW-8	Upstream of River Vamsadhara Near Podimaska

The detailed Surface water analysis report is mentioned in Annexure-3.

4.3 GROUND WATER LEVEL:

Ground water level was measured by pizeometer.

4.3.1 GROUND WATER LEVEL SAMPLING LOCATIONS :

Detail of the sampling location is given below:

Field ID	Location
GWL-1	Muniguda or Munikhol Village Borewell
GWL-2	Palama Village Openwell
GWL-3	Tikarpada Village Openwell
GWL-4	Bhairabgarh Tubewell
GWL-5	Jamuruguda Road Openwell (New Hope Hospital)
GWL-6	Jamuruguda Village Tubewell Near Muniguda Bypass

The detailed Ground water Level analysis report is mentioned in Annexure-4



4.4 NOISE LEVEL MONITORING:

Noise Levels were recorded by Digital Sound Level Meter of LUTRON make at two locations within the plant premises. Monitoring was carried out once in a month at each location during the study period for day time and night time. According to CPCB (Noise Pollution (Regulation & Control) rules, 2000 day time is considered from 6.00 am to 10.00 pm and night time is considered from 10.00 pm to 6.00 am.

Locations of Noise level monitoring stations are as follows:

4.4.1 NOISE LEVEL SAMPLING STATIONS:

Field ID	Location ID
N-1	Quarry-1
N-2	Quarry-2
N-3	Muniguda
N-4	Jamaruguda Road
N-5	Dhuanpadar
N-6	Padmapur
N-7	Bhairabguda Road
N-8	Bhairabguda Village

The detailed noise measurement data is given in Annexure-5.

4.5 SOIL ANALYSIS.

4.5.1 SOIL ANALYSIS SAMPLING STATIONS:

Field ID	Location ID
S-1	Bainibasa Mining lease area
S-2	Jamaruguda
S-3	Bhaliapadar
S-4	Bhairabguda

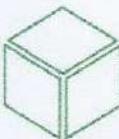
The detailed Soil Analysis data is given in Annexure-6



Annexure-1

AMBIENT AIR QUALITYANALYSIS REPORT





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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: Confid prof R - 0279

Date: 01/06/2020

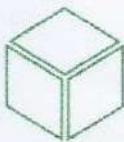
ANNEXURES-I

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada
 Sampling Location : AAQ-1- Quarry-1
 Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
 Sample Collected By : VCSPL Representative in presence of client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	47.7	25.6	5.3	11.5	0.12
2	04.04.2020	46.3	24.8	5.7	10.8	0.14
3	08.04.2020	48.0	25.1	4.9	11.1	0.11
4	11.04.2020	45.6	24.7	4.6	10.3	BDL
5	15.04.2020	43.8	23.6	5.3	9.7	0.12
6	18.04.2020	47.1	25.3	5.8	10.7	BDL
7	22.04.2020	45.5	24.4	5.1	11.6	0.14
8	25.04.2020	44.2	23.7	5.7	11.2	0.13
9	04.05.2020	47.8	25.2	6.1	12.4	0.11
10	07.05.2020	49.3	26.6	5.2	12.0	0.15
11	11.05.2020	50.4	26.7	4.9	11.6	0.12
12	14.05.2020	46.5	24.6	4.5	10.8	BDL
13	18.05.2020	48.3	25.3	5.1	11.2	BDL
Average		47.0	25.0	5.2	11.1	0.13
NAAQ Standard		100	60	80	80	4
Test Method	Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method	





Ref: Envirof20PR - 0280

Date: 01/06/2020

AMBIENT AIR QUALITY MONITORING REPORT APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

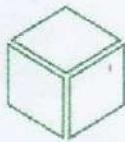
Sampling Location : AAQ-2- Quarry-2

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	45.7	24.6	5.8	10.6	0.12
2	04.04.2020	48.1	25.5	6.2	11.2	0.11
3	08.04.2020	49.6	26.8	6.0	11.5	0.14
4	11.04.2020	44.5	23.4	5.5	10.2	BDL
5	15.04.2020	46.7	25.2	4.8	9.7	BDL
6	18.04.2020	42.3	22.7	5.2	10.0	0.12
7	22.04.2020	48.3	25.6	5.6	10.5	0.13
8	25.04.2020	37.6	20.4	5.3	9.8	BDL
9	04.05.2020	44.5	23.6	4.8	10.1	0.11
10	07.05.2020	42.4	22.7	5.1	11.2	BDL
11	11.05.2020	40.5	22.2	5.3	10.7	0.12
12	14.05.2020	41.6	22.6	4.7	9.8	BDL
13	18.05.2020	44.3	23.4	4.4	10.1	BDL
Average		44.3	23.7	5.3	10.4	0.12
NAAQ Standard		100	60	80	80	4
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method





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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: Enviotech/201R - 0281

Date: 09/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

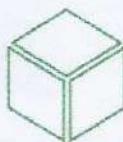
Sampling Location : AAQ-3- Bainibasa

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	49.6	26.7	6.4	11.7	0.14
2	04.04.2020	53.3	28.4	5.3	10.3	0.11
3	08.04.2020	50.6	27.5	5.8	11.2	0.15
4	11.04.2020	48.2	26.2	5.5	10.5	0.13
5	15.04.2020	45.4	24.6	6.1	12.2	0.16
6	18.04.2020	41.7	22.5	4.8	9.7	0.14
7	22.04.2020	44.3	23.4	5.3	10.3	0.12
8	25.04.2020	47.5	25.3	5.0	10.7	0.14
9	04.05.2020	43.6	23.7	4.6	9.8	0.11
10	07.05.2020	48.2	26.6	5.2	10.1	0.13
11	11.05.2020	44.3	24.1	5.5	10.4	0.14
12	14.05.2020	46.6	25.7	5.1	9.7	0.15
13	18.05.2020	43.5	23.6	5.3	10.3	0.13
Average		46.7	25.3	5.4	10.5	0.13
NAAQ Standard		100	60	80	80	4
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method





