

ENVIRONMENTAL MONITORING REPORT

Summer Season, 2023
(March to May, 2023)

PROJECT: HADDINAPADE IRON ORE MINE

ML No. 2516
SANDUR TALUK,
BALLARI DIST.,

Lessee

M/s. BKG MINING PVT. LTD.,

2198, BKG House, KHB Colony ,
Sandur Taluk, Ballari Dist

CONSULTANT

MINERAL ENGINEERING SERVICES
(Accredited by QCI-NABET ORG000756)
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ENVIRONMENTAL LABORATORY
Unit of Mineral Engineering Services)
(Accredited by NABL &, MOEF&CC Under
E(P) 1986)
#948, 2nd Cross, Kammanahalli Main
Road, St Thomas Town Post, Bangalore-
560 084, Karnataka,

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**ENVIRONMENTAL MONITORING FOR HADDINAPADE IRON ORE
MINE (ML NO. 2516), KUMARASWAMY RANGE, SANDUR TALUK,
BALLARI DIST,OF M/s.. BKG MINING PVT. LTD ,
SANDUR, BALLARI DIST.
Summer Season, 2023
(March to May, 2023)**

1.0 INTRODUCTION :

The subject mine is an ongoing mechanized mine. The iron ore produced from this mine is sold for internal consumption within India.

As per the guidelines issued by the Chief Controller of Mines, IBM, Nagpur and Ministry of Environment & Forests / Central Pollution Control Board, Govt. of India environmental monitoring is to be carried out for all the mines. Therefore, the work was entrusted to M/s. Mineral Engineering Services, Bangalore having a recognized environmental laboratory by MoEF&CC,, GOI, New Delhi to carry out environmental quality monitoring in respect of ambient & fugitive air quality, surface & ground water test report and noise level data for Summer Season, 2023.

2.0 AIR ENVIRONMENT :

In order to assess the quality of air environment within the buffer zone of 10 kms radius nine monitoring stations were setup. Out of these four stations represent buffer zone villages and one station represent core zone i.e., ML area for Ambient Air Quality as per NAAQS. four stations represent the fugitive mining operations for Particulate Matter (PM). The air quality data is given vide **Table Nos. 1a to 1r**. Statistical air quality data for SO₂, NO₂, PM₁₀ & PM_{2.5} are given vide **Table No..1s**. From the analysis report it can be seen that the air quality levels at all stations are within the permissible limits.

The details of Distance & Direction are furnished below:

LOCATION OF AIR MONITORING STATIONS

| Code No | Stations | From Mine | |
|---------|-------------------|----------------|-----------|
| | | Distance (KM) | Direction |
| AI | Core zone MI Area | -- | -- |
| AII | Dharmapur | 3.00 | N |
| AIII | Yeshwanthanagar | 3.50 | SW |
| AIV | Subbarayanahalli | 1.50 | S |
| AV | Nandihalli | 1.70 | E |
| AVI | Loading point | -- | -- |
| AVII | Dumping point | -- | -- |
| AVIII | Haulage Road | -- | -- |
| AIX | Screening Plant | -- | -- |
| AX | Crusher Plant | -- | -- |

3.0 WATER ENVIRONMENT :

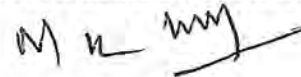
In order to assess the quality of water within the buffer zone of 10 kms radius, surface water samples were collected and analyzed

The test report shows that the surface & ground water samples were well within the permissible limits. The test reports are given vide **Table No.2a to 2c and 3a to 3c**

4.0 NOISE ENVIRONMENT :

Noise levels were monitored at four buffer zone villages and one core zone station located at Mines office. In addition Source noise levels were monitored covering mining operations and HEM machinery. The above monitored results were tabulated after calculating Day equivalent and Night equivalent and reported in the table enclosed vide Table No. 4. From the monitoring data it is found that the values were within the permissible limits as per the CPCB norms and ILO Code of Practice

For MINERAL ENGINEERING SERVICES



(M. ROHINI KUMAR)
Manager

Date : 10.06.2023



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TEST REPORT TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1a
MES/AQ/TR/06/00

| | |
|---------------------|---|
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Station at & Code | : A - I, Core Zone (ML Area) |
| Duration | : 24 Hrs |
| Date of Report | : 05.04.2023 |
| Reference IS 5182 | Report No : ELMES/SS/ARN/27 |

| Date of Sampling | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) | Ammonia (NH ₃), µg/m ³ | Benzene (C ₆ H ₆), µg/m ³ |
|--|---|--|---|--|---|---|
| 01.03.2023 | 10 | 11 | 50 | 25 | <20 | <1 |
| 03.03.2023 | 12 | 14 | 54 | 26 | <20 | <1 |
| 06.03.2023 | 11 | 12 | 47 | 23 | <20 | <1 |
| 08.03.2023 | 10 | 14 | 43 | 22 | <20 | <1 |
| 15.03.2023 | 11 | 12 | 46 | 25 | <20 | <1 |
| 17.03.2023 | 12 | 18 | 43 | 22 | <20 | <1 |
| 22.03.2023 | 12 | 15 | 50 | 26 | <20 | <1 |
| 24.03.2023 | 9 | 11 | 56 | 29 | <20 | <1 |
| Limits for Industrial , Residential, Rural and other Areas | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs | 400 24 Hrs | 5 Annual |

| Date of Sampling | Lead (Pb), µg/m ³ | Nickel (Ni), ng/m ³ | Arsenic (As), ng/m ³ | Benzo(a) Pyrene (BaP), ng/m ³ | Carbon Monoxide* (CO), mg/m ³ | Ozone* (O ₃), µg/m ³ |
|--|------------------------------|--------------------------------|---------------------------------|--|--|---|
| 01.03.2023 | 0.28 | <0.5 | <0.5 | <0.5 | 0.33 | 27 |
| 03.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.11 | 27 |
| 06.03.2023 | 0.18 | <0.5 | <0.5 | <0.5 | 0.32 | 27 |
| 08.03.2023 | 0.06 | <0.5 | <0.5 | <0.5 | 0.20 | <20 |
| 15.03.2023 | 0.09 | <0.5 | <0.5 | <0.5 | 0.06 | 21 |
| 17.03.2023 | 0.11 | <0.5 | <0.5 | <0.5 | 0.22 | 22 |
| 22.03.2023 | 0.17 | <0.5 | <0.5 | <0.5 | 0.26 | 28 |
| 24.03.2023 | 0.05 | <0.5 | <0.5 | <0.5 | 0.26 | 24 |
| Limits for Industrial , Residential, Rural and other Areas | 1.0 24 Hrs | 20 Annual | 6 Annual | 1 Annual | 4 1 Hr | 180 1 Hr |

Note : * Parameters monitored for period of 1 hr

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Govt. Analyst / Authorised Signatory

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TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1b
MES/AQ/TR/06/00

Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Station at & Code : A - II, Dharmapura
Duration : 24 Hrs
Date of Report : 05.04.2023
Reference IS 5182

Report No : ELMES/SS/ARN/28

| Date of Sampling | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) | Ammonia (NH ₃), µg/m ³ | Benzene (C ₆ H ₆), µg/m ³ |
|--|---|--|---|--|---|---|
| 01.03.2023 | 11 | 14 | 46 | 20 | <20 | <1 |
| 03.03.2023 | 10 | 12 | 54 | 30 | <20 | <1 |
| 06.03.2023 | 9 | 11 | 40 | 24 | <20 | <1 |
| 08.03.2023 | 11 | 17 | 52 | 28 | <20 | <1 |
| 15.03.2023 | 10 | 12 | 49 | 26 | <20 | <1 |
| 17.03.2023 | 11 | 13 | 42 | 23 | <20 | <1 |
| 22.03.2023 | 11 | 12 | 54 | 28 | <20 | <1 |
| 24.03.2023 | 12 | 15 | 45 | 26 | <20 | <1 |
| Limits for Industrial , Residential, Rural and other Areas | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs | 400 24 Hrs | 5 Annual |

| Date of Sampling | Lead (Pb), µg/m ³ | Nickel (Ni), ng/m ³ | Arsenic (As), ng/m ³ | Benzo(a) Pyrene (BaP), ng/m ³ | Carbon Monoxide* (CO), mg/m ³ | Ozone* (O ₃), µg/m ³ |
|--|------------------------------|--------------------------------|---------------------------------|--|--|---|
| 01.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.19 | 24 |
| 03.03.2023 | 0.16 | <0.5 | <0.5 | <0.5 | 0.22 | 23 |
| 06.03.2023 | 0.11 | <0.5 | <0.5 | <0.5 | 0.15 | 22 |
| 08.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.36 | 25 |
| 15.03.2023 | 0.13 | <0.5 | <0.5 | <0.5 | 0.22 | 28 |
| 17.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.42 | 26 |
| 22.03.2023 | 0.05 | <0.5 | <0.5 | <0.5 | 0.31 | 22 |
| 24.03.2023 | 0.13 | <0.5 | <0.5 | <0.5 | 0.22 | 20 |
| Limits for Industrial , Residential, Rural and other Areas | 1.0 24 Hrs | 20 Annual | 6 Annual | 1 Annual | 4 1 Hr | 180 1 Hr |

Note : * Parameters monitored for period of 1 hr

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TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1c
MES/AQ/TR/06/00

Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Station at & Code : A - III, Yeshwanthanagar
Duration : 24 Hrs
Date of Report : 05.04.2023
Reference IS 5182