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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: envfabprofr-0282

Date: 01/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

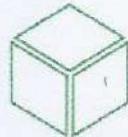
Sampling Location : AAQ-4 Jamaruguda Road

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	43.8	23.2	5.4	11.0	0.13
2	04.04.2020	41.6	22.0	4.9	9.8	0.11
3	08.04.2020	44.7	23.7	5.2	10.7	0.15
4	11.04.2020	40.3	21.4	4.6	10.2	0.12
5	15.04.2020	38.7	20.5	4.8	9.6	0.11
6	18.04.2020	41.6	22.0	5.1	10.5	BDL
7	22.04.2020	44.5	23.6	5.3	10.8	0.14
8	25.04.2020	40.4	21.4	4.7	9.6	0.12
9	04.05.2020	42.5	22.5	4.9	10.0	BDL
10	07.05.2020	39.8	21.1	5.2	10.3	0.13
11	11.05.2020	41.3	21.9	5.5	10.7	BDL
12	14.05.2020	44.6	23.6	4.6	9.8	BDL
13	18.05.2020	40.5	21.5	5.1	10.2	BDL
Average		41.9	22.2	5.0	10.2	0.13
NAAQ Standard		100	60	80	80	4
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method





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ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envirof R - 0283

Date: 09/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

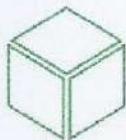
Sampling Location : AAQ-5- Bhairabguda Village

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	47.3	25.7	6.0	11.3	0.14
2	04.04.2020	43.8	23.6	5.4	10.8	0.12
3	08.04.2020	46.4	24.8	5.8	9.7	0.16
4	11.04.2020	49.1	26.5	5.3	10.5	0.13
5	15.04.2020	47.5	25.8	5.0	10.2	0.11
6	18.04.2020	44.8	24.3	6.2	11.1	0.12
7	22.04.2020	46.3	24.6	5.7	10.6	0.14
8	25.04.2020	49.2	26.7	6.1	11.3	0.11
9	04.05.2020	51.7	27.2	5.8	10.7	0.13
10	07.05.2020	46.4	25.1	5.3	10.0	0.11
11	11.05.2020	44.2	23.7	4.9	9.6	0.15
12	14.05.2020	47.1	25.5	5.4	10.5	0.13
13	18.05.2020	43.4	23.6	5.2	10.7	0.12
Average		46.7	25.2	5.5	10.5	0.13
NAAQ Standard		100	60	80	80	2
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochreiser Method	Dispersive Infrared Method





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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001:2018

Ref: Enufab/20PR - 0284

Date: 01/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

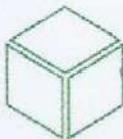
Sampling Location : AAQ-6- Bhairabguda road

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	47.2	25.2	6.2	11.3	0.12
2	04.04.2020	44.5	23.8	5.7	10.5	0.15
3	08.04.2020	39.8	21.3	6.4	10.8	0.11
4	11.04.2020	42.5	22.7	5.9	9.7	0.13
5	15.04.2020	40.7	21.7	5.5	10.2	0.14
6	18.04.2020	43.5	23.2	5.2	11.5	0.12
7	22.04.2020	37.6	20.1	6.1	10.6	0.11
8	25.04.2020	41.7	22.3	5.4	11.1	0.15
9	04.05.2020	39.3	21.0	4.9	10.0	0.13
10	07.05.2020	44.2	23.6	5.3	10.8	0.16
11	11.05.2020	42.6	22.7	5.1	11.3	0.14
12	14.05.2020	39.7	21.2	5.6	11.7	0.12
13	18.05.2020	41.3	22.1	5.2	10.6	0.13
Average		41.9	22.4	5.6	10.8	0.13
NAAQ Standard		100	60	80	80	4
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method





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ISO 14001:2015

OHSAS 45001:2018

Ref: Enafer 20f R - 0285

Date: 01/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

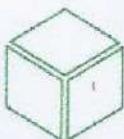
Sampling Location : AAQ-7- Padmapur

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.

Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	46.5	24.7	4.9	9.7	0.12
2	04.04.2020	42.3	22.4	5.2	10.5	0.10
3	08.04.2020	47.1	25.3	5.5	9.4	0.13
4	11.04.2020	44.7	23.8	4.7	9.8	0.11
5	15.04.2020	40.2	21.6	5.1	10.3	BDL
6	18.04.2020	37.5	20.5	5.3	10.7	BDL
7	22.04.2020	39.2	21.3	5.0	10.2	0.14
8	25.04.2020	42.4	22.6	5.4	10.8	0.12
9	04.05.2020	38.6	20.7	5.2	10.0	0.10
10	07.05.2020	41.3	22.3	5.7	11.2	0.13
11	11.05.2020	44.5	23.8	4.9	10.1	0.15
12	14.05.2020	40.7	21.6	5.1	10.6	BDL
13	18.05.2020	43.4	23.4	5.3	9.8	BDL
Average		42.2	22.6	5.2	10.2	0.12
NAAQ Standard		100	60	80	80	2
Test Method	Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method	





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ISO 9001 : 2008

ISO 14001:2015

OHSAS 45001: 2018

Ref: Enufab/20f Rf0286

Date: 01/06/2020

AMBIENT AIR QUALITY MONITORING REPORT-APRIL 20 TO MAY 20

Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada
 Sampling Location : AAQ-8- Muniguda

Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Analyzer.
 Sample Collected By : VCSPL Representative in presence of Client's Representative