Report No : ELMES/SS/ARN/29

| Date of Sampling | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) | Ammonia (NH ₃), µg/m ³ | Benzene (C ₆ H ₆), µg/m ³ |
|--|---|--|---|--|---|---|
| 01.03.2023 | 10 | 12 | 45 | 27 | <20 | <1 |
| 03.03.2023 | 12 | 16 | 47 | 26 | <20 | <1 |
| 06.03.2023 | 8 | 16 | 58 | 32 | <20 | <1 |
| 08.03.2023 | 16 | 21 | 44 | 22 | <20 | <1 |
| 15.03.2023 | 11 | 14 | 56 | 30 | <20 | <1 |
| 17.03.2023 | 7 | 12 | 51 | 28 | <20 | <1 |
| 22.03.2023 | 9 | 10 | 50 | 26 | <20 | <1 |
| 24.03.2023 | 11 | 15 | 48 | 25 | <20 | <1 |
| Limits for Industrial , Residential, Rural and other Areas | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs | 400 24 Hrs | 5 Annual |

| Date of Sampling | Lead (Pb), µg/m ³ | Nickel (Ni), ng/m ³ | Arsenic (As), ng/m ³ | Benzo(a) Pyrene (BaP), ng/m ³ | Carbon Monoxide* (CO), mg/m ³ | Ozone* (O ₃), µg/m ³ |
|--|------------------------------|--------------------------------|---------------------------------|--|--|---|
| 01.03.2023 | 0.07 | <0.5 | <0.5 | <0.5 | 0.06 | 23 |
| 03.03.2023 | 0.18 | <0.5 | <0.5 | <0.5 | 0.11 | 28 |
| 06.03.2023 | 0.16 | <0.5 | <0.5 | <0.5 | 0.22 | 24 |
| 08.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.27 | 27 |
| 15.03.2023 | 0.10 | <0.5 | <0.5 | <0.5 | 0.31 | 21 |
| 17.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.17 | 22 |
| 22.03.2023 | 0.11 | <0.5 | <0.5 | <0.5 | 0.32 | 20 |
| 24.03.2023 | 0.13 | <0.5 | <0.5 | <0.5 | 0.25 | 24 |
| Limits for Industrial , Residential, Rural and other Areas | 1.0 24 Hrs | 20 Annual | 6 Annual | 1 Annual | 4 1 Hr | 180 1 Hr |

Note : * Parameters monitored for period of 1 hr

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TEST REPORT

TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1d
MES/IAQ/TR/06/00

| | |
|---------------------|---|
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Station at & Code | : A - IV, Subbarayanahalli |
| Duration | : 24 Hrs |
| Date of Report | : 05.04.2023 |
| Reference IS 5182 | Report No : ELMES/SS/ARN/22 |

| Date of Sampling | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) | Ammonia (NH ₃), µg/m ³ | Benzene (C ₆ H ₆), µg/m ³ |
|--|---|--|---|--|---|---|
| 07.03.2023 | 12 | 14 | 43 | 22 | <20 | <1 |
| 09.03.2023 | 11 | 15 | 53 | 25 | <20 | <1 |
| 16.03.2023 | 9 | 10 | 47 | 22 | <20 | <1 |
| 18.03.2023 | 10 | 18 | 51 | 24 | <20 | <1 |
| 23.03.2023 | 12 | 17 | 55 | 29 | <20 | <1 |
| 25.03.2023 | 9 | 21 | 50 | 31 | <20 | <1 |
| 28.03.2023 | 11 | 13 | 40 | 26 | <20 | <1 |
| 30.03.2023 | 6 | 17 | 54 | 22 | <20 | <1 |
| Limits for Industrial , Residential, Rural and other Areas | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs | 400 24 Hrs | 5 Annual |

| Date of Sampling | Lead (Pb), µg/m ³ | Nickel (Ni), ng/m ³ | Arsenic (As), ng/m ³ | Benzo(a) Pyrene (BaP), ng/m ³ | Carbon Monoxide* (CO), mg/m ³ | Ozone* (O ₃), µg/m ³ |
|--|------------------------------|--------------------------------|---------------------------------|--|--|---|
| 07.03.2023 | 0.08 | <0.5 | <0.5 | <0.5 | 0.19 | 21 |
| 09.03.2023 | 0.15 | <0.5 | <0.5 | <0.5 | 0.30 | 26 |
| 16.03.2023 | 0.20 | <0.5 | <0.5 | <0.5 | 0.21 | 20 |
| 18.03.2023 | 0.11 | <0.5 | <0.5 | <0.5 | 0.08 | 26 |
| 23.03.2023 | 0.05 | <0.5 | <0.5 | <0.5 | 0.35 | 23 |
| 25.03.2023 | 0.15 | <0.5 | <0.5 | <0.5 | 0.22 | 21 |
| 28.03.2023 | <0.05 | <0.5 | <0.5 | <0.5 | 0.10 | 22 |
| 30.03.2023 | 0.06 | <0.5 | <0.5 | <0.5 | 0.27 | 20 |
| Limits for Industrial , Residential, Rural and other Areas | 1.0 24 Hrs | 20 Annual | 6 Annual | 1 Annual | 4 1 Hr | 180 1 Hr |

Note : * Parameters monitored for period of 1 hr

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Dy. Govt. Analyst

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TEST REPORT

TEST REPORT OF AMBIENT AIR QUALITY

Table No. 1e

MES/AQ/TR/06/00

Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Station at & Code : A - V, Nandihalli
Duration : 24 Hrs
Date of Report : 05.04.2023
Reference IS 5182

Report No : ELMES/SS/ARN/30

| Date of Sampling | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) | Ammonia (NH ₃), µg/m ³ | Benzene (C ₆ H ₆), µg/m ³ |
|---|---|--|---|--|---|---|
| 01.03.2023 | 11 | 12 | 40 | 24 | <20 | <1 |
| 03.03.2023 | 6 | 9 | 53 | 29 | <20 | <1 |
| 06.03.2023 | 8 | 10 | 40 | 24 | <20 | <1 |
| 08.03.2023 | 10 | 11 | 51 | 26 | <20 | <1 |
| 15.03.2023 | 11 | 13 | 47 | 25 | <20 | <1 |
| 17.03.2023 | 12 | 15 | 41 | 24 | <20 | <1 |
| 22.03.2023 | 9 | 11 | 54 | 27 | <20 | <1 |
| 24.03.2023 | 8 | 10 | 38 | 21 | <20 | <1 |
| Limits for Industrial, Residential, Rural and other Areas | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs | 400 24 Hrs | 5 Annual |

| Date of Sampling | Lead (Pb), µg/m ³ | Nickel (Ni), ng/m ³ | Arsenic (As), ng/m ³ | Benzo(a) Pyrene (BaP), ng/m ³ | Carbon Monoxide* (CO), mg/m ³ | Ozone* (O ₃), µg/m ³ |
|---|------------------------------|--------------------------------|---------------------------------|--|--|---|
| 01.03.2023 | 0.23 | <0.5 | <0.5 | <0.5 | 0.22 | 28 |
| 03.03.2023 | 0.18 | <0.5 | <0.5 | <0.5 | 0.26 | 20 |
| 06.03.2023 | 0.24 | <0.5 | <0.5 | <0.5 | 0.26 | 26 |
| 08.03.2023 | 0.25 | <0.5 | <0.5 | <0.5 | 0.27 | 26 |
| 15.03.2023 | 0.18 | <0.5 | <0.5 | <0.5 | 0.25 | 26 |
| 17.03.2023 | 0.05 | <0.5 | <0.5 | <0.5 | 0.14 | 20 |
| 22.03.2023 | 0.12 | <0.5 | <0.5 | <0.5 | 0.15 | 26 |
| 24.03.2023 | 0.15 | <0.5 | <0.5 | <0.5 | 0.22 | 21 |
| Limits for Industrial, Residential, Rural and other Areas | 1.0 24 Hrs | 20 Annual | 6 Annual | 1 Annual | 4 1 Hr | 180 1 Hr |

Note : * Parameters monitored for period of 1 hr

Aravind Kousar
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TEST REPORT

Table No. 1f

Test Report of Fugitive Emission

MES/AQ/TR/06/00

| | |
|---------------------|--|
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Station at & Code | : A - VI, Loading point |
| Duration | : 08 Hrs |
| Date of Report | : 05.04.2023 |
| Report No | : ELMES/SS/ARN/31 |
| Date of sample | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 03.03.2023 | 456 |
| 15.03.2023 | 512 |

| | |
|-------------------|--|
| Station at & Code | : A - VII, Dumping point |
| Duration | : 08 Hrs |
| Date of Report | : 05.04.2023 |
| Date of sample | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 03.03.2023 | 564 |
| 15.03.2023 | 521 |

| | |
|-------------------|--|
| Station at & Code | : A - VIII, Haulage Road |
| Duration | : 08 Hrs |
| Date of Report | : 05.04.2023 |
| Date of sample | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 06.03.2023 | 547 |
| 17.03.2023 | 563 |

| | |
|-------------------|--|
| Station at & Code | : A - IX, Screening plant |
| Duration | : 08 Hrs |
| Date of Report | : 05.04.2023 |
| Date of sample | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 06.03.2023 | 496 |
| 17.03.2023 | 537 |

| | |
|-------------------|--|
| Station at & Code | : A - X, Crushing plant |
| Duration | : 08 Hrs |
| Date of Report | : 05.04.2023 |
| Date of sample | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 06.03.2023 | 487 |
| 17.03.2023 | 526 |

| | |
|---|---|
| Ref | : Environmental (Protection) Rules, 2010 (Sixth Amendment) |
| Permissible limits for Fugitive Emissions | Particulate mater ($\mu\text{g}/\text{m}^3$) 1200 $\mu\text{g}/\text{m}^3$ |

Arshiyankousar
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By: C.A. Chemical

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TEST REPORT

Table No. 1g

AMBIENT AIR QUALITY

| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|---------------|---|--|--|---|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Station at & Code : A - I, Core Zone (ML Area) | | | | | |
| Duration : 24 Hrs | | | | | |
| Report No : ED/23-030 | | | | | |
| Issue date : 06.05.2023 | | | | | |
| Reference IS 5182 | | | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 05.04.2023 | Ed/23/04-0061 | 12 | 14 | 51 | 29 |
| 07.04.2023 | Ed/23/04-0124 | 9 | 12 | 56 | 30 |
| 10.04.2023 | Ed/23/04-0224 | 11 | 14 | 49 | 23 |
| 12.04.2023 | Ed/23/04-0330 | 8 | 12 | 45 | 22 |
| 17.04.2023 | Ed/23/04-0460 | 9 | 11 | 55 | 31 |
| 19.04.2023 | Ed/23/04-0513 | 10 | 18 | 53 | 33 |
| 26.04.2023 | Ed/23/04-0760 | 12 | 13 | 48 | 25 |
| 28.04.2023 | Ed/23/04-0815 | 9 | 13 | 50 | 26 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT



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Table No. 1h

AMBIENT AIR QUALITY

| Name of the Client | | : M/s. BKG Mining Pvt. Ltd., | | | |
|---|---------------|---|--|--|---|
| Name of the Project | | : Haddinapade Iron Ore Mine (ML No. 2516) | | | |
| Station at & Code | | : A - II, Dharmapura | | | |
| Duration | | : 24 Hrs | | | |
| Report No | | : ED/23-031 | | | |
| Issue date | | : 06.05.2023 | | | |
| Reference | | IS 5182 | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 05.04.2023 | Ed/23/04-0062 | 11 | 15 | 47 | 25 |
| 07.04.2023 | Ed/23/04-0125 | 6 | 9 | 40 | 22 |
| 10.04.2023 | Ed/23/04-0225 | 12 | 18 | 53 | 23 |
| 12.04.2023 | Ed/23/04-0331 | 13 | 15 | 46 | 19 |
| 17.04.2023 | Ed/23/04-0461 | 10 | 13 | 49 | 25 |
| 19.04.2023 | Ed/23/04-0514 | 7 | 17 | 55 | 35 |
| 26.04.2023 | Ed/23/04-0761 | 8 | 12 | 52 | 28 |
| 28.04.2023 | Ed/23/04-0816 | 10 | 15 | 44 | 26 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No. 1i

AMBIENT AIR QUALITY

| Name of the Client | | : M/s. BKG Mining Pvt. Ltd., | | | |
|---|---------------|---|--|--|---|
| Name of the Project | | : Haddinapade Iron Ore Mine (ML No. 2516) | | | |
| Station at & Code | | : A - III, Yeshwanthanagar | | | |
| Duration | | : 24 Hrs | | | |
| Report No | | : ED/23-032 | | | |
| Issue date | | : 06.05.2023 | | | |
| Reference | | IS 5182 | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 05.04.2023 | Ed/23/04-0063 | 7 | 12 | 55 | 21 |
| 07.04.2023 | Ed/23/04-0126 | 8 | 17 | 40 | 22 |
| 10.04.2023 | Ed/23/04-0226 | 9 | 15 | 46 | 24 |
| 12.04.2023 | Ed/23/04-0332 | 8 | 9 | 59 | 35 |
| 17.04.2023 | Ed/23/04-0462 | 6 | 14 | 61 | 30 |
| 19.04.2023 | Ed/23/04-0515 | 8 | 12 | 57 | 29 |
| 26.04.2023 | Ed/23/04-0762 | 10 | 15 | 47 | 25 |
| 28.04.2023 | Ed/23/04-0817 | 12 | 11 | 49 | 22 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No.1 J

AMBIENT AIR QUALITY

| | |
|---------------------|---|
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Station at & Code | : A - IV, Subbarayanahalli |
| Duration | : 24 Hrs |
| Report No | : ED/23-033 |
| Issue date | : 06.05.2023 |
| Reference | IS 5182 |

| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
|---|---------------|---|--|--|---|
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 05.04.2023 | Ed/23/04-0064 | 8 | 17 | 52 | 29 |
| 07.04.2023 | Ed/23/04-0127 | 9 | 13 | 56 | 30 |
| 10.04.2023 | Ed/23/04-0227 | 10 | 15 | 55 | 24 |
| 12.04.2023 | Ed/23/04-0333 | 9 | 12 | 43 | 23 |
| 17.04.2023 | Ed/23/04-0463 | 11 | 13 | 40 | 22 |
| 19.04.2023 | Ed/23/04-0516 | 7 | 14 | 39 | 21 |
| 26.04.2023 | Ed/23/04-0763 | 10 | 16 | 42 | 25 |
| 28.04.2023 | Ed/23/04-0818 | 11 | 18 | 50 | 28 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No.1k

AMBIENT AIR QUALITY

| | |
|---------------------|---|
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Station at & Code | : A - V, Nandihalli |
| Duration | : 24 Hrs |
| Report No | : ED/23-034 |
| Issue date | : 06.05.2023 |
| Reference | IS 5182 |

| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
|---|---------------|---|--|--|---|
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 05.04.2023 | Ed/23/04-0065 | 8 | 13 | 47 | 26 |
| 07.04.2023 | Ed/23/04-0128 | 9 | 10 | 56 | 24 |
| 10.04.2023 | Ed/23/04-0228 | 7 | 15 | 45 | 23 |
| 12.04.2023 | Ed/23/04-0334 | 8 | 13 | 46 | 28 |
| 17.04.2023 | Ed/23/04-0464 | 7 | 15 | 43 | 28 |
| 19.04.2023 | Ed/23/04-0517 | 9 | 13 | 53 | 22 |
| 26.04.2023 | Ed/23/04-0764 | 7 | 19 | 49 | 25 |
| 28.04.2023 | Ed/23/04-0819 | 9 | 19 | 50 | 28 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Fugitive Emission

Table No. 11

| | |
|---------------------|---|
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Station at & Code | : A - VI, Loading point |
| Duration | : 08 Hrs |
| Report No | : ED/23-035 |
| Issue date | : 06.05.2023 |

| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
|----------------|---------------|--|
| 05.04.2023 | Ed/23/04-0066 | 358 |
| 07.04.2023 | Ed/23/04-0129 | 458 |

| | |
|-------------------|--------------------------|
| Station at & Code | : A - VII, Dumping point |
| Duration | : 08 Hrs |

| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
|----------------|---------------|--|
| 10.04.2023 | Ed/23/04-0229 | 567 |
| 12.04.2023 | Ed/23/04-0335 | 518 |

| | |
|-------------------|--------------------------|
| Station at & Code | : A - VIII, Haulage Road |
| Duration | : 08 Hrs |

| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
|----------------|---------------|--|
| 05.04.2023 | Ed/23/04-0067 | 589 |
| 07.04.2023 | Ed/23/04-0130 | 496 |

| | |
|-------------------|---------------------------|
| Station at & Code | : A - IX, Screening plant |
| Duration | : 08 Hrs |

| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
|----------------|---------------|--|
| 10.04.2023 | Ed/23/04-0230 | 564 |
| 12.04.2023 | Ed/23/04-0336 | 475 |

| | |
|-------------------|-------------------------|
| Station at & Code | : A - X, Crushing plant |
| Duration | : 08 Hrs |

| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
|----------------|---------------|--|
| 07.04.2023 | Ed/23/04-0131 | 567 |
| 10.04.2023 | Ed/23/04-0231 | 487 |

Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)

Particulate mater ($\mu\text{g}/\text{m}^3$)

Permissible limits for Fugitive Emissions

1200 $\mu\text{g}/\text{m}^3$

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TEST REPORT

Table No. 1m

AMBIENT AIR QUALITY

| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|-----------------|---|--|--|---|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Station at & Code : A - I, Core Zone (ML Area) | | | | | |
| Duration : 24 Hrs | | | | | |
| Issue date : 07.06.2023 | | | | | |
| Reference IS 5182 | | | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 03.05.2023 | Ed/23/05/2-0029 | 8 | 9 | 42 | 27 |
| 05.05.2023 | Ed/23/05/2-0053 | 10 | 11 | 56 | 16 |
| 09.05.2023 | Ed/23/05/2-0195 | 11 | 13 | 54 | 30 |
| 11.05.2023 | Ed/23/05/2-0256 | 8 | 11 | 50 | 25 |
| 17.05.2023 | Ed/23/05/3-0209 | 10 | 12 | 50 | 22 |
| 19.05.2023 | Ed/23/05/4-0026 | 10 | 12 | 55 | 28 |
| 22.05.2023 | Ed/23/05/4-0185 | 10 | 14 | 49 | 23 |
| 24.05.2023 | Ed/23/05/4-0238 | 10 | 14 | 50 | 25 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No.1n

AMBIENT AIR QUALITY

| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|-----------------|---|--|--|---|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Station at & Code : A - II, Dharmapura | | | | | |
| Duration : 24 Hrs | | | | | |
| Issue date : 07.06.2023 | | | | | |
| Reference IS 5182 | | | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 03.05.2023 | Ed/23/05/2-0026 | 12 | 11 | 42 | 20 |
| 05.05.2023 | Ed/23/05/2-0054 | 10 | 12 | 39 | 18 |
| 09.05.2023 | Ed/23/05/2-0196 | 10 | 12 | 49 | 30 |
| 11.05.2023 | Ed/23/05/2-0257 | 9 | 11 | 48 | 22 |
| 17.05.2023 | Ed/23/05/3-0210 | 9 | 11 | 52 | 25 |
| 19.05.2023 | Ed/23/05/4-0027 | 11 | 14 | 48 | 22 |
| 22.05.2023 | Ed/23/05/4-0186 | 11 | 13 | 51 | 26 |
| 24.05.2023 | Ed/23/05/4-0239 | 11 | 15 | 48 | 22 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No.10