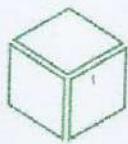
Sl. No.	Date	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NOx ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
1	01.04.2020	48.6	26.2	6.7	11.3	0.14
2	04.04.2020	46.4	24.7	7.3	12.1	0.12
3	08.04.2020	49.5	26.5	6.8	11.6	0.11
4	11.04.2020	45.1	24.3	6.4	11.2	0.13
5	15.04.2020	43.5	23.7	6.7	12.1	0.15
6	18.04.2020	46.4	24.5	6.2	11.7	0.12
7	22.04.2020	49.3	26.6	6.0	10.5	0.14
8	25.04.2020	45.2	24.4	6.6	11.7	0.12
9	04.05.2020	47.3	25.8	6.9	11.3	0.15
10	07.05.2020	44.6	23.6	7.2	12.1	0.13
11	11.05.2020	46.1	24.2	6.5	10.6	0.12
12	14.05.2020	49.4	26.6	6.8	11.3	0.15
13	18.05.2020	45.3	24.7	6.3	11.7	0.13
Average		46.7	25.1	6.6	11.5	0.13
NAAQ Standard		100	60	80	80	2
Test Method		Gravimetric	Gravimetric	Improved West & Geake Method	Modified Jacob & Hochheiser Method	Dispersive Infrared Method



Annexure-2

GROUND WATER QUALITY ANALYSIS REPORT





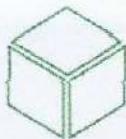
Ref: Enufak/20f R - 0288

Date: 01/06/2021

GROUND WATER QUALITY ANALYSIS REPORT APR 20 TO MAY 20

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant , Rayagada
2. Sampling Location : GW1: Muniguda /Munikhol Village Borewell
GW2: Palama Village Openwell
GW3: Tikarpada Village Openwell
3. Date of Sampling : 05.05.2020
4. Date of Analysis : 06.05.2020 to 13.05.2020
5. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Parameter	Unit	Testing Methods	Standard as per IS:10500:2012 Amended on 2015 & 2018		Analysis Results		
				Acceptable Limit	Permissible Limit	GW-1	GW-2	GW-3
Essential Characteristics								
1.	Colour	Hazen	Visual Comparison Method APHA 23 RD Ed,2017 : 2120 B, C	5	15	CL	CL	CL
2.	Odour	--	Threshold Odour Test APHA 23 RD Ed,2017 :2150 B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Taste	--	Flavor Threshold Test APHA 23 RD Ed,2017 :2160 C	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	Nephelometric Method APHA 23 RD Ed,2017 :2130 B	1	5	0.8	0.7	0.8
5.	pH	--	pH Meter APHA 23 RD Ed,2017 : 4500H ⁺ B	6.5-8.5	No Relaxation	7.24	7.36	7.15
6.	Total Hardness (as CaCO ₃)	mg/l	EDTA Titrimetric Method APHA 23 RD Ed,2017 : 2340 C	200	600	106	115	120
7.	Iron (as Fe)	mg/l	By AAS Method APHA 23 RD Ed,2017 : 3111, B	1.0	No Relaxation	0.34	0.3	0.32
8.	Chloride (as Cl)	mg/l	Argentometric Method APHA 23 RD Ed,2017 : 4500Cl ⁻ B	250	1000	9.8	9.5	8.9
9.	Residual Free Chlorine	mg/l	Iodometric Method APHA 23 RD Ed,2017 : 4500Cl ₂ B	0.2	1	ND	ND	ND
Desirable Characteristics								
10.	Total Dissolved Solids as TDS	mg/l	Gravimetric Method APHA 23 RD Ed,2017 : 2540 C	500	2000	179	162	174
11.	Calcium as Ca	mg/l	EDTA Titrimetric Method APHA 23 RD Ed,2017 : 3500Ca B	75	200	23.6	22.4	26.2
12.	Magnesium as Mg	mg/l	Calculation Method APHA 23 RD Ed,2017 : 3500Mg B	30	100	10.2	11.1	10.7
13.	Copper as Cu	mg/l	By AAS Method APHA 23 RD Ed,2017: 3111 B	0.05	1.5	BDL	BDL	BDL
14.	Manganese as Mn	mg/l	Persulfate Method APHA 23 RD Ed,2017: 3500Mn B	0.1	0.3	BDL	BDL	BDL
15.	Sulphate as SO ₄	mg/l	Turbidimetric Method APHA 23 RD Ed,2017: 4500 SO ₄ ²⁻ E	200	400	4.1	5.1	3.9
16.	Nitrate as NO ₃	mg/l	By UV-Screen Method APHA 23 RD Ed,2017: 4500 NO ₃ ⁻ E	45	No Relaxation	0.48	0.32	0.41
17.	Fluoride as F	mg/l	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500F C	1.0	1.5	0.041	0.048	0.051
18.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	Chloroform Extraction by Colorimetric Method APHA 23 RD Ed,2017: 5530 B,D	0.001	0.002	BDL	BDL	BDL
19.	Mercury as Hg	mg/l	AAS Method APHA 23 RD Ed,2017: 3112 B	0.001	No Relaxation	BDL	BDL	BDL
20.	Cadmium as Cd	mg/l	AAS Method APHA 23 RD Ed,2017: 3111 B	0.003	No Relaxation	BDL	BDL	BDL
21.	Selenium as Se	mg/l	By AAS Method APHA 23 RD Ed,2017: 3500 Se C	0.01	No Relaxation	BDL	BDL	BDL



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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: EnviropfR - 0288