AMBIENT AIR QUALITY

| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|-----------------|---|--|--|---|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Station at & Code : A - III, Yeshwanthanagar | | | | | |
| Duration : 24 Hrs | | | | | |
| Issue date : 07.06.2023 | | | | | |
| Reference IS 5182 | | | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 03.05.2023 | Ed/23/05/2-0031 | 10 | 10 | 41 | 25 |
| 05.05.2023 | Ed/23/05/2-0055 | 12 | 12 | 40 | 25 |
| 09.05.2023 | Ed/23/05/2-0197 | 7 | 12 | 58 | 30 |
| 11.05.2023 | Ed/23/05/2-0258 | 9 | 12 | 44 | 27 |
| 17.05.2023 | Ed/23/05/3-0211 | 10 | 12 | 49 | 26 |
| 19.05.2023 | Ed/23/05/4-0028 | 10 | 12 | 50 | 23 |
| 22.05.2023 | Ed/23/05/4-0187 | 11 | 15 | 48 | 27 |
| 24.05.2023 | Ed/23/05/4-0240 | 9.5 | 13 | 50 | 26 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No. 1p

AMBIENT AIR QUALITY

| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|-----------------|---|--|--|---|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Station at & Code : A - IV, Subbarayanahalli | | | | | |
| Duration : 24 Hrs | | | | | |
| Issue date : 07.06.2023 | | | | | |
| Reference IS 5182 | | | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ (µg/m ³) | PM _{2.5} (µg/m ³) |
| 03.05.2023 | Ed/23/05/2-0032 | 11 | 15 | 44 | 23 |
| 05.05.2023 | Ed/23/05/2-0056 | 9.5 | 10 | 48 | 25 |
| 09.05.2023 | Ed/23/05/2-0198 | 10 | 13 | 51 | 25 |
| 11.05.2023 | Ed/23/05/2-0259 | 10 | 12 | 45 | 25 |
| 17.05.2023 | Ed/23/05/3-0212 | 11 | 14 | 51 | 28 |
| 19.05.2023 | Ed/23/05/4-0029 | 11 | 13 | 48 | 28 |
| 22.05.2023 | Ed/23/05/4-0188 | 10.7 | 12 | 50 | 28 |
| 24.05.2023 | Ed/23/05/4-0241 | 11 | 12 | 47 | 28 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No. 1q

AMBIENT AIR QUALITY

| Name of the Client | | : M/s. BKG Mining Pvt. Ltd., | | | |
|---|-----------------|---|--|--|---|
| Name of the Project | | : Haddinapade Iron Ore Mine (ML No. 2516) | | | |
| Station at & Code | | : A - V, Nandhihalli | | | |
| Duration | | : 24 Hrs | | | |
| Issue date | | : 07.06.2023 | | | |
| Reference | | IS 5182 | | | |
| Date of Sampling | Lab Code | Sulphur Dioxide (SO ₂), µg/m ³ | Nitrogen Dioxide (NO ₂), µg/m ³ | Particulate Matter | |
| | | | | PM ₁₀ , (µg/m ³) | PM _{2.5} , (µg/m ³) |
| 03.05.2023 | Ed/23/05/2-0033 | 11 | 9 | 50 | 29 |
| 05.05.2023 | Ed/23/05/2-0057 | 12 | 12 | 53 | 30 |
| 09.05.2023 | Ed/23/05/2-0199 | 11 | 15 | 48 | 24 |
| 11.05.2023 | Ed/23/05/2-0260 | 11 | 14 | 50 | 24 |
| 17.05.2023 | Ed/23/05/3-0213 | 12 | 12 | 50 | 30 |
| 19.05.2023 | Ed/23/05/4-0030 | 10 | 12 | 50 | 25 |
| 22.05.2023 | Ed/23/05/4-0189 | 9 | 12 | 47 | 22- - |
| 24.05.2023 | Ed/23/05/4-0242 | 11.5 | 13 | 51 | 24 |
| Limits for Industrial , Residential, Rural and other Areas | | 80 24 Hrs | 80 24 Hrs | 100 24 Hrs | 60 24 Hrs |

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TEST REPORT

Table No. | 7

Fugitive Emission

| | | |
|------------------------------|---|--|
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., | |
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) | |
| Station at & Code | : A - VI, Loading point | |
| Duration | : 08 Hrs | |
| Issue date | : 07.06.2023 | |
| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 09.05.2023 | Ed/23/05/2-0200 | 358 |
| 19.05.2023 | Ed/23/05/4-0031 | 394 |

| | | |
|------------------------------|--------------------------|--|
| Station at & Code | : A - VII, Dumping point | |
| Duration | : 08 Hrs | |
| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 11.05.2023 | Ed/23/05/2-0261 | 378 |
| 22.05.2023 | Ed/23/05/4-0190 | 510 |

| | | |
|------------------------------|--------------------------|--|
| Station at & Code | : A - VIII, Haulage Road | |
| Duration | : 08 Hrs | |
| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 09.05.2023 | Ed/23/05/2-0201 | 460 |
| 19.05.2023 | Ed/23/05/4-0032 | 428 |

| | | |
|------------------------------|---------------------------|--|
| Station at & Code | : A - IX, Screening plant | |
| Duration | : 08 Hrs | |
| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 11.05.2023 | Ed/23/05/2-0262 | 399 |
| 22.05.2023 | Ed/23/05/4-0191 | 470 |

| | | |
|------------------------------|-------------------------|--|
| Station at & Code | : A - X, Crushing plant | |
| Duration | : 08 Hrs | |
| Date of sample | Lab Code | Particulate mater ($\mu\text{g}/\text{m}^3$) |
| 19.05.2023 | Ed/23/05/4-0033 | 480 |
| 22.05.2023 | Ed/23/05/4-0192 | 410 |

Ref : Environmental (Protection) Rules, 2010 (Sixth Amendment)

Particulate mater ($\mu\text{g}/\text{m}^3$)

Permissible limits for Fugitive Emissions

1200 $\mu\text{g}/\text{m}^3$

ARSHIY KOUSAK

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ENVIRONMENTAL LABORATORY

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Recognised by BIS, FSSAI, ISO:45001:2018 Certified Laboratory
Recognised by MoEFCC(CPCB) under E(P) Act 1986 & recognition is valid upto 23.05.2025



TEST REPORT

Table No. 1s

STATISTICAL AIR QUALITY DATA

| | | | | | | | | | | | | |
|---|-----------------|-----------------|------------------|-------------------|---------------------------------|-----------------|------------------|-------------------|-----------------------------------|-----------------|------------------|-------------------|
| Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | | | | | | | | |
| Name of the Client : M/s. BKG Mining Pvt. Ltd., | | | | | | | | | | | | |
| Season : Summer Season, 2023 | | | | | | | | | | | | |
| Month : March to May, 2023 | | | | | | | | | | | | |
| Station Code : A-I - Core Zone | | | | | Station Code : A-II Dharmapura | | | | Station : A III - Yeshwanthanagar | | | |
| | SO ₂ | NO ₂ | PM ₁₀ | PM _{2.5} | SO ₂ | NO ₂ | PM ₁₀ | PM _{2.5} | SO ₂ | NO ₂ | PM ₁₀ | PM _{2.5} |
| Min. | 8 | 9 | 42 | 16 | 6 | 9 | 39 | 18 | 6 | 9 | 40 | 21 |
| 10% | 8 | 11 | 44 | 22 | 8 | 11 | 41 | 20 | 7 | 11 | 42 | 22 |
| 25% | 9 | 12 | 48 | 23 | 10 | 12 | 45 | 22 | 8 | 12 | 46 | 25 |
| 50% | 10 | 13 | 50 | 25 | 11 | 13 | 48 | 25 | 10 | 12 | 49 | 26 |
| 75% | 11 | 14 | 54 | 28 | 11 | 15 | 52 | 27 | 11 | 15 | 55 | 28 |
| 98% | 12 | 18 | 56 | 32 | 13 | 18 | 55 | 33 | 14 | 19 | 60 | 34 |
| Max. | 12 | 18 | 56 | 33 | 13 | 18 | 55 | 35 | 16 | 21 | 61 | 35 |
| Avg. | 10 | 13 | 50 | 26 | 10 | 13 | 48 | 25 | 10 | 13 | 50 | 26 |
| SD | 1 | 2 | 4 | 4 | 2 | 2 | 5 | 4 | 2 | 3 | 6 | 3 |
| No. of obs | 24 | | | | 24 | | | | 24 | | | |
| Station Code : A IV- Subbarayanahalli | | | | | Station Code : A V - Nandihalli | | | | | | | |
| | SO ₂ | NO ₂ | PM ₁₀ | PM _{2.5} | SO ₂ | NO ₂ | PM ₁₀ | PM _{2.5} | | | | |
| Min. | 6 | 10 | 39 | 21 | 6 | 9 | 38 | 21 | | | | |
| 10% | 8 | 12 | 41 | 22 | 7 | 10 | 40 | 22 | | | | |
| 25% | 9 | 13 | 44 | 23 | 8 | 11 | 46 | 24 | | | | |
| 50% | 10 | 14 | 49 | 25 | 9 | 13 | 50 | 25 | | | | |
| 75% | 11 | 16 | 51 | 28 | 11 | 14 | 51 | 28 | | | | |
| 98% | 12 | 20 | 56 | 30 | 12 | 19 | 55 | 30 | | | | |
| Max. | 12 | 21 | 56 | 31 | 12 | 19 | 56 | 30 | | | | |
| Avg. | 10 | 14 | 48 | 26 | 9 | 13 | 48 | 26 | | | | |
| SD | 1 | 3 | 5 | 3 | 2 | 3 | 5 | 3 | | | | |
| No. of obs | 24 | | | | 24 | | | | | | | |