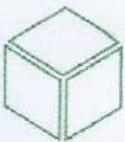
Date: 01/06/2020

22.	Arsenic as As	mg/l	By AAS Method APHA 23 RD Ed,2017: 3114 B	0.01	No Relaxation	BDL	BDL	BDL
23.	Cyanide as CN	mg/l	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500 CN C,D	0.05	No Relaxation	ND	ND	ND
24.	Lead as Pb	mg/l	By AAS Method APHA 23 RD Ed,2017 3111 B	0.01	No Relaxation	BDL	BDL	BDL
25.	Zinc as Zn	mg/l	By AAS Method APHA 23 RD Ed,2017: 3111 B	5	15	0.002	0.001	0.001
26.	Chromium as Cr ⁶⁺	mg/l	Diphenyl Carbazide Method APHA 23 RD Ed,2017: 3500Cr B	--	--	BDL	BDL	BDL
27.	Mineral Oil	mg/l	Partition-Gravimetric Method APHA 23 RD Ed,2017: 5520 B	0.5	No Relaxation	ND	ND	ND
28.	Alkalinity	mg/l	Titration Method APHA 23 RD Ed,2017:2320 B	200	600	54	48	42
29.	Aluminium as Al	mg/l	AAS Method APHA 23 RD Ed,2017: 3111 D	0.03	0.2	BDL	BDL	BDL
30.	Boron	mg/l	Curcumin Method APHA 23 RD Ed,2017: 4500B, B	0.5	2.4	BDL	BDL	BDL

Note: CL: Colourless, ND: Not Detected.

** Amended Standard (ISO 10500: 2015 & 2018) incorporated in above table.





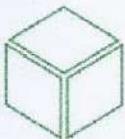
Ref: *envlab/20fr-0289*

Date: *01/06/2020*

GROUND WATER QUALITY ANALYSIS REPORT APR 20 TO MAY 20

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant , Rayagada
2. Sampling Location : GW4: Bhairagarh Tubewell
GW5: Jamuruguda Road Openwell (New Hope Hospital)
GW6: Jamuruguda village Tubewell near Muniguda Bypass
GW7: Hatamuniguda Road
3. Date of Sampling : 05.05.2020
4. Date of Analysis : 06.05.2020 to 13.05.2020
5. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Parameter	Unit	Testing Methods	Standard as per IS:10500:2012 Amended on 2015 & 2018		Analysis Results			
				Acceptable Limit	Permissible Limit	GW-4	GW-5	GW-6	GW-7
<i>Essential Characteristics</i>									
1.	Colour	Hazen	Visual Comparison Method APHA 23 RD Ed,2017 : 2120 B, C	5	15	CL	CL	CL	CL
2.	Odour	—	Threshold Odour Test APHA 23 RD Ed,2017 : 2150 B	Agreeable	Agreeable	U/O	U/O	U/O	U/O
3.	Taste	—	Flavor Threshold Test APHA 23 RD Ed,2017 : 2160 C	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	Nephelometric Method APHA 23 RD Ed,2017 : 2130 B	1	5	0.16	0.25	0.27	0.2
5.	pH	—	pH Meter APHA 23 RD Ed,2017 : 4500H B	6.5-8.5	No Relaxation	7.17	7.20	7.29	7.19
6.	Total Hardness (as CaCO ₃)	mg/l	EDTA Titrimetric Method APHA 23 RD Ed,2017 : 2340 C	200	600	110	121	124	139
7.	Iron (as Fe)	mg/l	By AAS Method APHA 23 RD Ed,2017 : 3111, B	1.0	No Relaxation	0.23	0.25	0.27	0.29
8.	Chloride (as Cl)	mg/l	Argentometric Method APHA 23 RD Ed,2017 : 4500Cl B	250	1000	9.5	8.2	8.7	8.4
19.	Residual Free Chlorine	mg/l	Iodometric Method APHA 23 RD Ed,2017 : 4500Cl, B	0.2	1	ND	ND	ND	ND
<i>Desirable Characteristics</i>									
10.	Total Dissolved Solids as TDS	mg/l	Gravimetric Method APHA 23 RD Ed,2017 : 2540 C	500	2000	159	197	182	193
11.	Calcium as Ca	mg/l	EDTA Titrimetric Method APHA 23 RD Ed,2017 : 3500Ca B	75	200	20.4	28.6	25.4	29.2
12.	Magnesium as Mg	mg/l	Calculation Method APHA 23 RD Ed,2017 : 3500Mg B	30	100	9.0	11.3	12.3	12.4
13.	Copper as Cu	mg/l	By AAS Method APHA 23 RD Ed,2017 : 3111 B	0.05	1.5	BDL	BDL	BDL	BDL
14.	Manganese as Mn	mg/l	Persulfate Method APHA 23 RD Ed,2017 : 3500Mn B	0.1	0.3	BDL	BDL	BDL	BDL
15.	Sulphate as SO ₄	mg/l	Turbidimetric Method APHA 23 RD Ed,2017 : 4500 SO ₄ ²⁻ E	200	400	2.9	3.0	3.5	2.5
16.	Nitrate as NO ₃	mg/l	By UV-Screen Method APHA 23 RD Ed,2017 : 4500 NO ₃ E	45	No Relaxation	0.39	0.45	0.47	0.51
17.	Fluoride as F	mg/l	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017 : 4500F C	1.0	1.5	0.007	0.006	0.008	0.005
18.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	Chloroform Extraction by Colorimetric Method APHA 23 RD Ed,2017 : 5530 B,D	0.001	0.002	BDL	BDL	BDL	BDL
19.	Mercury as Hg	mg/l	AAS Method APHA 23 RD Ed,2017 : 3112 B	0.001	No Relaxation	BDL	BDL	BDL	BDL
20.	Cadmium as Cd	mg/l	AAS Method APHA 23 RD Ed,2017 : 3111 B	0.003	No Relaxation	BDL	BDL	BDL	BDL
21.	Selenium as Se	mg/l	By AAS Method APHA 23 RD Ed,2017 : 3500 Se C	0.01	No Relaxation	BDL	BDL	BDL	BDL