Archana Kousar
ARCHANA KOUSAR

By: T.M. Chemical
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Gazette Notification No. legal 42(3)/2022 dated 22.07.2022 Recognition valid upto 23.05.2023
ISO 45001:2018 Certified Laboratory



TC-6172

TEST REPORT

Table No.2a
MES/W/TR/11/00

| | |
|--|---|
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Month | : March, 2023 |
| Date of sampling | : 06.03.2023 |
| Date of Report | : 05.04.2023 |
| Report No | : ELMES/SS/WRN/15 |
| Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards) | |

| Sl.No. | Parameters | Method of Testing | Limits For Stream Water | Sample | | |
|--------|--|-----------------------|-------------------------|--------|--------|--------|
| | | | | SW1 | SW2 | SW3 |
| i | pH | IS:3025(Part-11) | 6.5 to 8.5 | 6.80 | 8.55 | 8.32 |
| ii | Dissolved Oxygen (as O ₂), mg/l, Min | IS:3025(Part-38) | 4 | 5.8 | 5.4 | 5.5 |
| iii | Biochemical Oxygen Demand (as O ₂), mg/l, Max | IS:3025(Part-44) | 3 | 1.8 | 2.2 | 2.0 |
| iv | Total Coliform (mpn/100ml), Max | IS:1622 | 5000 | 140 | 156 | 168 |
| v | Colour (Hazen Units), Max | IS:3025(Part-4) | 300 | 5 | 5 | 5 |
| vi | Fluoride (as F),mg/l, Max | IS:3025(Part-60) | 1.5 | <0.1 | <0.1 | 0.40 |
| vii | Cadmium (as Cd), mg/l, Max | IS:3025(Part-41) | 0.01 | <0.002 | <0.002 | <0.002 |
| viii | Chloride (as Cl),mg/l, Max | IS:3025(Part-32) | 600 | 24.0 | 145.0 | 85.0 |
| ix | Chromium (as Cr ⁺⁶), mg/l, Max | IS:3025(Part-52) | 0.05 | <0.03 | <0.03 | <0.03 |
| x | Cyanides (as CN), mg/l, Max | IS:3025(Part-27) | 0.05 | <0.01 | <0.01 | <0.01 |
| xi | Total Dissolved Solids (mg/l), Max | IS:3025(Part-16) | 1500 | 82 | 550 | 412 |
| xii | Selenium (as Se), mg/l, Max | IS:3025(Part-56) | 0.05 | <0.005 | <0.005 | <0.005 |
| xiii | Sulphates as SO ₄ (mg/l), Max | IS:3025(Part-24) | 400 | 4.5 | 62.6 | 52.0 |
| xiv | Lead (as Pb) mg/l, Max | IS:3025(Part-47) | 0.1 | <0.005 | <0.005 | <0.005 |
| xv | Copper (as Cu),mg/l, Max | IS:3025(Part-42) | 1.5 | <0.01 | <0.01 | <0.01 |
| xvi | Arsenic as As (mg/l), Max | IS:3025(Part-37) | 0.2 | <0.002 | <0.002 | <0.002 |
| xvii | Iron (as Fe),mg/l, MAX | IS:3025(Part-53) | 50 | <0.05 | <0.05 | 0.09 |
| xviii | Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max | IS:3025(Part-43) | 0.005 | <0.001 | <0.001 | <0.001 |
| xix | Zinc (as Zn),mg/l, Max | IS:3025(Part-49) | 15 | <0.005 | <0.005 | <0.005 |
| xx | Insecticides, mg/l, Max | APHA 21 st | Absent | NA | NA | NA |
| xxi | Anionic detergents (as MBAS),mg/l, Max | Annex K of IS 13248 | 1 | <0.1 | <0.1 | <0.1 |
| xxii | Oil and grease, mg/l, Max | IS:3025(Part-39) | 0.1 | <0.01 | <0.01 | <0.01 |
| xxiii | Nitrates (as NO ₃),mg/l, Max | IS:3025(Part-34) | 50 | 1.7 | 13.7 | 12.2 |
| xxiv | Alpha Emitters (µcurie/ml), Max | APHA 21 st | 10 ⁻⁹ | NA | NA | NA |
| xxv | Beta Emitters (µcurie/ml), Max | APHA 21 st | 10 ⁻⁶ | NA | NA | NA |

SAMPLE CODE :

SW1 - Hari Shankar Spring Water

SW2 - Nari Halla Nallah water

SW3 - Hulikunta kere water

Samples Collected & Analysed by Mineral Engineering Services, Ballari

Note : NA - Not Analysed

Govt. Analyst / Authorised Signatory

Govt. Analyst / Authorised Signatory

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TEST REPORT

Table No.2b

Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Sample Collected by : Environmental Laboratory Representative
Particulars of sample collected : SW1 - Hari Shankar Spring Water
SW2 - Nari Halla Nallah water
SW3 - Hulikunta kere water
Date of sample collection : 11.04.2023
Date of sample receipt : 12.04.2023
Issue Date : 06.05.2023
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)

| Sl.No. | Lab Code Parameters | ED/23/4-082 | ED/23/4-083 | ED/23/4-084 | Limits For Stream Water Standards | Method of Testing |
|--------|--|-------------|-------------|-------------|--------------------------------------|------------------------------|
| | | Results | | | | |
| 1 | Colour (Hazen Units), Max | 5 | 5 | 5 | 300 | IS:3025(Part-4)2021 |
| 2 | pH | 6.85 | 8.23 | 8.15 | 6.5 to 8.5 | IS:3025(Part-11)2022 |
| 3 | Dissolved Oxygen (as O ₂), mg/l, Min | 5.8 | 5.5 | 5.5 | 4 | IS:3025(Part-38)1989RA 2019 |
| 4 | Oil and grease, mg/l, Max | <0.01 | <0.01 | <0.01 | 0.1 | IS:3025(Part-39) 2021 |
| 5 | Total Dissolved Solids (mg/l), Max | 54 | 560 | 412 | 1500 | IS:3025(Part-16)2023 |
| 6 | Nitrates (as NO ₃),mg/l, Max | 1.1 | 11.2 | 2.6 | 50 | IS:3025(Part-34)1988 RA 2019 |
| 7 | Anionic detergents (as MBAS),mg/l, Max | <0.1 | <0.1 | <0.1 | 1 | IS:3025(Part-68) |
| 8 | Copper (as Cu),mg/l, Max | <0.01 | <0.01 | <0.01 | 1.5 | IS:3025(Part-42) 2019 |
| 9 | Chloride (as Cl),mg/l, Max | 22.0 | 152.0 | 85.0 | 600 | IS:3025(Part-32) ;1988RA2019 |
| 10 | Fluoride (as F),mg/l, Max | <0.1 | <0.1 | 0.65 | 1.5 | APHA 23rd Edition 4500F |
| 11 | Iron (as Fe),mg/l, MAX | <0.05 | <0.05 | <0.05 | 50 | IS:3025(P-2) 2019 |
| 12 | Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max | <0.001 | <0.001 | <0.001 | 0.005 | IS:3025(P-43)Sec 1 2022 |
| 13 | Selenium (as Se), mg/l, Max | <0.005 | <0.005 | <0.005 | 0.05 | IS:3025(P-2) 2019 |
| 14 | Sulphates as SO ₄ (mg/l), Max | 6.0 | 70.0 | 53.0 | 400 | IS:3025(P-24)Sec 1 2022 |
| 15 | Zinc (as Zn),mg/l, Max | <0.005 | <0.005 | <0.005 | 15 | IS:3025(P-2) 2019 |
| 16 | Cadmium (as Cd), mg/l, Max | <0.002 | <0.002 | <0.002 | 0.01 | IS:3025(P-2) 2019 |
| 17 | Cyanides (as CN), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | IS:3025(P-27) Sec 12021 |
| 18 | Lead (as Pb) mg/l, Max | <0.005 | <0.005 | <0.005 | 0.1 | IS:3025(P-2) 2019 |
| 19 | Arsenic as As (mg/l), Max | <0.002 | <0.002 | <0.002 | 0.2 | IS:3025(P-2) 2019 |
| 20 | Chromium (as Cr ⁺⁶), mg/l, Max | <0.03 | <0.03 | <0.03 | 0.05 | IS:3025(P-52) 2014 |
| 21 | Biochemical Oxygen Demand (as O ₂), mg/l, Max | 1.8 | 2.3 | 2.0 | 3 | IS:3025(P-44) 2014 |
| 22 | Total Coliform (mpn/100ml) | 190 | 43 | 176 | 5000 | IS:1622:2009 |

"END OF REPORT"