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ISO 9001: 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: Envirolab-0289

Date: 05/06/2020

22.	Arsenic as As	mg/l	By AAS Method APHA 23 RD Ed,2017: 3114 B	0.01	No Relaxation	BDL	BDL	BDL	BDL
23.	Cyanide as CN	mg/l	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500 CN C,D	0.05	No Relaxation	ND	ND	ND	ND
24.	Lead as Pb	mg/l	By AAS Method APHA 23 RD Ed,2017 3111 B	0.01	No Relaxation	BDL	BDL	BDL	BDL
25.	Zinc as Zn	mg/l	By AAS Method APHA 23 RD Ed,2017: 3111 B	5	15	0.001	0.001	0.001	0.001
26.	Chromium as Cr ⁺⁶	mg/l	Diphenyl Carbazine Method APHA 23 RD Ed,2017: 3500Cr B	--	--	BDL	BDL	BDL	BDL
27.	Mineral Oil	mg/l	Partition-Gravimetric Method APHA 23 RD Ed,2017: 5520 B	0.5	No Relaxation	ND	ND	ND	ND
28.	Alkalinity	mg/l	Titration Method APHA 23 RD Ed,2017:2320 B	200	600	48	52	48	54
29.	Aluminium as Al	mg/l	AAS Method APHA 23 RD Ed,2017: 3111 D	0.03	0.2	BDL	BDL	BDL	BDL
30.	Boron	mg/l	Curcumin Method APHA 23 RD Ed,2017: 4500B, B	0.5	2.4	BDL	BDL	BDL	BDL

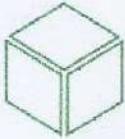
Note: CL: Colourless, ND: Not Detected. ** Ammended Standard (ISO 10500: 2015 & 2018) incorporated in above table.



Annexure-3

SURFACE WATER QUALITY REPORT





Ref: Enafab/201/R-0290

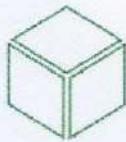
Date: 01/06/2020

SURFACE WATER QUALITY ANALYSIS REPORT-MAY 20

1. Name of Industry : M/s Bianibasa Graphite Mine & Beneficiation Plant, Rayagada
2. Sampling Location : SW1 : Sakata Nala distributaries near Munikhol Bhairabguda road
SW2 : Nala feeding Sakat nala Munikhol Bhairabguda road
SW3 : Bainibasa MIP
SW4: Nala in M.L area
3. Date of Sampling : 05.05.2020
4. Date of Analysis : 06.05.2020 to 13.05.2020
5. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296 :1992 Class -C'	Analysis Results			
					SW-1	SW-2	SW-3	SW-4
1	Colour	Visual Comparison Method APHA 23 RD Ed,2017: 2120 B, C	Hazen	300	30	7	5	10
2	pH at 25°C	pH Meter APHA 23 RD Ed,2017: 4500H B	--	6.0-9.0	7.29	7.63	7.15	7.38
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23 RD Ed,2017: 2540 C	mg/l	4.0	6.3	6.1	5.9	6.4
4	Turbidity	Nephelometric Method APHA 23 RD Ed,2017: 2130 B	NTU	--	2.5	1.1	1.3	1.2
5	Chloride (max)	Titrimetric Method APHA 23 RD Ed,2017: 4500Cl B	mg/l	600	16.5	19.0	21.0	15.5
6	Total Dissolved Solids	Gravimetric Method APHA 23 RD Ed,2017: 2540 C	mg/l	1500	195	181	164	208
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23 RD Ed,2017:5520-B	mg/l	--	ND	ND	ND	ND
8	BOD (3 days at 27°C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993, RA 2003	mg/l	3.0	2.1	2.3	2.2	1.9
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23 RD Ed,2017: 5220 C	mg/l	--	8	10	8	6
10	Arsenic as As	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	0.2	BDL	BDL	BDL	BDL
11	Lead as Pb	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	0.1	BDL	BDL	BDL	BDL
12	Cadmium as Cd (max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	0.01	BDL	BDL	BDL	BDL
13	Hexa Chromium as Cr ⁶⁺	Diphenyl Carbazide Method APHA 23 RD Ed,2017: 3500Cr B	mg/l	0.05	BDL	BDL	BDL	BDL
14	Copper as Cu (max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	1.5	BDL	BDL	BDL	BDL
15	Zinc as Zn(max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	15	0.12	0.07	0.1	0.11
16	Selenium as Se (max)	By AAS Method APHA 23 RD Ed,2017: 3500 Se C	mg/l	0.05	BDL	BDL	BDL	BDL
17	Cyanide as CN (max)	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500 CN C,D	mg/l	0.05	ND	ND	ND	ND
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500F C	mg/l	1.5	0.18	0.21	0.19	0.21
19	Sulphates (SO ₄) (max)	Turbidimetric Method APHA 23 RD Ed,2017: 4500 SO ₄ ²⁻ E	mg/l	400	11.8	10.1	12.6	10.2
20	Phenolic Compounds as C ₆ H ₅ OH (max)	Chloroform Extraction by Colorimetric Method APHA 23 RD Ed,2017: 5530 B,D	mg/l	0.005	BDL	BDL	BDL	BDL
21	Iron as Fe (max)	By AAS Method APHA 23 RD Ed,2017: 3500Fe, B	mg/l	0.5	0.28	0.19	0.15	0.21
22	Nitrate as NO ₃ (max)	By UV-Screen Method APHA 23 RD Ed,2017: 4500 NO ₃ - E	mg/l	50	2.2	1.9	2.8	3.2
23	Anionic Detergents (max)	Anionic Surfactants as MBAS APHA 23 RD Ed,2017: 5540 C	mg/l	1.0	BDL	BDL	BDL	BDL
24	Total Coli form (TC)	By Multiple Tube Fermentation Technique APHA 23 RD Ed,2017: 9221 B	MPN/100 ml	5000	920	1100	940	830