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TEST REPORT

Table No. 2c

Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Sample Collected by : Environmental Laboratory Representative
Particulars of sample collected : SW1 - Hari Shankar Spring Water
SW2 - Nari Halla Nallah water
SW3 - Hulikunta kere water
Date of sample collection : 22.05.2023
Date of sample receipt : 23.05.2023
Issue Date : 08.06.2023
Ref:IS : 2296, 1982 Class C Norms (Stream Water Standards)

| Sl.No. | Lab code | ED/23/5/4-0134 | ED/23/5/4-0135 | ED/23/5/4-0136 | Limits For Stream | Method of Testing |
|--------|--|----------------|----------------|----------------|-------------------|------------------------------|
| | Parameters | Results | | | | |
| 1 | Colour (Hazen Units), Max | 5 | 5 | 5 | 300 | IS:3025(Part-4)2021 |
| 2 | pH | 6.55 | 7.98 | 7.98 | 6.5 to 8.5 | IS:3025(Part-11)2022 |
| 3 | Dissolved Oxygen (as O ₂), mg/l, Min | 5.4 | 5.7 | 5.7 | 4 | IS:3025(Part-38)1989RA 2019 |
| 4 | Oil and grease, mg/l, Max | <0.5 | <0.5 | <0.5 | 0.1 | IS:3025(Part-39) 2021 |
| 5 | Total Dissolved Solids (mg/l), Max | 75 | 530 | 530 | 1500 | IS:3025(Part-16)2023 |
| 6 | Nitrates (as NO ₃),mg/l, Max | <0.1 | <0.1 | <0.1 | 50 | IS:3025(Part-34)1988 RA 2019 |
| 7 | Anionic detergents (as MBAS),mg/l, Max | <0.1 | <0.1 | <0.1 | 1.0 | IS:3025(Part-68) |
| 8 | Copper (as Cu),mg/l, Max | <0.005 | <0.005 | <0.005 | 1.5 | IS:3025(Part-42) 2019 |
| 9 | Chloride (as Cl),mg/l, Max | 25.1 | 147.9 | 147.9 | 600 | IS:3025(Part-32) ;1988RA2019 |
| 10 | Fluoride (as F),mg/l, Max | <0.1 | <0.1 | <0.1 | 1.5 | APHA 23rd Edition 4500F |
| 11 | Iron (as Fe),mg/l, MAX | 0.05 | <0.005 | <0.005 | 50 | IS:3025(P-2) 2019 |
| 12 | Phenolic compounds (as C ₆ H ₅ OH),m | <0.001 | <0.001 | <0.001 | 0.005 | IS:3025(P-43)Sec 1 2022 |
| 13 | Selenium (as Se), mg/l, Max | <0.005 | <0.005 | <0.005 | 0.05 | IS:3025(P-2) 2019 |
| 14 | Sulphates as SO ₄ (mg/l), Max | <1 | 64.0 | 64.0 | 400 | IS:3025(P-24)Sec 1 2022 |
| 15 | Zinc (as Zn),mg/l, Max | <0.005 | <0.005 | <0.005 | 15 | IS:3025(P-2) 2019 |
| 16 | Cadmium (as Cd), mg/l, Max | <0.001 | <0.001 | <0.001 | 0.001 | IS:3025(P-2) 2019 |
| 17 | Cyanides (as CN), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | IS:3025(P-27) Sec 12021 |
| 18 | Lead (as Pb) mg/l, Max | <0.005 | <0.005 | <0.005 | 0.1 | IS:3025(P-2) 2019 |
| 19 | Total Arsenic as As (mg/l), Max | <0.002 | <0.002 | <0.002 | 0.2 | IS:3025(P-2) 2019 |
| 20 | Chromium (as Cr ⁺⁶), mg/l, Max | <0.03 | <0.03 | <0.03 | 0.05 | IS:3025(P-52) 2014 |
| 21 | Biochemical Oxygen Demand (as O ₂), mg/l, Max | <3 | <3 | <3 | 3 | IS:3025(P-44) 2014 |
| 22 | Total Coliform (mpn/100ml), Max | <1 | 9 | 9 | 5000 | IS:1622:2009 |

"END OF REPORT"


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TEST REPORT

Table No. 3a

Name of the Client : M/s. BKG Mining Pvt. Ltd.,
Name of the Project : Haddinapade Iron Ore Mine (ML No. 2516)
Sample Collected by : Environmental Laboratory Representative
Sample Collected by : Mineral Engineering Services
Date of sample collection : 11.04.2023
Date of sample receipt : 12.04.2023
Issue Date : 06.05.2023
Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards)

| Sl. No. | Lab code Parameters | ED/23/04-085 | ED/23/04-086 | ED/23/04-087 | Desirable Limits | Permissible Limits | Method of Testing |
|---------|---|--------------|--------------|--------------|------------------|--------------------|----------------------------------|
| | | Results | | | | | |
| | | GW1 | GW1a | GW2 | | | |
| 1 | Colour (Hazen Units), Max | 1 | <1 | 1 | 5 | 15 | IS:3025 (Part-4) |
| 2 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | IS:3025 (Part-5) |
| 3 | pH | 7.40 | 7.10 | 7.70 | 6.5 to 8.5 | 6.5 - 8.5 | IS:3025 (Part-11) |
| 4 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | IS:3025 (Part- 8) |
| 5 | Turbidity,NTU, Max | 2.7 | 0.8 | 1.5 | 1 | 5 | IS:3025 (Part-10) |
| 6 | Total Dissolved Solids,mg/l, Max | 494 | 162 | 728 | 500 | 2000 | IS:3025 (Part-16) |
| 7 | Aluminium (as Al), Max | <0.01 | <0.01 | <0.01 | 0.03 | 0.2 | IS:3025 (Part-55) |
| 8 | Ammonia (as total Ammonia -N),mg/l, Max | <0.1 | <0.1 | <0.1 | 0.5 | 0.5 | IS:3025 (Part-34) |
| 9 | Anionic Detergents (as mds),mg/l, Max | <0.1 | <0.1 | <0.1 | 0.2 | 1.0 | Annex K of Is:13428 |
| 10 | Barium (as Ba), mg/l, Max | <0.05 | <0.05 | <0.05 | 0.7 | 0.7 | IS:15302 & APHA 21 st |
| 11 | Boron (as B), mg/l, Max | <0.1 | <0.1 | <0.1 | 0.5 | 2.4 | IS:3025 (Part-57) |
| 12 | Calcium (as Ca),mg/l, Max | 64 | 24 | 80 | 75 | 200 | IS:3025 (Part-40) |
| 13 | Chloramines (as Cl ₂), mg/l, Max | NA | NA | NA | 4.0 | 4.0 | APHA 21 st |
| 14 | Chloride as Cl (mg/l),mg/l, Max | 120 | 12 | 100 | 250 | 1000 | IS:3025 (Part-32) |
| 15 | Copper (as Cu),mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 1.5 | IS:3025 (Part-42) |
| 16 | Fluoride (as F),mg/l, Max | 0.70 | <0.1 | 0.50 | 1 | 1.5 | IS:3025 (Part-60) |
| 17 | Residual, Free Chlorine,mg/l, Max | <0.1 | <0.1 | <0.1 | 0.2 | 1 | IS:3025 (Part-26) |
| 18 | Iron (as Fe),mg/l, Max | <0.05 | <0.05 | <0.05 | 1.0 | 1.0 | IS:3025 (Part-53) |
| 19 | Magnesium (as Mg),mg/l, Max | 60.7 | 23.8 | 90.0 | 30 | 100 | IS:3025 (Part-46) |
| 20 | Manganese (as Mn),mg/l, Max | <0.03 | <0.03 | <0.03 | 0.1 | 0.3 | IS:3025 (Part-59) |
| 21 | Mineral Oil,mg/l, Max | <0.01 | <0.01 | <0.01 | 1.0 | 1.0 | Clause 6 of IS 3025 (part-39) |
| 22 | Nitrates (as NO ₃),mg/l, Max | 6.6 | 12.0 | 78.0 | 45 | 45 | IS:3025 (Part-34) |
| 23 | Phenolics (as C ₆ H ₅ OH),mg/l, Max | <0.001 | <0.001 | <0.001 | 0.001 | 0.002 | IS:3025 (Part-43) |
| 24 | Selenium (as Se),mg/l, Max | <0.005 | <0.005 | <0.005 | 0.01 | 0.01 | IS:3025 (Part-56) |
| 25 | Silver (as Ag), mg/l, Max | <0.002 | <0.002 | <0.002 | 0.1 | 0.1 | Annex J of Is:13428 |
| 26 | Sulphates (as SO ₄),mg/l, Max | 83.0 | 30.0 | 180.0 | 200 | 400 | IS:3025 (Part-24) |
| 27 | Sulphide (as H ₂ S), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 0.05 | IS:3025 (Part-29) |
| 28 | Alkalinity (as CaCO ₃), mg/l, Max | 220 | 96 | 300 | 200 | 600 | IS:3025 (Part-23) |
| 29 | Total Hardness (as CaCO ₃),mg/l, Max | 410 | 158 | 570 | 200 | 600 | IS:3025 (Part-21) |
| 30 | Zinc (as Zn),mg/l, Max | <0.005 | <0.005 | <0.005 | 5 | 15 | IS:3025 (Part-49) |
| 31 | Cadmium (as Cd),mg/l, Max | <0.002 | <0.002 | <0.002 | 0.003 | 0.003 | IS:3025 (Part-41) |
| 32 | Cyanide (as CN),mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 0.05 | IS:3025 (Part-27) |
| 33 | Lead (as Pb),mg/l, Max | <0.005 | <0.005 | <0.005 | 0.01 | 0.01 | IS:3025 (Part-47) |
| 34 | Molybdenum (as Mo), mg/l, Max | NA | NA | NA | 0.07 | 0.07 | APHA 21 st |
| 35 | Mercury (as Hg),mg/l, Max | <0.0005 | <0.0005 | <0.0005 | 0.001 | 0.001 | IS:3025 (Part-48) |
| 36 | Nickel (as Ni),mg/l, Max | <0.01 | <0.01 | <0.01 | 0.02 | 0.02 | IS:3025 (Part-54) |
| 37 | Pesticides (Total) | NA | NA | NA | Absent | 0.001 | APHA 21 st |
| 38 | Polychlorinated biphenyls mg/l, Max | NA | NA | NA | 0.0005 | 0.0005 | APHA 21 st Edition |
| 39 | Polynuclear Aromatic Hydrocarbons (as PAH),mg/l, Max | NA | NA | NA | 0.0001 | 0.0001 | APHA 21 st Edition |
| 40 | Arsenic (as As),mg/l, Max | <0.002 | <0.002 | <0.002 | 0.01 | 0.01 | IS:3025 (Part-37) |
| 41 | Chromium (as Cr ⁶⁺),mg/l, Max | <0.03 | <0.03 | <0.03 | 0.05 | 0.05 | IS:3025 (Part-52) |
| 42 | Trihalomethanes,mg/l, Max | NA | NA | NA | -- | -- | APHA 21 st |
| 43 | Radioactive materials,Bq/l,mg/l | NA | NA | NA | -- | -- | APHA 21 st |
| 44 | Total Coliform (/100ml) | Absent | Absent | Absent | Absent | Absent | IS:1622 |
| 45 | E-Coli (cfu/100ml) | Absent | Absent | Absent | Absent | Absent | IS:1622 |

Code No : GW1 -RO Plant water - In Let Near Check post No. 3 Bore water, GW1a -RO water - Out/Let water, GW2- Dharmapura bore water

Note : NA - Not Analysed

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.
 Phone : 080-25432969 Tel/fax : 25432968. E-mail : mesbng@gmail.com, www.envtest.in

Note : This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

Table No: 3b

| Sl. No. | Lab code Parameters | ED/23/04-088 | ED/23/04-089 | ED/23/04-089A | Desirable Limits | Permissible Limits | Method of Testing |
|---------|--|--------------|--------------|---------------|------------------|--------------------|----------------------------------|
| | | Results | | | | | |
| | | GW3 | GW4 | GW5 | | | |
| 1 | Colour (Hazen Units), Max | 1 | 1 | <1 | 5 | 15 | IS:3025 (Part-4) |
| 2 | Odour | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | IS:3025 (Part-5) |
| 3 | pH | 7.83 | 7.30 | 7.88 | 6.5 to 8.5 | 6.5 - 8.5 | IS:3025 (Part-11) |
| 4 | Taste | Agreeable | Agreeable | Agreeable | Agreeable | Agreeable | IS:3025 (Part-8) |
| 5 | Turbidity, NTU, Max | 1.7 | 1.9 | 1.3 | 1 | 5 | IS:3025 (Part-10) |
| 6 | Total Dissolved Solids, mg/l, Max | 1008 | 840 | 280 | 500 | 2000 | IS:3025 (Part-16) |
| 7 | Aluminium (as Al), Max | <0.01 | <0.01 | <0.01 | 0.03 | 0.2 | IS:3025 (Part-55) |
| 8 | Ammonia (as total Ammonia -N), mg/l, Max | <0.1 | <0.1 | <0.1 | 0.5 | 0.5 | IS:3025 (Part-34) |
| 9 | Amionic Detergents (as mPACS), mg/l, Max | <0.1 | <0.1 | <0.1 | 0.2 | 1.0 | Annex K of Is:13428 |
| 10 | Barium (as Ba), mg/l, Max | <0.05 | <0.05 | <0.05 | 0.7 | 0.7 | IS:15302 & APHA 21 st |
| 11 | Boron (as B), mg/l, Max | <0.1 | <0.1 | <0.1 | 0.5 | 2.4 | IS:3025 (Part-57) |
| 12 | Calcium (as Ca), mg/l, Max | 96 | 80 | 44.0 | 75 | 200 | IS:3025 (Part-40) |
| 13 | Chloramines (as Cl ₂), mg/l, Max | NA | NA | NA | 4.0 | 4.0 | APHA 21 st |
| 14 | Chloride as Cl (mg/l), mg/l, Max | 250 | 210 | 50 | 250 | 1000 | IS:3025 (Part-32) |
| 15 | Copper (as Cu), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 1.5 | IS:3025 (Part-42) |
| 16 | Fluoride (as F), mg/l, Max | 0.32 | 1.20 | 0.26 | 1 | 1.5 | IS:3025 (Part-60) |
| 17 | Residual, Free Chlorine, mg/l, Max | <0.1 | <0.1 | <0.1 | 0.2 | 1 | IS:3025 (Part-26) |
| 18 | Iron (as Fe), mg/l, Max | <0.05 | <0.05 | <0.05 | 1.0 | 1.0 | IS:3025 (Part-53) |
| 19 | Magnesium (as Mg), mg/l, Max | 82.6 | 90.0 | 11.0 | 30 | 100 | IS:3025 (Part-46) |
| 20 | Manganese (as Mn), mg/l, Max | <0.03 | <0.03 | <0.03 | 0.1 | 0.3 | IS:3025 (Part-59) |
| 21 | Mineral Oil, mg/l, Max | <0.01 | <0.01 | <0.1 | 1.0 | 1.0 | Clause 6 of IS 3025 (part-30) |
| 22 | Nitrates (as NO ₃), mg/l, Max | 65.0 | 57.0 | 3.2 | 45 | 45 | IS:3025 (Part-34) |
| 23 | Phenolics (as C ₆ H ₅ OH), mg/l, Max | <0.001 | <0.001 | <0.001 | 0.001 | 0.002 | IS:3025 (Part-43) |
| 24 | Selenium (as Se), mg/l, Max | <0.005 | <0.005 | <0.005 | 0.01 | 0.01 | IS:3025 (Part-56) |
| 25 | Silver (as Ag), mg/l, Max | <0.002 | <0.002 | <0.002 | 0.1 | 0.1 | Annex J of Is:13428 |
| 26 | Sulphates (as SO ₄), mg/l, Max | 200.0 | 170.0 | 48.0 | 200 | 400 | IS:3025 (Part-24) |
| 27 | Sulphide (as H ₂ S), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 0.05 | IS:3025 (Part-29) |
| 28 | Alkalinity (as CaCO ₃), mg/l, Max | 350 | 240 | 180 | 200 | 600 | IS:3025 (Part-23) |
| 29 | Total Hardness (as CaCO ₃), mg/l, Max | 580 | 570 | 200 | 200 | 600 | IS:3025 (Part-21) |
| 30 | Zinc (as Zn), mg/l, Max | <0.005 | <0.005 | <0.005 | 5 | 15 | IS:3025 (Part-49) |
| 31 | Cadmium (as Cd), mg/l, Max | <0.002 | <0.002 | <0.002 | 0.003 | 0.003 | IS:3025 (Part-41) |
| 32 | Cyanide (as CN), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.05 | 0.05 | IS:3025 (Part-27) |
| 33 | Lead (as Pb), mg/l, Max | <0.005 | <0.005 | <0.005 | 0.01 | 0.01 | IS:3025 (Part-47) |
| 34 | Molybdenum (as Mo), mg/l, Max | NA | NA | NA | 0.07 | 0.07 | APHA 21 st |
| 35 | Mercury (as Hg), mg/l, Max | <0.0005 | <0.0005 | <0.0005 | 0.001 | 0.001 | IS:3025 (Part-48) |
| 36 | Nickel (as Ni), mg/l, Max | <0.01 | <0.01 | <0.01 | 0.02 | 0.02 | IS:3025 (Part-54) |
| 37 | Pesticides (Total) | NA | NA | NA | Absent | 0.001 | APHA 21 st |
| 38 | Polychlorinated biphenyls mg/l, Max | NA | NA | NA | 0.0005 | 0.0005 | APHA 21 st Edition |
| 39 | Polynuclear Aromatic Hydrocarbons (as PAH), mg/l, Max | NA | NA | NA | 0.0001 | 0.0001 | APHA 21 st Edition |
| 40 | Arsenic (as As), mg/l, Max | <0.002 | <0.002 | <0.002 | 0.01 | 0.01 | IS:3025 (Part-37) |
| 41 | Chromium (as Cr ⁶⁺), mg/l, Max | <0.03 | <0.03 | <0.03 | 0.05 | 0.05 | IS:3025 (Part-52) |
| 42 | Trihalomethanes, mg/l, Max | NA | NA | NA | - | - | APHA 21 st |
| 43 | Radioactive materials, Bq/l, mg/l | NA | NA | NA | - | - | APHA 21 st |
| 44 | Total Coliform (/100ml) | Absent | Absent | Absent | Absent | Absent | IS:1622 |
| 45 | E-Coli (cfu/100ml) | Absent | Absent | Absent | Absent | Absent | IS:1622 |

Code No : GW3 -Yeshwanthnagar bore water, GW4 -GW4 - Nandihalli bore water, GW5 - GW5 - Subbarayanahalli, bore water

Note : NA - Not Analysed

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.