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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: EnvLab/201R-0291

Date: 01/06/2020

SURFACE WATER QUALITY ANALYSIS REPORT-MAY 20

1. Name of Industry : M/s Birida Graphite Mine & Beneficiation Plant, Rayagada
2. Sampling Location : SW5: Sakat Nala, Perrineal Stream from Niyamagiri
SW6: Pond in Muniguda
SW7: Upstream of River Vamshadhara near Podimaska
3. Date of Sampling : 05.05.2020
4. Date of Analysis : 06.05.2020 to 13.05.2020
5. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class -C'	Analysis Results		
					SW-5	SW-6	SW-7
1	Colour	Visual Comparison Method APHA 23 RD Ed,2017: 2120 B, C	Hazen	300	10	35	20
2	pH at 25°C	pH Meter APHA 23 RD Ed,2017: 4500H'B	--	6.0-9.0	7.84	7.53	7.56
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23 RD Ed,2017: 2540 C	mg/l	4.0	6.2	5.1	6.3
4	Turbidity	Nephelometric Method APHA 23 RD Ed,2017: 2130 B	NTU	--	1.5	9.6	1.4
5	Chloride (max)	Titrimetric Method APHA 23 RD Ed,2017: 4500CI'B	mg/l	600	24.0	35.5	18.5
6	Total Dissolved Solids	Gravimetric Method APHA 23 RD Ed,2017: 2540 C	mg/l	1500	172	180	159
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23 RD Ed,2017:5520-B	mg/l	--	ND	ND	ND
8	BOD (3) days at 27°C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993, RA 2003	mg/l	3.0	2.2	2.5	2.1
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23 RD Ed,2017: 5220 C	mg/l	--	10	10	7.6
10	Arsenic as As	By AAS Method APHA 23 RD Ed,2017: 3114 B	mg/l	0.2	BDL	BDL	BDL
11	Lead as Pb	By AAS Method APHA 23 RD Ed,2017:3111 B	mg/l	0.1	BDL	BDL	BDL
12	Cadmium as Cd (max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	0.01	BDL	BDL	BDL
13	Hexa Chromium as Cr ^{VI}	Diphenyl Carbazide Method APHA 23 RD Ed,2017: 3500Cr B	mg/l	0.05	BDL	BDL	BDL
14	Copper as Cu (max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	1.5	BDL	BDL	BDL
15	Zinc as Zn(max)	By AAS Method APHA 23 RD Ed,2017: 3111 B	mg/l	15	0.13	0.45	0.08
16	Selenium as Se (max)	By AAS Method APHA 23 RD Ed,2017: 3500 Se C	mg/l	0.05	BDL	BDL	BDL
17	Cyanide as CN (max)	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500 CN' C,D	mg/l	0.05	ND	ND	ND
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23 RD Ed,2017: 4500F C	mg/l	1.5	0.19	0.21	0.15
19	Sulphates (SO ₄) (max)	Turbidimetric Method APHA 23 RD Ed,2017: 4500 SO ₄ ²⁻ E	mg/l	400	11.7	19.4	10.6
20	Phenolic Compounds as C ₆ H ₅ OH (max)	Chloroform Extraction by Colorimetric Method APHA 23 RD Ed,2017: 5530 B,D	mg/l	0.005	BDL	BDL	BDL
21	Iron as Fe (max)	By AAS Method APHA 23RD Ed,2017: 3500Fe, B	mg/l	0.5	0.16	0.28	0.14
22	Nitrate as NO ₃ (max)	By UV-Screen Method APHA 23RD Ed,2017: 4500 NO ₃ - E	mg/l	50	2.4	4.1	2.3
23	Anionic Detergents (max)	Anionic Surfactants as MBAS APHA 23RD Ed,2017: 5540 C	mg/l	1.0	BDL	BDL	BDL
24	Total Coli form (TC)	By Multiple Tube Fermentation Technique APHA 23RD Ed,2017: 9221 B	MPN/100 ml	5000	840	1200	790



Plot No.-M-228, Jagannath Industrial Estate, Patia, Bhubaneswar-751024, Dist-Khurda, Odisha Tel: 97752017905

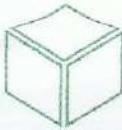
E-mail : visiontek@vcspl.org, visiontekin@gmail.com, visiontekin@yahoo.co.in, Visit us at: www.vcspl.org

Committed For Better Environment

Annexure-4

GROUND WATER LEVEL ANALYSIS REPORT





Ref: Enfakb/201 R - 0287

Date: 01/06/2020

GROUND WATER LEVEL ANALYSIS REPORT APR 20 TO MAY 20

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant , Rayagada
2. Date of Sampling : 05.05.2020
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

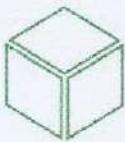
SL.No.	Location	Unit	Analysis Result
1	GW1: Muniguda /Munikhola Village Borewell	mt/bgl	6.8
2	GW2: Palama Village Openwell		7.4
3	GW3: Tikarpada Village Openwell		7.6
4	GW4: Bhairagarh Tubewell		7.1
5	GW5: Jamuruguda Road Openwell (New Hope Hospital)		7.2
6	GW6: Jamuruguda village Tubewell near Muniguda Bypass		7.4
7	GW7: Hatamuniguda Road		7.0



Annexure-5

NOISE QUALITY ANALYSIS REPORT





Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)



ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref:

Enufab/20fR - 0292

NOISE MONITORING REPORT

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada

2. Sample Collected By : VCSPL Representative

Day Time Noise monitoring results (Noise Level in dB (A) Leq April-2020

TIME (6.00 AM to 10.00 PM)	N1: Quarry 1	N2: Quarry-2	N3: Muniguda	N4: Jamrunguda	N5: Dhuampadar	N6: Padampur	N7: Bhairabguda road	N8: Bhairabguda Village
15.04.2020	15.04.2020	15.04.2020	15.04.2020	15.04.2020	16.04.2020	16.04.2020	16.04.2020	16.04.2020
6:00 AM	43.5	44.2	41.8	40.5	41.2	40.8	41.3	40.2
7:00 AM	45.6	42.5	43.5	42.9	43.6	41.8	43.5	41.6
8: 00 AM	47.1	41.9	46.9	43.7	45.8	42.6	45.1	43.5
9: 00 AM	45.9	46.3	48.5	45.1	48.2	43.2	46.9	46.9
10: 00 AM	44.9	48.5	49.2	48.6	51.2	44.1	46.2	48.7
11: 00 AM	52.3	50.2	50.2	49.5	50.7	45.9	47.8	49.5
12:00 Noon	53.1	53.1	51.7	50.2	53.6	44.7	50.2	50.2
1:00 PM	55.8	59.3	53.2	51.6	55.8	46.5	52.1	53.6
2: 00 PM	56.9	60.5	55.9	55.7	57.8	49.8	54.6	55.8
3: 00 PM	58.7	58.7	58.4	59.7	59.4	50.2	55.9	59.7
4: 00 PM	52.4	54.3	60.2	60.1	60.2	51.4	57.3	56.2
5: 00 PM	51.6	52.7	61.7	59.8	58.6	53.6	52.1	53.1
6:00 PM	52.9	51.2	56.8	57.4	55.4	55.9	50.6	52.7
7: 00 PM	50.2	50.7	55.4	56.2	54.3	53.4	49.6	50.4
8: 00 PM	51.7	49.3	52.1	52.8	53.2	52.1	48.5	48.6
9: 00 PM	48.6	47.2	50.6	48.6	51.6	50.8	45.2	45.7
Avg.	50.7	50.7	52.3	51.4	52.5	47.9	49.2	49.8
Standard as per CPCB	75	55	50	55	55	55	55	55

Night time Noise monitoring results (Noise Level in dB (A) Leq April-2020

TIME (10.00PM to 6.00AM)	N1: Quarry 1	N2: Quarry-2	N3: Muniguda	N4: Jamrunguda	N5: Dhuampadar	N6: Padampur	N7: Bhairabguda road	N8: Bhairabguda Village
15.04.2020	15.04.2020	15.04.2020	15.04.2020	15.04.2020	16.04.2020	16.04.2020	16.04.2020	16.04.2020
10:00PM	44.4	43.8	47.6	44.6	44.5	44.6	44.3	43.8
11: 00 PM	43.2	42.9	45.2	42.8	43.8	43.5	43.8	44.5
12. 00 Mid Night	43.1	42.1	44.9	40.6	42.1	42.9	42.1	42.1
1: 00 AM	42.9	40.8	43.0	42.7	41.6	41.7	41.9	41.6
2: 00 AM	40.5	41.3	41.2	41.9	40.6	42.5	40.9	40.9
3: 00 AM	42.1	40.7	40.6	40.9	42.9	40.8	41.2	40.2
4: 00 AM	40.7	41.3	41.3	42.8	43.6	42.3	42.3	41.9
5: 00 AM	42.5	43.6	43.5	43.5	42.5	41.9	41.8	43.1
Avg.	42.4	42.1	43.4	42.5	42.7	42.5	42.3	42.3
Standard as per CPCB	70	45	40	45	45	45	45	45

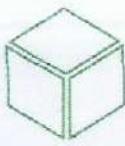


ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

01/06/2020



Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)



ISO 9001 : 2008
ISO 14001: 2015

OHSAS 45001: 2018

Ref:

Fanfall / 201R 10298

NOISE MONITORING REPORT

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada
2. Sample Collected By : VCSPL Representative

Day Time Noise monitoring results (Noise Level in dB (A) May-2020

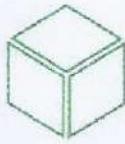
TIME (6:00AM to 10:00PM)	NI: Quarry 1	N2: Quarry-2	N3: Muniguda	N4: Jamrugguda	N5: Dhuaniapadar	N6: Padampur	N7: Bhairabguda road	N8: Bhairabguda Village
12.05.2020	12.05.2020	12.05.2020	12.05.2020	13.05.2020	13.05.2020	13.05.2020	13.05.2020	13.05.2020
6:00 AM	41.6	40.5	42.1	40.9	41.3	42.5	43.2	40.9
7:00 AM	42.5	42.5	43.8	43.2	42.9	43.6	44.8	41.6
8:00 AM	43.2	41.6	45.8	45.9	44.8	45.8	46.9	42.5
9:00 AM	45.9	42.9	47.5	47.6	45.6	48.9	45.7	43.2
10:00 AM	47.6	44.8	49.2	50.2	48.6	49.5	48.5	44.6
11:00 AM	49.5	45.6	51.3	52.3	49.5	50.6	50.2	45.2
12.00Noon	50.2	47.6	53.6	54.7	50.2	52.3	51.2	46.5
1:00 PM	52.3	45.9	55.4	56.8	53.6	54.6	53.4	47.8
2:00 PM	54.8	48.2	57.6	59.8	56.8	59.8	56.9	49.5
3:00 PM	56.9	53.1	58.2	60.2	58.7	58.7	59.8	48.9
4:00 PM	59.3	59.3	60.2	61.4	59.8	56.1	60.4	52.3
5:00 PM	60.2	60.5	59.3	58.7	53.4	55.2	56.4	56.4
6:00 PM	61.8	58.7	62.1	55.6	51.2	53.7	55.2	58.7
7:00 PM	57.6	54.3	60.2	53.2	50.8	52.8	52.1	56.2
8:00 PM	53.1	49.9	58.6	52.8	48.9	50.6	50.7	53.1
9:00 PM	50.2	48.2	54.3	51.4	46.5	48.9	49.6	50.8
Avg.	51.7	49.0	53.7	52.8	50.2	51.5	51.6	48.6
Standard as per CPCB	75	55	50	55	55	55	55	55