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TEST REPORT

Table No. 3c

| | |
|--|---|
| Name of the Client | : M/s. BKG Mining Pvt. Ltd., |
| Name of the Project | : Haddinapade Iron Ore Mine (ML No. 2516) |
| Sample Collected by | : Environmental Laboratory Representative |
| Sample Collected by | : Mineral Engineering Services |
| Date of sample collection | : 11.04.2023 |
| Date of sample receipt | : 12.04.2023 |
| Lab Code | : ED/23/04-0090 |
| Issue Date | : 06.05.2023 |
| Ref : IS:10500-2012 Norms Amendment - 4 (Drinking Water Standards) | |

| Sl. No. | Parameters | Results | Desirable Limits | Permissible Limits | Method of Testing |
|---------|--|-----------|------------------|--------------------|----------------------------------|
| 1 | Colour (Hazen Units), Max | 1 | 5 | 15 | IS:3025 (Part-4) |
| 2 | Odour | Agreeable | Agreeable | Agreeable | IS:3025 (Part-5) |
| 3 | pH | 7.42 | 6.5 to 8.5 | 6.5 - 8.5 | IS:3025 (Part-11) |
| 4 | Taste | Agreeable | Agreeable | Agreeable | IS:3025 (Part- 8) |
| 5 | Turbidity, NTU, Max | 1.5 | 1 | 5 | IS:3025 (Part-10) |
| 6 | Total Dissolved Solids, mg/l, Max | 1080 | 500 | 2000 | IS:3025 (Part-16) |
| 7 | Aluminium (as Al), Max | <0.01 | 0.03 | 0.2 | IS:3025 (Part-55) |
| 8 | Ammonia (as total Ammonia -N), mg/l, Max | <0.1 | 0.5 | 0.5 | IS:3025 (Part-34) |
| 9 | Anionic Detergents (as MBAS), mg/l, Max | <0.1 | 0.2 | 1.0 | Annex K of Is:13428 |
| 10 | Barium (as Ba), mg/l, Max | <0.05 | 0.7 | 0.7 | IS:15302 & APHA 21 st |
| 11 | Boron (as B), mg/l, Max | <0.1 | 0.5 | 2.4 | IS:3025 (Part-57) |
| 12 | Calcium (as Ca), mg/l, Max | 88 | 75 | 200 | IS:3025 (Part-40) |
| 13 | Chloramines (as Cl ₂), mg/l, Max | NA | 4.0 | 4.0 | APHA 21 st |
| 14 | Chloride as Cl (mg/l), mg/l, Max | 290 | 250 | 1000 | IS:3025 (Part-32) |
| 15 | Copper (as Cu), mg/l, Max | <0.01 | 0.05 | 1.5 | IS:3025 (Part-42) |
| 16 | Fluoride (as F), mg/l, Max | 0.39 | 1 | 1.5 | IS:3025 (Part-60) |
| 17 | Residual, Free Chlorine, mg/l, Max | <0.1 | 0.2 | 1 | IS:3025 (Part-26) |
| 18 | Iron (as Fe), mg/l, Max | <0.05 | 1.0 | 1.0 | IS:3025 (Part-53) |
| 19 | Magnesium (as Mg), mg/l, Max | 104.5 | 30 | 100 | IS:3025 (Part-46) |
| 20 | Manganese (as Mn), mg/l, Max | <0.03 | 0.1 | 0.3 | IS:3025 (Part-59) |
| 21 | Mineral Oil, mg/l, Max | <0.01 | 1.0 | 1.0 | Clause 6 of IS 3025 (part -39) |
| 22 | Nitrates (as NO ₃), mg/l, Max | 59.0 | 45 | 45 | IS:3025 (Part-34) |
| 23 | Phenolics (as C ₆ H ₅ OH), mg/l, Max | <0.001 | 0.001 | 0.002 | IS:3025 (Part-43) |
| 24 | Selenium (as Se), mg/l, Max | <0.005 | 0.01 | 0.01 | IS:3025 (Part-56) |
| 25 | Silver (as Ag), mg/l, Max | <0.002 | 0.1 | 0.1 | Annex J of Is:13428 |
| 26 | Sulphates (as SO ₄), mg/l, Max | 290.0 | 200 | 400 | IS:3025 (Part-24) |
| 27 | Sulphide (as H ₂ S), mg/l, Max | <0.01 | 0.05 | 0.05 | IS:3025 (Part-29) |
| 28 | Alkalinity (as CaCO ₃), mg/l, Max | 230 | 200 | 600 | IS:3025 (Part-23) |
| 29 | Total Hardness (as CaCO ₃), mg/l, Max | 650 | 200 | 600 | IS:3025 (Part-21) |
| 30 | Zinc (as Zn), mg/l, Max | <0.005 | 5 | 15 | IS:3025 (Part-49) |
| 31 | Cadmium (as Cd), mg/l, Max | <0.002 | 0.003 | 0.003 | IS:3025 (Part-41) |
| 32 | Cyanide (as CN), mg/l, Max | <0.01 | 0.05 | 0.05 | IS:3025 (Part-27) |
| 33 | Lead (as Pb), mg/l, Max | <0.005 | 0.01 | 0.01 | IS:3025 (Part-47) |
| 34 | Molybdenum (as Mo), mg/l, Max | NA | 0.07 | 0.07 | APHA 21 st |
| 35 | Mercury (as Hg), mg/l, Max | <0.0005 | 0.001 | 0.001 | IS:3025 (Part-48) |
| 36 | Nickel (as Ni), mg/l, Max | <0.01 | 0.02 | 0.02 | IS:3025 (Part-54) |
| 37 | Pesticides (Total) | NA | Absent | 0.001 | APHA 21 st |
| 38 | Polychlorinated biphenyls mg/l, Max | NA | 0.0005 | 0.0005 | APHA 21 st Edition |
| 39 | Polynuclear Aromatic Hydrocarbons (as PAH), mg/l, Max | NA | 0.0001 | 0.0001 | APHA 21 st Edition |
| 40 | Arsenic (as As), mg/l, Max | <0.002 | 0.01 | 0.01 | IS:3025 (Part-37) |
| 41 | Chromium (as Cr ⁺⁶), mg/l, Max | <0.03 | 0.05 | 0.05 | IS:3025 (Part-52) |
| 42 | Trihalomethanes, mg/l, Max | NA | -- | -- | APHA 21 st |
| 43 | Radioactive materials, Bq/l, mg/l | NA | -- | -- | APHA 21 st |
| 44 | Total Coliform (/100ml) | Absent | Absent | Absent | IS:1622 |
| 45 | E-Coli (cfu/100ml) | Absent | Absent | Absent | IS:1622 |

Code No : GW6 - Ankamanahalu bore water

Note : NA - Not Analysed

(Signature)
 By: *(Signature)*
 Govt. Analyst / Authorised Signatory

Govt. Analyst / Authorised Signatory

948, 2nd Cross, St. Thomas Town Post, Kammanahalli, Bangalore - 560 084.

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TEST REPORT NOISE LEVEL DATA

Table No. 4

| Name of the Client | | : M/s. BKG Mining Pvt. Ltd., | | | | | |
|---|----------------------------|---|-----------------|--|--|-----------------|------------------|
| Name of the Project | | : Haddinapade Iron Ore Mine (ML No. 2516) | | | | | |
| Particulars of sample collected | | : Sound Levels | | | | | |
| Sample Collected by | | : Mineral Engineering Services | | | | | |
| Date of sample collection | | : 11.04.2023 | | | | | |
| Date of sample receipt | | : 12.04.2023 | | | | | |
| Issue Date | | : 06.05.2023 | | | | | |
| Sampling & Test Method | | : IS:9989 | | | | | |
| Code No. | Monitoring stations | Day | | | Night | | |
| | | L _{min} | L _{eq} | L _{max} | L _{min} | L _{eq} | L _{max} |
| Buffer zone | | | | | | | |
| N1 | Dharmapura | 38.0 | 53.6 | 57.0 | 35.0 | 42.6 | 45.3 |
| N2 | Yeshwanthanagar | 38.0 | 52.1 | 58.6 | 34.0 | 42.9 | 49.0 |
| N3 | Subbarayanahalli village | 41.0 | 49.4 | 57.5 | 35.4 | 44.4 | 48.0 |
| N4 | Nandhihalli | 37.0 | 49.9 | 55.0 | 34.0 | 40.8 | 46.3 |
| Corezone | | | | | | | |
| N5 | Core zone (Mines office) | 41.0 | 56.7 | 63.0 | 34.0 | 44.0 | 49.0 |
| N6 | Haulage Road | 45.0 | 58.8 | 68.0 | During operation | | |
| N7 | Mobile Screening Plant | 47.0 | 68.8 | 89.0 | During operation | | |
| Heavy Earth Moving Machineries | | | | | | | |
| N8 | Tata Hitachi Laxis 370 MTA | 43.0 | 62.7 | 80.0 | During operation inside of the cabin | | |
| | | 40.0 | 61.4 | 76.0 | During operation 10mts outside of the cabin | | |
| N9 | Cat 323D3 No. 5 | 48.0 | 61.1 | 70.0 | During operation inside of the cabin | | |
| | | 45.0 | 58.8 | 68.0 | During operation 10mts outside of the cabin | | |
| N10 | Wheel Loader Cat - 950L | 44.0 | 60.8 | 75.0 | During operation inside of the cabin with AC | | |
| | | 40.0 | 59.0 | 70.0 | During operation 10mts outside of the cabin | | |
| Permissible limits as per ILO Code of Practice | | | | Permissible Limits of Ambient Noise Levels as per CPCB Guidelines | | | |
| For Unprotected ear - 8 hrs working shift | | | | Leq. Limit dB(A) | | | |
| Warning limit - 85 dB(A) | | | | Day | | | |
| Danger limit - 90 dB(A) | | | | Night | | | |
| Worker not to be exposed for more than 115 dB(A) | | | | Industrial areas | | 75 | 70 |
| With ear protection - | | | | Commercial area | | 65 | 55 |
| 130 dB(A) 'Impulse' or 120 dB(A) 'Fast' | | | | Residential area | | 55 | 45 |
| No entry when noise level exceeds 140 dB(A) | | | | | | | |

Anil Kumar Kousar
ANIL KUMAR KOUSAR
By. T.M. Chitambar
Govt. Analyst / Authorised Signatory

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