Night time Noise monitoring results (Noise Level in dB (A) Leq May-2020

TIME (10:00PM to 6:00AM)	NI: Quarry 1	N2: Quarry-2	N3: Muniguda	N4: Jamrugguda	N5: Dhuaniapadar	N6: Padampur	N7: Bhairabguda road	N8: Bhairabguda Village
12.05.2020	12.05.2020	12.05.2020	12.05.2020	13.05.2020	13.05.2020	13.05.2020	13.05.2020	13.05.2020
10:00PM	44.9	42.1	45.6	47.6	43.6	44.6	45.3	44.8
11:00 PM	45.2	40.8	44.8	45.8	42.5	43.8	44.5	43.9
12.00 Mid Night	43.7	41.3	43.2	43.2	42.8	42.1	42.8	42.1
1:00 AM	42.1	40.9	42.9	42.1	41.7	45.8	41.3	41.5
2:00 AM	40.8	40.2	41.5	40.1	41.3	43.1	40.5	40.8
3:00 AM	41.6	41.3	40.6	42.9	40.6	42.8	41.6	42.3
4:00 AM	42.7	42.6	42.3	45.2	40.1	43.6	42.8	44.7
5:00 AM	43.2	43.8	43.9	42.3	42.3	40.8	43.6	43.8
Avg.	43.0	41.6	43.1	43.7	41.9	43.3	42.8	43.0
Standard as per CPCB	70	45	40	45	45	45	45	45

Date:

01/06/2020



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ISO 9001 : 2008

ISO 14001: 2015

OHSAS 45001: 2018

Ref: Tanjali/20f R-0294

Date: 01/06/2020

NOISE MONITORING REPORT (SUMMERIZED)

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada
2. Sample Collected By : VCSPL Representative
3. Period : April 2020 to May 2020

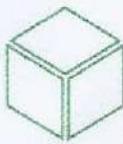
Sl.No.	Locations	CPCB Norms			Day Time dB (A)	Night Time dB (A)
		Day	Night	Day		
N-1	Quarry 1	75	70		51.2	42.7
N-2	Quarry-2	55	45		49.8	41.8
N-3	Muniguda	50	40		53.0	43.3
N-4	Jamruguda	55	45		52.1	43.1
N-5	Dhuanpadar	55	45		51.4	42.3
N-6	Padampur	55	45		49.7	42.9
N-7	Bhairabguda road	55	45		50.4	42.5
N-8	Bhairabguda Village	55	45		49.2	42.6



Annexure-6

SOIL QUALITY ANALYSIS REPORT





Ref: Enviotech/20/Pr 0295

Date: 01/06/2020

SOIL QUALITY ANALYSIS REPORT-APRIL 20

1. Name of Industry : M/s Bainibasa Graphite Mine & Beneficiation Plant, Rayagada
2. Sampling Location : S1: Bainibasa Mining Lease Area
S2: Jamuruguda
S3: Bhaliapadar
S4: Bhairabguda
3. Date of Sampling : 12.04.2020
4. Date of Analysis : 13.04.2020 TO 20.04.2020
5. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result			
				S1	S2	S3	S4
1	Colour	--	--	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Slightly alkaline	Slightly alkaline	Slightly alkaline	Slightly alkaline
3	pH	--	IS 2720 (P-26) 1987, RA 2016	7.61	7.83	7.43	7.42
4	Soil Texture	%	Methods of Soil Analyses Black 1965 American Society of Agronomy USA	Loam	Loam	Loam	Sandy Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.35	1.20	1.21	1.13
6	Infiltration Rate	Cm/hr	--	8.5	7.5	8.4	9.3
7	Porosity	%	USDA 1954,RA 2010, Page 39	14.9	13.7	14.1	13.5
8	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	10.5	11.2	9.6	9.8
9	Chloride as Cl	%	USDA 1954,RA 2010, Page 133	0.58	0.56	0.61	0.60
10	Sulphate as SO ₄	%	IS 2720 (P-27)1977 RA 2015	0.017	0.018	0.019	0.020

Sl. No.	Parameter	Unit	Method of Analysis	Analysis Result			
				S1	S2	S3	S4
12	Iron as Fe	%	IS 2720 (P-26) 1987, RA 2016	1.34	1.21	1.41	1.34
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	14	12	13	12
14	Available Nitrogen as N	%	Method of Analysis of Soil by HLS.Tandon	0.24	0.23	0.29	0.24
15	Magnesium as Mg	%	Method of Analysis of Soil by HLS.Tandon	0.41	0.37	0.33	0.31
16	Silica as SiO ₂	%	Method of Analysis of Soil by HLS.Tandon	18.0	17.2	15.8	16.8





Visiontek Consultancy Services Pvt. Ltd *(An Enviro Engineering Consulting Cell)*

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